Beginning a discussion of nutrition and health disparities\textsuperscript{1,2}

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In 2005, the American Society for Nutrition (ASN) created a Minority Affairs Committee (MAC). The goal of the committee is to enhance the participation of scientists from minority groups in the activities of the ASN. Because of the marked disparities in health conditions between white Americans and ethnic minority groups, the MAC also aims to promote scholarly interaction in the area of nutrition in health disparities. To that end, in 2010, the MAC held its first symposium at Experimental Biology. The goal of the symposium was to begin a discussion within the ASN of the role of nutrition in disparities in health status between whites and ethnic minority communities in the United States.

Disparities in health between white Americans and ethnic minority groups were first addressed in the 1985 report of the Secretary of the US Department of Health and Human Services’ task force on black and minority health (1). The report stated that, although the overall health of the US population had improved, and life expectancy had significantly increased, the life expectancy and health of ethnic minority groups such as African Americans, Latinos, and American Indians still lagged behind that of whites in conditions including obesity, diabetes, and heart disease, which are conditions that are influenced by nutrition and diet-related behaviors. More than 20 y later, the nation’s health continues to improve, but many of the same disparities remain (2). Healthy People 2010 and 2020 include eliminating health disparities as an overarching goal (3, 4).

In particular, compared with white Americans, African Americans, Latinos, and American Indians have higher rates of obesity and a higher prevalence of and poorer outcomes for a number of chronic diseases including diabetes, hypertension, cardiovascular disease, and certain cancers (5, 6). Pacific Islanders also have higher prevalence of some chronic diseases including diabetes (7). Although most ethnic minorities have a higher prevalence of overweight and obesity, Asian Americans tend to have lower body weights, but there is some evidence that they may have higher risk of some diseases at lower body weights. For example, an analysis of data from the Behavioral Risk Factor Surveillance Survey found that, although Asian Americans had the lowest mean body mass index (BMI), when adjusted for age, sex, and BMI, they had a higher risk of diabetes than did white Americans (7).

The reasons for these disparities are unclear because a variety of factors (ie, social, environmental, and biological factors) seem to play a role. Most of the research on nutrition and health disparities has focused on the cultural, socioeconomic, and structural differences in ethnic groups. Some of the nutrition-related health disparities between white Americans and ethnic minority groups are due to socioeconomic status as measured by income and education (8, 9). However, even when socioeconomic status is controlled for, disparities remain. Neighborhood and other environmental factors, as well as differential access to health care, also influence health status (10). However, research on the genetic and biological bases for these disparities has been limited. It is possible that a variation in diet, behavior, and the social and physical environment by ethnic groups may differentially influence gene expression (11, 12). Only with a greater understanding of the determinants of these inequities can health disparities be fully addressed.

In this context, we can examine potential determinants of health disparities through the lens of the socioecologic model. This model considers the characteristics of the individual and the multiple levels of the individual’s physical and sociocultural environment that can influence health and health behaviors (13). The socioecologic model we considered has 5 levels as follows: 1) intrapersonal (individual), 2) interpersonal, 3) institutional, 4) community, and 5) policy. Much work in nutrition focuses on the intrapersonal level, but if we only consider individual characteristics, we miss part of the picture that is often necessary for developing successful interventions. Behavior-change interventions can be more successful when all levels of the model are addressed (14).

The core of the socioecologic model is the intrapersonal (individual) level. This can include the biological as well as psychosocial characteristics that influence behavior, such as knowledge, attitudes, beliefs, and skills. The interpersonal level suggests that individuals are influenced by the social environment that includes family, friends, and peers. Factors to consider in this level include culture, social networks, norms, and support. The institutional level includes organizations within the community that include schools, churches, health care institutions, and worksites. A community in the next level can be people grouped together by geography, but it can also result from shared characteristics such as ethnicity or common interests (15). It can also include relationships among organizations. The final level is policy, which includes policies at all levels of government that directly or indirectly influence health and health behaviors. Policy initiatives

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First published online March 9, 2011; doi: 10.3945/ajcn.110.003459.
such as food stamps and Women, Infants, and Children programs have resulted in improved health for women and children (16–18).

For this first symposium, we chose to feature an aspect of health disparities in the following 4 broad ethnic groups: Latinos, African Americans, Asian Americans, and American Indians. The articles discussed different aspects of health disparities as they related to the socioecologic model. However, there are subgroups within each of these ethnic minority groups that may have different characteristics in terms of diet, chronic disease prevalence, and other health-related factors (19). More examination of these subgroups is needed.

The article by Perez-Escamilla (20) examined nutrition and acculturation in Latinos, which is a topic that cuts across all 5 levels of the socioecologic model. Acculturation influences a person’s beliefs and behaviors, their interpersonal relationships, their interactions with communities, and how they are affected by policy. Perez-Escamilla (20) described acculturation’s influences on diet and physical activity, obesity, and diabetes. He ended with a description of an intervention that addressed the different levels of the model.

Asians characteristically have lower BMIs than other ethnic groups in the United States but a higher percentage body fat and risk of cardiovascular disease that white Americans. Wang (21) reviewed the literature and examined differences between Asians and whites in the United States. Data on this topic are limited; hence, this article focused on health disparities at the intrapersonal level.

An increasing number of studies have documented a high prevalence of vitamin D deficiency in the United States, and the prevalence is even higher in African Americans (22). In our symposium, Harris (23) presented emerging data on the possible connection of vitamin D to higher rates of cardiovascular disease and diabetes in African Americans. With the evidence currently available, this topic centers on the intrapersonal level but has implications for the community level because people may reduce their potential for vitamin D production by staying inside because of issues of safety and walkability in minority neighborhoods (24).

Gittelsohn and Rowan (25) reported a series of interventions that focused on changing the food environment in American Indian communities to facilitate a dietary change as it relates to diabetes and obesity. Their work touched all levels of the socioecologic model, especially community and policy levels.

Each author concluded with recommendations for future research on some of the issues related to health disparities in these populations. These articles will add to the growing discussion of how to understand and address the nutritional aspects of health disparities in the United States. As the evidence for the determinants of these nutrition-related health disparities grows, it will be important to consider the contribution of each level of the socioecologic model to meet the Healthy People goals of eliminating these disparities.

We thank the symposium presenters, the members of the MAC, the ASN staff who support the MAC, the symposium sponsor DSM Nutritional Products Inc, and the scientific planning committee.

The authors’ responsibilities were as follows—KJL and OIB designed, drafted, and reviewed the manuscript and approved the final manuscript. Neither of the authors had a conflict of interest.

REFERENCES


