**Methods**

*Study Sample*

For this secondary analysis, we used data from the publicly available National Health and Nutrition Examination Survey (NHANES). The methods and design of NHANES have been described in detail elsewhere (Rothwell et al., n.d.). Briefly, NHANES is a nationally representative multi-stage probability sample conducted every two years by the National Center for Health Statistics and Centers for Disease Control and Prevention. In order to ensure representativeness, NHANES oversamples minority, low-income, and older individuals, although individuals of all ages are eligible to participate. The cross-sectional survey assesses a wide variety of health topics, including weight control behaviors, mental health, drug and alcohol use, and functional limitations, although specific questions vary according to participant age and year of interview. Surveys are completed in-person at NHANES mobile examination centers using audio computer-assisted self-interview systems. Additionally, trained NHANES staff conduct physical examinations of respondents, obtaining in-person measurements of weight, height, and waist circumference, among other biometrics. Response rates for the selected years ranged from 72 – 79%.

In the present study, we restricted our analyses to respondents age 18 and over in the 2007 (*N* = 4,625), 2009 (*N* = 5,001), and 2011 (*N* = 4,796) waves of NHANES. Although data for later waves (2013 - 2014 and 2015 – 2016) are available, the structure of the questionnaire assessing weight perception changed somewhat between 2011 and 2013, such that respondents in later years were asked only about weight loss behaviors, rather than both weight loss behaviors and behaviors to not gain weight. Because we were interested in both types of weight control behaviors, we focused on earlier waves of data.

**Measures**

*Weight Perception and Desired Weight*

After self-reporting their current weight, participants were asked two questions regarding weight perception: “Do you consider yourself now to be overweight, underweight, or about the right weight?” and “Would you like to weigh more, less, or about the same?” We operationalized two weight perception variables, weight consideration and desired weight, respectively, from responses to these questions.

Participants also self-reported their weight a year prior to the interview, and, if their previous weight was more than 10 pounds greater than their current weight, were asked if the change was intentional. Those who had not lost weight or had done so unintentionally were also asked if they had tried to lose weight or to not gain weight at any point in the past year and, if so, what methods they used to accomplish this (e.g. used laxatives, dieted, exercised). Due to a skip pattern in the survey, questions about weight control methods were not asked of participants who had lost weight unintentionally, had not tried to lose weight, or had not tried to not gain weight in the past year. We dummy coded a five-level weight action variable based on responses to weight control questions as lost weight intentionally, lost weight unintentionally, tried to lose weight (but did not), tried to not gain weight, and none of the above. Because no questions were asked about attempts to gain weight, individuals in the ‘none of the above’ category include both those who did not try to control their weight and those who tried to gain weight.

*Body Mass Index*

We used weight and height measured in the NHANES mobile clinics to calculate BMI using the formula weight in kilograms divided by height in meterssquared, and coded BMI category as follows: < 18.5kg/m2 as underweight, 18.5 – < 25 kg/m2 as normal weight, 25 – < 30 kg/m2 as overweight, 30 – < 35 kg/m2 as obesity, class I, 35 – 40 kg/m2 as obesity, class II, and ≥ 40 kg/m2 as obesity, class III.

*Outcomes*

Current depressive symptoms was assessed using the nine-item Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001). PHQ-9 scores range from zero to 27, with higher scores representing greater depression severity. Per scoring guidelines, we operationalized depression as a score of 10 or more, which roughly corresponds to moderate depression or greater (Kroenke et al., 2001). We operationalized smoking status as never (less than 100 cigarettes lifetime), former (more than 100 cigarettes lifetime but no longer smoking), and current (more than 100 cigarettes lifetime and currently smoking) smokers. Finally, we coded cannabis use as \_\_\_\_\_\_\_\_.

**Statistical Analyses**

To determine the strengths of association among weight consideration, desired weight, weight control, and BMI category, we first constructed a matrix of pairwise polychoric correlations between the four variables. We then computed unadjusted associations (Model 1) between weight consideration, desired weight, and weight control and each of the three outcomes (depression, binge drinking, and cannabis use) using binary and multinomial logistic regression for dichotomous and categorical outcomes, respectively. In Model 2, we adjusted for BMI category only, and in Model 3 further adjusted for race (), age category (), marital status (), education (), and household income (). Models for smoking and cannabis use were also adjusted for current depression. We fit models separately by sex, and, given the complex sampling methodology of NHANES, all analyses were adjusted for survey design. Data management and analysis were performed in R, version 3.6.1, and RStudio, version 1.2.5019 (R Core Team, 2019), using the RNHANES (Susmann, 2016) and dplyr (Wickham et al., 2015) packages for data management, the survey package (Lumley, 2004) for design-based analyses and the nnetpackage (Ripley & Venables, 2016) for multinomial logistic regression.

**Results**

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