

Review Article

Health, poverty and human development: A review and further analysis of effects of poverty on health: Clinical manifestations and management of a patient of malnutrition in Khartoum, Sudan

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Abstract

Introduction: Health-damaging effects of economic poverty can lead to, exacerbate and perpetuate poverty. Because the health sector generally has little or no control over many of the most powerful influences on health, such as education, food supply, housing, environmental hazards, and work conditions, it faces the practical challenge of identifying how, alone and in coordination with other sectors, it can most effectively work to interrupt the vicious cycle of poverty–ill-health–poverty.

Method: In order to review and further analyze the effect of poverty on health we had a detailed case study to evaluate and assess the clinical manifestations and management profile in a patient of malnutrition in Khartoum, Sudan with relevance to his socio-economic status. We also took into account his past history of frequent illness and poor food intake.

Result: Malnutrition, which is mainly attributed to poverty and lower socio-economic group is one of the global causes of child mortality and a major concern in developing countries like Sudan.

Conclusion: Effective government policy for combating such situations, more participation by international agencies and more health education and public awareness regarding immunization and nutrition will help to reduce the incidence and mortality of malnutrition in Sudan.

Key Words: Malnutrition, Kwashiorkor, Poverty, Health, Human development, Human Rights.

Introduction

Poverty may also be defined in relative terms. In this view income disparities or wealth disparities are seen as an indicator of poverty and the condition of poverty is linked to questions of scarcity and distribution of resources and power. Although the most severe poverty is in the developing world, there is evidence of poverty in every region. Poverty may be seen as the collective condition of poor people, or of poor groups, and in this sense entire nation-states are sometimes regarded as poor. To avoid stigma these nations are usually called developing nations. In many developed countries, the official definition of poverty used for statistical purposes is based on

relative income. As such, many critics argue that poverty statistics measure inequality rather than material deprivation or hardship. Income inequality for the world as a whole is diminishing⁽¹⁻³⁾.

Even if poverty may be lessening for the world as a whole, it continues to be an enormous problem and barrier towards human development:

Effects of poverty on health

For many poor people, the health-damaging effects of economic poverty are compounded by inequality related to sex, racial or ethnic group, disability, HIV infection, or other factors associated with social position. Thus, efforts that focus exclusively on economic poverty may have limited effectiveness for promoting health. Globally, ill-

health also can lead to, exacerbate and perpetuate poverty. Because the health sector generally has little or no control over many of the most powerful influences on health, such as education, food supply, housing, environmental hazards, and work conditions, it faces the practical challenge of identifying how, alone and in coordination with other sectors, it can most effectively work to interrupt the vicious cycle of poverty–ill-health–poverty. Some effects of poverty may also be causes, as listed above, thus creating a "poverty cycle" and complicating the subject further: These include depression, extremism, hunger and starvation, human trafficking, high crime rate, increased suicides, homelessness, lower literacy, emigration, increase discrimination, lower life expectancy and drug abuse⁽³⁻⁵⁾.

In developed countries, Protein-Energy Malnutrition (PEM) is common among the institutionalized elderly (although often not suspected) and among patients with disorders that decrease appetite or impair nutrient digestion, absorption, or metabolism. In developing countries, PEM affects children who do not consume enough calories or protein.

The Global Burden of Disease study used the Disability-Adjusted Life-Year (DALY) to compare death and disability from various disorders in developing and developed countries. The developing countries carried almost 90% of the global disease burden yet were recipients of only 10% of global health care funding. The highest disease burdens were in sub-Saharan Africa (21.4% of global total) and India (20.9%). Communicable, maternal, perinatal, and nutritional disorders (group 1 causes) predominated in sub-Saharan Africa (65.9% of burden), while non-communicable diseases (group 2 causes) accounted for 80% of the burden in established market economies; injuries (group 3) did not differ substantially across regions.

In developed countries, these causes were ischemic heart disease, unipolar major depression, and cerebrovascular diseases. Malnutrition was the risk factor responsible for the greatest loss of DALYs (15.9%), followed by poor water supply, sanitation, and personal hygiene (6.8%)⁽⁶⁾.

The medical history, clinical features and investigations of 145 children with kwashiorkor were compared with 113 marasmic kwashiorkor, 158 marasmic children and 186 nutritionally normal controls of similar age admitted to hospital in Khartoum. Factors in the group with PEM that could relate to etiology include a history of prolonged illness and anorexia, frequent and prolonged episodes of diarrhea and recent measles⁽⁷⁾.

The results from 53 developing countries with nationally representative data on child weight-for-age indicated that 56% of child deaths were attributable to malnutrition's potentiating effects. 83% of these were attributable to mild-to-moderate as opposed to severe malnutrition, with a range of 73-74% in Bangladesh and India to a high of 100% in countries with very low malnutrition prevalence's. For individual countries, malnutrition's total potentiating effects on mortality ranged from 13% in Paraguay to 67% in India, with at least 3/4 of this arising from mild-to-moderate malnutrition in each case. The powerful impact of malnutrition on child mortality suggests that strategies involving only the screening and treatment of the severely malnourished are not sufficient⁽⁸⁾.

The recent increase in under-5 mortality in some African countries was highly concentrated in specific population subgroups. Exactly which groups were most affected was highly variable. It cannot be assumed that lower socioeconomic groups are always most vulnerable. Strategies to halt the under-5 mortality increase should be based

on disaggregate information for individual countries⁽⁹⁾.

The above fact gave us an impetus to verify clinical manifestation, management and prognosis of a severely malnourished child of marasmus and to further analyze the effect of poverty on severity and prognosis of the disease.

Clinical presentation

A one year old child was admitted to the Department of Pediatrics at the Academy of Medical Science and Technology Hospital, Khartoum, Sudan. The patient presented with severe muscular wasting, apathy, irritability, muscles were shrunken and bones were prominent. Skin was thin, dry, inelastic, pale, and cold. The hair was dry and sparse. The anthropometric measurements revealed the total body length of 76 cm, head circumference of 42 cm, mid-arm circumference of 9.5 cm, mid-thigh circumference 14 cm and chest circumference of 43 cm; all indicating severe acute malnutrition⁽¹⁰⁾.

The patient had received all immunization as per schedule as informed by the mother though she was completely illiterate. The father is a manual laborer and belongs to lower socio economic group; they live in hutment and dietary history revealed very low nutrition diet in the past due to extreme poverty.

The child presented with acute history of loose motion and vomiting for the last three days and was found to be febrile. The mother acknowledged that the child had, till date, four to five episodes of respiratory tract infection and diarrhoea in the last one year and was diagnosed as a case of Koch's and had received treatment but she was not aware of the regime and duration of treatment.

On examination it was found that the cervical lymph nodes were enlarged 2x2 cm, soft and matted. Parasternal heave in 5th intercostals spaces

with crepitation on left side with vesicular breathing on right and left lower lobes.

The patient was diagnosed as a case of acute diarrhoea, severe marasmus and respiratory tract infection and was treated with antibiotics, anti diarrhoeal and antipyretic along with nasogastric feeds. After a week of treatment, the child was being shifted to oral vitamin supplementation. The patient has improved but the future care and management after discharge from the hospital is doubtful due to poverty, illiteracy and environmental surroundings.

The lowered cell-mediated immunity due to under nourishment is the likely cause of increasing susceptibility to infections. The symptoms of weight loss, growth retardation, and wasting of subcutaneous fat and muscle are attributed to Marasmus.

Prevention and Management

Worldwide, the most important preventive strategy is to reduce poverty and improve nutritional education and public health measures.

Mild or moderate PEM, including brief starvation, can be treated by providing a balanced diet, preferably orally. Severe PEM or prolonged starvation requires treatment in a hospital with a controlled diet. The first priority is to correct fluid and electrolyte abnormalities. Next is to supply macronutrients orally or, if necessary, through a feeding tube, a nasogastric tube (usually), or a gastrostomy tube. Programs of community-based therapeutic care substantially reduce case-fatality rates and increase coverage rates. These programs use new, ready-to-use, therapeutic foods and are designed to increase access to services, reduce opportunity costs, encourage early presentation and compliance, and thereby increase coverage and recovery rates. This approach promises to be a successful and cost-effective treatment strategy⁽¹⁰⁾.

Suggestions

Long-term effects of PEM in children are not fully documented. Some children develop chronic malabsorption and pancreatic insufficiency. Very young children may develop mild mental retardation, which may persist until at least school age. Permanent cognitive impairment may occur, depending on the duration, severity, and age at onset of PEM.

In view of the increasing mortality rates due to malnutrition in Africa, Effective government policy for combating such situations, more participation by international agencies and more over health education and public awareness regarding immunization and nutrition will help over to reduce the incidence and mortality of malnutrition in Sudan. In African hospitals, fatality rates of 20% are common and are often attributed to poor training and faulty case management. Improving outcome will depend upon the identification of those at greatest risk and targeting limited health resources. Formal assessment of these features as emergency signs to improve triage and to rationalize work force resources toward the high-risk groups is required. In addition, basic clinical research is necessary to identify and test appropriate supportive treatments⁽¹¹⁾.

There is an urgent need of health education regarding nutrition and diet and various nutritional supplementation schemes needs to be implemented in Africa to combat the mortality rates due to malnutrition⁽¹²⁾.

Health institutions will need to make systematic and sustained efforts to build infrastructure, to overcome the complex barriers to receiving health care that often accompany poverty and social disadvantage, and to achieve comprehensive and high-quality universal services.

Benchmarks and targets must be set as part of a strategic long-range plan to build infrastructure and

ensure, progressively, more comprehensive, and high-quality services for the entire population.

The health sector must strengthen its capacity for active, ongoing monitoring and become an effective advocate to raise awareness of the potential implications of development policies for health equity and human rights and to call for appropriate action.

Routine assessment of potential health implications for different social groups should become standard practice in the design, implementation and evaluation of all development policies

National and international health agencies should provide global leadership to mobilize coordinated action to reduce poverty and achieve health equity and human rights. Meaningful participation of those who represent the poor or disadvantaged and other civil society groups, of political leaders, and of policy-makers from all relevant sectors is essential.

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