

Child Nutrition and General Health Require Nutritional Knowledge of Parents and Others

Farouk El-Sabban*

Department of Food Science and Nutrition, College of Life Sciences, Kuwait University, Kuwait

***Corresponding Author:** Farouk El-Sabban, Professor of Nutrition and Physiology, Department of Food Science and Nutrition, College of Life Sciences, Kuwait University, P.O. Box 5969 - Safat 13060, Kuwait City, Kuwait.

Received Date: December 07, 2015; **Published:** January 18, 2016

Abstract

The three main factors involved in human survival are: genetic make-up, environment and nutrition, with the latter being the most modifiable factor among the three. Human survival ought to be healthy, so that individuals would be able to function normally. The relationship between nutrition and general health has been established and a healthy lifestyle that involves balanced nutrition and physical activity is recommended for humans at all phases of their growth and development. Such recommendations are for protecting the body from disease and for maintaining a good state of health. Most of the children live with their parents at home during the early years of their lives, after which their lives become almost divided between home and school. Almost all children do not have enough knowledge about proper nutrition and dietary habits - thus; parents, nannies, school administrators, teachers, and all other who are directly or indirectly involved in child nutrition ought to be knowledgeable of many aspects of healthy nutrition and lifestyle. Such knowledge is of benefit to all concerned, as well as for positively influencing children towards a healthful existence. For the benefit of all adults who are concerned about child nutrition, this article explores aspects of the different phases of human development and the changing nutrient requirements for each. Also, several approaches to facilitate children's comprehension, entice them to learn about sound nutrition, and the value of regular physical activity are recommended for implementation. Coordination and collaboration among all stakeholders of child nutrition is a must, so that devised interventional strategies and programs would yield the desired outcomes.

Keywords: Awareness; Child; Education; Health; Knowledge; Nutrition; Parents; Society

The human body is composed of millions of biological units known as cells. There are varieties of cells such as: nerve cells that receive and send electrical signals, muscle cells that their function in association with the bones and joints of the skeleton would enable us to move, red blood cells that carry oxygen, white blood cells that defend the body against invading pathogens (immunity), as well as platelets that are involved in blood clotting. There is a known organization, starting with cells, tissues, organs, then systems that work together to achieve normal functions for the human body [1]. Being free of diseases is a good definition of general health, although the World Health Organization (WHO) of the United Nations adds the presence of mental and psychological well-being to the definition [2].

Human survival and health are mainly influenced by three main factors, which are: genetics, environment and nutrition. There are some diseases that have genetic basis, thus the genetic makeup of an individual can determine the level of susceptibility to such diseases. The genetic makeup of the individual can not be changed. Some environmental aspects can be controlled by individuals at home or office, while others such as climate can not. In contrast, nutrition is the most modifiable factor among the three factors. The association between nutrition and health has long been established. Unlike plants, that can manufacture their food, humans need to eat daily to provide their bodies with needed energy, be defended against diseases and preserve their general health.

Sound nutrition knowledge is the key to healthy dietary attitudes and practices that result in healthy bodies and protects against several diseases. Thus, awareness of the basis of good nutrition by all individuals would be beneficial to the society at large. Healthy nutrition/dietary patterns can be achieved through awareness and education, particularly if learned in the early years of life. Healthy dietary habits established in childhood may also be carried over into adulthood. Pertinent literature revealed that nutrition knowledge among children and adolescents is insufficient [3]. Therefore, many health authorities recommend that parents, teachers, and other influential adults should guide children and adolescents in developing healthful eating patterns and acquiring information on nutrition and diet-health relationships [4].

Up until 3 years of age, almost all children would be living with their parents at home, after which children may go to kindergarten. Beginning with 6 years of age, children start going to elementary schools and continue on until they graduate from high school. So, starting from age 3 - the child's life can be divided between home and school. At home, the influence of parents and those who take care of children is certainly dominant. Parental influences on children's dietary patterns have been recognized [5] and the relationships between dietary intakes of children and their parents (particularly the mothers) affected the overall family diet quality [6]. Several studies have shown that many parental factors can influence children nutrition and health outcomes. The socioeconomic status of the family was found to affect many aspects of child nutrition - such as: the level of consumption of high-energy food by 2-year old children [7], nutrition during infancy and toddlerhood [8], food availability and variety at home and pattern of consumption [9], and the consumption of snacks and sugar-sweetened beverages [10]. Parental dietary and physical activity habits and their effects on the nutrition state of pre-school children were related to their socioeconomic determinants [11]. Socioeconomic, parental and home environment were shown to influence consumption of fruits and vegetables among children in grades 5 and 6 [12]. Sound hygienic and sanitary aspects at the home environment are expected to be closely related to a certain satisfactory level of socioeconomic status, with their positive effects on child nutrition and general health. The educational level of parents can be of great influence on their children's dietary habits and nutritional status [13]. Studies have shown that maternal education has more influence, than that of fathers, on nutritional status - as well as on infant and child mortality [14]. Higher consumptions of many unhealthy food items; such as: cookies, sugary beverages and juices were associated with low maternal educational level [15]. As an added factor, child rearing pattern (parenting style) was found to influence nutritional states of children [16]. Thus, parents and the home environment figure prominently as most influencing factors on the nutritional and health states of small children. As would be expected, when children reach their adolescent stage - they begin to deviate from earlier dietary patterns. The issue of adolescent nutrition is complex, as variations in activity and interest begin to exist and prevail.

As children begin to go to kindergarten or get enrolled in elementary schools, they are most likely provided with food items from home - thus, the influence of home continues during this stage of their growth and development. At school, influence of teachers on education and other aspects of life can also be very prominent. In some countries and schools, meals are provided to ensure proper nutrition of children. Significant aspects of nutrition and children diet have been recently addressed [17]. Prevalent regulations of educational districts and school administrators play a significant role in providing children with healthful food items in school cafeterias. Thus, for the overall benefit to children, all stakeholders must be knowledgeable about nutrition and its influence on their general health. In this case, stakeholders are: children, parents, child-care personnel, teachers, school health personnel, medical care personnel, and others who are involved in children education. Because of the diversity in backgrounds of all stakeholders, a standard level of nutrition knowledge for all would be most beneficial. Essential aspects of nutrition and information for grown-up children and the rest of the adult stakeholders are explored herein. For small children, a special segment of this article will be devoted to what could be effective approaches for their knowledge?

The human life cycle has many phases, namely: infancy, childhood, adolescence, adulthood, and elderly. In order to be aware of the importance of nutrition in preserving health and in preventing nutrition-related diseases, a brief exploration of the basics of good nutrition (also known as healthy nutrition) is hereby explored. Basic understanding of human nutrition at different stages of development is also briefly included. Nutrient requirements that are recommended for maintenance of health are based on data that were generated from many scientific studies. Requirements for nutrients and energy differ according to the phases of life and the physiological state of

the individual. Also, it should be emphasized that adequate and well balanced nutrition ought to be observed in all phase of human life - as briefly explored below.

Food groups: There are four main food groups, which are: 1) grains and cereals, 2) milk and dairy products, 3) meats and meat products, and 4) fruits and vegetables. While all these groups contain chemical substances that the body needs (nutrients), each provides more of certain nutrients. Grains and cereals contain carbohydrates (like starch and sugars), that the body needs for energy. Milk and dairy products provide the body with calcium, carbohydrates (the sugar lactose) and protein. Meats and meat products provide most of the protein that the body needs for growth and repair of tissue. The fruits and vegetables group provides the body with water, minerals and vitamins (which are needed for many biological functions in the body).

Classes of nutrients: There are six classes of nutrients (chemical substances) that the body needs for normal growth and functions. These are: carbohydrates, proteins, fats, minerals, vitamins and water. Carbohydrates are needed for generation of energy, proteins are to provide the nitrogen that is needed for growth and repair of damaged tissue, fats (and oils) are needed for energy production, minerals are needed for many biological functions (e.g., being components of bones, carry oxygen in blood), vitamins can help in fighting diseases and are involved in many biological processes involved in body metabolism (building and destroying substances and structures). Water is a very special class of nutrients, as it constitutes about 2/3 of total adult body and serves many vital functions in the body.

Healthy nutrition: This expression means that each individual consumes adequate amounts of all food groups, i.e., to observe balanced nutrition. This way, there would be assurance that such a diet would provide the body with the needed nutrients on a daily basis. There are means to guide the public about healthy nutrition, most known and practiced is the food guide pyramid that was devised by the United States Department of Agriculture in 2005 (Figure 1).

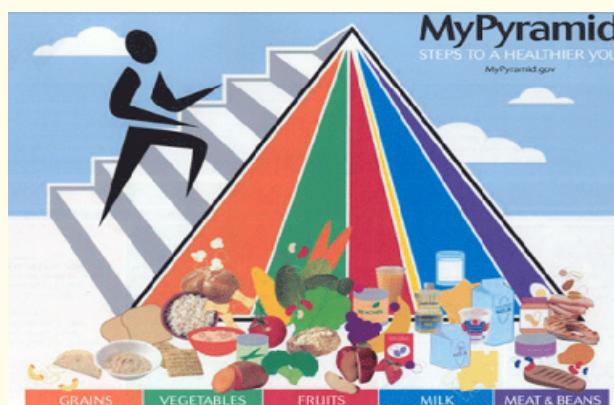


Figure 1: The food guide pyramid [18].

Nutrition of infants: Based on the recommendations of the World Health Organization of the United Nations (WHO-UN), a new born baby should be breast-fed exclusively for the first 6 months of his/her life [2]. Mother's milk is the most perfect and natural food for babies at this age, thus should be encouraged and promoted. Introduction of semi-solid foods and those that are easy to digest begin after the first six months of age.

Nutrition of children: This phase of development is characterized by fast growth for both boys and girls. Up until the next phase (adolescence), there are no much differences in the nutrient requirements between both genders. It is natural for children to be active, thus their energy requirements increase with age. Sound nutrition should be followed for children to achieve normal weight and height. Food guides have been devised for proper nutrition of young children, such as that is shown in Figure 2. Caution should be observed so that

children would not eat foods that are high in fat such as those that are fried and those that contain readily available sugar such as candy and chocolates.



Figure 2: Food guide pyramid for kids [19].

Nutrition of adolescents: Growth continues in this phase and, consequently, nutrient requirements increase. Additionally, adolescents are physically active in general, thus, their energy requirements are expected to increase. Nutrient requirements begin to be higher for boys than for girls at this stage of development, as they become more masculine. Girls at this stage begin to be aware of their figure and become influenced by the mass media that glorifies thinness, a matter that can be the cause of much anxiety and may lead to some psychological problems.

Nutrition of adults: A basic aspect of nutrition of adult males and non-pregnant females is that there are differences in nutrient requirements between males and non-pregnant females. Adult males generally have 10% higher requirements of protein and energy than females of the same age category. Pregnant females and lactating mothers require higher protein and energy levels in their diet to support their prevalent physiological states.

It should be noted that following a healthy-type nutritional pattern is not sufficient for having a healthy existence - thus, the term "healthy lifestyle" was coined. Emphasis on having a healthy lifestyle entails: following a healthy dietary pattern and being engaged in a regular physical activity program. Individuals who are physically active are able to maintain their normal body weight - thus avoiding one of the risk factors for disease (overweight and obesity). Proper cardiovascular conditioning and proper level of muscle toning are major benefits of regular physical activity programs.

The mass media, especially television, has a great influence on children in general - particularly on the small. Therefore, the mass media can play a significant and positive role towards nutrition awareness for children. Also, school books that have colored pictures and other printed materials and charts can have a magnitude of influence if they contain attractive and attracting materials to entice children into learning about nutrition. As far as TV is concerned, studies have shown that the child watches TV between 3-5 hours daily [20] - a matter that emphasizes its influence. From a nutrition awareness standpoint, programs that are designed for children should attract the child's attention and interest. Such programs can be in the form of contests, interactive games, simple cross-word puzzles, connect-the-lines, etc... that emphasize recognition of nutrients and their main sources among food items. Additionally, such programs and games would emphasize the roles of nutrients in our body and for having a healthy existence. Additionally, such approaches to children are to learn about what is the meaning of healthy nutrition? what is an active lifestyle?, how can good nutrition make us healthy?,

and why should we be healthy? For devising games and programs (for TV and other means) that target children for nutrition awareness, it is a must that there would be teams involved that include nutritionists and child psychologists - who would work together with TV producers and directors, among many others who produce such materials. It must be emphasized that such games and programs be simple, interesting and attracting for the attention of children. Such a strategy might be able to counter-act the enormous influence that children are exposed to when they watch many advertisements of fast-food restaurants, soda and candy manufacturers - thus reducing the adverse effects of consuming high levels of fats, sugar and salt. It is known that the child at this early stage of life is enormously influenced by what is being watched on TV [20,21] and requests that his/her parents to provide such adverse food items - to which parents most often comply. It has been reported that the child at this early age is not able to distinguish between what is healthy from what is not [22] - thus, the responsibility of child nutrition falls heavily on the parents and other adults involved.

Enhancing knowledge about nutrients, their significance for the body, and healthy nutrition for all segments of society is a key measure to ensure having a healthy and consequently a productive population. While it is ideal that each person would seek information about nutrition as a way of caring for one's health, the responsibility for nutrition awareness and education in society would be on ministries of health, private clinics and hospitals, ministries of education, colleges and universities, social associations and sporting and religious groups in each country. There must be a clear strategy for the nutrition awareness and education campaign and its objectives should be clear and measurable, for making a judgment on its effectiveness and success. Because of the diversity in targeted segments (sub-populations), involved entities can vary. For example, a program that promotes breast-feeding of infants would mainly involve, among others, the ministries of health, private hospitals, social and religious entities. Programs for school children would involve the parents of children (who are hoped to be nutritionally- aware), ministries of education (teachers), and the mass media (newspapers, magazines, radio, and television). Diverse educational means and approaches can be implemented in this campaign, such as: different types of publications (broachers, booklets, leaflets...etc.), courses and workshops, general and specific events, as well as simple messages to the public in the mass media (especially television). If all those who are involved work together, children would learn about healthy nutrition and develop dietary patterns that would stay with them for the rest of their lives.

Bibliography

1. Hole's Essentials of Human Anatomy and Physiology, by D Shier., *et al.* 9th Edition, Publisher: McGraw-Hill, New York, USA (2006).
2. Public Health Nutrition, Edited by MJ Gibney., *et al.* 1st Edition, Publisher: Blackwell Science, Oxford, UK (2004).
3. Niciforovic-Surkovic O., *et al.* "Knowledge of nutrition and nutritional behavior of schoolchildren and their parents in Vojvodina". *Medicinski prehled* 55.11-12 (2002): 465-469.
4. Blaylock JR., *et al.* "Maternal Nutrition Knowledge and Children's Diet Quality and Nutrient Intakes". Food and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture. Food Assistance and Nutrition Research Report No. 1, 1999.
5. Wardle J. "Parental influences on children's diets". *Proceedings of the Nutrition Society* 54.3 (1995): 747-758.
6. Robinson LN., *et al.* "Relationships between dietary intakes of children and their parents: a cross-sectional, secondary analysis of families participating in the family diet quality study". *Journal of Human Nutrition and Dietetics* 28 (2015): 443-451.
7. Vilela S., *et al.* "The influence of socioeconomic factors and family context on energy-dense food consumption among 2-year-old children". *European Journal of Clinical Nutrition* 69.1 (2015): 47-54.
8. Summerbell C., *et al.* "Consequences and determinants of poor nutrition in children aged 0-3 years, and public health interventions that may improve dietary intake: a general view". *Journal of Children Services* 9.2 (2014): 128-142.
9. Ranjit N., *et al.* "Socioeconomic inequalities in children's diet: the role of the home food environment". *International Journal of Behavioral Nutrition and Physical Activity* 12.Suppl 1 (2015): S4.
10. Van Ansem WJC., *et al.* "Socio-economic inequalities in children's snack consumption and sugar-sweetened beverage consumption: the contribution of home environmental factors" *British Journal of Nutrition* 112.3 (2014): 467-476.
11. Sotos-Preito M., *et al.* "Parental and self-reported dietary and physical activity habits in pre-school children and their socio-economic determinants". *Public Health Nutrition* 18.2 (2014): 275-285.

12. Attrop A., *et al.* "Associations between socioeconomic, parental and home environment factors and fruit and vegetable consumption of children in grades five and six in British Columbia, Canada". *Biomedical Central Public Health* 14 (2014): 150.
13. Frost MB., *et al.* "Maternal education and child nutritional status in Bolivia: finding the links". *Social Science and Medicine* 60.2 (2005): 395-407.
14. Chochrane SH., *et al.* "Parental education and child health: intracountry evidence". *Health Policy and Education* 2.3-4 (1982): 213-250.
15. Saldiva SRDM., *et al.* "The consumption of unhealthy foods by Brazilian children is influenced by their mother's educational level". *Nutrition Journal* 13 (2014): 33.
16. Rhee KE., *et al.* "Parenting styles and overweight status in first grade". *Pediatrics* 117.6 (2006): 2047.
17. Clark H. "Nutrition and the school environment". *EC Nutrition* 2.3 (2015): 351-353.
18. United States Department of Agriculture.
19. Nutrition Explorations (2010) Kids Nutrition Pyramid.
20. <http://mohnkuchen-iwritebrief2.blogspot.com/>
21. <http://blogs.cornell.edu/ccesuffolkfhw/files/2014/04/ME-Children-television-and-screen-time-p6picc.pdf>
22. J Van Evra. "Television and Child Development". Lawrence Erlbaum Associates, Inc., Publishers, New Jersey, USA (1998).

Volume 3 Issue 3 January 2016

© All rights are reserved by Farouk El-Sabban.