Breaking the poverty/malnutrition cycle in Africa and the Middle East

Tola Atinmo, Parvin Mirmiran, Oyediran E Oyewole, Rekia Belahsen, and Lluís Serra-Majem

The cost to developing countries, for current and future generations, of not eradicating hunger and poverty – in terms of recurrent conflicts and emergencies, widening inequalities, depleted resources, ill health, and premature death – is enormous. Although strategies are underway to address certain problems in Africa and the Middle East, much remains to be done. Breaking the poverty cycle in these regions demands both local and international attention. Nutrition transition is a key factor, since many countries in the region also suffer the consequences of the excessive and unbalanced diets that are typical of developed countries. This paper reviews the experiences with facing malnutrition in Sub-Saharan and North Africa and the Middle East.

INTRODUCTION

In spite of the numerous strategies being implemented at the national and international levels in order to break the cycle of poverty in Africa and developing nations in the Middle East, the problem continues unabated. It is doubtful that any another condition is more damaging to individual dignity or causes greater dependence on others than persistent deprivation of food, which, along with water, is one of the most essential ingredients for a healthy and fulfilling life.

POVERTY AND HUNGER: FOCUS ON AFRICA

Chronic hunger afflicts one in five of the developing world’s people, assaulting children and individuals in rural populations in particular. Hunger is both a violation of dignity and an obstacle to social, political, and economic progress; chronic hunger increases one’s susceptibility to disease, hinders learning ability, and leaves one weak and unable to work and meet family needs. This rupturing of self-reliance inhibits developing economies and contributes to the devastating downward spiral of hunger and poverty.

There is clear evidence that the major damage caused by malnutrition takes place in the womb and during the first 2 years of life. This damage is irreversible and is linked to lower intelligence and reduced physical capacity, which in turn diminishes productivity, slows economic growth, and perpetuates poverty. Moreover, malnutrition passes from generation to generation because stunted mothers are more likely to have underweight children.\(^1\) As such, it is clear that to break this cycle, the focus must be on preventing and treating malnutrition in pregnant women and in children aged 0–2 years. School feeding programs – often implemented as nutrition interventions – may help get children into school and keep them there, but such programs do not attack the root causes of malnutrition.

Hunger is as much a cause as an effect of poverty. Failure to address problems of hunger and undernourishment frustrates and retards the achievement of poverty alleviation goals. Sub-Saharan Africa has the highest

Affiliations: T Atinmo and OE Oyewole are with the Department of Human Nutrition, University of Ibadan, Nigeria. P Mirmiran is with the Institute of Nutrition, Endocrine Research Center, Shaheed Beheshti University of Medical Sciences, Iran. R Belahsen is with the Training and Research Unit on Food Sciences, Laboratory of Physiology Applied to Nutrition and Feeding, Chouaib Doukkali University, School of Sciences, El Jadida, Morocco. L Serra-Majem is with the NGO Nutrition without Borders, Barcelona and the Department of Clinical Sciences, University of Las Palmas de Gran Canaria, Las Palmas de Gran Canaria, Spain.

Correspondence: L Serra-Majem, Department of Clinical Sciences, University of Las Palmas de Gran Canaria, PO Box 550, 35080 Las Palmas de Gran Canaria, Spain. E-mail: lserra@dcc.ulpgc.es, Phone: +34-928-453-477.

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proportion of people living in poverty, with nearly half of the population living below the international poverty level of US$1 a day.²

Some 300 million people face a daily struggle for survival, with thousands of them – especially children – losing the battle. In the case of Africa, there are many factors that hinder hunger and poverty alleviation efforts, thus disrupting agricultural productivity, sustainable livelihoods, and effective development initiatives. Such obstacles to improvement need to be addressed simultaneously and include the following:

**Threat to peace.** Conflicts across Africa arise from, as well as generate, poverty, income inequality, and competition over resources, while simultaneously playing a role in the displacement and disruption of sustainable activities for over 15 million people.

**Lack of job opportunities.** Sub-Saharan Africa has the highest proportion of unemployed and underemployed people in the world with approximately 300 million people living on less than US$1 a day.

**Poor health and the spread of HIV/AIDS.** Inadequate nutrition and poor health increase vulnerability to HIV infection and shorten the HIV incubation period, causing people to fall ill sooner. Family spending increases while ability to generate income is reduced.³

**Inequitable trade policies and the negative impacts of globalization.** Subsidies in developed countries, unsustainable world market prices, and international dumping in developing markets hinder opportunities for African farmers to get out of debt or generate profits.

**Unsustainable management of natural resources.** Augmented deforestation, expansion of arable land, inadequate soil protection and irrigation methods, overuse of mineral fertilizers, pollution of ground water sources, and the loss of genetic diversity is affecting weather patterns and jeopardizing the balance of Africa’s natural ecosystem.

**Gender discrimination.** Despite studies that demonstrate the correlation between women’s development and household well being, women in many parts of Africa still don’t have access to education, inheritance rights, and essential resources such as land and investment inputs.

**Recurrent natural and man-made emergencies.** Chronic drought, flooding, conflict, and unreliable food stock management lead to repeated cycles of food insecurity resulting in the need for international crisis interventions.

The world community can drastically reduce hunger over the next five decades if developed and developing countries support rural development in poor countries, spend more money on research, and reduce barriers in developed countries to importing agricultural products from developing countries.

According to studies from the United Nations Conference on Trade and Development, trade rules and restrictions on poor countries, including the poorest in Africa, cost these countries around US$100 billion per year – twice the amount that the entire developing world receives in aid. Prevailing and proposed trade policies cannot address poverty and hunger as they persist in Africa today. Studies demonstrate that even a 1% increase in world exports from Africa would result in gains in income and livelihoods that could shift 40 million Africans out of poverty and help promote sustainable development.⁴⁵

Developed nations must be committed to fair trade and the allocation of resources (encouraged to consist of 0.7% of gross domestic product) that are earmarked for international assistance programs. Developing nations must improve and redirect policies that will provide aid to rural areas. Additionally, the rural poor themselves have a central role in seeking sustainable methods of self-development that respect equality and education.

It is also envisaged that a focus on integrated approaches to development, transformation of policy environments, the advancement of rural infrastructure (health, education, markets), and improved access to rural livelihood opportunities (agriculture, skills training, small-business capital) will positively contribute to breaking the cycle of poverty in Africa.⁶

In order to achieve food security as a means of breaking the cycle of poverty, the following factors become very relevant: supporting rural livelihoods; improving natural resource management; promoting women’s empowerment; training in disaster management and mitigation; indigenous knowledge and cost-effective technology; education targeting female children.

**NUTRITION TRANSITION**

Malnutrition results from the imbalance of nutrients and energy provided to the body (too low) relative to its needs (too high). More people now die of heart disease, diabetes, and some cancers in developing countries than in the developed, and the problem is becoming more serious among the poor.⁷ Generally consistent associations of growth failure in early childhood and the development of overweight in later childhood along with the associated risk of elevated blood pressure, glucose, and serum lipids.
Recent studies suggest that certain Middle Eastern and African countries are in the process of nutrition transition. Currently developing nutrition transitions are deeply rooted in the processes of globalization, which is associated with changing incomes and lifestyles. Globalization is having a major impact on food systems around the world that affect availability and access to food through changes in food production, procurement, and distribution. Unfortunately, urbanization and social development occurring in certain countries are not often accompanied by steady and significant economic growth. Although food consumption patterns and dietary quality are highly income-dependent, dietary choices are also driven by non-economic forces.

While the problems of undernutrition still exist, the burden of overweight and obesity and diet-related chronic disease is increasing. This can be seen in the case of Iran, which has an endemic area of iodine deficiency disorders and where iron-deficiency anemia has been a major public health problem. Moreover, riboflavin deficiency, repeatedly documented in preschool children, still constitutes a significant problem. Following is a review of some of the key malnutrition disorders affecting the WHO Regional Office for the Eastern Mediterranean (WHO EMRO), consisting primarily of Middle Eastern and North African countries, at the beginning of the third millennium:

### Iodine deficiency disorders

Programs of universal salt iodization have been implemented in the WHO EMRO region; Iran, Lebanon, and Syria have the highest percentages of iodized salt consumption, whereas Afghanistan and Pakistan have the lowest. The prevalence of goiter in the Islamic Republic of Iran was found to be between 10% and 60% in 1968. A nationwide survey of goiter in 1989 showed that goiter existed in schoolchildren in most provinces at rates of between 30% and 80% and it was estimated that 20 million people were at risk of iodine deficiency. After legislation was passed in 1994 for the mandatory iodization of all salt produced for household use in Iran, more than 90% of households consumed iodized salt, as shown in the 1997 survey. In the last national survey, conducted in 2001, all provinces were iodine sufficient and the total goiter rate among school children had decreased to 9.8%.

In North Africa, the evidence is not as positive. Iodine deficiency affects about 33 million people in the region and the prevalence of goiter remains high in Egypt, Algeria, and Morocco. A consultation organized by WHO and UNICEF was held in Tehran, Islamic Republic of Iran, in October 1998 to develop effective strategies for combating iron deficiency. Initiatives included supplementation with iron, food fortification, and dietary measures such as changing eating behavior, as well as public health measures. Following this meeting, flour fortification was begun in Iran.

### Iron-deficiency anemia

Updated data for anemia at the national level is only available for a few countries in the WHO EMRO region. The prevalence of anemia in women of childbearing age ranged from around 20% in Jordan and parts of Egypt to more than 30% in countries like Bahrain, Iran, and Oman. Iron fortification of commonly consumed foods is the most cost-effective option. A consultation organized by WHO and UNICEF was held in Tehran, Islamic Republic of Iran, in October 1998 to develop effective strategies for combating iron deficiency. Initiatives included supplementation with iron, food fortification, and dietary measures such as changing eating behavior, as well as public health measures. Following this meeting, flour fortification was begun in Iran.

In North Africa, on the whole, data remain scarce and although improvements have been made in certain countries, notably Tunisia and Morocco, micronutrient deficiencies are still prevalent. Anemia continues to be a major public health problem in all North African
countries (Table 1). It affects the population in general, but the groups most affected are preschool children and their mothers.\textsuperscript{14}

With respect to vitamin A deficiency (VAD) in North Africa, VAD is considered to be a subclinical, mild-to-moderate public health problem among preschoolers and their mothers in Algeria, Morocco, and Egypt; in Tunisia it has not been identified as a public health problem. It is prevalent among 40% and 17% of children under the age of 6 years in Morocco and Mauritania, respectively.\textsuperscript{15}

**Protein-energy malnutrition**

In the case of Iran, the proportion of underweight, wasted, and stunted children, plus the infant and under-5 mortality rates, have fortunately all decreased on the whole over the years. However, the prevalence of stunted children under the age of 5 years is still relatively high, nearing 20%. For children under the age of 6 years, 5.2% are wasted (<2 SD) and 5% are stunted, reflecting malnutrition over the past years. Moderate-to-severe degrees of underweight have been reported in 3.7% of children (unpublished data from the Ministry of Health and Medical Education and the United Nations Children’s Fund, Tehran).

A rural project aimed at decreasing the incidence of protein-energy malnutrition among children under the age of 5 years was conducted in September 1994. The implementation of nutrition interventions in the primary healthcare system led to a decrease in the incidence of malnutrition, dropping from 6.5% to 1.8% in a recent assessment.\textsuperscript{16}

In the case of North Africa, despite the improvements of nutritional status in young children suggested by the latest nationwide nutrition surveys available, data based on anthropometric indicators show that both undernutrition and overweight are prevalent in children under the age of 5 years throughout the entire region. In North African countries, the mean prevalence of undernutrition was 4% from 1992 to 1999 – a figure that represents 39 million children.\textsuperscript{17}

Concerning child malnutrition, as reported by the UNICEF Global Database on Child Malnutrition,\textsuperscript{15} underweight is prevalent in children under the age of 5 years in all North African countries, with the highest rates seen in Mauritania followed by Algeria, Egypt, and Morocco (Table 1). In adults, underweight has decreased over the last decade in Morocco, Tunisia, and Egypt, but it remains elevated in Mauritania.

**Overweight and obesity**

Alarming increases in the prevalence of obesity and overweight are being observed in the Middle Eastern region;
Bahrain, Iran, Lebanon, and Saudi Arabia all have a high prevalence of obesity in both male and female populations (Table 2).  

In the case of Iran, the prevalence of overweight among urban 15–39 and 40–69 year olds was estimated at about 22% and 40%, respectively; corresponding values in rural areas were 16% and 26%, respectively. This demonstrates how Iran is now faced with the need to simultaneously tackle the double burden of over- and undernutrition in its population. 

As for North Africa, Table 1 shows that overweight and obesity are prevalent in all countries of the region, reaching a peak in Egypt, where more than 45% of women are obese. The trend in obesity prevalence in North Africa is predicted to continue rising in future years. 

Changes in the economic, social, and demographic determinants of health and the adoption of unhealthy lifestyles are contributing to the observed transformations in disease patterns, characterized by a progressive and accelerated rise in cardiovascular diseases in the North African region.

In Libya, a survey carried out in 1998 and 1999 found that diabetes is emerging as an important public health problem with a prevalence slightly higher in urban than in rural areas (14.5% versus 13.5%). In Tunisia, a household epidemiologic survey of a representative sample of the adult urban population of Soussa (n = 957) showed a high prevalence of hypertension (>160/95 mm Hg) in 18.8% (adjusted rate: 15.6%), a history of diabetes in 10.2%, obesity (BMI > 30) in 27.7% (with a higher [34.4%] prevalence in women), and android obesity in 36% of the study sample. 

In Algeria, the first detailed prevalence data for an Algerian population, consisting of a sample of 1457 subjects aged 30–64 years from Setif Wilaya, showed that the prevalence of type 2 diabetes and glucose intolerance has an important socioeconomic impact. Also, a 2003 pilot survey conducted in Setif and Mostaganem demonstrated that 27.6% of the population was hypertensive and 6% was diabetic. 

In Morocco, data on the anthropometric status of children under the age of 5 years that show both under-nourishment and overweight are prevalent. In adult data from the 1984 national household consumption and expenditure survey, prevalence rates of 21.4% for overweight (16.9% men and 25.5% women) and 4.1% for obesity (1.6% men and 6.4% women) were observed. More recently, in the year 1998, the prevalence of overweight increased to 27.1% (21.1% men versus 29% women) and obesity increased to 11.7% (4.3% men versus 16% women). The prevalence of CVD risk factors also increased. In fact, a more recent national-level survey, carried out in the year 2000 on 1500 men and women aged 15–60 years, indicated that the prevalence of obesity had doubled among women, to 17.8%, and showed high rates diabetes (6.6%), hypertension (33.6%), and hypercholesterolemia (29%).

In the same way, various surveys in Egypt have concluded that the primary nutritional problem for many Egyptian adults is a tendency towards obesity. According to the study in 2000, there was an increase in BMI, reaching an average of 30 ± 4 kg/m², as well as an increase in the prevalence of obesity (BMI ≥ 30 kg/m²) in mothers (42%). 

Being overweight is associated with a higher risk of CVDs, type 2 diabetes, ischemic heart disease, hypertension, and certain cancers. In almost all populations in the North African region, CVD risk factors and metabolic syndrome have been increasing with age, affect more women than men, are higher in urban versus rural areas, and are associated with obesity, which is reaching immense proportions, particularly among women. A pressing need exists in this region to intensify efforts to strengthen programs for the prevention and control of obesity.

Sedentary behavior is one of the main factors contributing to increased obesity rates and related cardiovascular risk factors. Data demonstrate a sedentary lifestyle is highly prevalent in the North African population. Indeed, a high percentage of the population has decreased the amount of physical activity engaged in during both work and leisure by spending more hours per week watching TV and by utilizing more vehicles and activity-saving appliances. Results of a survey conducted in 2002 among Moroccan women older than 15 years on the association between physical inactivity and cardiovascular risk factors indicated that physical inactivity appears to play a critical role in the development of body fat and may be a risk indicator for features of metabolic syndrome.

Although most national public health programs and policies in North Africa focus on undernutrition and its effects on survival, mortality, and the development of mothers and children, more efforts should be made to decrease other types of malnutrition in this region. North African countries, as well as other countries in the Middle East, are undergoing health and nutrition transition. There is no doubt that if malnutrition and micronutrient deficiencies are not eradicated, there will be an increased prevalence of noncommunicable diseases. However, noncommunicable diseases are often not recognized as a high public health priority in the majority of countries in these regions, which are still confronted with the heavy burden of infectious diseases and poor maternal and child health. The health and nutrition transition is happening in the absence of steady and significant economic growth.
Studies show that the shift of dietary habits from a traditional diet to industrial food could explain, in part, the nutritional and metabolic disorders reported in these population groups. Unhealthy dietary practices include the high consumption of saturated fats and refined carbohydrates, low consumption of fiber, and increasingly sedentary behavior. Growing urbanization has also been accompanied by a progressive increase in cardiovascular risk factors such as obesity, hypertension, diabetes, and hypercholesterolemia.

**CONCLUSION**

Poverty, hunger, malnutrition, nutrition transition, and obesity and noncommunicable diseases are coexisting in Africa and parts of the Middle East, creating inequalities that need to be addressed politically. Countries in these regions need nutrition solutions that are adapted to their circumstances and that combine supplement use as well as agricultural and educational actions to achieve better and sustainable nutrition for improved public health.

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