The mission of IFMSA is to offer future physicians a comprehensive introduction to global health issues. Through our programs and opportunities, we develop culturally sensitive students of medicine, intent on influencing the transnational inequalities that shape the health of our planet.

IFMSA was founded in May 1951 and is run by medical students, for medical students, on a non-profit basis. IFMSA is officially recognized as a non-governmental organization within the United Nation’s system and has official relations with the World Health Organization. It is the international forum for medical students, and the largest student organization in the world.
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NOTICE: Every care has been taken in the preparation of these articles. Nevertheless, errors cannot always be avoided. IFMSA cannot accepted any responsibility for any liability. The opinions expressed in this publication are those from the authors and do not necessarily reflects the view of IFMSA.
Dear all,

Welcome to the final edition of MSI for the term 2007-2008. The elected theme for this General Assembly and also the theme of this MSI is Nutrition and Health.

When we think of nutrition and health we think of malnutrition and diseases that occur as a result of starvation. We immediately picture the infomercials of children with distended abdomens that do not have enough to eat or proper water to drink. It is essential to understand as future healthcare leaders our role in the society, helping to raise awareness about this topic.

However, there is another, possibly equally sinister ‘disease’ that threatens many people, especially those living in the Western world – obesity. “Obesity is a health problem in its own right and is considered a major risk factor in the development of diabetes and cardiovascular disease.” – WHO, Geneva 2000

We hope that through this GA and through this edition of MSI, medical students become aware of the realities that are associated with under and over nutrition. And as medical students and young doctors, they can learn to identify these problems and treat them adequately.

On Behalf of MSI Editorial Board

Candice Galea & Eduardo Ríos
Publication Support Division Co-Directors
The world faces a major public health challenge linked to diet, nutrition and lifestyle. Malnutrition is estimated to contribute to more than one third of all child deaths, although it is rarely listed as the direct cause. On the other hand, rates of obesity and overweight in adult have increased across the world in the last 20 years. Not long time ago, obesity was the disease of developed countries, while malnutrition was the concern of developing countries. Now, malnutrition and obesity are the concern of both!

Obesity has reached epidemic proportions globally, more than 1 billion adults overweight with at least 300 million of them clinically obese, making itself a major contributor to the global burden of chronic disease and disability. It is surprisingly coexisting with under-nutrition in many countries; obesity is a complex condition, with serious social and psychological dimensions, affecting virtually all ages and socioeconomic groups.

The rate of childhood obesity has increased sharply, the increased consumption of more energy-dense, nutrient-poor foods with high levels of sugar and saturated fats, combined with reduced physical activity, have led to obesity rates that have risen three-fold or more in the last decades. Leaving the children posed to a major risk for serious diet-related chronic diseases, including type 2 diabetes, cardiovascular disease, hypertension and stroke, and certain forms of cancer. The health consequences range from increased risk of premature death, to serious chronic conditions that reduce the overall quality of life. The obesity epidemic is not restricted to one community, it hits both developed and developing countries!

If Obesity is not the major concern in some countries, then the lack of access to highly nutritious foods, especially in the present context of rising food prices, makes malnutrition the major concern. The increasing food prices and the lack of access to healthy food leaves millions of people undernourished. In some countries 30% of all babies born at full term are underweight!

Malnutrition is not only in under-developed countries. Poor feeding practices, such as inadequate breastfeeding, offering the wrong foods, and not ensuring that the child gets enough nutritious food, contribute to malnutrition all over the world. Infection – particularly frequent or persistent diarrhoea, pneumonia, measles and malaria – also undermines a child's nutritional status.

The world has to step up and the authorities has to unite efforts in food safety and access to food at a global level to combat this problem. The increasing food prices are making the world less secure! There are many key players in this complex picture. Public authorities at national and international level, have an important role to play as do industry, consumers, retailers, and the scientific community, if we are to successfully address this difficult and important public health challenge.

The IFMSA has dedicated its 57th August General Assembly and this version of MSI magazine to this issue. As Future Health Physicians believe that we have a key part to play in it. Health professionals need to promote interdepartmental cooperation and action by governments to eradicate poverty, improve food industry and monitor food prices and quality. We hope that our goals will be achieved and our efforts rewarding to influence the transnational inequalities that shape the health of our planet.

Anas Eid
President 2007-2008
IFMSA
Can vitamin and mineral supplementation improve academic performance in school children?

An Evidence Based Medicine report

Preface

Currently undertaking my General Practice rotation sponsored by Brunei Shell Petroleum at the Panaga Health Center in Brunei Darussalam, I had the opportunity to interact with a multi-racial assortment of patients, which stretched from Australian to Zimbabwean, as well as local Malay, Dayak, Iban, Indian and Chinese patients. A few patients that I have come across, in this cited example Australians, will fall into category 5 of Murtagh’s Diagnostic model – “Is the patient trying to tell me something else?”. A common and memorable scenario is a parent bringing a child for a common cold, but asking “Have just commenced my child in Junior Rugby, is there something that he should eat to help increase his performance?”

Prelude

A newspaper article “Tuition Nation” triggered me to think about a similar but hypothetical patient-doctor scenario, and hence search for evidence to educate the patient. The article describes how my home country Singapore has become a “tuition nation”, citing a survey that revealed that 97 of 100 respondents polled have either a private tutor, or are enrolled in a centre. This triggered me to think about a similar but hypothetical patient-doctor scenario, and hence search for evidence to educate the patient. Carrying the same enthusiasm as the Australian parent, the Singaporean could well ask: “Can vitamin and mineral supplementation increase academic performance?”

The more the merrier?

In trying to tackle that question, I began by explaining the importance of a balanced diet in children to the parent. In a recent Taiwanese study (Fu Ming-Ling et al, November 2007), after adjusting for sex and grade, the majority of unhealthful eating patterns (i.e. sweet and fried foods) had a positive effect on unfavorable overall performance in school.

With the plethora of vitamin and mineral supplements available off-the-shelf and through online purchase, just how much is enough? Or is the more the merrier?

Examining the evidence

I began my search by framing the clinical question using the PICO structure:In schoolchildren (Patient), is vitamin and mineral supplementation (Intervention) versus no supplementation (Comparison) associated with better academic performance (Outcome)?

An initial search on BMJ Clinical Evidence using the words “vitamin”, “mineral” and “intelligence” and “academic performance” yielded few results of interest. I continued with the search terms “vitamin* performance* intelligence*”, with no limit specified. PubMed yielded 41 studies while the Cochrane library yielded 10 studies. The faculty librarian suggested that I broaden my search and replace “performance” with “child*”. That worked brilliantly, and after limiting my search to “meta-analysis, randomized control trials, clinical trial AND review”, and then ignoring those treating Down’s syndrome patients, I quickly settled on 20 relevant studies, starting with a doubled-blinded placebo-controlled trial published by the Lancet in 1988. I found the studies worthwhile tracing.

The association between nutrition and school performance is complex and multifactorial. While the role of nutrition in cognitive function is well-established, the evidence for supplementation is less clear and often inconsistent. Further research is needed to clarify the specific effects of vitamin and mineral supplementation on academic performance in school children.
performance were found to fall into four main areas:

- Breakfast
- Food insufficiency
- Iron deficiency and supplementation
- Nutritional Supplements and Micronutrients

Children who do not consume breakfast are associated with fatigue and poor school performance. Food insufficiency is well covered in physiology and biochemistry textbooks – the brain is a selfish organ and requires glucose as a fuel for its processes. Breakfast interrupts the fasting state and provides this fuel to the brain and the rest of the organism. Iron deficiency anaemia has a preponderance of evidence demonstrating poorer cognition and subsequent lower academic achievement.

Benton & Roberts (1988) published a small RCT (90 schoolchildren, double control – placebo & no treatment) contending that supplementation produced a statistically significant increase in nonverbal IQ. The paper attracted many critiques (In letters to the Lancet Editor), citing the brevity of the 3-day dietary diary, low mineral content and omission of the untreated group in the analysis.

Several others (Naismith et al, 1988; Crombie et al, 1990 & Schoenthaler et al, 1991) repeated the Benton trial and even broadened the scope of testing, but made little headway towards understanding the effect of vitamin and mineral supplementation in schoolchildren.

Schoenthaler et al eventually conducted a meta-analysis encompassing 13 trials conducted since 1988. The results displayed that the supplemented schoolchildren performed better, on average, than the placebo in nonverbal IQ, regardless of formula, location, age, race, and gender or research team composition. The mean difference across all studies was 3.2 IQ points, the standard deviation of which was larger in the supplemented group compared to the placebo. It was concluded that there are important health risks when school children’s dietary habits fall below that of the U.S. RDA; and poor dietary habits may lead to impaired intelligence. Supplementation in this instance may restore the cognitive abilities of these children. However, there is also evidence that vitamin and mineral supplementation produced no significant effect on the intelligence of well-nourished children.

Should I conclude my search here?

Many developed countries today can identify with children having sufficient or even over-nourishment. I came across an interesting Longitudinal study by V. Arija (2005). Her team carried out observations made on children where their energy and education requirements were met. This removed confounders from the predecessor studies where undernourishment may be associated with poorer opportunities, skewing the outcome. Using multiple linear regression analysis, they found a significant and positive relationship between iron intake and both total and non-verbal IQ; and for folate levels, both total and verbal IQ.

Looking out for data from children who were fed and well, the search terms “nutrient* school* child* intelligence* or cognition*” yielded articles from which 2 recent ones were selected: 1) Effect of micronutrient supplement on health and nutritional status of schoolchildren (2006) by S Vazir et al, and 2) Effect of a 12-mo micronutrient intervention on learning and memory in well-nourished and marginally nourished school-aged children: 2 parallel, randomized, placebo-controlled studies in Australia and Indonesia (2007) by the NEMO study group.

The NEMO group’s RCT was closer to my prospective patient’s expectations, and it also followed close adherence to criteria of the CONSORT-Statement. In the same tangent as results described by V Arija, they found that an intervention with a micronutrient fortified drink improved micronutrient status and improved
school-aged Australian children who meet their energy and educational requirements.

Sharing the evidence with my future patient

Contrary to the evidence from the Schoenthaler’s 1999 Meta-analysis, I will explain to the concerned parent that using the evidence from the 2007 study by the NEMO group, micronutrient supplementation may improve scores on tests assessing verbal memory and learning in school-aged Australian children. Findings can be better explained when the relationship between verbal learning, memory, and academic performance in schoolchildren, are described in further studies. This partially validates Arija’s 2005 longitudinal study that low iron or folate levels was associated with poorer performances in non-verbal IQ test scores, and verbal IQ test scores respectively, children having their energy and educational needs met.

As an avid exam taker like all readers here, I remain curious about the evidence concerning other factors. There may be associations between physical activity, sleep, chronic health conditions, & obesity, with school performance. Of course, I still pop the multivitamin pill if and when I remember.

**REFERENCES:**

- Naismith D.J. Can Children's intelligence be improved by vitamin/mineral supplements? *The Lancet, Volume 332, Issue 8606, 6 August 1988, 335*

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**POTATO: The Answer to the Global Food Crisis**

The United Nations in its hope to alleviate poverty, improve international food security and promote economic development globally has declared 2008 the International Year of the Potato. The price of the potato is determined by local markets as it is not traded on international markets, contributing to local food security. The UN hopes that greater awareness of the merits of potatoes will contribute to the achievement of its Millennium Development Goals. It is the world's fourth most-important food crop, after maize, wheat and rice.
Q: So, briefly, what has been the impact of the potato on world history?

A: "The potato played a crucial role in the development of a succession of imperial states in its cradle land – the Andes – but its influence has been most dramatically illustrated in Europe, following its introduction by the Spanish in the late 16th century. Nothing like this had happened before – anywhere. After depending upon grain for thousands of years, Europe now had a supplementary crop that not only flourished in a wider range of soil and climatic conditions but also produced four times more carbohydrate per unit of land and labour. Wherever the potato was adopted, populations grew rapidly, which in turn supplied a large and cheaply nourished labour force just at the time when trade and industry were replacing agriculture as the dominant feature of European economies. Thus the potato fuelled the Industrial Revolution, and from Europe has spread around the world – staving off hunger, improving nutrition and fuelling the development of economies."

He also quoted as saying that "People simply do not believe such a commonplace commodity deserves serious attention."

Any discussion on the topic of the potato usually is not taken seriously, but the potato deserves all of our attention.

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Dr. Stefan C. Hemmings  
Co-Chairman, Organizing Committee  
57th August Meeting of the IFMSA  
Ocho Rios, JAMAICA
Adequate nutrition has been a known contributing element to good health since the time of Hippocrates, as he is believed to have "prescribed good food both for the treatment and prevention of many common illnesses". He was also aware that malnutrition, in all its forms, is a contributory factor towards ill-health, and this fundamental knowledge has been developed tremendously in the years following this realisation. Malnutrition has now been identified as being among the most important risk factors for disease globally, as it contributes towards both obesity and underweight-related diseases.

The "double burden of malnutrition" has been defined as "the dual burden of under-nutrition and over-nutrition occurring simultaneously within a population". This has been observed in recent years in many developing countries, especially in those experiencing rapid economic growth. The United Nations Standing Committee on Nutrition states that "while under-nutrition early kills in life, it also leads to a high risk of disease and death later in life. This double burden of malnutrition has common causes, progressing from inadequate foetal and infant nutrition to later exposure (including through marketing practices) to unhealthy energy-dense, nutrient-poor foods and lack of physical activity." This paradox leads to the "double burden" of malnutrition facing many developing countries today.

Infectious diseases are known to be more prevalent in communities affected by poverty, which contributes to famine, and thus leads to inadequate nutritional intake. Under-nutrition in developing countries can be further divided into macronutrient deficiency (for example lack of protein) and micronutrient deficiency (lack of essential substances such as iron, Vitamin A and zinc). These insufficiencies leads to impairment of many biological and physiological functions of the human body including the immune, reproductive and neurological systems. Under-nutrition led to the death of 10.5 million children under the age of five in 2004, from diseases which could have been prevented with adequate nutrition. The constant threat of malaria, cholera and diarrhoea among poorer urban dwellers is predominantly due to slow progress in improving the local water, sanitation and public health systems. These unhygienic conditions thwart efforts to reduce under-nutrition, as these communities are trapped in the vicious cycle of infectious diseases being most prevalent among the under-nourished.

The restriction of food availability due to poverty creates the need to maximise the energy content of what little food can be obtained, often with other nutritional factors being ignored. The affordability of food with high fat and carbohydrate content provides the necessarily high energy levels but sacrifices the other nutritional elements, especially micronutrients, needed for a balanced diet. Food fortification can be used to combat successfully the problem of micronutrient deficiencies in affected populations. However this does not solve the overall problem of the development of obesity even in communities that suffer from under-nutrition.

Rapid urbanisation and economic surges in many developing countries have caused a nutritional transition to occur, in which malnutrition demographics are slowly trending towards obesity due to over-nutrition, and away from under-nutrition. This trend is becoming most obvious in middle-income countries, where dietary and lifestyle modifications have led to a food intake with a predominantly high calorific value at the same time as a general reduction in energy expenditure. Among the affluent urban...
populations of developing countries, this can be attributed to the increased availability of convenience foods, which are offered at affordable prices and have the added attraction of time-saving. An equally important factor is the transition to a more sedentary, technology-driven lifestyle.¹

This demographic shift has led to obesity due to over-nutrition and a related increase in chronic diseases amongst the overweight, such as cardiovascular disease and type II diabetes. These conditions have previously been linked to dietary habits in developed countries, and evidence suggests that they contribute to premature death. These non-communicable diseases are expected to be the most important cause of mortality and morbidity in low-income countries by 2015, surpassing infectious diseases². This poses a huge burden on health finance and allocations of resources in developing nations, as many are still menaced by infectious diseases and related illnesses due to under-nutrition, especially in children⁴.

Yet this problem cannot be easily classified, as both infectious diseases and chronic diseases are present simultaneously, due to the rather incongruous presence of over-nutrition and under-nutrition in the same population. This “double burden of malnutrition” is the double burden of diseases associated with both ends of the nutritional spectrum. What solutions, then, can be proposed? Community nutrition education is vital to promote dietary modifications and an awareness of the importance of physical exercise. This has been attempted in schools in order to involve both students and their parents, as well as with health centres and non-governmental organisations in conjunction with the media for a wider coverage. The most feasible intervention to achieve prevention is by targeting children. National programmes to improve the diet of school students have the ability to improve children's nutrition, and are expected to result in a healthier weight and the consequently lessened risk of obesity-associated morbidities in later life.³ Populations particularly at risk from other diseases such as HIV/AIDS may need to be targeted for additional food supplementation¹.

Above all, the coexistence of under-nutrition and over-nutrition should be taken into account in determining the best intervention for combating both problems¹. Many of the countries affected are beleaguered by infectious diseases such as AIDS and multi-drug resistant TB, and it is important that under this pressure they do not succumb to the trap of alleviating just these infectious illnesses whilst ignoring the long-term management of non-communicable diseases⁴.

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BIBLIOGRAPHY:

I’m loving it…

I can see the world grow fat just by looking out of my window. A few months ago I moved to my new home which happens to be situated right in front of McDonald’s and above the Kentucky Fried Chicken. This means that when I look out of my window at one side of my room, I see two big Golden Arches smile at me. When I open the window at the other side of the room the smell of chicken wings being fried slowly reaches my nose.

Every morning when I open my curtains I can see the early bird fast food lovers already standing in line for their first and probably not their last hamburger today. During the day I see them walking in, hungry, seduced by the bill boards that show them how tasty a Big Mac or a Double Cheeseburger can be. Five minutes later they come out again, chewing on some hundreds of calories, swallowing away tons of fat and sugar.

I watch them, while I sit at my desk and study on the raising number of patients with type II diabetes and the cardiovascular risks of obesity for my next exam. And suddenly an alarming thought pops into my mind: I have to stop them! Isn’t it my duty to go out and tell this 10-year-old girl that is buying a Super Size Big Mac that she will be a Super Size herself in about ten years, that she will probably need a daily shot of insulin for the rest of her life, a life that won’t last too long anyway, because she will die of a heart attack at the age of fifty?

As future doctors, isn’t it our moral responsibility to warn these people for and cure diseases that could have been prevented just by closing the nearest fast food restaurant…

I try to focus again on my book on Internal Medicine, but I can’t stop looking out of my window. I see two girls standing in front of my house, eating a McFlurry, while holding a donut in their hands as a dessert. I stare at them for a few seconds, then I take a decision, close my book and stand up. I take the stairs to my front door and cross the street. I pass the two girls with their ice creams and an old fat man taking a bite of his Quarter Pounder and walk in. After a short moment of hesitating I take a deep breath, go to the counter and say: “One McFlurry, a large French Fries and two brownies, please.”

Sometimes you just have to enjoy life. And come on, we are not doctors yet…

Ragna Boerma.
University of Amsterdam.

Controlling Obesity: An Elementary School Prevention Project

INTRODUCTION

The last few years have seen the prevalence of obesity skyrocket, in both adults and children alike. In Canadian children and adolescents alone, there are almost three times as many obese youth as there were 25 years ago. In Quebec, 23% of children and adolescents are now overweight or obese, which is astonishing considering only 30 years ago, obesity was almost non-existent in children aged 2-11.

Fundamentally, the cause of weight gain is an imbalance between food intake and energy expenditure. The ingestion of a high caloric diet containing an important amount of sugar and saturated fat in combination with bad eating patterns, as well as the increase in daily screen time, are some of the main societal factors that are correlated with overweight and obesity in children.¹
The consequences of childhood obesity are serious in both the short and long term. First, childhood obesity is associated with negative psychological outcomes such as depressive mood and low self esteem as well as many health consequences including insulin resistance and type 2 diabetes. Moreover, there is an increased likelihood for obese children to develop high blood pressure and sleeping disorders in adulthood. Furthermore, children who are obese, especially before puberty, are at a higher risk of becoming obese adults than non obese children, and adolescents who are overweight have a higher risk of both morbidity and mortality associated with heart disease, as well as for all causes combined.

While a healthy diet and physical activity are known to decrease many health risks, including that of obesity, these factors can also contribute to children’s success at school. In fact, a recent study showed that 24% of the differences in academic achievement can be explained solely by BMI, eating habits, and the practice of physical activity, even when controlling for sex, parents education, family structure, and rate of absences. Moreover, healthy eating has a positive influence on children’s growth, and the regular practice of physical activity has been shown to improve concentration.

Children establish dietary and physical activity habits that stay with them for the rest of their lives. Since healthy lifestyle habits have an influence on children’s health and success, and it is easier to maintain good lifestyle habits if they are acquired at a young age, it clear that it is imperative to intervene during a child’s early elementary school years.6

**Objectives**

It is for these reasons that the Standing Committee on Public Health at University of Montreal designed a project to teach elementary school children basic nutrition and the importance of physical activity. The goal was to increase their exposure to the importance of a healthy lifestyle at an age when habits are being formed, to have a positive impact on their health now and in the future. Furthermore, providing the students with documentation to be read by them and their parents would potentially broaden the project’s impact and have a positive influence on a sector of the adult population as well. Additionally, the objective was to allow medical students to increase their knowledge and experience in an important domain of public health, to enrich their future medical practices.

**Methods**

The project was designed for a target audience of first grade students (aged 6-7) in order to be one of the first interventions in their learning of healthy lifestyles. To captivate and maintain their attention, the information was presented in the form of interactive games. The nutrition component required the students to classify different foods as being either healthy or unhealthy. An array of images of foods were distributed to the children and they were asked to place them on the appropriate mascot (either a student wearing an apron or a student wearing a container of French fries), depending on whether they thought the food was healthy or unhealthy (Fig 1). After all the images were placed, the animators asked the class if any foods were incorrectly classified and simple explanations were given based on the Canadian Food Guide. An apple and the Canadian Food Guide were distributed.

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**Facts**

In 2007, an estimated 22 million children under the age of 5 years were overweight throughout the world. - WHO

The United Kingdom Department of Health recently projected an average of five years lower life expectancy for men by 2050 if the current trends in obesity continue. - WHO

%59% of Canadian children and adolescents were reported to consume fruit and vegetables less than five times a day. – CCHS 2004

Over a third (36%) of children aged 6 to 11 logged more than 2 hours of screen time each day – CCHS 2004

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received a recipe book with simple, nutritious recipes for the classroom.

The physical activity component consisted firstly of a series of questions designed to allow the children to discover different examples of active and passive activities and the importance of decreasing the time devoted to passive activities in order to increase the time where they are active. To increase student participation, they were asked to mime their favourite physical activity while their classmates tried to guess the sport. This was followed by a game of the presenters’ choice in which the children had the opportunity to be active in the classroom. A letter to the parents and Canada’s Physical Activity Guide for children ages 6-9 were given to each child.

To ensure that each group of animators gave the same quality of presentation, the Presenter’s Guide was developed. This guide includes the project’s history, background information on the obesity epidemic, and the set objectives. The activities are also described in detail and some guidelines on presenting to first grade students were included. In addition to standardizing the project, this guide will sensitize medical students to the importance of improving the lifestyle habits of the population and will allow the project continuity from one year to the next.

RESULTS

Both the structure and the impact of the project have evolved since it was initiated two years ago. In 2005-2006, the project focused solely on nutrition and was presented as a pilot project to one first grade class in one elementary school. The following year, the project expanded to include 7 presenters in 4 schools. New costumes were created and a recipe book was started. In 2008, the component on physical activity was introduced; the Presenter’s Guide was created; and the recipe books were finalized and distributed, along with the Canadian Food Guide and the Canadian Guide to Physical Activity. Furthermore, nine animators presented to eight classes in five different schools. Thus, the number of students, families, and neighbourhoods in Montreal exposed to this presentation is expanding. While a direct evaluation of the project’s short and long term impact has not yet been developed, the discussion of these topics in the classroom setting contributes to an increased awareness of these important health issues.

DISCUSSION

The implementation of this type of project is not without obstacles. Firstly, there is the difficult task of recruiting and maintaining a team of animators in order to have enough man-power to present in a multitude of schools. This requires the project to be visible and appealing to medical students at all levels, and necessitates persistence and repeated recruitment to ensure that most students are aware of the existence of the project. Moreover, because many medical students have limited free time in their schedules, it is a challenge to maintain the initial number of participants for the duration of the project.

The task of presenting healthy lifestyle
children is a further challenge inherent to this project. Medical students are accustomed to discussing health issues with explanations and a vocabulary that are far too complex for elementary school children. Even those experienced speaking to patients are usually exposed to adults, who certainly differ from children in their comprehension. Thus, presenting to first grade students requires a flexible and simplistic approach.

Finally, it is important to realize that children have many role models and they are influenced by the opinions of both their parents and teachers. Thus it is possible that they receive information at home, at school, or even during the presentation that conflicts with the national recommendations and guidelines. Today nutrition is such a widespread topic, with many schools of thought and popular diets, so it is not unusual for adults to be misinformed about proper eating habits. Therefore, it is only by repeated exposure to the evidence-based recommendations that children and adults alike will receive the proper information for healthy living.

CONCLUSION

Despite all the treatment options available, it has been recognized that the best way to counteract the obesity epidemic, and minimize both the health complications and related costs, remains prevention. Since the problem relies mostly on societal factors, public and private stakeholders, as well as the civil society must all make a concerted effort to stop obesity.

Unlike adults, children cannot always decide what foods they eat and the environment they live in. Since they spend most of their time in school, it is a good environment for them to acquire proper lifestyle habits which they can maintain throughout their life. Moreover, the knowledge they acquire in class on these subjects can have a positive influence on all members of their family.

Certainly, medical students have an important role to play in promotion and prevention in school communities. Showing children the importance of eating fruit and vegetables, limiting the intake of high caloric food, and being physically active, can help prevent obesity in these future patients. While this intervention targets early elementary school children, it would be interesting to create future presentations adapted to older students in order to broaden the project’s impact and to allow for continuity and repetition of proper lifestyle habits throughout childhood and adolescence. Undoubtedly, it will take a massive increase in prevention programs to curb the obesity epidemic.

REFERENCES:

• QUEBEC. MINISTER OF EDUCATION, LEASURE, AND SPORT (2007). Pour un virage santé à l’école : Politique cadre pour une saine alimentation et un mode de vie physiquement actif.
The Global Obesity Epidemic reflects the presence of multifactorial risk factors and need for health education interventions to reduce morbidity and mortality. Using the preventive health model, medical students at the Iberoamerican University (UNIBE) in Santo Domingo, conducted a university health fair and measured arterial pressure, cardiac frequency at rest, body mass index and body mass and percentages of fat and water. At-risk participants described current health, diet and physical activity, while medical students explained that the physiological consequences of these health risks may be prevented through improved nutrition and cardiovascular exercise. Health promotional activities highlighted self-care strategies to reduce risk to obesity and hypertension and improve lifelong strategies to maintain a healthy weight through diet and exercise.
UNIBE medical student measures the body mass and percentages of fat and water of participants at the university health fair.

Patient receives counseling regarding the evaluation of health measurements and discussion of self-care strategies to modify his behavior and develop lifelong health habits to prevent obesity and hypertension.

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The Problem:

Insecure access to food can be stated as one of the world’s most important threats to public health. Even before the latest rise of food prices more than one billion people were experiencing chronic hunger and two billion more were suffering from malnutrition, with 20,000 children dying every day. Hunger, malnutrition and consequent death despite of global food surplus is unacceptable and needs full international attention, including effective humanitarian emergency intervention.

It is also widely recognized that hunger is and was virtually never caused by the actual lack of food but by the inability of certain groups to afford it. Thus, the last months’ increase of food prices is said to have made poor people even more vulnerable to hunger and malnutrition. Many campaign groups working on food security are now advocating for harmonized international interventions in order to keep food prices in developing countries low.

However, it has to be questioned if this rather simple causality is actually true in daily economic life and if a rise of food prices might not also have beneficial (and low food prices have adverse) effects on poor households. The following article is intended to show the value of in-depth thinking on this problem and advocates that thorough case-to-case analysis addresses the problem better than easy sounding explanations and policy recommendations.

The Academic Discussion:

The effect of food prices on households’ budgets obviously depends upon its source of income and expenditures. Many households in developing countries both buy and sell food – thus, it is of high importance if the main source of income is agricultural or non-agricultural and if a household is a net food buyer (in the following: NFB) or net food seller (in the following: NFS). This leaves room for different strands of academic research:

Several studies show that in developing countries the number of NFB is higher than the number of NFS (Ravallion 1989; Seshan and Umali-Deininger 2007; Byerlee, Myers and Jayne 2006; Ivanic and Martin 2008; Warr 2005). This is also true for the poorest income quintile among these households and also for rural households, where one could think that agricultural activity reduces the necessity to buy food (Christiaensen and Demery 2006). Also on international level, low income countries tend to import more food than they export and therefore have higher spendings if internationally traded food and crops rise in price. Thus, many argue that high food prices hurt the poor by lowering their real income, making them more vulnerable to malnutrition and hunger (Byerlee, Myers and Jayne 2006; Christaensen and Demery 2007; Ivanic and Martin 2008; Warr 2005; Hoekman and Olarreaga 2007).

The current call for action to keep food prices low is often brought up by the same campaign groups who also propagate the elimination of the global trade policy system, without making references to the obvious contradictions in their argumentation: If low food prices were only pro-poor then why should eliminating the protection of agricultural markets of low-income countries and opening them up to highly subsidised products from industrialised countries not be a desirable solution? Putting it that way would mean that flooding local markets with externally subsidised and therefore artificially cheap food would not only be good for rich countries’ economies but also beneficial for the poor.
valid because economic interaction is more complex. Trends in food prices have a variety of effects on household behaviour in low-income countries. This is why non-intuitive interactions of food prices and poverty have to be taken into consideration.

First, there are findings indicating that NFS are very poor as well and rely on adequate prices if they are not to become vulnerable. Furthermore, the main focus of poverty in low-income countries lies in rural and not primarily in urban setting (World Bank 2007). As the rate of food producers is higher in rural settings than in urban areas, the benefits of high food prices could help to close the economic gap between poor rural and better-off urban areas with all its adverse effects (Schiff and Valdes 1992).

If economic interactions between NFB and NFS are considered to be completely independent from each other, then NFB in rural areas might indeed be very vulnerable to price increases while NFS are better off. However, interdependency between the sources of income is very strong (Porto 2005). Heads of NFB households in rural areas are mainly labourers or small businessmen. Thus, their income depends largely on the demand (and consequently the income) of NFS households of the same area. It exists good evidence on a positive correlation of higher agricultural incomes of NFS and non-agricultural incomes of NFB in rural areas (Haggblade, Hazel and Dorosh 2007). Due to these multiplier effects higher food prices might also affect positively the economic situation of NFB. On the other hand, if food prices are too low to create a sufficient demand for non-agricultural production and services by NFS, poor NFB households may suffer economic decline. If this effect outweighs their decreased real income (through cheaper food consumption) low food prices might be contra-poor.

It becomes clear that the common consensus of low food prices being necessarily pro-poor and high food prices being generally contra-poor is oversimplified. This was shown recently by the findings of an in-depth household analysis conducted in several countries in Asia, Africa and Latin America (Aksoy and Isik-Dikmelik 2008). First, poor households are in their majority indeed NFB, making them potentially vulnerable to increased food prices. However, nearly half of them are only very marginal NFB which diminishes the adverse effects of high food prices on their budget significantly. In most of the analyzed countries the share of vulnerable household was found to be rather small. Where they exist, however, effective and rapid assistance is needed in order to assure food security and thus fight acute malnutrition and hunger.

Another interesting finding refers to the differences in incomes. NFB households are on average better off than NFS households in nearly all of the respective countries. Consequently, high food prices induce an income transfer from wealthier to poorer households and would thus have a pro-poor effect. This, however, is only true for the overall national levels. Limiting this comparison to the poor households of a country reveals that in nearly all countries poor NFS were doing better than poor NFB. This means that there is an overall shift of resources from rich to poor households, but poor NFB are hit by rising food prices especially hard.

Third, economic activities and sources of income of NFS and NFB differ significantly. This makes it probable that the above mentioned multiplier effects seem indeed to be of importance for poor NFB households in rural areas. These households might benefit from secondary effects which high food prices have on NFS households even though they have to cope with higher food expenditures. These findings suggest that low food prices have diametric effects: On the one hand they might be pro-poor by reducing expenditures on food for poor households. On the other hand they also lead to a transfer from poor rural households to wealthier urban households, widening the already
Conclusion:

The impact of changes in food prices is very heterogeneous, with both positive and negative effects on poor households in low-income countries. These depend greatly on the expenditures (NFB vs. NFS households), the main income source (agricultural vs. non-agricultural), the setting (rural vs. urban areas), and on the interactions between households with different sources of income (multiplier effects).

Causes and effects of economic behaviour are highly complex and there are still big knowledge gaps in essential aspects of the impacts of high food prices on poor households, such as distributional impact over time, regional differences, multiplier effects and linkages between rural and urban poverty.

Similar to other contexts, easy answers sound appealing but do not address problems adequately. This is why policy makers have to be very careful when coping with the current rise of food prices, especially when being pressured by campaign groups. Otherwise malnutrition and hunger will continue to threaten life and wellbeing of a large share of the world’s population.

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REFERENCES:


- Byerlee, Derek, Robeht Myers and Thomas Jayne (2006). “Managing Food Price Risks and Instability in an Environment of Market Liberalization.” Agriculture and

Rural Development Department. The World Bank: Washington, D.C.


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e-Vagus
The IFMSA eNewsletter is called e-Vagus, is the official news bulletin that IFMSA produce to keeps its own members and external partners updated. The e-Vagus is distributed by email to all National Member Organizations (NMOs), who distributed at their local committees, potentially reaching more than 1 million medical students worldwide. Past issues of e-Vagus can be downloadable at www.ifmsa.org/publications.
For more information send an e-mail to publications@ifmsa.org
MSI is very pleased to interview for the edition of MSI 18: Nutrition and Health, Dr. Ian Darnton-Hill from the United Nations Children’s Fund, UNICEF. Special thanks to Jennifer Bryce, MD from the Institute of International Programs, of John Hopkins University’s Bloomberg School of Public Health, Baltimore, USA for the reference. (Interview conducted by Eduardo Rios)

Dr. Ian, what is your main role within the UNICEF organization and for how long have you been working with them?

I have been with UNICEF for 5 years. Before that I have done several things in academia, non-governmental organizations and the United Nations. I was Senior Global Health Leadership Fellow with World Health Organization (WHO) Headquarters (a 6 months Rockefeller scholarship) and before that with WHO in the Western Pacific Region, as Regional Adviser in Nutrition, and before Head, Nutrition Section, School of Public Health and Tropical Medicine, University of Sydney.

I joined UNICEF as Senior Adviser in Micronutrients, then became Senior Adviser in Child Survival & Nutrition and then was OIC and later Acting Chief of the Nutrition Section. I have just reached mandatory United Nations retirement age and after a month’s break have come back as Special Adviser to the Executive Director on Ending Child Hunger & Undernutrition for a 9-month assignment as her representative on the Interagency Taskforce on Ending Child Hunger & Undernutrition which is based at the World Food Program in Rome. It means that I spend about half my time in Rome and half in New York (or, as this week e.g. in Lao PDR as part of a BCG/REACH assessment team and then in a couple of weeks in Ghana as part of WHO-led (and Gates Foundation-funded) Landscape Assessment of readiness to scale-up nutrition interventions Interagency team.

Maternal and Child Undernutrition are global health problem affecting a big part of the World population. Do you see the current efforts are helping, and how can we do better?

Given the impact of maternal and child undernutrition on child mortality (at least one third of deaths are attributable according to the recent Lancet series published in January of this year) and the fact that for the first time U5MR (under 5 years of age mortality rates) are less than 10 million annually, it would seem likely that present efforts, along with immunization and other health and water and sanitation interventions, are having an impact. However, 10 million, or even just under it, is still an obscene number of largely preventable child deaths, and so much more needs to be done. Even before the current crisis due to the increase in food prices, and which may have led to a further 100 million food insecure people globally, progress towards the hunger and undernutrition target of the first Millennium Development Goal (MDG1) was problematic in many countries; and what progress there was, was largely due to the incredible reduction in China of undernutrition. However, there has been an environmental cost to this great reduction.

Even allowing for the moderate success in most regions, whole countries and parts of countries...
remain at risk e.g. the very high levels of around 50% of stunting in Guatemalan children. In sub-Saharan Africa, at least 18 countries are not only not on track, but 18 are actually going backwards, and that was before the food security crisis.

There needs to be a two-track, at least, approach: addressing the many causes of food insecurity, including the inappropriate subsidies in most affluent countries and by scaling-up the evidence-based interventions, as in the Lancet series, so that evidence-based nutrition interventions that are known to impact on child survival, growth, and intellectual and economic development and productivity are scaled-up in all situations where necessary, but especially the 36 countries identified as having the highest burden of undernutrition as identified by stunting. This includes such interventions as scaling-up exclusive and early initiation of breastfeeding, adequate complementary feeding, micronutrient supplementation, preventing and treating diarrhea with improved water and sanitation measures, increased treatment of severe acute malnutrition with ready-to-use therapeutic foods and attention to intrahousehold food security.

There needs to be a greater attention to female adolescents so that they enter their first pregnancy (which should be delayed until their 20s) with adequate nutritional status; much more coverage of antenatal care for pregnant women and focusing on the window of opportunity of 9 months gestation to around 2 years of age of the child. At the same time there needs to be attention to the double burden of malnutrition where both undernutrition and overnutrition exist in poor communities and that is leading to epidemics of obesity and diabetes, hypertension and particularly so in many middle-aged adult populations in countries such as Brazil and India. This has achieved new urgency with the food prices increase, particularly the urban poor of food-importing countries especially at-risk.

Do you consider undernutrition and malnutrition as a neglected disease, if yes, why?

I think the data speak for themselves: nearly 150 million children under-5 underweight in the transitional and developing economies; 830 million at least (FAO data) undernourished and probably at least a million more with the rising food prices; 80% of the world's stunted children living in just 20 countries and anemia rates not changed in 30 years. At the same time, the global burden of disease from the nutritionally-related chronic diseases is now greater in the transitional and developing economies countries than in the most affluent countries, and by 2015 will be something like 70% of the burden. Besides the health and nutrition costs of all these diseases, undernutrition and malnutrition are known to be inhibiting economic development. At the same time, we have the scientific knowledge on how to address these nutritionally-related conditions and diseases. Overwhelmingly it is a matter of inequity which will require political commitment and vision to address. As has been noted, undernutrition in the poor is a political issue and one that countries, and the international community, have chosen not to address.
Another global problem is the deficiency of vitamin A, along with other micronutrients such as iron, iodine, zinc and folate, as one of the biggest causes of blindness in children in the World. Are the current efforts to tackle this issue enough? What still needs to be done?

Vitamin A deficiency is far more important, in terms of public health nutrition, because of its impact on mortality in children in resource-poor countries from infectious diseases. Almost a quarter of child deaths from infectious diseases can be averted by vitamin A supplementation according to WHO/UNICEF/IVAC guidelines. It is unclear if there is an impact also on pregnant women but certainly many women become night-blind during pregnancy in countries such as Nepal so common in fact that it is seen as a 'normal' sign of pregnancy in such countries. Given the impact and size of problem - over a 125 million children under five - it is clear that not enough is being done, although it has been one of the success stories over the last decade. Over 60 countries now get two doses of vitamin A to target children each year (as it is stored in the liver, two mega doses each year gives good protection). Although some countries have taken on the responsibility themselves, the capsules are largely supplied by one donor (the Canadian Government) through the Micronutrient Initiative to UNICEF. Consequently, there is a potential problem of lack of sustainability of the programme globally. So, we need, in partnership with affected countries, to be increasing coverage of young children in countries at risk, encouraging countries to obtain their own supplies of vitamin A capsules, and expand the donor base.

The other micronutrients are also being tackled - some more successfully than others. Over 70% of affected households globally are now using iodized salt to prevent and control iodine deficiency - another global public health nutrition success story. The remaining 30% are now being aggressively addressed by a public/private collaboration of salt producers and Governments, with many partners such as UNICEF, WHO, the Micronutrient Initiative, GAIN and ICCIDD (International Council for the Control of Iodine Deficiency Disorders). Iron deficiency anaemia has not been successfully addressed as yet, and it is hoped that some of the current work with multimicronutrient supplementation and iron (and the B vitamins like folic acid) fortification of cereal grains might make an impact. Zinc is now a WHO/UNICEF recommendation for the treatment of diarrhoea, along with ORT, and is being rolled out. Still, there are an estimated 2 billion people globally suffering from this ‘hidden hunger’ and more attention, and resources, need to be directed to their prevention and control.

From your experience what are the most importance factor that governments should consider before take actions against this public health problem.

Firstly, they need to be aware of the magnitude and consequences of the problems caused by undernutrition, micronutrient malnutrition and overnutrition, including economic and development consequences. There needs to be a multi-sectoral approach, including Ministries of Finance and Prime Minister and Presidential commitment, as well as investment in agriculture, specifically pro-poor policies (as they are overwhelming the most affected) and inclusion of civil society and the private sector (who after all provide or make available most of the food and drink we consume today).

In your opinion, how can medical students as future healthcare leaders can intervene in the community to improve the global health outcomes of nutrition. What is your advice for Medical students?
My advice to medical students is to take the opportunity to do something different for a year or so, at least, before settling down into their career. I do understand that medical accrediting bodies and health systems in affluent and other countries do not necessarily encourage this but increasingly it is being seen as an impressive part of a young professional person’s development, career and curriculum vitae. When I first graduated, I did a residency year in the Goroka Base Hospital in the Eastern Highlands of Papua New Guinea. The South Australian Medical Board said I would not get a job back in South Australia (not only were they legally wrong but I did get a job anyway (in a rural practice). It was a wonderful early experience and of course, I was getting so much more experience than my colleagues and student friends back in Australia who seemed to be largely measuring blood pressure levels.

If you can do something like that outside of your own country and culture, so much the better but even in the community near where you live, or a more disadvantaged part of your own country or city or town. I can guarantee (well, of course I can’t really but the odds are in its favour) that you will never regret it, and later on in life1 year out of your chosen career path will seem like nothing- and in fact may even help you chose you career path (as it did for me).
When asked to name a disease that could pose a global threat within the next decade, most people would probably answer influenza, tuberculosis, malaria or AIDS. Even among medical professionals across the globe, the reply wouldn’t be any different. But why should we be so anxious about such predictions?

"Ignorantia legis neminem excusat" – this Latin sentence perfectly describes the level of social awareness concerning one of the most severe global afflictions: chronic diseases. The future becomes even darker when you realize that this ignorance affects not only the general population, but also governments and even health care professionals who know less rather than more about bariatric care. Meanwhile, according to the World Health Organization, chronic diseases such as stroke, cancer, diabetes, cardiovascular and chronic respiratory diseases, were responsible for 35 million deaths in 2005. This makes them prolific killers around the world - killers without a warrant of arrest.

The Invisible Epidemic

"Obesity is the terror within, (...) the magnitude of the dilemma will dwarf 9-11 or any other terrorist attempt."
Richard Carmona, U.S. Surgeon General

Fortunately, it seems that since the release of the moving documentary ‘Super Size Me’ (dir. Morgan Spurlock, 2004) international society became aware of how serious health damage is caused by overeating and a lack of physical activity. An unhealthy diet and a sedentary lifestyle lead to obesity, which increases the risk of raised blood pressure and abnormal blood glucose and lipids profile. In light of the predicted increased incidence of chronic diseases, and the decline they cause in the quality of an individual’s life, the prevention of obesity presents a major challenge to public health in highly developed countries. Even so, it is only one manifestation of the greater problem concerning world nutrition: malnutrition.

The WHO publication “Preventing chronic diseases: a vital investment” shows that only 20% of chronic diseases occur in high income countries, while 80% occur in middle and low income countries, which make up most of the global population. The most recent agricultural revolution resulted in an excessive uptake of calories, processed food and animal fat even in sub-Saharan countries, decreasing world hunger, but without solving the problem of malnutrition. People now eat more, but their diet is still poor in vitamins, minerals and other essential nutrients. It seems unusual that in many local markets it is hard to find fruits and vegetables at a reasonable price, though fields are full of them. This is because many governments assume that it is lucrative to sell their goods around the world, when in fact it ends up costing them millions. Locals suffer because of premature deaths and disabilities caused by the unavailability of the agricultural products exported from their own yard.

The reason for the ease with which these diseases attack new regions one by one is the diversity of their risk factors. And one of them is especially insidious because it not only causes most of the deadly syndromes, it also worsens the quality of life of affected individuals and their families: obesity. In 2005 more than 1,000,000,000 people were overweight. The number of obese people - nearly 600 million - has been growing with every survey conducted since the mid-1980s. Data collected through the Centers for Disease Control Behavioral Risk Factor Surveillance System (BRFSS) present that what used to be an alarming trend has become an epidemic. In 1990, among the U.S. states participating in the BRFSS, none had the prevalence of BMI > 30 equal to or greater than 15%. However, in 2006 only four of them had a prevalence of obesity less than 20%.
Research shows that 80% of these diseases can actually be prevented. Some countries, like Vietnam, have already implemented cost-effective strategies on reducing obesity. However, when creating a new health policy, not only economical but also cultural and social factors have to be considered. For example, in the Islamic Republic of Mauritania, generations of young girls were force-fed to fulfill an image of female beauty. In order to change this and lower the prevalence of obesity among women, the government introduced television commercials and official pronouncements promoting a new viewpoint: that being overweight leads to diabetes, heart problems, high blood pressure and other ailments. In other countries cultural and social factors can pose an equal problem. An example of this is in the USA where there are an increasing number of movements promoting ‘size diversity’ and slogans like ‘you don’t have to apologize for your size!’, which on one hand can help obese people to have a better life, but on the other hand they assure people that nothing is wrong with being overweight.

Fortunately, examples from many different places around the world prove that it is possible to prepare a policy aimed towards increasing physical activity and having a proper diet without destroying the traditions and cultural diversity of that society. However, it is a difficult task. Although an individual can successfully achieve energy balance, limit energy intake and increase physical activity, the promotion and implementation of these recommendations requires a concentrated effort and collaboration between many public and private organizations. Unlimited human resourcefulness, willpower and the determination of members and NMO’s to influence governments and institutions will create a driving force towards the formulation and introduction of an effective worldwide strategy that would reduce the rate of deaths and disabilities by improving diet and promoting physical activity.

A variety of educational programs were conducted for years in local committees, notably by the Standing Committee on Public Health officers and coordinators, to tackle chronic diseases with obesity as their main risk factor. Since the 1950s, campaigns educating men and women on their cardiovascular risk, or teaching children about the impact of body weight on their future health, have been expanded independently around the world. As today’s young health care professionals, we also have a solemn duty to advocate a change of lifestyle among our families, friends and patients. Despite an abundance of independent activity, there has not been an international initiative, which is essential to enhance the effectiveness of these kinds of projects.

Thanks to the commitment of successive SCOPH directors, several major steps towards achieving this complex goal have been implemented in Federation.

Every voice has a meaning if we understand that the future of health care is in our hands. Do not stand idle - take action. You can.

Filip Dąbrowski
Medical Student
IFMSA-Poland

"Obesity is the terror within, (...) the magnitude of the dilemma will dwarf 9-11 or any other terrorist attempt."
Death is blatant and death is common; however, so is life. Life is blatant in its beauty, and common in that it permeates every place I go and everything I see. The other day on an early dawn jog, I passed three of the most precious baby goats. Then I went out to one of the communities, and baby lambs were “romping” around in the field, just like in a picture book. Down the road, there were piglets. I love the piglets. And then the other morning I looked out my window to see little Trilo (a little dog on premises) and a baby flamingo playing—literally playing! I couldn’t help but laugh out loud as they tried to figure out who (and what) each other were. Also, following the day in the ER, Jane and I had an equally busy day, but in the “sala de labor,” where we helped with four births. I must say that I am absolutely in love with those little wiggly 2-minute old creatures. Though these are very obvious examples of life, less transparent examples that surround me 24/7. In Spanish, to live is vivir. To survive is sobrevivir. Here in Zumbahua, and even more in the remote communities, life is about surviving, or sobreviviendo. And with such limited resources (steep hills, unforgiving weather, 50 cents or a dollar a day), these people amaze me with their ability to sobrevivir, and smiling all the while. They always share a smile. They always say hello. They always offer a handshake.

While facing death and while witnessing life (great training for a life in medicine, eh?), I am busy as ever. I know many of you aren’t surprised, as that is a tendency I usually have. However, the projects I am working on are incredible. I always wake up excited for the day’s adventures. Basically, I am in charge of spear heading the Claudio Benati Nutrition Task Force. As I mentioned before, I have a group of four indigenous girls who I am training in general nutrition and anthropometrics.

An E-mail Home: Contrasts

They are everywhere, but I personally have never been as blazingly confronted by them as I am here. The other day I was helping Jane, a visiting pediatrician from the states, do outpatient consults. We were working from the ER because there was no other place available. The day was insanely busy, and we had a pile of histories on the desk—kids waiting to be seen. Though I was helping Jane, I was also called every 20 or 30 minutes to help with other events, mainly emergencies. At one point, Dra. Anita and I made a splint for a boy with a broken leg: he had been hit by a car, or he fell off...the story was unclear. At another point I was rolling in the X-ray or ultrasound machine. At another I was taking intake medical histories because no physicians were available.

This same day, a woman in labor was rushed into the emergency room...where she gave birth to a dead baby. Then, just a few hours later, a man was rolling into the emergency room...though he was already dead. He had come by bus from the coast apparently, and was in bad shape when the bus arrived. On the highway above town (busses don’t usually enter town, they just do a rolling stop on the highway above town), the drivers put him in a camioneta (a small truck, that acts like a taxi) and told the driver to take him to the hospital. The worst part was that he was alone. And we had no way of knowing who he was in order to notify his family. The equivalent of the medical examiners office came for him later that night. Then one of the following days, I was in one of the communities, and I asked a mother how many children she had. She said fifteen. I didn’t understand at the moment, because I knew there weren’t fifteen kids living in the house. I asked one of the indigenous girls who helps me in the field, and she clarified: she had fifteen kids, but only nine are alive. Wow. I can’t imagine losing a third of my children? And most are lost due to malnutrition, or rather, a lack of nutrition, either in utero or in infancy, or in early childhood due to diseases (that could easily be fought by a healthy body).
They travel with me to the villages, where we follow-up on the growth and development of severely malnourished children in their houses (often they don’t have the money or time to get to the Hospital).

I am also working on implementing the WHO guidelines for the inpatient treatment of severely malnourished children here at the hospital. In addition, I am working on formulating the protocol of a diagnostic study of the nutritional status of the parroquia of Zumbahua, which I am theoretically carrying out in Jan/Feb. I am also doing a Market Survey, to analyze the products available at the local market and their prices. On the same lines, I am working on creating a Nutritional Values Food Table for Zumbahua. That means I am putting together lists of the local foods and plates, how they are prepared, with what quantities, etc. so that I can analyze their nutritional content.

I love the hidden challenges: educating a people that cannot read or write (only some went to a portion of elementary school), teaching nutrition when resources are so limited that meat, meat products, fruits, and vegetables are almost always out of the question, and working where human and economic resources are limited. On the other hand, I am working with a people (here at the hospital and in (most of) the communities), who have big hearts, who give all they can, and who have a work ethic impresionante. We could all learn from them.

As I started the email, I will come to a close: we can all learn from the stark contrast visible in the lives of those around me—they Have Not food, money, or land, but they Have heart, life, and determination.

**Important Facts**

Some stats from 1999: 26% of the 12,000 people in the parroquia (maybe compare it to a county) of Zumbahua are under 5 years of age. Infants are well nourished (96%) in the first 6 months of life due to the fabulousness of breast milk. Fifty percent of infants between 7-11 months are of normal weight, 41% have mild malnutrition, and 9% have moderate malnutrition. And here is the scary part: only 38% of children between 12-24 months of age are of normal weight, 24% have mild malnutrition, 16% moderate, and 22% severe malnutrition. And of those 22%, one third die.

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Resources

WORLD HEALTH ORGANIZATION
http://www.who.int/nutrition/
http://journal.paho.org/?a_ID=1004

WORLD FOOD PROGRAM
http://www.wfp.org/policies/
http://www.wfp.org/food_aid/food_for_hiv/

UNITED NATIONS
http://un.org/millenniumgoals/goals.html

WIKIPEDIA ENCYCLOPEDIA
http://en.wikipedia.org/wiki/Malnutrition

Source: http://www.wfp.org/country_brief/hunger_map/map/hungermap_popup/map_popup.html
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