



World Health Organization

The Dual Burden of Disease

By Marilyn Wang

INTRODUCTION

u b i q u i t o u s —
*widespread, common,
pervasive*

The concurrence of under and over-nutrition in children has become one of the most pressing global health issues of today. No longer a problem that can be simply isolated to one socioeconomic stratum, the dual burden of disease has drastically distorted the landscape of health challenges in recent decades. During HMCA 2012, the World Health Organization (WHO) will seek to develop legislation that will combat and hopefully eliminate this global epidemic. As a specialized agency of the United Nations (UN) that acts as the chief authority on international public health, WHO is committed to providing assistance to countries to frame policies and implement national plans that are sustainable and cost-effective. But to truly combat the problem at hand, WHO must involve the support and involvement of governments and industries at a variety of levels as it develops its policies and actions. As developing nations undergo economic and nutrition transitions, it is vital that the health challenges present in developed nations not be allowed to proliferate further. The members of WHO must collaborate in their efforts to solve a problem that, if left unaddressed, will devastate the global economy in unimaginable ways.

Explanation of the Problem

“Cancer, diabetes, heart diseases are no longer the diseases of the wealthy. Today, they hamper the people and the economies of the poorest populations, even more than infectious diseases. This represents a public health emergency in slow motion.”
Mr. Ban Ki-Moon, UN Secretary-General

Recent Developments

In the past thirty years, a dramatic transition in the diet and lifestyles of billions of people across the globe has given rise to an epidemic that is more prevalent and intimidating than the health threat of hunger. Worldwide obesity has more than doubled in this time, and much of it can be traced to the nutrition transition and problematic social trends.

For those who grew up during the turn of the millennium, MacDonald’s was an occasional treat and an indelible aspect of childhood. Now, the golden arches that often conjures up happy childhood memories is a part of the lives of many people all over the world. The ubiquitous restaurant offers only a glimpse of the rising global infatuation with the Western diet. As fast food spread to other parts of the world, a gradual nutritional transition has taken place. Countries that previously followed a more traditional diet now consume foods saturated with fat, starch, and sugar. Greater quantities and varieties of energy dense foods are now available to the general consumer. Larger portions of food are offered at restaurants touting better “value” for money. An increased frequency of eating occasions along with a tendency to consume soft drinks instead of water only serves to intensify the problem. And due to the rising costs of food, more people, especially amongst those of the lowest socioeconomic brackets, are finding it increasingly harder to consume a healthy, well-balanced diet.

Recent trends in the lifestyles of people all over the world have also exacerbated the obesity epidemic. Among the youth, there is an increased level of sedentary



recreation. Children who once used to run outside on the playground are now stuck indoors playing video games. Among adults, the same trends occur. It is now commonplace to drive to a location that could easily be reached through other means such as walking or biking. There is an increased use of motorized transport as cars become cheaper. As technology develops at an astonishing rate, there are more channels than ever on a typical home entertainment system, not to mention distractions posed by computers, iPods, and iPads. It is now harder than ever to live an active lifestyle.

CVD—*cardiovascular disease*

This standard of living does not come without repercussions. Overall, 23.2% of the world's adult population in 2005 was overweight (24.0% in men and 22.4% in women), and 9.8% was obese (7.7% in men and 11.9% in women). The estimated total numbers of overweight and obese adults in 2005 were 937 million and 396 million respectively. Recent analysis by top scientists indicate that overweight and obesity are significant and increasing public health challenges in both economically developed and developing regions of the world. Although the prevalence of overweight and obesity was higher in economically developed countries than with economically developing countries, compared with developed regions of the world, developing regions are projected to have a much larger proportional increase in the number of overweight and obese individuals between 2005 and 2030. Growth in population size, population aging, urbanization and changes in lifestyle including increases in total caloric intake and reductions in physical activity, all contribute to an epidemic of overweight and obesity in developing regions.

But the most troubling trend occurs among the very young, in a case known as hidden hunger. Children who may seem perfectly fine on the outside are suffering from intense nutritional deficiency. An extreme scenario of this is the presence of both stunting and overweight in the same child. In a 2002 China National Nutrition and Health Survey, 13,770 children aged 2–17 years were surveyed. The family-based nationally representative cross-sectional study found 10,814 children to be of normal height and weight, 2128 stunted, 729 overweight and 99 stunted overweight. Overall, an estimated 2.8 million children are stunted and overweight in 2002. While seeming paradoxical, this condition is more common than believed, especially among city-dwelling kids who regularly consume fast foods with little nutrition and plenty of fat. Compared with children of normal height and weight, stunted and stunted overweight children consumed more high-energy-dense foods with a lower dietary diversity score, less protein, and less polyunsaturated fat and iron. Stunted overweight children also consumed lower amounts of vegetables, fruit, white meat and more milk.

Damages incurred during childhood may also impact later development and abilities. Childhood stunting is strongly associated with shorter height, less education, reduced economic productivity, and increased risk of death and disability-adjusted life-years in adulthood. Many studies have shown that obese children are more likely to become overweight or obese adults, and to be at increased risk for developing psychological disorders, asthma, certain cancers, CVD, diabetes and death in adulthood. Stunting, together with obesity in the same child, may increase the risk of not only stunting-related diseases but also obesity-related morbidities.

Studies have shown a significant association between stunting and overweight status in children of all countries. The concurrence of under- and over-nutrition in children has been reported in many developing countries, especially in countries experiencing economic and nutrition transitions. In rural areas, stunting remains a major problem, whereas in metropolitan environs, changes in income and eating practices may lead to obesity. However, these two problems are quickly blending together at an unprecedented rate. In developing countries, there were 559 million children younger than 5 years; among them, 156 million were stunted. Protein and energy deficiency were initially evaluated as major causes of stunting. However, with improved socio-economic development and continued food supply abundance, stunting and its resulting obesity is proving to be an increased problem.

Clearly, there is an important association between stunting and overweight in many ethnic and social backgrounds. Although the underlying mechanisms remain unexplored, this association has serious public health implications particularly for lower income countries. As these countries enter the nutrition transition, large changes in dietary and activity patterns may pose additional difficulties in their fight against obesity.

Preventing both stunting and overweight simultaneously in the same population will be a remarkable public health challenge, as providing adequate food to prevent stunting may in turn enable an obesogenic environment. Similarly challenging, obesity prevention programs should not lose sight of efforts to combat malnourishment. In a concerted effort to promote optimal growth in all children, malnutrition and obesity prevention programs should collaborate with each other in countries where under- and over-nutrition coexist. This will be the goal of the WHO at HMCA 2012.

Future Projections

Using conservative estimates, by 2030, the respective number of overweight and obese adults is projected to be 1.35 billion and 573 million individuals. If recent trends continue unabated, the numbers are projected to total 2.16 billion overweight and 1.12 billion obese individuals. Moreover, if recent trends persist, by 2030, up to 57.8% of the world's adult population could be either overweight or obese. The prevalence of overweight and obesity is increasing at an alarming rate in developed and developing countries throughout the world. Epidemiologic studies indicate that overweight and obesity are important risk factors for diabetes, cardiovascular disease, cancer and premature death. The high prevalence of overweight and obesity, combined with their simultaneous health risks, makes it a particularly relevant worldwide public health challenge.

The full burden upon the economy cannot yet be estimated, and even those estimates may fall short of actual drainage on healthcare services, educational attainment, and many other segments of the economy. Although childhood obesity brings a number of additional problems in its wake – high blood pressure, sleep apnea, social exclusion and depression – the greatest health problems will be seen in the current generation of children as the present childhood obesity epidemic passes through to adulthood. Greatly increased rates of heart disease, diabetes, certain cancers, gall bladder disease, endocrine disorders and other obesity-related conditions will be found in young adult populations, and their need for medical treatment may last for their remaining lifetimes. The costs to the health services, the losses to society and the burdens carried by the individuals involved will be great.

Focus of the Debate

In order to develop a feasible solution for the reduction and later elimination of the dual burden of disease, the WHO should attempt to advance a framework of guidelines that stress two sets of factors: one focusing on immediate intervention in terms of providing nutrients to at-risk adolescents through either supplementation or fortification, and other focusing on overall reforms in healthcare, education, and government policy. The benefit of addressing both factors is that it allows for an opportunity to quickly remedy some major pitfalls in food consumption while giving more time for more sweeping measures to take effect. According to Frank Hu of the Harvard Medical School, medical spending averages \$1400 more a year for an obese person than someone who is normal weight. Health services, especially in developing countries, may not easily bear these costs, and the result could be a significant fall in life expectancy. This briefing has thus been written to focus attention on the issue and to urge policy-makers all over the world to consider taking action before it is too late. Many questions regarding what constitutes the best treatment remain unanswered:

obesogenic—*factors contributing to obesity*

there have been few sufficiently large clinical trials to test the efficacy and safety of well-defined obesity treatment programs. While it is expected that the WHO will address this subject in comprehensive terms, delegates must remain aware that many issues surrounding this subject area are linked to cultural and geographical barriers that may prevent certain goals from being realized. For example, WHO must take the first step into standardizing methods for assessing children and adolescents as well as taking an active stance to compare populations and monitor trends. While not explicitly discussed in this briefing, delegates should feel free to pursue additional research into more culturally sensitive subjects surrounding body image and nutrition in preparation for this year's debate.

i n t r i n s i c —
*fundamental, inherent,
arising from the nature
of*

Interest Group Perspectives

Oxfam International

Oxfam is an international fifteen-group association that works with thousands of local partner organizations in nearly 100 to find lasting solutions to poverty and injustice. By working directly with communities, they seek to influence the powerful to ensure that poor people can improve their lives and livelihoods and have a say in decisions that affect them. Due to their belief that respect for human rights will help lift people out of poverty, Oxfam works with poverty-stricken individuals to exercise their human rights, assert their dignity as full citizens, and take control of their lives. As such, delegates in the WHO should consider collaborating closely with Oxfam during the course of the debate on this topic. Oxfam focuses their efforts on five key areas: development, emergencies, campaigning, advocacy, and policy research. WHO can use the support and guidance of each individual sector, which may be especially beneficial since the goals of Oxfam are very closely aligned to those of the WHO. It will be in the best interests of the WHO to reach out to Oxfam to seek opportunities for joint initiatives in this sector.

Amnesty International

Amnesty International (AI) is a self-proclaimed “worldwide movement” that campaigns for human rights throughout the world for all people no matter racial, religious, cultural, or ideological differences. Members of the AI believe that basic human rights are intrinsic to humanity and fight passionately against governments and factions who seek to violate them. More than two million people in 162 countries have joined as members and donors, and in addition to a presence in legal and judicial circles, AI is found throughout the world, building momentum from a youth-based foundation. Amnesty is extremely active in supporting the right to equal healthcare and treatment for all, and is particularly sensitive to the issue of malnutrition in children. While Amnesty may have a considerably more liberal stance towards different subjects, it is of crucial importance that delegates within the WHO contact AI due to their considerable influence on policymakers all over the world. Although Amnesty's objective of continuously protecting all people's rights is much broader than the topic at hand, the lobby's strategies have proved very effective and will be a significant help to the WHO.

Possible Solutions

To date, the current style of treatment has largely been aimed at bringing the problem under control, rather than implementing a cure. This approach is only successful when a multi-disciplinary and intensive regimen is mounted, but then managing the obesity epidemic will be vastly expensive and probably unaffordable for

most countries. Pharmaceutical approaches may assist, but cannot replace, the multi-disciplinary management of obesity. During HMCA 2012, the WHO will need to outline a feasible plan for combating the dual burden of disease, and to aid in this endeavor, some of the most prevalent solutions are given below.

The most logical settings for preventive interventions are school settings and home-based settings. Programs to prevent obesity in children may start by identifying those children at greatest risk, but there are some problems inherent within this approach. Although screening for obesity potential may help target resources where they are most needed, this screening could also create stigma among the children singled out. However, genetic studies suggest that most children are at risk of weight gain, and that strategies to prevent obesity in a child population – such as encouraging healthful diets and plentiful physical activity – will benefit the health of all children, whether at risk of obesity or not.

For example, reducing the time engaged in sedentary activities (such as watching television or playing computer and video games) has been shown to facilitate better treatment outcome. Dietary interventions in combination with exercise programs have been reported to have better outcomes than dietary restriction alone. Exercise programs alone without dietary modification are unlikely to be effective, because increased energy expenditure is likely to be matched by increased energy intake. A whole-family approach is vital, with several studies showing that outcomes are improved if the parents are engaged in the process, or even are the key instigators of the process, at least for younger children.

Interventions at the family or school level will need to be matched by changes in the social and cultural context so that the benefits can be sustained and enhanced. Such prevention strategies will require a coordinated effort between the many members of a community. Researchers have suggested that efforts to prevent obesity should include measures involving a wide range of social actions, such as:

- Public funding of quality physical education and sports facilities
- Protection of open urban spaces; provision of safer pavements, parks, playgrounds and pedestrian zones; creation of more cycling paths; taxes on unhealthy foods and subsidies for the promotion of healthy, nutritious foods
- Dietary standards for school lunch programs
- Elimination of soft drinks and junk food from vending machines in schools and offering healthier choices (i.e. low-fat dairy products, fruits and vegetables)
- Clear food labeling and controls on inconsistent health messages
- Encourage medical and health professionals to participate in the development of public health programs

After the community-based actions have been implemented, the WHO must act as the world leader in terms of identifying and addressing international trade and development issues in relation to nutritional health, including advertising and mass communication, world trade agreements, and international food labeling. Furthermore, the WHO must provide support to its member states to develop national policies and programs while developing a global strategy on diet, physical activity, and health itself. It must interact with numerous industries to stress the responsibility of the commercial sector in the need to improve diet, physical activity and health. The WHO is committed to providing assistance to countries to frame comprehensive policies and implement national plans that promote consumption patterns that are sustainable and health promoting.

sedentary—*inactive, not requiring any physical activity or movement*

Questions for Policymakers

The subject of the dual burden of disease is one that must be addressed thor-

oughly in the coming years. As a policymaker, it is your responsibility to see the issue from all angles and approach it with an open mind. The goal of this discussion is not to find one unique solution for this global problem, but rather to understand the role that each country can play in shaping this issue. Some questions that delegates must ask themselves are: To what extent should developing nations take the initiative in developing new programs to address global obesity and nutritional deficiency? How should developing nations reach out to the industrialized world for monetary or other types of support in achieving goals relating to this subject? How can developing nations assist each other in decreasing the effects of this pandemic in their respective countries? What sort of coordination can be developed, in the form of educational programs or otherwise, within the WHO? What should be the main approach the WHO should take to address this issue in the rest of the developing world? How can the WHO take a role of leadership in respect to this subject? How much funding should the WHO contribute to resolve this problem? Which other organizations can help the WHO achieve this goal? These are some ideas for debate but certainly are not limits to what may be discussed.

viable—*potentially successful, workable, pragmatic*

Summary

To truly combat the problem of the dual burden of disease, different entities within a society must collaborate to enact sweeping changes. Although this global crisis may not fully be resolved for at least a few more decades, the WHO is in a unique position to address this subject. As developing nations proceed upwards into the industrialized world, the health of its citizens is of crucial importance. For the developed nations, maintaining the health of its people is one of the most fundamental responsibilities. The WHO must evaluate all potential risks and outcomes in order to formulate solutions that are viable for all nations.

Glossary

Dual burden of disease – The concurrence of under- and over-nutrition in the same population, sometimes in the same child

Nutrition transition – From traditional diet and lifestyle to Westernized diet and lifestyle

Epidemiologic transition – From malnutrition and infection to chronic degenerative diseases

Global health – Health problems, issues, and concerns that transcend national boundaries and may best be addressed by cooperative actions; the application of the principles of public health to health problems and challenges that transcend national boundaries and to the complex array of global and local forces that affect them

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