Influence of Health and Nutritional Factors on Children’s School Achievement: Implications on Education for All

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Abstract
The health status of children is a major concern of any nation. Proper and adequate nutrition are necessary for promoting and maintaining good health of children. In developing countries, vast numbers of school-age children face major health and nutritional problems that adversely affect their ability to take advantage of limited educational opportunities available to them. Many of these children have a history of Protein-Energy-malnutrition (PEM) as well as current nutritional deficiencies including deficits in body stores of iodine, vitamin A and iron. These conditions are exacerbated by helminthic infection which is highly prevalence among school age children and particularly inimical to their healthy growth, development and educational progress. This paper highlighted the influence of these factors on children’s school achievements and further made suggestions on the way out to ensure the attainment of the noble goal of Education for all.

Nutrition is the process by which the body takes in and uses nutrients. The importance of nutrition to growth, development and maintenance of good health cannot be overemphasized globally. Good health depends on adequate food supply, proper selection and preparation of food at home. Every living organism, be it micro organism or human being requires food for its survival because it is food that provides energy for maintaining the functions of all bodily structures (Joshi 2001).

Although most of the food required to feed mankind every year is available on earth, food shortage often results due to deterioration shortly after harvest and gathering. This is the main reason why people have been worried and are still worried about lack of food, about getting enough of it and about its being palatable.
Although the lack of food is a source of worry to every parent because of several nutritional and health-related problems that are manifested, an abundance of ingested junk food is also more worrisome because of the numerous abnormal and ill-health conditions children are predisposed to (Florencio, 2003). The conditions which can be attributed to dietary patterns or associated with nutritional problems include: dental carries, goiters, anemia, among others. The characteristics of children suffering from nutritional related problems include: dullness, lifeless hair, greasy pimples, dull eyes, slumped posture, fatigue among many others and such children may be overweight or under weight.

According to Florencio, (2003) research evidences have explored the relationship between nutritional and health status and academic achievement test scores on selected cognitive tasks including concentration in classroom among school children and many of such studies posited that nutritional status contributes to a child’s cognitive test or school performance.

Kolade (2009), reported that education is the best instrument available for building capacity. A quality education beginning with primary education is fundamental to equip individuals with knowledge and skills as well as attitudes and values necessary to contribute effectively to the society. No wonder the education for all (EFA) initiative was launched in Jomitien Thailand in 1990 with the broad aim of meeting the learning needs of all children, youths and adults by 2015. This is to ensure the benefits of education get to every citizen in every society.

To realize this aim, a broad coalition of national governments, civil society groups and development agencies such as UNESCO and World Bank committed to developing six specific goals among which are:

1. Expand and improve comprehensive early child care and education especially for most vulnerable and disadvantaged children.

2. Ensure learning needs on all young people and adults are met through equitable access to appropriate learning and life skills programs.

3. Improve all aspects of the quality of education and ensure the excellence of all so that recognized and measureable learning outcomes are achieved by all (EFA World Bank 2009).

Nigeria has been in the pursuit of quality education for its citizens with the promulgation of National policy on Education (NPE) in 1977 revised in 1981, 1989, 1998 and 2004 and the Universal Basic Education (UBE) in 1999. Following the EFA initiative, the Nigeria government has directed its efforts towards ensuring that there is
equal and adequate educational opportunities at all levels (Okorafor and Okorafor, 2009).

The vision and mission of UBE is not far from EFA initiative which probably infers that most if not all nations of the world has joined this noble path to ensure citizens’ empowerment and liberation from underdevelopment and poverty.

Nevertheless, for the Nigerian education system to achieve the expected aim of education for all, there is need to adequately address the health and nutritional needs of school-age children especially at the primary and secondary school levels. This paper tried to look into some nutritional and health factors that influence academic achievement of school-age children with special focus on Protein-Energy-Malnutrition (PEM), iron, iodine and vitamin A deficiencies as well as helminthic infections.

**Protein-Energy Malnutrition (PEM)**

Among the developing countries, Protein-Energy Malnutrition is one of the most widespread nutritional problems among children. PEM, a condition that is often worsened by parasitic load in children that is caused by poor dieting. This disease is also experienced by infants. This problem threatens normal growth and development of a child and is also associated with different levels and types of nutritional deficiencies such as iron and vitamin A (Israel and Hornsby, 2000).

Relatively, little is known about the degree to which PEM is present among children in Nigeria but studies undertaken in a wide range of developing countries including Kenya and India reveal a high level of PEM present in poor rural populations. A high degree of stunting and wasting has been reported among school populations. Passivity, apathy, shortened attention span, reduced short-term memory, failure to acclimate to repetitive stimuli and a lag in the development of sensory integrative capacity have all been associated with Protein-Energy Malnutrition (Florencio, 2003).

Among infants and preschoolers, PEM has been shown to reduce playful and exploratory activity as well as increasing irritability. PEM induced dysfunctions directly impinge upon and stunt the development of a child’s active learning capacity (ALC). Not surprising children with PEM tend to function at reduced levels of intellectual and academic achievement. They appear to adapt to malnutrition seeking out more quiet and restful activities. It was further revealed that school achievement of children with server malnutrition or with low height-for age is inferior to that of matched but well nourished children. Children with a history of server malnutrition perform less well on tests of IQ (Lavinger, 2002). These harmful consequences
notwithstanding, reversibility and remediation are possible when the child’s diet is enriched and his psychological environment manipulated to make it more conducive to cognitive growth.

**Iron Deficiency Anemia**

Iron deficiency anemia is a nutritional deficiency common in the developing countries. Approximately 1.3 million people in the world are estimated to suffer from iron deficiency anemia of which 210 million are school-age children. The highest levels of anemia among school children are estimated to be in South Asia and Africa. Iron deficiency influences a child’s ability to benefit from classroom instructions in several ways. School-age children deficient in iron stores exhibit reduced level of alertness and inattentiveness and lack of concentration in the classroom and decreased social development (Jamison, 2003).

It was however observed that deficits in attention among school-age children were reversed once iron treatment was implemented. It was suggested that effective treatment or prevention of the condition in individuals whose diets are inadequate in terms of iron intake consists of daily oral supplementation with appropriate iron compounds.

**Iodine Deficiency among School-Age Children**

Of the 680 million people estimated to suffer from iodine deficiency, some 60 million are school-age children (Berkley, 2006). Iodine deficiency disorder (IDD) is perhaps the most studied of the micronutrient conditions.

In Africa, IDD affects almost 40 percent of the population of Kenya, 70% in Sudan and 75% in Cameroun. The consequences of IDD are significant in terms of school development. Conditions associated with IDD include reduced intelligence, psychomotor retardation, mental and neurological damage and cretinism (Berkley & Jamison, 2006). Specific aptitudes that also appear to be most vulnerable to iodine deficiency include visual perception organization, visual motor co-ordination and speed of information processing.

Children living in iodine deficient areas have also been shown to have impaired hearing. A child’s aptitude for formal education may also be in jeopardy even prior to school enrolment if the mother suffered from maternal iodine deficiency during pregnancy. Children from such mothers are also prone to mental and hearing impairments which are major obstacles to academic achievement. However, while iodine supplementation is advocated for preventive standpoint, the effect in the context of therapeutic to cognitive function and school performance is not clear.
Vitamin A Deficiency

Vitamin A deficiency is often accompanied by protein-calorie malnutrition. In its most extreme manifestations, it causes blindness. Depleted stores of vitamin A are also associated with acute respiratory infection. Vitamin A deficiency also contributes to night blindness and limited peripheral vision. There is no research evidence that directly examines the relationship between vitamin A deficiency and school performance. This is because extreme deficiencies result in blindness and preclude school enrolment in most areas of the developing world (Berkley and Jamison, 2006).

However it is reasonable to expect that under less extreme, students' school attendance would be directly linked to vitamin A stores. It has been observed in many countries that acute respiratory infection a condition related to vitamin A deficiency is the leading causes of school absence.

Helminthic Infection

Among school-age populations, helminthic infection generates very high morbidity despite the relatively limited mortality associated with the condition. This explains why the condition has not received priority attention it deserves. Yet large parasitic burdens, particularly severe hookworm infection, are associated with impaired cognitive function as well as such educational outcome measures as absenteeism, under-enrolment, and attrition (Bundy, 2004). Thus, helminthic infection appears to constitute a very real barrier to children’s progress in school.

Parasitic helminthic are one of the most common infections in the world with majority of cases in people living in the developing countries and are usually common and more intense among school-age children. Infections in children have also been shown to affect their growth, health and nutritional status. Among the helminthic infections often suffered by children of school-age are roundworm (Ascaris Lumbricoides), Whipworm (Trichuris trichura), Hookworm (Ankylostomiasis), and Schistosomes (Bilharzia).

Each of these parasitic infections is associated with a particular set of symptoms. Roundworm usually leads to malnutrition, impaired growth and development. Whipworm is associated with growth retardation, chronic colitis, and iron deficiency anemia. A recent study in Jamaica also found a relationship between Whipworm and psychomotor development among children. Heavy infections lead to iron deficiency anemia with adverse consequences to school performance. Iron deficiency anemia and (accompanying fatigue) is associated with hookworms while schistosomes contribute to decreased work capacity and severe disease. Clinical features of schistosomes include weakness, fever, vomiting, muscular pain, nausea, diarrhea among others. Schistosomes
seems likely to negatively affect school related outcomes as attendance. In general, helminthic infection is linked to poor cognitive function, educational attainment and learning ability.

Recent investigations however, shows that treatment leads to improved physical fitness, growth, appetite and performance on cognitive tests. Chemotherapy can achieve an overall reduction in prevalence and intensity of helminthic infection (imperial college of science, 2009).

Implications on Education for All

It is accepted that the benefits of Education for all go beyond literacy and numeracy to embrace all kinds of basic skills necessary for the individual to live a contented life and attain greater heights. These are most unlikely to be achieved if the negative consequence posed by PEM, vitamin A, iron and iodine deficiencies as well as helminthic infections are not properly addressed. Tagbo (2005) argued that, the educational progress of every child depends on good health, and that neither teaching nor learning can go on effectively in the absence of good health.

Be that as it may, Nigeria cannot afford to lag behind in the attainment of the noble goals of EFA initiative considering the Mellenium Development Goals (MDGs) and vision 2020: 20 objectives. The achievement of all these goals is hinged on the contribution of all; parents, and all other sectors of national development. More efforts need to be geared toward adequate and proper nutrition as well as addressing disease conditions of children. Children with poor nutrition and health status may not be able to actualize in their lives such vision of UBE which includes uninterrupted access to nine years formal education for every child of school age. Poor nutrition could lead to lack of energy in the school child resulting to weakness, inattentiveness and lack of concentration in class while at the same time promoting disease burdens which could lead to increase absenteeism and dropout rates thereby negating the UBE objectives of increase in enrolment.

Conclusion

Based on this presentation, it can be concluded that a synthesis of the findings obtained from various studies of infants preschoolers and children in school yields some important lessons.

First, early malnutrition can affect school aptitudes, time of enrolment, concentration and attentiveness. Second, the school achievement of children with a history of severe under nutrition or low height-for-age is inferior if matched with well nourished comparison groups. Children with history of under nutrition perform less well on test of IQ and specific cognitive functions among others.

Recommendations

1. Preschool programme such as health education of mothers, nutritional
supplementation for at risk infants, toddlers and their mothers will make important long-term contributions to school achievement.

2. School snack and breakfast programmed should be made compulsory for all schools.

3. Compensatory strategies must be developed by schools and parents to improve child’s quality. This can be inform of extra lessons assignments given to the child by his teacher.

4. Community health education of parents on the need for proper and adequate food selection, preparation and strict observation of hygienic principles is important.

5. Mass treatment of children in their homes, using village and ward heads as mobilizers is viewed as powerful tool for improving health. It has the potential to reduce reinfection while simultaneous serving as a focal point for health education.

References


Israel, R & Hornsby, A (2000), Background paper for the International School Nutrition and Health Meeting held in Rome 1998.

Imperial College of Science, Technology and Medicine (2009), Parasitic Worms and Child Development: The Quality of life of the Post-Survival Child: proceedings of Workshop presented by the imperial college of science, Technology and Medicine, London. March 5.


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