

Rural School-Age Children – Their Nutrition and Health

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The nutrition and health of school-age children is back on the global agenda. At the 27th Session of the SCN in Washington, DC (2000), an extraordinary meeting of the Working Group on Nutrition of School-Age Children resolved to promote more research and operational work on the nutrition of this age group.

In April 2000, a partnership of UN agencies, including UNESCO, WHO and UNICEF, with the World Bank and Education International used the World Education Forum in Dakar, Senegal to launch a joint effort to Focus Resources on Effective School Health, Nutrition and Hygiene (FRESH). This FRESH partnership emphasised the importance of hunger, malnutrition and ill health as constraints on both 'Education for All' and the second and third Millennium Goals of achieving universal primary education and gender equality in education access. Since then more than 20 low-income countries have launched FRESH programmes targeting more than 45m school children. These programmes seek to ensure that all schools:

- have effective nutrition and health policies
- offer adequate sanitation and access to water
- deliver effective life skills messages about nutrition, health and hygiene; and
- provide access to nutrition and health services.

Similarly, the WFP, in partnership with bilaterals and civil society organisations, has sought to promote girls' access to school through a global Food for Education Programme. WFP, the World Bank and WHO are also active partners in the Partnership for Parasite Control, which seeks to ensure that children's nutrition is not compromised by worm infection.

Malnutrition

Malnutrition refers to disorders resulting from an inadequate diet or from failure to absorb or assimilate dietary elements. Stunting (low height-for-age) is a physical indicator of chronic or long term malnutrition and is often linked to poor mental development. Stunting is a cumulative process of poor growth that

primarily occurs before the age of three years and is not easily reversed. This infers that these first years of life provide a window of opportunity for effective nutritional programming. Underweight (low weight-for-age) is an indicator of both chronic and acute undernutrition. Wasting (low weight-for height) is an indicator of acute undernutrition.

Underweight among school-age children, like stunting, can reflect a broad range of insults such as prenatal undernutrition, deficiencies of macro- and micro-nutrient, infection and, possibly, inadequate attention by care givers.

Overweight and Obesity

Overweight and obesity is becoming increasingly prevalent in low income countries where improvements in socioeconomic conditions and rapid urbanization are causing a 'nutrition transition'. A rapid shift in the composition of diet (higher fat and lower carbohydrate), reduced activity patterns and a subsequent shift in body composition characterise this transition.

Impact of under nutrition on education

Chronic undernutrition is associated with lower achievement in school children. Severe stunting is associated with lower test scores in school age children and later with late enrolment, increased absenteeism and repetition of school years.

Impact of under nutrition on health

The poor, particularly children in low income countries, carry the greatest burden of morbidity and mortality. Much of this burden results from hazards within their homes or their immediate environment. High levels of malnutrition, and its known synergistic relationship exacerbate their vulnerability to disease particularly diarrhoeal disease, helminthic infections, acute respiratory infections (ARIs) and malaria.

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1. Micronutrient deficiencies - Nutritional anaemia particularly deficiencies of iron, iodine and Vitamin A are major problems in low income countries. Iodine deficiency can produce severe mental retardation, goitre, hypothyroidism, abortion, still births, low birth weight and mild motor and cognitive defects. Iodine deficiency is a leading cause of preventable intellectual impairment. Poorer levels of cognitive development and school achievement result.

2. Diarrhoeal diseases – Most of the diarrhoeal disease burden occurs in children in developing countries, with under fives at greatest risk. Approximately 90% of the diarrhoeal disease burden is related to environmental factors of poor sanitation and lack of access to clean water and safe food.

3. Helminthic infections- It is estimated that over 35% (320m) of school-age children are infected with roundworm; 25% (233m) with whipworm and 26% (239m) with hookworm. As the intensity of infection is the central determinant of the severity of morbidity, it is the school-age child who is most at risk; for girls and boys aged 5-14 years in low income countries, intestinal worms alone account for an estimated 12% and 11% respectively of the total disease burden of this age group, making this the single largest contributor to the disease burden of this group.

4. Malaria – Most studies to date have focused primarily upon pre-school children estimating that over 75% of all-age malaria mortality is experienced by this age group. School children who have not acquired exposure-driven immunity may be at particularly high risk of severe and fatal consequences when exposed to the disease. The evidence also suggests that brain insult, as a consequence of cerebral malaria, in early childhood may have an effect on a child's cognitive and learning ability; residual neurological sequelae of 1-5% of children infected early in life.

5. HIV- Throughout the world, HIV infection prevalence is lowest in the 5 to 14 year old age group, and AIDS mortality does not have its primary effect on school-age children. The majority of children dying of AIDS are young children who have contracted the disease from mother-child transmission.

6. Psychological and Emotional Distress –

Properly conducted studies focusing on prevalence of anemia among school children is lacking from the state of Kerala. The current study included secondary data analysis from a health project for screening all school children for anemia. The health project was funded by the Local Self Government and implemented through the primary health centre in the area. The project

involved screening of all school going children from classes I-XII in Chithara panchayat area in Kollam district, Kerala.³

Another study was done to assess the extent and prevalence rate of Under-nutrition and Anemia among under five rural children in the two districts of South Karnataka, India.⁴ This study was conducted in two remote villages of Hassan and Kodagu districts of South Karnataka. The study had 300 preschool children (Boys 160, Girls 140), selected using stratified sampling design technique. Household survey was carried out in three villages covering 300 families under the jurisdiction of four primary health centres (PHC). Anthropometric measurements were taken using standard techniques. Infant meter was also used to measure below 1 year old children. Date of birth was obtained from the village directory for crosschecking. The indices of nutritional status have been mentioned in Standard Deviation (SD). Diet survey focusing cereals, pulses, milk and milk products, vegetable etc have also been done. Haemoglobin collection and estimation was also done under the guidance of a physician. Household socio-economic data collected through survey & analyzed using SPSS software. Nutritional deficiency and morbidities recorded under the supervision of the dietician. Children classified after simple clinical test for Anemia and mean anthropometric measurements. Through this study stunting was observed in 75.0 %, wasting in 81.7% and underweight in 87.6% of both Boys and Girls of pre- school children. In case of Anemia, 48% of Girls and 56% of Boys were severely affected; while 47 % of Girls and 41% of the Boys were modestly affected and 10% of the Boys and 28% Girls mildly affected. It also found clinical signs of Anemia among 62% of the studied children, 21% children with Vitamin A deficiency and 22% children with vitamin B complex deficiency. The Study also found that only 67% children were put on breastfeeding within three hours after the birth in the studied village.

Skills - Based Health Education

Skills-based health education, including HIV/AIDS prevention, aims to help children develop the knowledge, attitudes, values, and skills- including interpersonal skills, critical and creative thinking, decision making, and self awareness -needed to make sound health-related and social decisions.

Addressing the Issues

This synthesis shows that a child's ability to attain her or his potential is directly related to the synergistic effect of good health, good nutrition and appropriate

education. The evidence presented in this paper demonstrates the positive impact that simple interventions to combat malnutrition and ill health in the school-age population can have on health, nutrition and learning.

END NOTE

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