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The Paradox of Malnutrition in Developing Countries

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Abstract

This paper investigates the paradox of malnutrition- the coexistence of both under and over-nutrition in developing countries, particularly over-nutrition. Secondary data is being analyzed descriptively. The data reveals the prevalence of hunger or under-nutrition and chronic diseases related to over-nutrition (overweight or obesity) in developing countries. This is basically due to poverty on one hand and the nutrition transition on the other hand. Even though the incidence of chronic diseases is higher in high income countries, the burden is more on low and middle-income countries. Poverty eradication efforts need to be intensified so as to combat hunger. Overweight/obesity as well as the related chronic diseases are largely preventable, preventive measures such as reducing the intake of saturated fat and increasing the consumption of unsaturated fat, whole grains, nuts, fruits and vegetables and also the need for appropriate laws to regulate both national/international food industries so that their processing, labeling and marketing of food do not fuel chronic diseases, are recommended among others.

Key Words: Developing Countries, Malnutrition, Under-nutrition, Over-nutrition, Overweight/Obesity, Chronic Diseases.

Introduction

Economic development is normally accompanied by improvements in a country's food supply and the gradual elimination of dietary deficiencies, therefore improving the overall nutritional status of the country's population. Also it brings about qualitative changes in the production, processing, distribution and marketing of food. The expectation therefore is that countries that are economically developed should not suffer nutritional or calorie deficiencies, but rather excess of it. While poor countries should suffer deficiencies because of their poverty.

The average daily dietary intake level that is sufficient to meet the nutrient requirements of nearly all healthy individuals is referred to as the recommended daily (or dietary) allowance (RDA). The RDA therefore shows the daily required calorie and nutrients. Thus, a food intake below or above the RDA, or containing inappropriate nutrients is malnutrition. Malnutrition due to deficiencies in calorie and/or some nutrients in poor countries are common and in fact can be seen as normal since they are poor. But the prevalence of malnutrition which is as a result of excess calorie/nutrients (which should be the problem of the rich countries) in poor countries is a serious source for concern. Do the poor nations face the double sides of malnutrition, particularly over-nutrition? If yes what are the causes and what can they do to reduce or overcome the burden?

This paper attempts discussing the paradox of malnutrition in the developing economies and it is therefore divided into 4 parts. The first part introduces the paper. The second part discusses the concept of malnutrition. The paradox of malnutrition in developing countries is the focus of the third part. Finally, the fourth part concludes the paper and makes recommendations.

The Concept of Malnutrition

The Action against Hunger International (2010), says hunger consists of acute and chronic malnutrition. And on any given day more than one billion people suffer from one form or the other. And the acute malnutrition is the more immediate killer. While the Humanitarian Practice Network (HPN, 2006), explains chronic malnutrition as (stunting), the failure to grow in stature, and occurs as a result of inadequate nutrition over a longer time period which is why it is referred to as chronic. While the acute malnutrition is seen as 'wasting', this occurs as a result of recent rapid weight loss, or a failure to gain weight within a relatively short period of time. It commonly occurs in infants and younger children.

Hunger and malnutrition remain among the most devastating problems facing the majority of the world's poorest nations, as WHO (2002) explains it and that nearly 30% of humanity is currently suffering from one or more of the multiple forms of malnutrition. They further explain that the tragic consequences of malnutrition include death, disability, stunted mental and physical growth and as a result, retarded national socio-economic development.

The Medical dictionary defines it as a condition that develops when the body does not get the right amount of the vitamins, minerals, and other nutrients it needs to maintain healthy tissues and organ function. It is a general term that includes many conditions, including under-nutrition, over-nutrition and micronutrient deficiency diseases (like vitamin A deficiency, iron deficiency anemia, iodine deficiency disorders and scurvy).

Malnutrition is the insufficient, excessive or imbalanced consumption of nutrients. A number of different nutrition disorders may arise, depending on which nutrient is under or over abundant in the diet. Although a lot of the focus on malnutrition centers around undernourishment, overeating is also a form of malnutrition. Overeating is much more common in the US where for the majority of people, access to food is not an issue. The issue in these developed countries is choosing the right kind of food. However overeating is also a problem in countries where hunger and poverty persist (Wikipedia, 2010).

There are two or rather three basic types of malnutrition as pointed out by Global Issues, (2010). The first is protein- energy malnutrition- the lack of enough protein, and also lack of food that provides energy (measured in calories) which all the basic food groups provide. The second type is micronutrient (vitamin and minerals) deficiency. Recently there also has been a move to include obesity as a third form of malnutrition. Considering obesity as malnutrition expands the previous usual meaning of the term which referred to poor nutrition due to lack of food inputs. It is poor nutrition, but certainly not due to a lack of calories, but rather too many.

From the foregoing, malnutrition has different forms it could be the excess on one hand, or the deficiency of nutrients on the other hand. There are some variations on the deficiency side of malnutrition. Deficiency of food nutrients depends on the period of time (where we have acute and chronic malnutrition) and also on the type of nutrients where we have macro or micro nutrients deficiency.

The Paradox of Malnutrition in Developing Countries

Undernutrition

Under-nutrition is a lack of some or all the nutritional elements necessary for human health. Lack of some could be protein, mineral, or vitamin deficiency and lack of all is simply energy (calorie) deficiency. Both types of under-nutrition could be referred to as hunger. Under-nutrition (or hunger) could be chronic or acute. Chronic under-nutrition which is due to deficiency in some nutrients could lead to stunting. While acute under-nutrition which is due to lack of all nutrients or simply lack of food and therefore calorie could lead to starvation, wasting away and death.

Table 1 and the following chart show the number of malnourished and hungry people in the world. In 1990 there were 842 million malnourished people in the world and 832 million in 1995. The number rose to 848, 854, 923, and 925 million, in 2005, 2006, 2007, and 2008 respectively. But in 2009 the number rose to 1.02 billion. Most of the world's hungry live in developing countries as the chart below reveals.

The chart shows that the number of hungry people in all developed countries put together is not up to half the number in any region of the developing countries. In the year 2009, there are 15million hungry people in the developed countries, while Near East/North Africa, Latin America/Caribbean, and Sub-Saharan Africa have 42, 53, and 265 million hungry people respectively. But Asia and the Pacific has the highest number of 642 million this is probably due to their high population compared with other regions.

Some Causes of Under-nutrition

Some of the causes are listed below:

- poverty
- harmful economic systems
- conflict (mostly in Africa)
- climate change
- food crisis

Over nutrition in Developing Countries

Over-nutrition is a chronic condition where intake of food is in excess of dietary energy requirements, resulting in overweight and/or obesity. Raised body mass index (overweight & obesity) is an important cause of chronic disease. A substantial disease burden, including chronic diseases such as heart disease, stroke, diabetes and cancer, is attributable to health risks related to over-nutrition or the over-consumption of certain food components. It further explains that chronic diseases were the cause of 35 million deaths globally in 2005, 80% of which were in low and middle income countries. In many developing countries, especially in the urban populations, there is an increase in the consumption of energy-dense nutrition poor foods (high in fats and sugars and not enough nutrients) and a decrease in physical activity (WHO, 2006).

The chronic disease problem is far from being limited to the developed regions of the world. Contrary to widely held beliefs, developing countries are increasingly suffering from high levels of public health problems related to chronic diseases. Although HIV/AIDS, Malaria, and tuberculosis, along with other infectious diseases, still predominate in Sub-Saharan Africa (SSA), 79% of all deaths worldwide that are attributable to chronic diseases are already occurring in developing countries (WHO, 2003).

Obesity is the famous disease associated with over-nutrition and it is becoming a serious problem throughout Asia, Latin America and parts of Africa, despite the widespread presence of under-nutrition. Given the rapidity with which traditional diets and lifestyles are changing in many developing countries, it is not surprising that food insecurity and under-nutrition persist in the same countries where chronic diseases are emerging as a major epidemic. The epidemic of obesity, with its attendant co morbidities-heart disease, hypertension, stroke and diabetes – is not a problem limited to industrialized countries; but developing countries as India, Mexico, Nigeria and Tunisia (WHO, 2002). Problems of over-nutrition are growing rapidly in all parts of the world even in countries where hunger remains endemic. Below are tables that show the projected cause of deaths in different groups of countries.

Tables 2 and 3 show that in 2005, chronic diseases accounted for 43% of all deaths (summation of 23, 7, 5, 1, and 7 in table 2) in low income countries and it is projected to increase by 20% by the year 2015. It accounted for 75% of all deaths in lower middle income countries and is projected to increase by

15% by the year 2015. It also accounted for 76% of all deaths in upper middle countries and is projected to increase by 21% by the year 2015. Furthermore, it accounted for 87% of all deaths in high income countries and is projected to increase by 11%.

The startling points revealed by the above data are that in all the groups of countries, the deaths caused by chronic diseases are projected to increase. Also low income and lower middle income countries bear more of the burden than upper middle and high income countries (137, 144, 31, and 76 million people will die from chronic diseases by 2015 in those countries respectively). This confirms WHO, (2006). That says chronic diseases were the cause of 35 million deaths globally and 80% of which were in low and middle income countries.

Some Causes of Over-nutrition

Below is the list of some of the causes of over-nutrition:

- The fundamental cause is energy imbalance between calories consumed and expended.
- The nutrition transition towards refined foods, foods of animal origin, and increased fats. And the use of tobacco.
- A global shift in diet towards increased intake of energy-dense foods, that are high in fat and sugar but low in vitamins, minerals, and other micronutrients.
- The creation and marketing of unhealthy foods by some powerful multinational companies. They are fuelling chronic diseases through the promotion of some unhealthy foodstuff and diets.
- Marketing and globalization are the powerful tools for the nutrition transition, infiltrating traditional lifestyles even in the poorest of developing countries.

Conclusion

Malnutrition is not all about hunger and under-nutrition. It also involves over-nutrition. Even in developing countries where hunger and infectious diseases are endemic, over-nutrition (over-weight, obesity as well as chronic diseases) prevails. There is therefore the coexistence of both under and over-nutrition in developing countries – the paradox of malnutrition. Even though chronic diseases are higher in developed countries, the burden is more on

developing countries. Chronic diseases are related to over-nutrition (overweight, obesity).

Recommendations

The recommendations given here are focused on over-nutrition which is the main focus of this paper. Managing chronic diseases are highly expensive and would be too much a burden on the already burdened economies of the developing world e.g. it has been calculated that China will lose \$556 billion to heart disease, stroke and diabetes in the period 2005-2015 (Int. J. Epidemiol, 2005). Over-weight, obesity and their related chronic diseases are largely preventable. Preventive measures are therefore highly recommended. People must learn to (as pointed out by WHO, 2006):

- Achieve energy balance and a healthy weight.
- Limit energy intake from saturated fats to unsaturated fats.
- Increase consumption of fruits and vegetables, legumes, whole grains and nuts.
- Limit the intake of sugars
- Increase physical activity.

Public knowledge, awareness must be created especially by food/nutrition experts warning about the health consequences of very high levels of body fat so that individuals will be left with the choice between healthy and unhealthy diets.

The food industries (both national and international) must be highly regulated. Their processing, labeling and marketing must not fuel chronic diseases. Appropriate laws are therefore needed.

The collaboration of many stakeholders: public and private (governments, international agencies, NGOs, etc.) in shaping healthy environments, enacting appropriate laws and making healthier diet options affordable and easily accessible; especially to the most vulnerable the poor and children who have limited choices about the food they eat.

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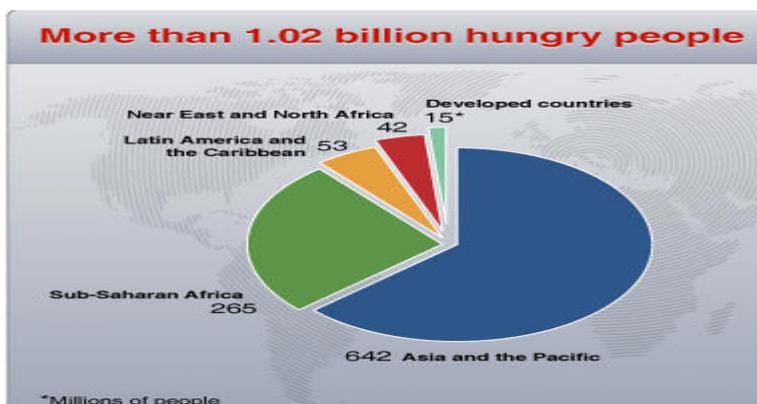
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Table 1: Number of Malnourished People in the World

| 1990 | 1995 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|-------|
| 842m | 832m | 848m | 854m | 923m | 925m | 1.02b |

Source: Global Issues, 2010 & Wikipedia, 2010

Number of Hungry People in the World (2009)



SOURCE: FAO, 2010

Table 2: Cause of Deaths in Low, Lower Middle, Upper Middle and High Income (Y) Countries, 2005

| CAUSE OF DEATH | LOW INCOME COUNTRIES (%) | LOWER MIDDLE INCOME COUNTRIES (%) | UPPER MIDDLE INCOME COUNTRIES (%) | HIGH INCOME COUNTRIES (%) |
|--|--------------------------|-----------------------------------|-----------------------------------|---------------------------|
| Cardiovascular disease | 23 | 37 | 36 | 38 |
| Cancer | 7 | 1 | 17 | 26 |
| Chronic respiratory disease | 5 | 11 | 6 | 6 |
| Diabetes | 1 | 2 | 5 | 3 |
| Other chronic diseases | 7 | 9 | 12 | 14 |
| Communicable, maternal and perinatal, nutritional deficiencies | 48 | 14 | 14 | 7 |
| Injuries | 9 | 11 | 10 | 6 |

Source: WHO, 2005

Table 3: 10 Year Projection (2005-2015) of Causes of Death

| LOW INCOME COUNTRIES | LOWER MIDDLE INCOME COUNTRIES | UPPER MIDDLE INCOME COUNTRIES | HIGH INCOME COUNTRIES |
|---|---|---|---|
| 137 million people will die from a chronic disease | 144 Million people will die from a chronic disease | 31 Million people will die from a chronic disease | 76 million people will die from a chronic disease |
| Deaths from infectious diseases, maternal and prenatal conditions and nutritional deficiencies combined will decrease by 4% | Deaths from infectious diseases, maternal and prenatal conditions and nutritional deficiencies combined will increase by 2% | Deaths from infectious diseases, maternal and prenatal conditions and nutritional deficiencies combined will decrease by 7% | Deaths from infectious diseases, maternal prenatal conditions and nutritional deficiencies combined will increase by 0.1% |
| Deaths from chronic diseases will increase by 20% -most markedly deaths from diabetes will increase 39% | Deaths from chronic diseases will increase by 15% -most markedly deaths from diabetes will increase 48% | Deaths from chronic diseases will increase by 21% -most markedly deaths from diabetes will increase by 80% | Deaths from chronic diseases will increase by 11% -most markedly deaths from diabetes will increase by 53% |

SOURCE: WHO, 2005