

3. Основными клиническими проявлениями ювенильного ревматоидного артрита у детей г. Гомеля и Гомельской области были: слабость, утренняя скованность и локальная симптоматика поражения суставов.

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Dinethrie R. Jayaweera

Scientific supervisor: Senior lecturer of the Department of Pediatrics L. S. Sergeichik

*Educational establishment
«Gomel State Medical University»
Gomel, Republic of Belarus*

CHILDHOOD MALNUTRITION AND THEIR CONSEQUENCES IN SRI LANKA

Introduction

Malnutrition is defined as «deficiencies in nutrient intake, imbalance of essential nutrients or utilization impairment of nutrients» according to WHO guidelines. Globally 45 % of deaths in children under the age of 5 are attributable to undernutrition; which puts children into a high risk of infections, increases the frequency and severity of infections and delays their recovery [1]. Good nutrition allows children to grow, develop, learn, play, participate and contribute while malnutrition robs children and their futures and leave young lives hanging in the balance. Sri Lanka is recognized for achieving good health outcomes at low-cost while being a country with a low level of per person income, exception being nutrition outcomes [2]. Malnutrition remains a challenging and unresolved public health problem. The importance of early childhood malnutrition to development outcomes is well recognized.

Goal

«Childhood malnutrition» is on the rise in Sri Lanka. Therefore, the main goal of this article is focused on the children who are considered malnutrition in Sri Lanka, to review recent literature related to trends in nutrition and nutritional status in children aged less than 5 years, it's long-term consequences in late childhood, and also as an adult.

Material and methods of research

The global level statistics and percentages were referred from the World Health Organization (WHO) official website. The statistical data related to Sri Lanka were from the Sri Lankan College of Pediatricians official website (slcp.lk). The definitions and other related data were also from PubMed articles specially having to mention «childhood malnutrition in Sri Lanka-A Road map for the last mile» article by Dr. Lalini C. Rajapaksa and Dr. Upul Senarath, (Colombo) which had a vast amount of knowledge- reference no [2]. Other statistics and data for the article were from the relevant recourses (see References below).

The results of the research and their discussion

Stunting is the devastating result of poor nutrition in early childhood. Children suffering from stunting may never grow to their full height and their brains may never develop to their full cognitive potential. Globally approximately 155 million children under 5 suffer from stunting [1].

These children begin their lives with marked disadvantages; they face learning difficulties in school, earn less as adults, and face barriers to participate in their communities.

Wasting in children is the life-threatening result of hunger and/or disease. Children suffering from wasting have weakened immunity, are susceptible to long term developmental delays, and face an increased risk of death: they require urgent treatment and care to survive.

Asia and Africa bear the greatest share of all forms of childhood malnutrition. In 2020, more than half of all children under 5 affected by stunting lived in Asia and two out of five lived in Africa [1]. Also, more than two thirds of all children affected by wasting lived in Asia and more than one quarter lived in Africa [1]. South Asia has the highest wasting prevalence of any sub-region in the world which is 14.1 percentage of children under 5.

Wasting and stunting in children below 5 years of age substantially improved from 1990 to 2000, but rates stagnated from 2000 to 2015 [4]. Chronic poverty, poor living conditions with deficits in sanitation and hygiene, a high prevalence of infectious diseases and environmental insults, food insecurity, poor maternal and fetal nutritional status and suboptimal nutritional intake in infancy and early childhood are major contributions towards these rising levels of childhood malnutrition [3]. Currently Sri Lanka is facing a huge economic crisis and as a result around 5.7 million people, including 2.4 million children and women require assistance in requiring nutritional support [5]. Families are already struggling to afford food with 70 % of household reporting reduced consumption of food [6]. Sri Lanka is second in South Asia in terms of wasting among children under the age of 5 [7]. According to recent research the following statistics were found regarding malnourished children of aged below 5 years, in Sri Lanka. Shown in table 1.

Table 1 – Summarises nutrition status of children below 5 years of age based on latest available national level surveys [2]

Children (0–24 months)	End of 2 years	End of 5 years
<ul style="list-style-type: none"> • Stunting 17,3 % • Wasting 15,1 % • Underweight 20,5 % 	<ul style="list-style-type: none"> • Stunting 21,2 % • Wasting 13,0 % • Underweight 19,8 % 	<ul style="list-style-type: none"> • Stunting 13,6 % • Wasting 15,4 % • Underweight 20,5 %

This early childhood malnutrition can have damaging neurodevelopmental effects, with significant increases in cognitive, neurological and mental health problems over lifespan, and their outcomes can also extend to the next generation.

A vicious cycle between malnutrition and infection has been recognized (Shown in figure 1) Episodes of infection potentiate undernutrition due to anorexia, reduced nutrient absorption, nutrient losses (such as vitamin A and proteins in diarrhea), diversion of nutrients to inflammatory responses, and tissue repair.

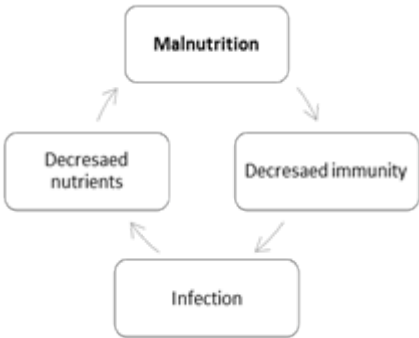


Figure 1 – Historical view of the vicious cycle of malnutrition and infection [7]

Catch up growth may be seen between infectious episodes if provided with adequate nutritional intake and if the interval between infections is long enough. Specific pathogens may cause more persistent growth-faltering because they result in chronic infections, chronic inflammation, or gut mucosal damage; these include HIV, tuberculosis, cryptosporidiosis and giardiasis. One of the most frequently described immunologic abnormalities in acute malnutrition is impaired cell mediated immunity.

Children who suffer from malnutrition are less physically and intellectually productive at adulthood [5]. It has been documented that malnutrition in early childhood causes disturbances in the morphological and functional development of the central nervous system, thus affecting the cognitive and emotional development of the child [6].

Micronutrient deficiencies such as iron and iodine, have been implicated to impair growth and cognitive development in children. A study indicates that children with an iodine deficiency had, on average, 13.5 points lower IQs than comparison groups [7].

More than 40 % of children of age 0–4 years in Sri Lanka suffer from anemia. Anemia in school aged children also may affect school performance whether or not there had been earlier impaired brain development [7].

Conclusion

It is well known that cases of childhood malnutrition are quite high in Sri Lanka. Several factors, such as poverty, poor child feeding practices, lack of nutrition education among nursing mothers or caregivers, and poor health care facilities in rural areas, have been identified as the most important risk factors. In view of this, the long-term consequences of childhood malnutrition could be prevented if their risk factors were properly controlled. One can help control the rising levels of childhood malnutrition by dietary changes such as eating food high in energy and nutrients, support for families to help them manage factors affecting the child's nutritional intake, treatment for underlying medical conditions causing malnutrition and providing children with vitamin and mineral supplements.

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