



Racial/Ethnic Differences in Weight-Loss Strategies among US Adults: National Health and Nutrition Examination Survey 2007-2012



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ABSTRACT

Background Dieting, exercising, and seeking professional help have been associated with intentional weight loss among adults.

Objective This study examined the use of diet (eg, ate less, ate less fat, or switched to low-calorie foods), exercise, diet and exercise, and professional help (eg, weight-loss program or prescribed diet pills) for weight loss among non-Hispanic whites, Mexican Americans, and non-Hispanic blacks.

Design Cross-sectional data from the 2007-2012 National Health and Nutrition Examination Survey were used.

Participants Males and females (n=9,046) aged 20 to 65 years were included.

Main outcome measure The weight history questionnaire assessed weight-loss attempts and use of weight-loss strategies in the past year.

Statistical analyses performed Multivariate logistic regression models were used to estimate associations of race/ethnicity with strategies to lose weight. Models controlled for age, sex, education, and body mass index. In fully adjusted models, interactions of race/ethnicity by sex were tested.

Results Lower proportions of Mexican Americans (35%) and non-Hispanic blacks (35%) than non-Hispanic whites (39%) reported trying to lose weight. Among those who tried to lose weight, non-Hispanic blacks were less likely than non-Hispanic whites to use diet (odds ratio [OR] 0.78, 95% CI 0.67 to 0.90) or exercise (OR 0.83, 95% CI 0.70 to 0.99) for weight loss. Mexican Americans (OR 0.71, 95% CI 0.53 to 0.95) and non-Hispanic blacks (OR 0.71, 95% CI 0.52 to 0.95) were also less likely than non-Hispanic whites to use professional help for weight loss. The relationships between race/ethnicity and weight-loss strategy were stronger for females than males.

Conclusions Targeted efforts are needed to address racial/ethnic disparities in weight-loss attempts and use of recommended strategies especially among females.

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THE HIGH PREVALENCE OF OVERWEIGHT AND obesity among US adults is a major public health concern.¹ Excess body weight is associated with chronic conditions, such as hypertension and diabetes.² Obesity and related comorbidities are disproportionately higher in Mexican Americans and non-Hispanic blacks than in non-Hispanic whites.^{3,4} Despite this, Mexican Americans and non-Hispanic blacks are less likely than non-

Hispanic whites to perceive themselves to be overweight.⁵⁻⁷ Evidence suggests that non-Hispanic blacks are less likely to attempt weight loss,^{8,9} and Mexican Americans who experience weight loss are at greater risk for weight regain compared to non-Hispanic whites.^{10,11} Thus, there is a need to better understand the weight-management strategies used by different racial/ethnic groups.

The American Heart Association/American College of Cardiology/The Obesity Society Obesity Guidelines and the 2015-2020 Dietary Guidelines for Americans recommend diet and exercise for weight loss.^{12,13} These strategies can reduce energy intake and increase energy expenditure, which help create an energy deficit resulting in weight loss. The simultaneous use of diet and exercise is more effective at producing longer-term weight loss than diet or exercise alone.^{14,15}

The American Heart Association/American College of Cardiology/The Obesity Society Obesity Guidelines also recommend use of professional help for weight loss.¹³

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Clinicians can consider referring patients to commercial weight-loss programs, as they have been shown to be efficacious for weight loss.¹⁶ Pharmacotherapy can also be prescribed to patients who are overweight with comorbidity or obese in conjunction with diet and exercise for weight loss.¹³ Eligible patients can also be advised on bariatric surgical treatment for obesity.¹³

Previous analyses of the National Health and Nutrition Examination Survey (NHANES) data have examined weight-loss efforts, but have not evaluated differences in use of recommended weight-management strategies between racial/ethnic groups.^{17,18} Understanding weight-management strategies in high-risk groups could help inform intervention efforts. The purpose of this study was to examine the prevalence of attempting to lose weight; the use of diet, exercise, diet and exercise, and professional help for weight loss; and sex differences in the relationship between race/ethnicity and weight-loss strategy among non-Hispanic whites, Mexican Americans, and non-Hispanic blacks.

METHODS

Data are from the 2007–2012 NHANES.¹⁹ NHANES is a cross-sectional study examining the health and nutrition of children and adults in the United States. It collects data related to demographics, health, and health behaviors. NHANES employs a complex and multi-stage stratified probability cluster sample design to obtain a nationally representative sample of the non-institutionalized US civilian population.

The study sample included adult participants 20 to 65 years of age who were non-Hispanic white, Mexican American, and non-Hispanic black (n=10,826). A total of 1,780 participants were excluded because of incomplete data on the variables of interest (ie, education, body mass index (BMI; calculated as kg/m²), and whether they had tried to lose weight in the past year). Compared with adults in the analytical sample, individuals in the excluded sample were younger and less likely to be college graduates and to have a normal BMI. The final analytic sample included 9,046 adults.

Measures

Weight-Loss Strategies. Participants were asked to self-report whether they had intentionally tried to lose weight in the past year, “During the past 12 months, have you tried to lose weight?” Participants who responded “yes” were categorized as trying to lose weight and further asked, “How did you try to lose weight?” Weight-loss strategies were categorized into four categories: diet (ie, ate less to lose weight; switched to foods with lower calories; ate less fat to lose weight; skipped meals; ate diet foods or products; used a liquid diet formula; drank a lot of water; followed a special diet; ate fewer carbohydrates; ate more fruits, vegetables, salads; changed eating habits; or ate less sugar, candy, and sweets); exercise (ie, exercised to lose weight); diet and exercise; and professional help. The professional help category was based on two separate questions: (1) “How did you try to lose weight?” Responses for “joined a weight-loss program” and “took diet pills prescribed by a doctor” were included, and (2) “Did you seek help from a personal trainer, dietitian, nutritionist, doctor or other health professional to lose weight?”

Race/Ethnicity. Participants were asked to report their race/ethnicity. The survey categorized individuals as non-Hispanic white, Mexican American, and non-Hispanic black. Individuals from other racial/ethnic categories were excluded due to small sample sizes.

Covariates. Sex was defined as male or female. Age was modeled categorically into 20 to 35, 36 to 50, and 51 to 65 years. Educational attainment was categorized as being less than a high school graduate, a high school graduate, and more than a high school education (some college/associates degree/college graduate). BMI was calculated from measured weight and height and categorized as normal weight (≥ 18.5 to <25), overweight (≥ 25 to <30), and obese (≥ 30).²⁰ Underweight individuals were excluded (BMI <18.5).

Analysis

Unadjusted means or frequencies and standard errors for all covariates were computed by race/ethnicity. Logistic regression models were used to estimate the likelihood of using weight-loss strategies by racial/ethnic group. Specifically, the likelihood of Mexican Americans and non-Hispanic blacks, compared with non-Hispanic whites, of using diet, exercise, diet and exercise, or professional help for weight loss, relative to not using that strategy for weight loss was estimated. Weight-loss categories were not mutually exclusive. All models were adjusted for age, sex, education, and BMI. In fully adjusted models, interactions of race/ethnicity by sex were tested.

All analyses were adjusted for sampling weights to account for the complex sampling design. SAS, version 9.4²¹ was used to carry out the descriptive and regression analyses.

RESULTS

Table 1 presents the distribution of participant characteristics by race/ethnicity. Mexican Americans and non-Hispanic blacks had the highest prevalence of obesity. Mexican Americans and non-Hispanic blacks had the lowest proportions of individuals who reported trying to lose weight in the past year.

Table 2 shows the results from the multivariable adjusted analysis of weight-loss strategies used by those who tried to lose weight in the past year. Compared with non-Hispanic whites, non-Hispanic black individuals were significantly less likely to use diet (odds ratio [OR] 0.78, 95% CI 0.67 to 0.90) or exercise (OR 0.83, 95% CI 0.70 to 0.99) as a strategy for weight loss. Also, compared with non-Hispanic whites, Mexican Americans (OR 0.71, 95% CI 0.53 to 0.95) and non-Hispanic blacks (OR 0.71, 95% CI 0.52 to 0.95) were less likely to use professional help as a strategy for weight loss.

Interactions were tested to examine whether sex moderated the relationship of race/ethnicity and use of weight-loss strategy. Interactions were significant ($P<0.05$) and associations were stratified by sex in **Table 3**. Specifically, relationships between race/ethnicity and use of diet, exercise, or professional help for weight loss were statistically significant for females but not males.

DISCUSSION

The results of this study demonstrate differences in attempting to control weight and in use of weight-loss

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