



Benefits of Nutrition Intervention for Healthy Living

C. L. Nwankwoala and G. O. Ekenedo

Department of Human Kinetics and Health Education, Faculty of Education, University of Port Harcourt
Corresponding author: chidilyne2000@gmail.com/08037076964

Abstract

Nutrition intervention is purposeful planned actions intended to positively change a nutritional -related behavior, environmental condition, or aspect of health status for an individual, target group or the community at large. The purpose of nutrition intervention is to resolve or improve the nutritional diagnosis or nutritional problem by provision of advice, education, or delivery of food, component of a specific diet or meal plan tailored to the patient/clients. Nutritional is concerned primarily with the part played by nutrients in the body growth, development and maintenance of body tissue. Nutrition is the study of nutrients in food, how the body uses them and the relationship between diet, health and disease. This paper focused on how people can use dietary choices to reduce the risk of disease, classification of foods, what constitute healthy diet and tips for maintaining good health, basis for nutrition intervention and how to determine nutrition intervention. This paper concluded that nutrition intervention is needed to reduce morbidity and mortality through dietary changes which can be achieved through eating balance diet that is appropriate for one's body. This study therefore recommended that nutrition intervention should start early in one's life for a healthy living and appropriate diagnosis should be made before embarking on nutrition intervention under the guidance of a professional.

Key words: Nutrition, intervention, Nutrient and Food

Introduction

Good nutrition is a vital part of patient care and this includes nutrition screening, assessment and intervention. Researchers demonstrate that early nutrition intervention improves the outcomes of cancer patients including nutritional status, weight treatment tolerance and quality of life (Medical Nutrition International Industry (MNII), 2012). Nutrition is the study of nutrients in food, how the body uses them and the relationship between diet, health and diseases. Diet has a role in the maintenance of health and development of diseases and understanding this relationship has proven very difficult. But what is obvious is that the benefits of some dietary choices are not the same for everyone (Johnson, 2015).

Nutrition is the science of food and its relationship to health. It is concerned primarily with the part played by nutrients in the body growth, development and maintenance of body tissues. According to Newman, (2020). Nutrition is the study of nutrients in food, how the body uses them and the relationship between diet, health and disease. It also focuses on how people can use dietary choice to reduce the risk of disease. When people do not have right balance of nutrients in their diet, their risk of developing certain health conditions increases. Nutrition is the combination of dynamic process by which the consumed food is utilized for nourishment, structural and functional efficiency of every cell of the body (Newman, 2020).

Unhealthy eating habits have contributed to the obesity epidemic in United States with about one-third adults (33.8%) and approximately 17% of children and adolescents age 2-19 years being obese. By making and choosing the choice of food, you can help protect yourself from health problems.

The body requires food to provide energy for organ function, body movement, and work; maintain body temperature and provide raw materials for enzyme function, growth; replacement of cells repair. The body undergo biochemical reaction known as metabolism. It consists of anabolic reactions that build substances and body tissues and catabolic reactions that breakdown substances. Food is ingested, digested, and absorbed to produce the energy needed for these reactions (Basavanthappa, 2008). According to Park (2009) foods are classified into different ways and these include: (1) origin – foods of animal origin and foods of vegetable origin. (2) Chemical composition - proteins, fats, carbohydrates, vitamins and minerals. (3) Predominant functions which are bodybuilding foods (milk, meat, poultry, fish, eggs, pulses, groundnuts etc.), energy giving foods: (cereals, sugars, roots and tubers, fats and oils), protective foods: (vegetables, fruits, milk) and (4) Classification by nutritive value; cereals and millets, pulses (legumes), vegetables, Nuts and oilseeds, fruits, animals food, fats and oils, sugar and jiggery and condiments.

Nutrients are organic and inorganic complexes contained in food (Park, 2009). Lean (2015) state that the seven classes of nutrients are carbohydrates fats, fiber mineral, protein, vitamins and water. There are about 50 different nutrients, which are supplied from the foods we eat, and each nutrient has specific functions in the body and most natural foods contain more than one nutrient. We have macronutrients and micronutrients. Macronutrients

according to Richards (2020) are carbohydrate, proteins and fats which provide energy and keep the body healthy. While micronutrients are vitamins and minerals, they are called micronutrients because they are required in small amounts, which vary from a fraction of a milligram to several grams. (World Health Organization, Food and Agricultural Organization, 2004).

Healthy diet provides the body with essential nutrition like fluid, macronutrients, micronutrient and adequate calories (Lean, 2015). A healthy diet may contain fruits, vegetables, and whole grains and may include little or no processed food and sweetened beverages. The requirements for a healthy diet can be met from a variety of plant based and non-animal-based foods (Melina, Vesanto; Craig, Winston; Levin, Susan, 2016).

What Constitute Healthy Diet

Nutrition is a critical part of health and development and it is related to improved maternal and child health, stronger immune system and lower risk of non-communicable disease (World Health Organization, 2021). World Health Organization (2020) states that consuming a healthy diet in one's life helps to prevent malnutrition in all its forms and well as a range of non-communicable diseases (NCDs) and other conditions.

Gangwisch, Hale and Garica (2015) opined that those who consume fast food are 51% more likely to develop depression compared to those who eat little or none. Depression and dietary pattern appears to be associated with high glyceric carbohydrate of which needs to be minimized through nutrition intervention. Furthermore, dietary pattern with fried food, sweetened desserts, processed meat and refined grains has also been associated with depression while the consumption of whole natural foods has been shown to be strongly protective Sutcliffe, Carnot, Fushrman, Sutcliffe and Scheid (2018).

The exact make-up of a diversified, balanced and healthy diet will vary depending on individual characteristics (such as age, gender, lifestyle and degree of physical activity), cultural context, locally available foods and dietary customs. Nevertheless, the basic principles of what constitute a healthy diet remain the same (WHO, 2020).

Healthy food/diet for an adult includes the following; fruits, vegetables legumes (e.g. lentils and beans) nuts and whole grains (e.g. unprocessed maize, millet, oats, wheat and brown rice). At least 400g (that is five portion) of fruits and vegetable per day excluding potatoes, sweet potatoes cassava and other starchy roots' (world Health organization and food and agriculture organization, 2003). Less than 10% of total energy intake from free sugars (WHO, 2015) which is equivalent to 50g (or about 12 level teaspoon) for a person of healthy body weight consuming about 2000 calories per day, but the ideal is less than 50% of total energy intake for additional health benefits (Who, 2015). (Free sugar are all sugars added to foods or drinks by the manufacturer, cook or consumer, as well as sugars naturally present in fruit juices, syrups, honey and fruit juice concentrates). Less than 30% of total energy intake from fats (FAO 2010, WHO, 2003, and Hooper, Abdelhamid, Brown, Summerbell and Skeaff, 2015). It is worthy of note that, unsaturated fats (found in fish, avocado, nuts and in sunflower, soybean, canola and olive oil) are preferable to saturated fats (found in fatty meat, butter, palm and coconut oil, cream, cheese, and lard). Furthermore, trans-fats of all kinds, both industrially-produced trans-fats (found in baked and fried foods, and pre-packaged snacks and foods, such as frozen pizza, pies, cookies, biscuits, wafers and cooking oils and spreads) and ruminant animals such as cows, sheep and goat etc) are also on unhealthy because they contain saturated fats. However, it is suggested that the intake of saturated fats be reduced to less than 10% of total intake and trans-fats to less than 1% of total energy intake (WHO, 2009, WHO, 2018) and less than 5g of iodized salt (which is equivalent to one teaspoon per day is acceptable).

Healthy diet for an infants and young children, which is an optimal nutrition in the first 2years of a child's life, fosters healthy growth and improves cognitive development. It also reduces the risk of becoming overweight or obese and developing non-communicable disease later in life. Therefore, advice given on a healthy diet for infants and children is similar to that given to adults. However, the following elements are also important. Infants should be placed on exclusive breast feeding during the first 6 months of life for strong immunity. Infants should also be breast fed continuously until 2years of age and beyond if need be. Breast milk should be complemented from 6months of age with a variety of adequate, safe and nutrient dense foods. Sugars and salt should not be added to complementary foods.



Tips on nutrition for maintaining good health

Fruits and vegetables: Eating at least 400g or five portions, of fruit and vegetables per day reduces the risk of NCDs and helps to ensure an adequate daily intake of dietary fiber (WHO, 2003). Fruits and vegetable intake can help to improve one's health by always including vegetables in meals, eating fresh fruits and raw vegetables that are in seasons and eating a variety of fruits and vegetables.

Fats: Reducing the amount of total fat intake to less than 30% of total energy intake helps to prevent unhealthy weight gain in the adult population (Hooper, Abdelhamid, Bunn, Brown, Summerbell, and Skeaff (2015, WHO, 2003 and FAO, 2010). Reducing the amount of total fat intake will also help to reduce the risk of developing NCDs by reducing saturated fats to less than 1% of total energy intake; reducing trans-fats to less than 1% or total energy intake and replacing both saturated fats and trans-fats with unsaturated fats particularly with polyunsaturated fats. Saturated fat and industrially produced trans-fat intake can be reduced by steaming or boiling instead of frying when cooking. Replacing butter, lard with oils rich in poly-saturated fats (e.g soybean, canola, rapeseed, corn, and sunflower oils), eating reduced fat dairy foods and lean meats or trimming visible fat from meat and limiting the consumption of baked and fried foods, and pre-packaged snacks and foods (e.g., doughnuts, cakes, pies, cookies, biscuits and wafers) that contains industrially produced trans-fats is unhealthy.

Salt, sodium and potassium: Most people consume too much sodium through salt (corresponding to consuming an average of 9-12g of salt per day) and less potassium (less than 3.5g). It is worthy to note that consuming high sodium and insufficient potassium intake contribute to high blood pressure, which in turn increases the risk of heart disease and stroke (WHO, 2012). Also reducing salt intake to the recommended level of less than 5g per day could prevent 1.7million deaths each year (Mozaffarian, Fahimi Singh, Khatibzadeh, and Engel, 2014). In many countries Nigeria inclusive most salt comes from processed food (e.g reaching meals; processed meat like bacon, ham and processed meat like bacon, ham, cheese and salty snacks). It could come also from the food consumed frequently in large amounts (e.g bread). High salt intake can also come from the salt added to food during cooking (e.g stock, cubes, soy sauce and fish sauce or at the point of consumption (example, table salt).

Hence, salt intake can be reduced by limiting the amount of salt and high-sodium condiments when cooking and preparing foods, not having salty sauce on the table, limiting the consumption of salty snacks and choosing products with lower sodium content. In addition, potassium can mitigate the negative effects of elevated sodium consumption on blood pressure. Therefore, intake of potassium can be increased by consuming fresh fruit and vegetables.

Sugar: The intake of free sugars should be reduced to less than 10% of total energy intake (WHO, 2015). Furthermore, a reduction to less than 5% of total energy intake of free sugar would provide additional health benefits (WHO, 2015). At this point, it is important to know that consuming free sugars increases the risk of dental caries (tooth decay), excess calories from foods and drinks high in free sugars contribute to unhealthy weight gain, which can lead to overweight and obesity. According to Te-Morenga, Howatson, Jones, Mann, (2014) free sugars influence blood pressure and serum lipids, which suggest that a reduction in free sugar intake reduces risk factors for cardiovascular diseases.

In order to reduce sugar intake, individuals should limit the consumption of food and drinks containing high amount of sugars e.g., sugary snacks, candies, and sugar sweetened beverages (that is all types of beverages containing free sugars. These include carbonated or non-carbonated soft drinks, fruit or vegetable juices and drinks, liquid and powder concentrates, flavored water, energy and sport drinks, ready to drink tea, ready to drink coffee and flavored milk drinks and taking fresh fruits and raw vegetables as snacks instead of sugary snacks.

Basis for nutrition interventions

Diet is one of the most important and modifiable life style determinants of human health. Under nutrition and over nutrition play a role in morbidity and mortality. Therefore nutrition interventions are needed to reduce morbidity and mortality through dietary change. This change can be implemented at an individual, local, or national level (Nutrition Society).

Nutrition intervention is defined as purposefully planned actions intended to positively change a nutrition-related behavior, environmental condition, or aspect of health status for an individual, target group or the community at large (Gunawardane 2011). The purpose of nutrition intervention is to resolve or improve the nutrition diagnosis or nutrition problem by provision of advice, education or delivery of the food. Component of a specific diet or meal plan tailored to the patient/client's need.

How to determine nutrition intervention

It is important to make appropriate diagnosis and its etiology before the selection of a nutrition intervention. Nutrition intervention strategies are selected to change nutritional intake, nutrition-related knowledge or behavior, environmental conditions, or access to supportive care and service. The goal of nutrition intervention is to provide the basis for monitoring progress and measuring outcomes. This intervention is accomplished in two distinct and interrelated steps; planning and implementing.

Planning nutrition intervention involves

1. Prioritizing nutrition diagnosis
2. consulting the academics, use of evidence Base Nutrition practice Guidelines and other practice guidelines
3. determining patient i.e. focused expected outcomes for each nutrition diagnosis,
4. Conferring with patient /client /caregivers to agree on the intervention plan
5. Defining a nutrition intervention plan and related strategies,
6. Defining time and frequency of care.
7. Identifying resources needed.

While implementation is the action phase which involves

1. Communication of the nutrition care plan to the patient
2. Carrying out the plan.

Types of nutrition intervention for healthy living

- ❖ Provide intensive dietary counselling for adults with lipid disorder and other risk factor for cardiovascular and diet-related chronic disease e.g. Hypertension, diabetics, cancer, kidney failure.
- ❖ Counselling can be delivered in clinical settings by physician or specialist such as dietitians, and should include nutrition education and behavior education such as self-monitoring, overcoming barriers to selecting a healthy diet, setting goals, shopping and food preparation and social support. (Centre for diseases control).

Conclusion

Nutrition intervention is needed to reduce morbidity and mortality through dietary changes which can be achieved through eating balance diet that is appropriate for one's body.

Recommendations

1. Nutrition intervention should start early in one's life for a healthy living.
2. Appropriate diagnosis should be made before embarking on nutrition intervention under the guidance of a professional.

References

- Basavanthappa, B. T. (2008). Community health Nursing. New Delhi* Jaypee Brothers Medical Publishers (p) Ltd.
- Food and Agriculture Organisation of United Nations (2010). Fats and fatty acids in human nutrition: Report of an expert consultation. FAO food and Nutrition paper 91.
- Gunawardane, D. A. (2011). *International Dietetics and nutrition*. Terminology Reference mineral shdeshare.net
- Hooper, L., Abdelhamid, A., Bunn, D., Brown, T., Summerbell, C., D & Skeah, C. M (2015). Elteits of total fat intake on body weight. *Cochrane wata base sys* (8) C D 011 834.
- Johnson, M (2015). The role of the food and nutritional science in examining the determinants of health. *Food Nutri Rep.*, 1(1),8-9.
- Lean, M. E. J. (2015). Principle of Human nutrition medicine. 43(2), 61-65. doi: 10.1016/j.m pmed. 2014.11009.
- Medical Nutrition International Industry (MNII, 2012) Oral Nutritional Supplements to tackle malnutrition.. Summary of the evidence base. Brussels, Belgium:
- Melina, V., Craig, W & Levin S (2016). Position of the Academy of Nutrition and Dietetics: vegetarian diets* *Journal of the Academy of Nutrition and dietetics*. 116(12), 1970-1980 doi: 10.1016/g. jand. 2016.09.025* PMID 27886704*
- Mozattarian, D., Fahimi, S., Singh, G. M., Micha, R., Khatibzadeh, S & Engell, R., E. (2014). Global sodium consumption and death from cardiovascular causes. *N. Engl J Med*. 371(7), 624-34.
- Newman, T (2020). What is nutrition? And why does it matter? *Medical news today.com*
- Park, K (2009). Preventive and social medicine. M/S Banarsi Banavsidas Bhanot: publisher – India. Iuchia; Banarsidas Bhanot Publishers



- Richards, L (2020). Micro VS Macros: Everything you need to know. Alnews today.com.
- Sutcliffe, J. T., Carnot, M. J., Fushman, J. H., Sutiffe, C. A & Scheid, J. C (2018). A worksite intervention is effective at improving employee well-being. A pilot study. *Journal of nutrition and metabolism*, 10,8187203.
- Te morenga, L. A., Howatson, A., Jones, R., M & Mann, J (2014). Dietary sugars and cardiovascular risk: system review and meta-analysis of randomized controlled trials of the effects on blood pressure and lipids. *AJCN*. 100(1), 65-79.
- World Health Organisation (2015). Guideline: sugars intake for adult and children. Geneva: WHO.
- World Health Organisation (2018). Guidelines: saturated fatty acid and trans-fatty acid intake for adults and children. Geneva: WHO (Draft issued for public consultation in May 2018).
- World Health Organisation (2018). Replace: an action package to eliminate industrially produced trans-fatty acids. WHO/NMA/NHD/18.4. Geneva: WHO.
- World Health ORGANISATION (2020) Healthy diet. WHO.int.
- World Health Organisation/Food and Agricultural organisation Expert consultation (2003). Diet, nutrition and prevention of chronic diseases: report of joint WHO/FAO; expert consultation. WHO Technical Report service, No916.
- World Health Organization, Food and agricultural Organization (2004). Vitamin and mineral requirements in human nutrition * (PDF) (2.ed) Geneva: World Health Organization ISBN 978-9241546126.