

Review Article

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Nutrient as a force for family security: A Review

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Abstract

Critical nutrients are important for healthy living in any family because of different blood composition and gene makeup but yet to be gambled through nutritional education. The state of nutrients in food during harvesting, processing, storage and handling are important to the retention, availability, lethality and for keeping life going, also for family security. Each stage of life begins, requiring specific critical nutrients which are prime to cell transition, and dormancy of cell for healthy life cycle.

Keywords: Critical nutrient, Education, Family security, Intervention

Introduction

Nutrients are critical for proper nutrition. In malnutrition, which affects individual life, group and family consist of certain nutrients that the knowledge on how they may be available, stable, unstable in food eaten are absent. Critical nutrients like vitamins, certain essential amino acids, fatty acid, simple sugars or starch found around in foods becomes available, sometimes unavailable, unstable and lethal. UNICEF initiative reported the number of death per day due to certain vitamin. Nigeria has 82,000 deficiencies with maternal death of 11, 000. Obioker associated 40% of 10% million death amongst children to malnutrition. Similarly Oguntona asserts that 42% of children indicate stunted growth and millions of adult suffer from initiated to chronic related diseases like obesity, heart diseases and diabetes. Nutrients that are unavailable under the label malnutrition in many parts of Nigeria are as a result of ignorance, processing approach, food choice, preparation and climate, taboos, lack of basic nutritional dynamics about food.¹

It is therefore essential that individual family group or organizations and family member should be enlightened on state of nutrients which are critical to nutrient “availability” in other to maintain good dietary regimes through practices, processing, storage and handling for normal and healthy living through nutritional education.

According to Tanko², even when the necessary foods are accessible in abundance people do not always choose good diet food, they are restricted by poverty, short supplies, and the knowledge on how to make use of the best in the scarce resource for proper nutrition through nutritional education could be assured through critical nutrition which becomes a necessary force. Adamu³ asserts that nutrition education is wide hence, the knowledge on critical nutrition can normalized and specifies choice for family members, positioning social health and security of the family.

Nutritional Education

Nutritional education refers to organization of educational resource to quality food and nutrition behavior to pursuing improved health. According to Ahendo, nutrition education is the key process by which knowledge, attitude, confidence and skills are geared. The education on nutrient is to throw abroad nutrients and nutritional education and understanding of nutrients for proper usage to maintain good health. According to Food and Agriculture Organization, asserts that the aim of nutritional education is for public awareness, wider knowledge, and development of skills on food usage.

The state of food could be solid, liquid or gaseous. These could be in their natural form or semi-natural form. The nutritional compositions, state of processing, climate, individual psychology, microbial load, viscereal load all these go a long way to defined or explain critical state of nutrients in food. Understanding criticality of the nutrient in relation to the state and what could make them unavailable is what termed critical state of nutrient in education. Classification of nutrients is based on building types, energy type, body regulating or system regulating types. The most critical nutrients are the classes of cells building and regulating or system regulating types. These nutrients become critical due to temperature geography, wellness or health of the individual and state of the nutrients in the food.

Proteineous food losses its amino acid functionality, especially the essential amino acid at certain temperature and PH, this can be observed even when the food is fresh. Employing high temperature short time (HTST) or low temperature long time (LTLT) on protein food during processing depending on the water activity of that food could stabilize its zwitterions effect. The temperature at which mother's breast feed her children should be low, though at high temperature, depending on climate at that point, milk may be released considerably, critical protein and other nutrients such as vitamins could be denatured similarly the mother temperature when it is at high degree could release free radical and some time combined poison which can be passed to the child. Another situation like nutrient addition through complementation or supplementation of food especially protein, vitamins should not be done in an aerated space, avoid storage of ionic compound close to food. Temperature of the diluents should be very low and also mixing should be slow to degenerate unnecessary chilants from the mixtures when preparing especially vitamin rich foods.

The Safety of Nutrients

Nutrients may only be safe when there are in their natural form and not when the food had to undergo harvesting, transportation, exposure, storage and ready to eat form. Along these chains nutrient undergoes critical loss which have gross effect on nutrients and health of the family.

Nutrients generally do not have safe record, just like food composition table that are unstable. They are faced with some processing, storage, handling, terrorism and toxicant migrating moiety factors. The application of the principle of nutrients safety could lead to an improvement in the overall quality and Quantity of nutritional values of food, reduction in nutritional disease and greater resistance of infants to intestinal infection and diseases.

Principle behind Safety of Nutrient

Harvesting: Raw or bulk food undergoes harvesting with less reaction given to the edible state of the food. Natural state of food undergoes senescence and climacteric problems. The aging and nutrients reduction as well as carbon IV oxide to oxygen ratio concentration in liquid food for example in milk and milk product are initiated by oxidation /reduction process, though packages and storage have little or no effect on this.

Processing: At these state, the food changes it state, they may become solid and especially liquid. This state defines nutrient critically and critical control point of food safety (HACCP). The safe area of food is wide and this allows enzyme and environmental influence on the food nutrient using catalysing enzyme or metabolites which may not be orented. Similarly, microbial proliferation is another critical use to maintaining nutrient content of food, like the Indonesia temple.

Storage: The keeping quality of any food is a function of water activity. The bound and unbound water somehow are available for microbial and enzyme reactions. Usually, a high moisture food detoriate faster compare to less moisture foods. Most processed food could keep for long time because of its water activity and controlled atmosphere. The nutrition educationist ought to understand package handling and package information, keeping in a cold or hot environment should be based on the vitamin and protein characteristics of such food on the state of the food.

Handling: The care giving to food nutrients or food when making it available for consumption, that is after applying

cooking methods as well as on the table, could allow fresh air, the temperature of the hot liquid for making food pasty, beverages and sometime vegetable blanching can cause nutrient shock. Shrinking especially proteins and also making heat labile vitamins like vitamin A, C, and some B- vitamin unavailable metabolically for cell utilization. Refrigerating shocks can result to temporary flaccidity of the membrane cells bluffing cells intermittently making food nutrient to leach away through thawing. This should be an understanding for nutritional educationist to educate patrons, self, cooks and other disciplines including the Home cooks and mothers for family security nutritionally. The amount of nutrient surging out of living cells is a function of how abundant or present or unavailable the nutrient in that food under consideration.

Fermentation

Nutrition is the supply of calories or energy, essential amino-acid, essential fatty acid, vitamins and mineral requirement to satisfy the metabolic needs of the consumer. Allot of nutritional diseases has been known, these range from kwashiokor, marasmous, pellegra, oedema, xerophthalmia to beriberi, these are prominent in children.

The nutritional impact of fermented food on nutritional disease can be direct and sometimes indirect. Food fermentation that raises protein value or content can have direct impact or curative effect. Similarly, fermentation increases the content of vitamins like riboflavin, thiamine, niacin, folic acid and these can have preferred effect on the health of the consumer of such food. Maize has been used in different ways like ogi or akamu, here niacin is stepped up after fermentation. Rice is a staple limited in thiamine; however bioenrichment through fermentation can improve the thiamin content.

Food safety

The safety of food containing bioactive ingredient are threatened by food poisoning and infection. Infection is the vehicle that carries food poisoning. The key food pathogens are campylobacter spp and salmonella spp, listeria monocytogene. The age of infection are usually children between 1-2 years, while *E. coli* infest children of age 1-10 years which could cause blood diarrhea and hemolytic uremic syndrome (HUS).The pre-processing approach on some exported or exotic food such as apple should be known because they have been treated or coated with wax and other under gradable material that could

cause barrier in nutrient utilization across mucosal and cause other visceral problems.

Critical Nutrient for the Infants

The infant are between the age brackets of 1-5 years old of age. Carbohydrate should be high to spare protein, high protein are needed by infants with degree of disorders. Fats are good source of energy but infants lacks visceral enzymes, so short or medium fatty acid could be made but the least come from breast milk, especially through formulation.⁴ The level of dilution makes vitamin rich juice to stop pneumonic problem. The dynamics roles of vitamins and minerals do not play here, although the best source for these critical nutrients are through fermentation or fermented food. Complementation and supplementation of food are the other ways. Animal nutrient posses certain proteins unlike plant proteins or nutrient requiring different metabolic process however processed form of animal protein can restrict this effect in infants.

Critical Nutrient for the Adolescence

Critical nutrient for the adolescence should not be stable because of their high metabolic posture.⁵ The adolescent passes through puberty, cognitive maturation and psychosocial maturation requiring critical phases and understanding of certain food nutrient to be supplied. This stage could be called “crises for nutrient stage” because the body requirement keep depleting and replicating in synergistic way whereby the child should know what nutrient or kind of nutrient such as carbohydrate, fat, protein, vitamin and mineral to take just to keep metabolic balance. Critical nutrients like iron, zinc, folate and vitamins A, E are beneficial to body and functioning and role of the adolescence.

Critical Nutrient for the Aged

At this stage, fluid morbidity, muscle senescence or aging takes place and so build up may acrew when certain nutrients are not observed. Carbohydrates food should be available with balanced fibre. Protein as nutrient should be adjusted to prevent sarcopenia, at this stage also, fatty food are critically bad except the essential fatty acid derived from plant seeds.⁶ Water is critical here to prevent dehydration and to keep other nutrients diffusing .The fate of vitamins such as vitamin D, B2, A, iron, vitamin E, calcium, mineral, magnesium, zinc especially from plant as a source are more fictional and can reduce free radical build up at this stage.⁷

Critical Nutrient for the Pregnant Woman

Generally, the pregnant woman requires the normal balance diet as a normal adult but certain critical nutrients are required outside quality and quantity. The calories requirement from fatty food, carbohydrate, protein should be balanced for pregnant women since 300,000-2,500 calories are required for normal adult woman. These could be derived from critical nutrient like carbohydrate, fat and protein. A pregnant woman needs plenty quantity of calcium and iron these are more critical in demand by these set of special people derivable from fruitnuts, meats and soft tissues.⁸

Recommendation

1. Nutrition education should have recommended guide line that could specifically narrow dietary or tailored food needs.
2. The gene pools of individual through genomics could help tailor side by side quid line for dietary prescription just like in drugs prescriptions.

Conclusion

Based on the review studies, nutritional education as a concept covers wide scope. This review revealed how nutrient can be safe. Critical nutrient at each stage of development from infant to the aged were reviewed showing critical nutrient needed by these groups of people in our family, community and society.

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