Global Journal of Food Science and Technology

Vol. 2 (2), pp. 122-126, March, 2014. © Global Science Research Journals
http://www.globalscienceresearchjournals.org/

*Review*

# The role of balanced diet in the development of talent and educational excellence

**Dr. Omar Turki Mamdoh Ershidat**

AL-Balqa Applied University, Irbid University College, Jordan, P.O. Box 941941, Amman 11194, Jordan

Accepted 19th March, 2014

**Balanced diet is a basis for completeness of fitness for gifted individual physically, mentally, psychologically and socially. Balanced health nutrition is considered the most important factor affecting the health of the gifted individual and preventing him from catching disease, as well as, it helps in his mental composition and builds his character and behavior. Consequently, many of the studies confirmed the relationship of certain nutrients and growth of intelligence capabilities and growth of the brain and cognitive functions. These nutrients contain: Iron , Iodine , Omega-3 , B12, Zinc , Vitamin C, Folic Acid and Essential Fatty Acids in addition to three others ( Linoleic , Linoleic , and Alarcdonak ) . Additionally, there are many problems that affect nutritional health negatively on growth of talent and educational excellence, including malnutrition, eating disorders, insufficient food supplies and bad eating habits. But the studies about the role of a balanced diet in the development of talent and educational excellence are inadequate. Therefore this study aimed to identify the role of a balanced diet in talent and educational excellence development through answering the following questions: -What is the impact of a balanced diet in the development of talent and educational excellence? - What is the role of nutritional health guidance in the development of talent and educational excellence?**

**Key Words:** Balanced Diet, Nutritional health guidance, Talent, Educational excellence, Creative child

## INTRODUCTION

The distinguished and gifted student is considered a local and a national wealth. Accordingly, he must have custody which helps him to adapt himself with his community as well as enabling him to receive the expertise for full development of his abilities and talents (Dababneh, 2005).

Moreover, education scholars agreed that the gifted and creative child must be recognized at an early age to complete the growth of his capabilities as the gifted child is in need for an additional curriculum and a balanced nutrition in his various stages of life (Mazahreh, Awamleh.2005).

Gifted students are identified by qualified scholars that they have the ability to high performance, and they need educational programs besides distinguished educational courses and additional services above what is provided by the normal teacher program in order to enable them to benefit themselves and their community together (Jerwan , 1998).

Gifted students have certain special abilities specially in the field of painting, music, poetry ... and so on. This definition term has widely expanded to include all of innovative production in any field which is accepted by the community (Althan, 2005).

Concerns about the gifted students were not sufficient as a result of the belief that they do not require special care, but various studies reported that the talented are just as in need of care and attention same as the the people with special needs, and that there are many factors associated with affecting talent including psychological factors and health and nutrition factors. Additionally, the gifted child is in need for parental care to achieve growth, physical and psychological demands (Zahran, 2005). Gardner (1999) confirmed in his book entitled “Reframing

of Intelligence " that the personal characteristics of the creative students are not innate , but they are resulting from interaction among several factors as the most important one is the environment. Meanwhile, many studies confirmed the effect of dietary factors on the health of the individual in which Lachance (1995) indicated in his study that weight of the mother's body before pregnancy contributes to prediction of the size and weight of the born baby.

Moreover, brain researches confirm the importance of functions of the body and its relationship to the knowledge and perception, whereas the mental functions depend on the input coming from the body. The brain as it is referred to the physical member, while the mind is referred to as the coordinated functions performed by the brain with the body (Pinker, 1997). The research has revealed that the brain of learning and thinking, creativity and intelligence operations are not limited to the brain alone, but includes the whole body. The qualities that are already connected to humanity cannot be separated from the body (Hannaford, 1995). Both (Caine & Caine, 1994) indicated that it is important to stick to the fact regarding the body and brains are not separated. Besides, there is a link between the nervous and the glandular systems. In addition, the immune system is connected to a psychological one ( Badawi , 2010).

**Importance of the Study**

The importance of the study is stemmed from the importance of a balanced diet , nutrition balanced basis of structure of health and social and economic development of any society , which is an important influential factor in human health specially in shaping and guiding ethical behavior , social and configuration of mental and character building and the prevention of diseases. It has an important role in the construction of the mind and the body of talented and in the continuing evolution of the talent and the achievements and creations. In the researcher's knowledge, there is a shortage of research that touched on the role of a balanced diet in development of talent and educational excellence, as this study will open the way for many other specialized studies in the role of food and nutritional health guidance for development of talent in different age levels and statement nutrients affecting it.

**The Research Method**

Basic research attempts through review of the literature published in the field of a balanced diet and its role in the development of talent and educational excellence. To answer to questions about this role of balanced diet the study employed inductive approach in analyzing the data.

**Discussion**

To answer the first question of the study: what are the nutrients influence in the development of talent and educational excellence?

Balanced nutrition stimulates neurons cells – as they are the basic growing units for mental performance – besides they are the most important needs for supplying the brain with oxygen and glucose, because it serves as an organized fuel for the brain (Jensen, 2007). Balanced diet contains all the nutrients which are necessary for the body as the body without them tries to compensate the missing elements from its cellular structure. Balanced meals can be planned by using the food pyramid (Mazahreh, 2010).

Food eating times and its distribution into daily meals is very important to the health of the body in general and the functions of the brain in particular, for example, blood sugar (Diabetes) is the sole source to supply brain cells for energy, but many people do not eat breakfast, which is the first opportunity to compensate for glucose after a night's sleep and thus deprives the brain of the power that it needs, and thus the mental performance decreases until eating the following meal (Wolfe, 2002).

First: the researcher will discuss the impact of a balanced diet on gifted students and the educational excellence in two trends:

A – Positive Trend: According to a study conducted by Glewwe, et al., (2001) on primary school children which indicated that good food leads to higher academic achievement and it contributes to children to go early to their schools. A study conducted by Liu, et al., (2003) concluded that improving the level of nutrition can also improve cognitive development.

A study conducted by Klenman, et al., (2003) showed emergence of improvement in academic achievement, with an enhancement in efficiency of food rising levels for academic accomplishment which reflects positively on behavior and attendance of the students to school after 6 months period of eating a diet containing 50% of the recommended food needs.

Another study conducted by Whalley, et al., (2004) concluded that children who are subjected to strengthen food elements efficiency increased their degrees of I.Q. (Intelligence Quotient) tests. As shown in a study conducted by Afenito (2007) that the meal contents and food type can bring benefits to cognitive and behavioral abilities for gifted, as eating breakfast has been associated with academic achievement and improvement in mental performance positively.

A study by Kim, et al. (2003) recommended a need for eating three regular meals for its connection to strong academic performance of students with dietary behaviors.

Chandler; et al. (1995) conducted a study in which experimental sample consisted of 97 children indicated their suffering from food shortages and comparing these findings with control sample which showed advancement in language skills after four weeks of improving diet. Another study by Walker; et al., (2000) indicated that food strengthening for children in early childhood has a positive effect on growth of knowledge when they arrive at the age of 11-12 years.

According to the study by Benton; (2001) they confirmed that during the past ten years series of 10-13 studies

have been conducted which concluded that there are a positive relationship between food strengthening and intelligence.

Brown (1998) confirmed in his study that eating breakfast in the morning contributed to the high academic achievement of students at the primary stage, while results from a study of both Sachdev; et al.m (2002) and Sungthong; et al., (2005) showed a high rate of IQ tests and the rate of grades in language and arithmetic when iron added for treatment of anemia.

A study by Santiageo-fermande; et al. (2004 ) indicated existence of high degree of intelligence tests with a high concentration of iodine in the urine of the research sample members , this study concluded possibility of improvement in IQ scores between children who are dealing with proper amounts of iodine .

The study by Tamura; et al., (2005) showed that there are many studies that have linked the case of folic acid for mothers during pregnancy and mental growth of children after birth while another study by Desci & Koletzko (2005) added that strengthening fatty acids are many non- saturation (especially Omega: a short-chain fatty acids) during pregnancy is helpful to growth of the cognitive, visual and mental ability of children at the age of four.

As the brain is made up of water at a higher rate than any other member of the body, the drought affects at high speed where loses focus on attention and become sleepy and lazy, and it prefers water drinking on the stimuli they are diuretic, therefore people have to be educated on the importance of drinking water throughout the day (Hannaford, 1995). We assure here on the need to provide essential six nutrients in a balanced diet, protein, carbohydrates, vitamins, minerals, and water and if we add to the air as a seventh factor, we have to stress the need to provide oxygen to the brain as it consumes five oxygen by the body, linked to levels of attention and high concentration and work intellectual access to fresh air (Jensen.2001, Mazahreh.2010).

B – Negative Trend: The study by Eze & Abidoy (2000) showed existence of a negative correlation between academic achievement and the problems of pregnancy and childbirth but, the study by Mendez and Adair (1999) concluded malnutrition in infancy and early childhood strongly affect cognitive development. Alderman (2001) said that the gifted teenagers are more prone to eating disorders, especially if they grew up in a wealthy family. The study by Alaimo, et al. (2003) was conducted on children between the ages of (6-12 years) in emergence of low achievement in arithmetic skills that may be associated with a lower enough food. A study by Pelicam (1982) has reported that anemia associated with low performance in reading and pronunciation skills and problem solving arithmetic and lethargy and fatigue. A study conducted by Fu, et al., (2007) showed the low academic achievement of children with insuffient proteins and mineral salts and vitamins in their nutrition. According to the study by Li, et al., (2003) the lack of nutrients during early childhood reduces the level of intelligence and educational achievement.

A study by Pollitt, et al. (2000) concluded that shortage of iron enzymes associated with the brain related to the knowledge and behavior, and the correlation was observed through actual ability and nerve function with a lack of iodine in food, whereas the study of Gordon (2000) showed that iron deficiency can affect brain and nerve cells causing to brain damage or lack of oxygen. In the same context, Black, (2003) explained in his study existence of clear impact of zinc deficiency in diets of infants on cognitive and motor performance.

Second: To answer the second question of the study about role of nutritional health guidance in the development of talented and educational excellence?

There is no doubt that the appropriate place to start nutritional health extension programs for gifted students must start from the moment in which the child enters kindergarten , but it is not from the family since recognizing talented students should not be before that and parents must be instructed about health nutrition's before and during pregnancy . Nutritional counseling programs for talented have to be about health of each child, then for the gifted ones after their recognizing. This early start regarding dealing with the gifted students will avoid any wasting of energy caused by frequency or lack of clarity of goals or lack of awareness of the individual who needs the gifted. Mazahreh and Awamleh (2005) in their study concentrates that the gifted students have individual needs by being an active members that interact and affect and being influenced by those around them, therefore we address in this study the nutritional status and its impact on the talent and educational excellence, as the ultimate goal is mentoring nutrition programs that many talented stage of physical growth and mental development commensurate with limits of its inheritance which enables creative excellence and the desired limits .

Concerns about health of the gifted , feeding and caring about them are considered the most important factors about their development and encouragement for creativity , and nutrition extension programs to achieve goals , including dissemination of health information in order to avoid diseases, malnutrition and encourage systems nutritionally , healthy lifestyles and disease prevention ( Asakria and Mazahreh , 2008) whereas nutritional counseling programs play an important role in health benefit of gifted nutrition by choosing the type and quantity according to the needs and changes in nature of its activity and health, and so on. Education is a main source for conveying information to individuals and modifying their behavior as well as ways of life, health and nutrition in various methods within limits of existing possibilities by providing them with an advice and information on proper diet.

The Indicative program as included by a study conducted by Zahran (2005) is a program that was planned and

organized by including counseling services directly and indirectly, individually or collectively to all the targeted individuals in order to help them for achieving healthy growth , freedom choice and psychological and physical compatibility within the work environment , besides their respective fields . A study conducted by Subhi (2004) summarizes the most important goals of nutrition education in the following points:

- Teaching the individual about the function of food and how to design a balanced and appropriate diet that meets individual needs.
- Teaching the individual methods of processing and preparation and food preservation.
- Advising the individual about the ways in which he can assess his nutritional health and condition.
- Explaining the close relationship between a balanced diet and growth, talent, creativity and the ability to perform outstanding work.

## CONCLUSIONS

This study concludes the following points:

It is important to provide requirements for excellence and creativity of the child through the stages of pregnancy, besides his various stages of growth whether the requirements supplying by the family or social and other developmental institutions where the study indicates the following the findings:

1- The necessity of caring about the pregnant mother nutritionally and healthy in addition to providing her with a balanced diet along with implementing the doctor's instructions to take the necessary dietary supplements only.

2 - Supplying the nutritional requirements of the child health by focusing on breastfeeding and good weaning and appropriate complementary feeding.

3 – There is a need to provide healthy nutritional guidance programs systematically to the mother, the family and the gifted child.

## Recommendations

The researcher of the study recommended the following:

- It is important to focus on healthy and balanced food for the gifted, through activation of a healthy and early nutritional guidance programs for the mother before, during, and after pregnancy, as well as for the gifted themselves.
- Conducting further studies on the role of a balanced diet in the development of talent and educational excellence which aim to determine impact of many nutrients regarding development of talent in the child early ages of life.
- Preparation of informational brochures or publications which describe the role of a balanced diet in the development of creativity, in order to increase positive attitudes towards methods of getting a balanced diet and nutritional habits in various health fields.

## REFERENCES


Asakria, Saud, Mazahreh, Ayman, (2008), culture, family, house curriculum, Amman - Jordan.

Badawi, twitter Keyed, (2010). Effectiveness of the educational program on brain growth-based learning, Unpublished MA Thesis, Balqa Applied University, Amman - Jordan.

Benton D (2001). Micro-nutrient supplementation and the intelligence of children. Neurosci Biobehav Rev. Jun; 25(4): 297-309.

Caine R, & Caine G (2002).The Brain/Mind principles Wheel. Http.

Chandler; A Walker; S Connolly; K and Grantham-Mc Gegoris (1995). School Breakfast improves verbal fluency in Undernourished .Jamaican children. J. Nutr. Vol.105.P.894-900.

Dababneh, immortality, (2005). Experience and the Ministry of Education in the care of gifted and talented students. First Childhood Conference under the theme towards a happy childhood and a thriving family (11-12) May (2005), pp. 613-619.

Desci, T and Koletzko B (2005). N-3 fatty acids and pregnancy outcomes.curr opin Clin Nutr Metab care Mar; 8(2): 161-6.

Eric Jensen. (2007). Learning based on reason. Translation Jarir Bookstore - Riyadh - Saudi Arabia.

Fuentes; E, Garriga; m, Leon; A, and Soriguer; F. (2004). Intelligence Qoutient and iodine intake: across-sectional study in Children, J Clin, Endocrinol Metab. Aug; 89(8): 3851-57.

GarciaTamuraT,Goldenberg;R.,Chapman,V,Johnston,KE,Ramey;SL, Nelson;G,(2005). Folate status of mothers during pregnancy and mental and psychomotor development of their children at five years of age, pediatrics .Sep; 116(3):703

Gardener. (1999).intelligence Reframed: Multiple intelligences for the 21st Century. New York .NY: Basic Book.

Gelwwe P, Jacoby G, and King M. (2001). Early Childhood Nutrition and Academic achievement: a longitudinal analysis. Journal of Public Economics 81(3), September, P 345-368.

Hannaford. (1995).Smart Moves: Why Learning is not All in your Head.
Arlington, a: Great Ocean publishers.

Jerwan, Fathi, (1998). Talent, creativity and excellence, University Book House, Al Ain, UAE.

Kim P, Frongillo A, Han s, Oh Y, Jang A, Won S, Lee S and Kim SH (2003). Academic Performance of Korean Children is associated with Dietary Behaviors and Physical Status. Asian Journal of Clinical Nutrition; 12, 186-192.

Klenman; E, h, Green; D, Korzec-Ramirez; K, Patton; E, Pagano; M. and Murphy. (2002). Diet, breakfast, and academic performance in Children. Annuals of Nutrition Metabolism, 46(1): 24-30.

Lachance, P (1995). Recommended dietary allowances for growth, development and performance. Asia pacific J Clin 4, Suppl, 7-12.

Liu, H, Barnhart HY, stein AD, Martorell R (2003). Effects of early childhood supplementation on the educational achievement of women. Pediatrics. NOV; 112(5):1156-621.

Mazahreh, Ayman, its factors, Habits, (2005). The role of women in the detection of talented and caring , the first conference under the theme of childhood toward a happy childhood and the family of a prosperous 11-12 May 2005, pp. 323-338 .

Mazahreh Ayman, (2010). Fundamentals of Human Nutrition, Dar Kandil, Amman - Jordan.

Pinker KS (1997).How the mind works ,Boston :Allyh and Bacon.

Santiago- Fernandez; P Torres- Barahona; R Muela- Martinez; J Rojo- Matinez; G Garcia- Fuentes; E Garriga; m Leon; A and Soriguer F (2004). Intelligence Qoutient and iodine intake: across-sectional study in Children, J Clin, Endocrinol Metab. Aug; 89(8): 3851-57.

Subhi, Afaf Hussein (2004). nutrition education and health, Edition 1, library, Cairo - Egypt.

Tahan, Muhammad Khalid (2005). The role of emotional intelligence in the child adapt superior and talented, the fourth Arab Scientific Conference for the Gifted and Talented, together to support
talented and creative in a rapidly changing world, Amman - Jordan.

Whalley J; Fox C; Wahle W; Starr M and Deary J (2004). Cognitive aging, Childhood Intelligence, and the use of food supplements: Possible Involvement of n-3 fatty acids. AmJ Clin Nutri. Dec; 80(6): 1650-57.

Tahan, Muhammad Khalid (2005). The role of emotional intelligence in the child adapt superior and talented, the fourth Arab Scientific Conference for the Gifted and Talented, together to support talented and creative in a rapidly changing world, Amman - Jordan.

Whalley J Fox; C Wahle; W Starr; M and Deary J (2004). Cognitive aging, Childhood Intelligence, and the use of food supplements: Possible Involvement of n-3 fatty acids. AmJ Clin Nutri. Dec; 80(6): 1650-57.

Wolfe, Pate (2002).Healthy Brains for Health Educators.

Zahran, Hamid Abdul Salam (2005). Developmental Psychology, tenth edition, the book world, Cairo - Egypt.

Possible Involvement of n-3 fatty acids. AmJ Clin Nutri. Dec; 80(6): 1650-57.

Wolfe, Pate (2002).Healthy Brains for Health Educators.

Zahran, Hamid Abdul Salam (2005). Developmental Psychology, tenth edition, the book world, Cairo - Egypt.