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Health status, health behaviors, and acculturation factors associated with overweight and obesity in Latinos from a community and agricultural labor camp survey

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Abstract

Background. U.S. Latino adults have experienced an 80% increase in obesity in the last decade.

Methods. A cross-sectional survey of 18–64-year-old Latino women ($N = 380$) and men ($N = 335$) from a community sample, and men ($N = 186$) from an agricultural labor camp sample in Monterey County, California, provided data on correlates of obesity.

Results. In the community and labor camp samples, prevalences of chronic disease risk factors (high blood pressure and cholesterol, diabetes) were 1.5–7 times higher in the heaviest compared with the leanest weight groups. Higher acculturation (generational status, years lived in the United States) was the strongest correlate of obesity (measured by BMI) in the community sample ($P < 0.001$), followed by less exercise and poorer diet (P values < 0.05). Women who exercised <2.5 h/week, watched TV regularly, ate chips/fried snacks, and ate no fruit the previous day were 45 lbs heavier than women with healthier habits. Men who did not exercise, rarely trimmed fat from meat, and ate fried foods the previous day were 16 lbs heavier than men with healthier habits. Discussions with health care providers about diet/exercise were associated with more accurate weight perception and more weight loss attempts in obese participants in both samples.

Conclusions. The associations of acculturation, exercise, and diet to BMI implicate societal as well as individual contributors to obesity among U.S. Latinos.

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Introduction

Obesity is a major public health concern primarily due to its well-recognized association with important chronic disease conditions, including heart disease, stroke, diabetes, hypertension, elevated blood lipids, osteoarthritis, and cancer [1–6]. Data from the National Health and Nutrition Examination Surveys indicate that, despite these multiple health risks, the prevalence of obesity in the United States has increased over 50% between the 1970s and 1990s in the adult population [7]. Surveillance by CDC and state health departments between 1991 and 1998 suggests that steady increases have occurred in all states and for both sexes, and across all age, ethnic, education, and smoking status groups [8]. These data also show that the largest increases in obesity have been among Latinos, whose rates increased from 12% to 21% (almost an 80% increment) over the 7-year period. In addition, increases in class 3 obesity defined as body mass index (BMI) ≥ 40 were greatest, four- to fivefold, in Latina women between 1990 and 2000 [9]. Such trends are of particular importance given that Latinos are the largest and fastest growing ethnic minority group in the United States. Projections indicate that by the year 2050 the proportion of Latinos will more than double to comprise about 25% of the United States population [10]. It is the

state of California, from which the present study cohort was drawn, that has among the largest proportion of Latinos (32%).

Given the trends described and their potential impact on health, we examined correlates of obesity, including other chronic disease risk factors, in a sample of Latinos who participated in a survey of health behaviors and screening practices in Monterey County, California. Among those who were obese and could benefit most from interventions, we further explored the relationship between obesity and the impact of health care provider discussions about diet and exercise. The primary goals of our analyses were to identify specific correlates of obesity within the Latino population and to elucidate potential avenues for obesity education and intervention programs.

Previous studies of Latinos have indicated that sociodemographic characteristics and level of acculturation may play important roles in the development of obesity [11–18]. However, few or none have examined the specific contribution of health behaviors, including diet and exercise, to obesity within the Latino population. Limited data also are available on the extent to which health care providers discuss healthy behaviors that can lower risk among Latinos who are obese [19]. Our study builds on past studies by (1) identifying acculturation factors, sociodemographic characteristics, and health behaviors that are most strongly associated with being overweight and obese in Latinos, (2) examining the relationship between chronic disease risk factors and obesity, and (3) examining the possible role of health care providers in efforts at interventions on obesity. We examine these relationships among women and men from a community sample and among men from an agricultural labor camp sample who are medically underserved and underrepresented in epidemiological surveys.

Methods

Study design and population

A cross-sectional survey aimed at identifying and comparing cancer-related risk factors and screening practices among Latinos of predominantly Mexican origin was conducted in Monterey County, California, between July and December 2000. Invited participants were 18–64 years old and were sampled from: (1) urban and rural census tracts of the county using random-digit dialing, given that preliminary household canvassing indicated that almost 100% of residents had telephones (the community sample), and (2) 29 agricultural labor camps using door-to-door canvassing of randomly selected households (the labor camp sample). These approaches assured inclusion of residents often missed in surveys of this kind and provided a cross-section of the population at large, given the high study response rates (87% and 98% in the community and labor camp samples, respectively).

Interviews eliciting self-reported data were conducted either in English or in Spanish (Spanish was used in 35% of the community and 98% of the labor camp interviews) by bilingual women using a 166-item instrument similar to that developed for the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveys. Human subjects approval for the study was granted by the appropriate university Institutional Review Board. Further details of the study design and sampling approach as well as descriptive characteristics of the surveyed population have been published [20].

Variable definitions

The following screening question, developed with the guidance of community members and health professionals in Monterey County, was used to determine ethnicity: "Are you of Mexican, Latino, or Hispanic background? This includes people who were born, or whose relatives were born in Mexico, Central America, or South America".

Weight categories were defined by BMI, calculated from self-reported measurements of weight in kilograms divided by height in meters squared. Three BMI groupings were created according to current standards: normal or underweight (BMI < 25 kg/m^2), overweight (BMI = 25–29.9 kg/m^2), and obese (BMI = 30+ kg/m^2). Study characteristics of interest with regard to their associations with overweight and obesity were:

(1) Perceived health status, doctor visits, and chronic disease risk factors—self-rating of general health on a 5-point scale from excellent to poor, number of doctor visits in the past year, diagnoses of high blood pressure, high cholesterol or diabetes, and number of such diagnoses reported.
(2) Sociodemographic factors—age in years, annual household income, education in years, occupation (skilled professional, semiskilled white collar or clerical, semiskilled blue collar, unskilled service or laborer, farm worker, homemaker, unemployed/student), and marital status (married/living as married, not married).
(3) Acculturation—years lived in the United States, generational status (foreign born, first generation U.S. born, second generation U.S. born), and primary language spoken at home (Spanish, English).
(4) Health behaviors:
    Exercise: Hours per week of moderate to vigorous physical activity at leisure or work, also dichotomized (no, yes) as meeting current guidelines of 30+ min per day of moderate to vigorous activity most days of the week (about 2.5 h per week).
    Television watching: Watches TV on a regular basis (no, yes).
    Dietary practices related to high fat, fast food, and fruit/vegetable consumption: Each of the following