

Bosu WKK. **An overview of the nutrition transition in West Africa: implications for non-communicable diseases.** Proc Nutr. Soc 2014 Dec 22:1-12.

Jaacks LM, Slining MM, Popkin BM. **Recent underweight and overweight trends by rural-urban residence among women in low- and middle-income countries.** J Nutr. 2015 Feb; 145(2):352-7.

Introduction

Historically, nutrition programs in Africa have focused on the causes and consequences of undernutrition and associated deficiencies, whereas efforts related to obesity and non-communicable disease were largely confined to other regions, such as North America and Europe. However, with increasing urbanization and globalization, there is growing evidence of changing lifestyles in Africa, including changing dietary patterns (1), and increasing prevalence of overweight and risk of chronic disease. These changes are collectively referred to as the "nutrition transition", reflecting their appearance in parallel with demographic transition (from high fertility, low life-expectancy to low fertility, high life-expectancy) and epidemiologic transition (from infectious to non-communicable disease) (2).

This issue of Nutrition News for Africa summarizes two published papers which describe these recent changes in the nature of nutrition problems in Africa. A review paper by William Bosu, published in the *Proceedings of the Nutrition Society*, reviews evidence for the nutrition transition in Africa, including data on the prevalence of overweight, associated conditions, such as hypertension, and trends in dietary patterns and physical activity (3). A second paper, by Jaacks et al, published in the *Journal of Nutrition*, describes trends in the prevalence of underweight and overweight among women in urban and rural areas in low- and middle-income countries (4).

Methods

The Bosu paper was based on a presentation delivered at the Africa Nutritional Epidemiology Conference (ANEC VI) in 2014, in which the author reviewed evidence for the nutrition transition in sub-Saharan Africa (SSA). In particular, the author reviewed studies on the prevalence of obesity among adults and children, and associated chronic disease (hypertension and diabetes). The review also included evidence on dietary and lifestyle factors associated with the nutrition transition, including urbanization, availability of processed foods and fruits and vegetables, and physical activity.

Jaacks et al. analyzed data from 33 national surveys (29 of which were Demographic and Health Surveys) from low- and middle-income countries (19 from SSA). The researchers calculated the changes in the prevalence of underweight (BMI < 18.5 kg/m²) and overweight (BMI > 25 kg/m²) among nonpregnant women over two time periods (1990s to early 2000s, and early 2000s to late 2000s or early 2010s) and compared these trends between urban and rural areas.

Results and Conclusions

Bosu's review describes the rapid rate of urbanization of Africa, and suggests that this drives lifestyle changes likely to increase the risk of overweight. Evidence for dietary changes was presented from dietary studies suggesting a shift from a 'traditional' to a 'modern' diet; from FAO Food Balance Sheets (<http://faostat3.fao.org/home/E>), which indicate increases in available energy, fat, and protein; and from the WHO STEPS surveys (www.who.int/chp/steps/en/), which found that more than 75% of adults in 13 African countries consumed less than 5 fruit and vegetable servings per day. The STEPS survey also indicated high levels of physical inactivity, which was consistent with the limited literature on physical activity in Africa. In addition to the increasing prevalence of overweight and obesity, the available evidence suggests an increasing prevalence of associated chronic diseases, such as hypertension and diabetes.

In the analysis by Jaacks et al., the prevalence of underweight decreased during both time periods (1990s to early 2000s, and early 2000s to late 2000s or early 2010s). However, in SSA, the rate of decrease of underweight in urban compared to rural areas varied by country (i.e., in some countries, the decrease was greater in urban areas, but in others, the decrease was greater in rural areas). Three countries (Senegal, Madagascar, and Mali) had relatively large increases in underweight during the second time period. In contrast, the prevalence of overweight increased in most countries over both time periods, in both urban and rural areas. In SSA, the prevalence of overweight was greater and was increasing more rapidly in the urban areas.

Overall, both papers provide evidence for the increasing trend of obesity (and associated morbidities) in Africa and highlight the need to address this in research agendas, nutrition program priorities, and the health care system as a whole.

Program and Policy Implications:

These papers emphasize that nutrition professionals working in Africa should not ignore issues of overnutrition and chronic disease. Bosu points out that "West Africa faces immense challenges that limit its ability to manage the growing nutrition transition and its consequences". The trends highlighted by Bosu (2) and Jaacks et al (3) have important implications for resource allocation; namely, that additional resources are needed to address the growing burden of overweight and chronic disease. The finding that underweight is still prevalent, and has even increased recently in some settings, also suggests a need to develop context-specific strategies. Improved intra- and inter-sectoral collaboration is required to prevent the increase in overweight and obesity and the related noncommunicable disease burden.

NNA Editor's Comments:

Nutrition transition is affecting many African countries. However, these papers should not be interpreted to suggest diverting resources from one problem to another, but to call for increased

investment in nutrition as well as the health service infrastructure to meet the increasing demands. A paradigm shift is needed in the nutrition and public health community to identify approaches to prevent undernutrition and micronutrient deficiencies along with overweight and noncommunicable diseases.

While the increases in the prevalence of overweight are clear (4,5), available data on the associated trends in dietary patterns, physical activity levels, and noncommunicable disease prevalence are available mainly from small studies or indirect sources. Thus, research is needed to better characterize dietary patterns and physical activity, and changes in these over time, to identify and test strategies to prevent both under- and over-nutrition in the context of Africa.

*These comments have been added by the editorial team and are not part of the cited publication.

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