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Research report

The social distribution of dietary patterns. Traditional, modern and healthy eating among women in a Latin American city ☆

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ABSTRACT

Popkin's nutrition transition model proposes that after the change from the traditional to the modern dietary pattern, another change toward "healthy eating" could occur. As health-related practices are associated with social position, with higher socioeconomic groups generally being the first to adopt public health recommendations, a gradient of traditional–modern–healthy dietary patterns should be observed between groups. The objectives of this article were: 1) to describe the dietary patterns of a representative sample of adult women; 2) to assess whether dietary patterns differentiate in traditional, modern and healthy; and 3) to evaluate the association of social position and dietary patterns. We conducted a survey in Tijuana, a Mexican city at the Mexico–United States (US) border. Women 18–65 years old (n = 2345) responded to a food frequency questionnaire, and questions about socioeconomic and demographic factors. We extracted dietary patterns through factor analysis, and employed indicators of economic and cultural capital, life course stage and migration to define social position. We evaluated the association of social position and dietary patterns with linear regression models. Three patterns were identified: "tortillas," "hamburgers" and "vegetables." Women in a middle position of economic and cultural capital scored higher in the "hamburgers" pattern, and women in upper positions scored higher in the "vegetables" pattern. Economic and cultural capitals and migration interacted, so that women lower in economic capital having lived in the US were associated with higher scores in the "hamburgers" pattern.

Introduction

Throughout history, changes in processes of food production, distribution and trade have been accompanied by modifications in dietary patterns. In recent times, industrialization and globalized markets have led to a nutrition transition (Popkin, 1993), where a diet based on grains and starchy food gave way to the modern food pattern including a high consumption of saturated fats, sugars, processed food and those of animal origin. Another component of this transition is globalization, where local products are replaced by food from all parts of the world, and nontraditional, brand name food and fast food replaces the local diet (Belasco, 2008; Hawkes, 2006). These changes, apparent in high as well as middle and low-income countries, can occur rapidly with urbanization or migration, and within the same country different patterns may coexist (Popkin, 1993; Popkin, Adair, & Ng, 2012; Rivera, Pedraza, Martorell, & Gil, 2014). While the nutrition transition is a well-established phenomenon, another component of Popkin's model has been less studied. In his 1993 publication relating demographic and economic transformations to patterns of food consumption the author also proposed that another change may arise, where the intention of preventing disease would increase consumption of foods considered as healthy. Since the modern diet is associated with an increment in the risk of noncommunicable diseases (Ezzati & Riboli, 2013; World Health Organization, 2011), understanding the factors associated with its adoption, and with the possible transition to a healthier diet, becomes an important public health objective.

Health-related practices are carried out in specific sociohistoric contexts, which provide their conditions of possibility and are distributed differentially across social groups (Cockerham, 2013; Williams, 1995). In general, those higher in social position are the first to access innovations in health, as well as to adopt public health recommendations for a healthy lifestyle. Differential practices, in turn, result in a social gradient of risk and protective factors which mostly favors the better-off (Cockerham, 2005; Link & Phelan, 1996; Rubin, Clouston, & Link, 2014; Rubin, Colen, & Link, 2010). As happens with other health-related practices, dietary habits should be expected to differ between social groups. Supporting this notion, an association between higher economic and educational levels and

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dietary consumption following nutritional guidelines has been found (Arruda et al., 2014; Lenz et al., 2009; Mullie, Clarys, Hulens, & Vansant, 2010; Rezazadeh, Rashidkhani, & Omidvar, 2010). In middle income countries, which in the past few decades have undergone an accelerated nutrition transition, the change has been uneven, with malnutrition and obesity coexisting (Popkin et al., 2012; Rivera et al., 2014). In these countries, some studies show that people with better social position consume less of the traditional local foods, and more of the modern, globalized ones (Arruda et al., 2014; Oseguera, 2003). However, the association between eating habits and social position is still unclear, as studies of the social distribution of dietary patterns have mainly been conducted in high-income countries.

Using data from a survey of women's health-related practices in an urban, Latin American context, the objective of this article was to explore the socially differentiated distribution of dietary patterns. Our specific aims were:1) to describe the dietary patterns of a representative sample of adult women; 2) to assess whether dietary patterns differentiate in traditional, modern and healthy; and 3) to evaluate the association of social position and dietary patterns. For the purposes of this article, we defined "traditional" as a diet low in processed, industrialized and global food, and composed mainly of traditional food and local products. We defined "modern" as the consumption of globalized, processed, high caloric content food. Finally, we defined "healthy" as food recommended by current dietary guidelines, including fresh fruit and vegetables, high-fiber content and less fat and sugar. Below, we detail the elements of social position that were considered for the analysis, and our hypotheses regarding each of them.

Economic and cultural capital

Pierre Bordieu's work (Bourdieu, 1984) provides a framework for understanding the relationship between social position and health-related practices (Abel & Frohlich, 2012; Williams, 1995). According to Bourdieu, as a result of differential access to resources, as well as socially constructed predispositions, members of a social class tend to share common practices. Resources, in the form of "capitals," define class membership, as members of a social class share a common position in the space defined by their possession. Bourdieu distinguishes between social capital, consisting of resources accessible through belonging to social groups; economic capital, composed of assets and monetary resources; and cultural capital, which includes both knowledge and the credentials (degrees) that validate knowledge. The different types of capital can potentiate each other or interact in various ways, conditioning differentiated practices (Abel & Frohlich, 2012). Economic and cultural capital are components of social position which would independently be expected to be associated with the adoption of healthier practices (Cockerham, 2005; Link & Phelan, 1996), but their combined effect in this regard could also be synergistic (Abel & Frohlich, 2012).

In this article, we assessed the association of economic and cultural capital and dietary patterns. Our hypotheses were that a gradient would be observed where women with lower capital would consume the traditional pattern, women in an intermediate level would consume the modern pattern, and those with more capital would consume the healthy pattern. We also hypothesized there would be a synergistic interaction between economic and cultural capital in this relationship.

Life course

Life course refers to stages through which the individual passes along life, defined not just by age, but also by the social and cultural context (Hunt, 2005). The transitions from one stage to another may be accompanied by changes in dietary practices (Devine, 2005). Studies show in general that the consumption of industrialized and fast food reaches its highest point in adolescence and young adulthood, and decreases afterwards (Barquera et al., 2008; Paeratakul, Ferdinand, Champagne, Ryan, & Bray, 2003). In contrast, the consumption of fruits, vegetables and other "healthy foods" increases with age (Bezerra et al., 2014; Lenz et al., 2009; Rezazadeh et al., 2010). Other elements of the life course, in addition to age, can affect diet, among them are pregnancy (Olson, 2005), family structure and the position of women in it (Devine, Connors, Bisognia, & Sobal, 1998; Devine & Olson, 1991), health status and employment (Brown, Smith, & Kromm, 2012; Elstgeest, Mishra, & Dobson, 2012).

According to the above, our hypotheses were that younger women and those in positions of less family responsibility would tend to consume the traditional food pattern, while older women and/or those with more family responsibility would preferably consume the healthy pattern.

Migration

Migration from less developed countries and regions, to the more developed, is generally associated with changes akin to those of the nutrition transition (Holmboe-Ottesen & Wandel, 2012; Popkin & Gordon-Larsen, 2004). However, there are differences according to the conditions in which migration occurs. Migrants in better social position take advantage of the food possibilities at the destination site, and usually they have already been exposed to the modern diet at their places of origin (Anonymous, 2014; Perez-Cueto, Verbeke, Lachat, & Remaut-De Winter, 2009). Migrants with less resources may experience a rapid nutrition transition (Holmboe-Ottesen & Wandel, 2012) or food insecurity (Bojorquez et al., 2014; Reyes, Nazar, Estrada, & Mundo, 2007), and those from rural areas, when they arrive to urban areas, may maintain a traditional pattern (Bowen et al., 2011).

The city where this research was conducted, Tijuana, is located in Northern Mexico, a region with the lowest consumption of fruits and vegetables, and the greatest of food of animal origin in the country (Ponce et al., 2014). Tijuana also has one of the highest rates of internal migration in Mexico, and it is a city of passing for migrants heading to the US. More than 40 million annual border crossings (del Castillo, Peschard-Sverdrup, & Fuentes, 2007) account for the intense relationship between the city and the neighboring state of California, US, and some of Tijuana's inhabitants live essentially transborder lives with daily activities on both sides of the border. In this way, Tijuana can be described as an in-between place in a Mexico–US gradient of customs (Valenzuela, 2003).

Given the above, our hypotheses were that internal migrant women (born in Southern Mexico) would tend to consume the traditional dietary pattern, while women born in Tijuana, as well as those with a closer relation to the US (having lived in that country or crossing the border frequently), would tend to consume the modern pattern. Based on previous qualitative data which showed that the association between migration and diet varied according to the social context (Anonymous, 2014), we explored interactions between indicators of economic and cultural capital, and migration.

Methods

Sample design and selection

In 2014, we conducted a representative survey of adult women in Tijuana. The probability sample design started with selection of Basic Geographic Statistical Areas (AGEB), stratified by level of deprivation (low/middle/high). From each AGEB, blocks were randomly selected, and all households in each block were visited. When more than one eligible woman lived in the household, the respondent was selected randomly. Eligibility criteria were 1) being 18 years of age

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