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Malnutrition an unmet challenge in developing countries

Malnutrition is major contributory factor in morbidity and mortality of young children in our region and figures have not changed over last two decades. Both undernutrition and over the nutrition have short term and long term effects on growth, morbidity and mortality. Most common manifestations in children are failure of linear growth, acute and chronic protein-energy malnutrition (PEM)¹ on the one hand and obesity on the other. In a healthy infant, body weight distribution is 60 percent water, 15 percent protein and 25 percent fat.² Acute malnutrition results from shortage of food effecting weight, termed as wasting. If the child has edema as well it is called acute severe malnutrition. In Pakistan stunting has been reported up to 44% which is significant and a manifestation of chronic malnutrition and hidden hunger.³ This is not only because child is deprived of essential macro and micro nutrients in early infancy but the concept of first 1000 days explains that malnutrition starts in utero.⁴ Ignoring nutritional needs of mother during pregnancy results in birth of small for gestational age baby. Due to intrauterine growth retardation, a child loses the potential of attaining mid-parental height and becomes stunted. Loss of linear growth negatively effects children in terms of frequent episodes of GI and Respiratory illnesses in infancy and later repeated absences from school, poor grades and poor cognitive development. 35% of all deaths, occurring among children aged less than five years in developing countries, could be attributed to malnutrition.⁵

Micronutrient deficiency is called hidden hunger and is equally responsible for morbidity and mortality in children. Evidence shows that Zinc deficiency contributes to stunting. Zinc promotes immunity, resistance to infection and development of nervous system. Zinc plays a critical role in

cellular growth, cellular differentiation and metabolism and essential part of more than 100 specific enzymes. Growth retardation and hypogonadism are also linked with Zinc deficiency. Loss of Zinc during diarrhoea exacerbates dietary inadequacy of Zinc, contributing to a vicious cycle of infection and nutritional deficiency. Zinc supplementation reduces incidence of diarrhoea by 20% and pneumonia by 15%.⁶ Zinc supplementation in pregnancy has been shown to increase intrauterine femur length and prevent stunting and it reduces mortality in children of 1-4 years by 18%. World Health Organization recommends two annual high doses supplements of Vit-A to every child suffering from Vitamin A deficiency, which leads to suboptimal physical growth and anemia. Iodine deficiency is a primary cause of preventable mental retardation and brain damage. An average 13 points in IQ are higher in communities taking sufficient Iodine as compared to areas of deficiency. Iron deficiency is possibly the most widespread micronutrient deficiency worldwide.⁷ It is a serious public health concern and 43.8% of children below 5 years in Pakistan are suffering from Iron deficiency. Decreased Iron in the body reduces cognitive development, leads to poor learning and poor attention span.⁸ Supplementation of Iron, zinc, Iodine and Vitamin A may reduce about one million deaths in children.

About 38% of mothers worldwide exclusively breast feed their babies for the initial six months, a figure much lower in this region.⁹ Complementary feeding and weaning foods are not properly started in time as myths prevail more in our society than scientific advice. It is important for medical graduates and pediatric residents to recognize the burden of problem and understand the assessment and management of malnutrition. All pediatricians should be well trained and equipped with skills of IMNRCH and different

treatment options for a severely malnourished child. Mothers should be counselled and motivated to start breast feeding their babies in the first hour of birth and exclusive mother-feeding for the first six months. Complementary feeding and weaning foods should be started at six months and mothers should be encouraged and guidance can be provided through medical advice and mass media.

What can bring a change in the situation is neither possible overnight nor an impossible challenge. There can be short term approach and long term goals to combat this issue. Every pediatric resident should play a leadership role for encouraging and educating the mother to feed their children and counsel them the advantages of breast feeding. Rotation in preventive/community pediatrics must be part of residency. For long term vision to achieve the targets of sustainable development goals, every hospital and pediatric department should have the unit to train the doctors for management of children suffering with malnutrition. Basic changes are required in the undergraduate and postgraduate pediatric curriculum to teach and train future practitioners and pediatricians for preventive pediatrics and be able to serve in the community. Continuous evaluation by doing audits and research is mandatory. Political will of the government is obligatory and integration of its various departments related to the service provision and administrative services in context of malnutrition should be on one page. Role of media should not be ignored to communicate with masses.

Muhammad Shahid

Professor of Pediatrics,
Head of Department of Pediatrics
Post Graduate Medical Institute/LGH Lahore

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