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Using a biocultural approach to examine migration/globalization, diet quality, and energy balance

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HIGHLIGHTS

- Globalization/migration influence diet quality, energy balance, and dietary recommendations.
- Globalization is linked with the nutrition transition, and the adoption of a more Western diet.
- The impact of globalization/migration on dietary change varies across settings and populations.
- New conceptual models are needed to examine transnational processes that shape diet.
- Critical biocultural approaches can be used to examine globalization/migration and diet change.

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ABSTRACT

The aim of this paper is to examine the role and impact that globalization and migration (e.g., intra-/intercontinental, urban/rural, and circular) have had on diet patterns, diet quality, and energy balance as reported on in the literature during the last 20 years. Published literature from the fields of anthropology, public health, nutrition, and other disciplines (e.g., economics) was collected and reviewed. In addition, case studies from the authors' own research are presented in order to elaborate on key points and dietary trends identified in the literature. While this review is not intended to be comprehensive, the findings suggest that the effects of migration and globalization on diet quality and energy balance are neither lineal nor direct, and that the role of social and physical environments, culture, social organization, and technology must be taken into account to better understand this relationship. Moreover, concepts such as acculturation and the nutrition transition do not necessarily explain or adequately describe all of the global processes that shape diet quality and energy balance. Theories from nutritional anthropology and critical bio-cultural medical anthropology are used to tease out some of these complex interrelationships.

1. Introduction

Bogotá, Colombia, like other metropolises throughout the world, is a city of great contrasts. New buildings of glass and steel that spiral up to the sky abound in the backdrop of the magnanimous Andes Mountains. The Transmilenio, a rapid transit bus system, shuttles 1.4 million "Bogotanos" along its 84 km (54 miles) of four-lane arteries throughout the expanding city, reducing travel time by nearly one-third. Cars and taxies clog up the streets and avenues while street vendors sell fresh produce from horse-drawn carts. Malls, box stores, global fast food chains, and mega-supermarkets are interspersed between bodegas and bakeries. On the one hand, sustained economic growth in Colombia even during the global recession [8] has resulted in increasing economic prosperity among a growing middle class. On the other hand, poverty and hunger are ever present in Colombia's capital where multitudes of homeless and working poor struggle to survive. Throughout the city homeless people comb through trash in search of food or scrap-metal or beg or steal to make it through another day. Middle class and working poor families work harder and harder to make ends meet as the cost of living rises rapidly [31].

Colombians from the countryside continue to stream into Bogotá even as the 40 plus years of political instability and para-military and drug-cartel related violence have subsided [31]. Weather related events such as La Niña and climate change have resulted in increased flooding and mudslides, leaving thousands homeless [84]. About 1.5 million Colombians have been displaced and many of them are migrating from the rural areas to the big cities. In most cases, these internally displaced people (IDP) arrive in urban centers destitute, without land or money to survive. The Colombian government estimates the rate of

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food insecurity (i.e., lack of access to food of adequate quantity and quality obtained through socially-acceptable means) to be about 50% for IDPs [93].

While this scenario may play out in different ways, depending on the country, city, political and economic conditions, culture(s), geography, and climate, the Bogotá case underscores' the fact that globalization, migration, and climate change are having a significant impact on the lives of millions of people throughout the world.

The aim of this paper is to examine the role and impact that globalization and migration (e.g., internal/external, urban/rural, and circular) have had on diet patterns, diet quality, and energy balance as reported on in the literature during the last 20 years. Published literature from the fields of anthropology, public health, nutrition, and other disciplines (e.g., economics) was collected and reviewed. In addition, case studies from the authors' own research are presented in order elaborate on key points and dietary trends identified in the literature. While this review is not intended to be comprehensive, the findings suggest that the effects of migration and globalization on diet quality and energy balance are neither lineal nor direct, and that the role of social and physical environments, culture, social organization, and technology must be taken into account to better understand this relationship. Moreover, concepts such as acculturation and the nutrition transition do not necessarily explain or describe all of the global processes that shape diet quality and energy balance. Theories from nutritional anthropology and critical bio-cultural medical anthropology are used to tease out some of these complex interrelationships.

1.1. Ecological model for food and nutrition and critical biocultural perspective

Kandel et al. state that "food by virtue of its pivotal place in the human experience is, at once, a bundle of energy and nutrients within the biological sphere, a commodity within the economic sphere, and a symbol within the social and religious spheres" ([43]:1). Nutritional anthropology, with roots in medical and biological anthropology, is "explicit in its goal of [examining] the linkages between the biological significance of nutrients and the sociocultural and economic meaning of food" ([35]: 151). As Pelto et al. state, nutritional anthropologists study the way in which food use patterns and nutritional status are influenced by the interaction of social and biological factors ([62]: 2). Another way to think about this is that culture and the social and physical environment determine what foods are (and are not) consumed. These foods contain macro- and micro-nutrients, which, along with other factors such disease exposure, physical activity patterns, and mental health, influence nutritional status. In the end, through a chain of interactions, culture and environment shape biological functioning, which is reflected in human phenotypes and genotypes.

The influence of social class, race and ethnicity, and power and agency on biological functioning can be examined through the critical biological perspective, which borrows theory from biology and the social sciences (most notably from critical medical anthropology). This perspective incorporates the idea that biological functions become transformed socially [49] through political economic processes (e.g., global capitalism), and that social and economic inequalities and poverty become embodied in human biology. This theoretical framework is particularly useful when looking at globalization and migration in relationship to rising health disparities especially among those living in extreme poverty, the working poor, and even the middle class. Hence, a critical bio-cultural perspective provides a useful framework for examining the socio-cultural and political aspects of health [23,47].

In 1980, Jerome et al. proposed an ecological model for food and nutrition [41] which is still used today in nutritional anthropology and other fields. More recent bio-cultural perspectives that address sociocultural and biological dimensions of food and nutrition often borrow from this model [35]. Fig. 1 shows the redrawn ecological model of food and nutrition [62] in which global forces have proximal and distal

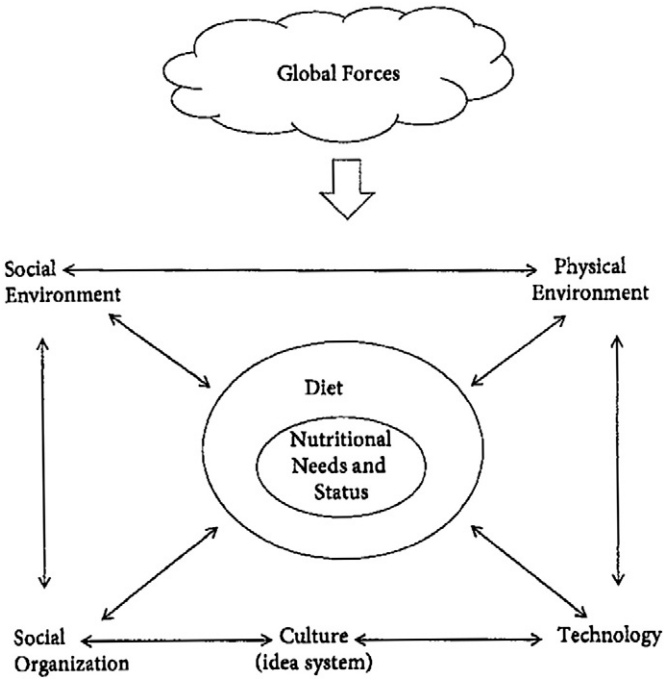

Fig. 1. An ecological model of food and nutrition. Excerpt from Pelto et al. [63].

effects on the physical (e.g., climate, water resources, flora and fauna) and social environments (e.g. societal, regional and community food systems), social organization (e.g., institutional and individual relationships), culture (idea systems such as knowledge and skills) and technology (e.g. industrial food system), as well as on the diet (e.g., food consumption patterns), and nutritional needs and status (e.g., diet quality, growth and development, immune function). The interactions among the domains are identified by the bidirectional arrows, indicating the bio-cultural nature of the conceptual model. Since the macro- and micro-level forces that shape diet are complex in the modern era and are interconnected with global capitalism and neoliberal economic policies, migration, and culture, the ecological model of food and nutrition and the critical bio-cultural perspective are ideal theoretical frameworks for examining changes in diet, diet quality, and energy balance among contemporary populations.

1.2. Definition of variables

Since the meaning of the main variables (as concepts and measures) examined here varies across disciplines, it is worthwhile to discuss them before moving onto the rest of the paper. These include: globalization, migration, diet quality, and energy balance.

1.2.1. Globalization

Globalization has been defined as a process of increasing interconnections and linkages, within societies and across geography, due to improved communication and expanded world trade [81]. As a multidimensional phenomenon, globalization "can be broken down into numerous complex interrelated processes that have a dynamism of their own" ([88]: 2). For example, Appadurai [4] conceptualizes the process based on the relationships among five dimensions of global cultural flow: ethnoscapes, mediascapes, technoscapes, financescapes, and ideoscapes, and the Globalization and World Cities study Group and Network (GaWC) have identified four spheres of transnational activities and transactions that constitute globalization processes: economic, cultural, political, and social [37,82]. The dynamic interactive processes of globalization can be examined in the context of the distal and proximal domains of the