



The relationship between obesity and psychiatric disorders across ethnic and racial minority groups in the United States

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ABSTRACT

Context: Epidemiologic studies of obesity have not examined the prevalence and relationship of mental health conditions with obesity for diverse ethnic and racial populations in the United States.

Objective: (1) To assess whether obesity was associated with diverse psychiatric diagnoses across a representative sample of non-Latino whites, Latinos, Asians, African-Americans, and Afro-Caribbeans; and (2) to test whether physical health status, smoking, sociodemographic characteristics, and psychiatric comorbidities mediate any of the observed associations.

Design: Our analyses used pooled data from the NIMH Collaborative Psychiatric Epidemiology Surveys (CPES). Analyses tested the association between obesity and psychiatric disorders in a diverse sample of Americans (N = 13,837), while adjusting for factors such as other disorders, age, gender, socioeconomic status, smoking and physical health status (as measured by chronic conditions and WHO-DAS scores) in different models.

Results: The relationship between obesity and last-year psychiatric disorders varied by ethnicity/race. The likelihood of having mood or anxiety disorder was positively associated with obesity for certain racial/ethnic groups, but was moderated by differences in physical health status. Substance-use disorders were associated with decreased odds for obesity in African-Americans.

Conclusions: The role of physical health status (as measured by chronic conditions and WHO-DAS scores) dramatically changes the pattern of associations between obesity and psychiatric disorders, suggesting the important role it plays in explaining differential patterns of association across racial and ethnic groups.

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1. Introduction

Obesity is an increasingly prevalent public-health problem with significant costs in the form of disease and premature death (Patterson, Frank, Kristal, & White, 2004), increased health-care costs (Wee et al., 2005), and social stigmatization (Latner, Stunkard, & Wilson, 2005). In addition, obesity causes or exacerbates many health conditions, both independently and in association with other diseases (Patterson et al., 2004). Recent data from the National Health and Nutrition Examination Survey (2003–2004) indicate that approximately 32.2% of adult Americans are obese (Ogden et al., 2006). Physical complications from obesity have been studied extensively, especially coronary heart disease, certain forms of cancer, and type 2 diabetes (Kopelman,

2000). However, there is much less known about the relationship between obesity and psychiatric disorders, and further, the role that ethnicity might play in impacting this relationship.

Weight is subject to a range of influences. Women are generally found to have higher rates of obesity than men, and many researchers attribute this to biological reasons (James et al., 2004; Halsam & James, 2005). Middle-aged and older adults also have higher rates of obesity (Hedley et al., 2004). Further, Latinos and African-Americans residing in the United States have higher rates of obesity than other racial or ethnic groups (Flegal et al., 2004; Hedley et al., 2004). Lower socioeconomic status is associated with obesity for a variety of reasons, including residing in neighborhoods which offer reduced opportunities for exercise and access to fresh healthy foods (Frank et al., 2004; Vandegrift & Yoked, 2004; Ford & Dzawaltowski, 2008).

1.1. Obesity and psychiatric disorders

Past studies comparing psychological functioning in obese and non-obese people have generated conflicting results, with some studies showing a positive relationship between obesity and psychiatric disorders (Carpenter, Hasin, Allison, & Faith, 2000; Crisp

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& McGuiness, 1976; Friedman & Brownell, 1995; Roberts, Kaplan, Shema, & Strawbridge, 2000; Roberts, Strawbridge, Deleger, & Kaplan, 2002) and other studies finding no association at all (11). A cross-sectional and prospective study of community residents 50 years and older yielded mixed results, with an overall conclusion suggesting an association between obesity and depression (Roberts et al., 2002). Some studies based on community surveys in the United States have found associations between obesity and depressive symptoms (Heo et al., 2006) and measures of psychological distress (Roberts et al., 2002). Some findings indicate sex differences in the relationship between obesity and depression, with positive associations among women and either negative or no association among men (Carpenter et al., 2000; Scott, Bruffaerts, et al., 2008; Scott, McGee, Wells, & Oakley Browne, 2008).

With regard to the association between obesity and anxiety, one study found low levels of anxiety in obese middle-aged men and women (Crisp & McGuiness, 1976). Another study concluded that obesity was related to more symptoms of anxiety in both non-Latino white and African-American women (Reed, 1985). In a recent prospective study of obese women and psychopathology, obesity at baseline was associated with a significant increase in odds for subsequent generalized anxiety disorder (Kasen, Cohen, Chen, & Must, 2008). Another recent study reported that obesity was associated with approximately a 25% increase in the odds of lifetime mood and anxiety disorders, and a 25% decrease in the odds of substance-use disorders, with significant variations across certain racial/ethnic groups (Simon et al., 2006).

Scott, Bruffaerts, et al. (2008) and Scott, McGee, et al. (2008) noted two important findings in their investigation of obesity–mental-disorder relationships among 13 countries: 1) there was an association between obesity (particularly severe obesity) and depressive disorders and anxiety disorders, but not alcohol-use disorders; and 2) the relationship between obesity and psychological disorders was confined to women. Simon et al. (2006) recently found that obese non-Latino whites were at increased risk for mood disorders compared to their African-American or Latino counterparts. In addition, obese Latinos were at an increased risk of anxiety disorders as compared to non-Latino white or African-American participants.

Overall, there is limited epidemiologic data that addresses the relationship between obesity and psychiatric disorders, especially anxiety and substance-use disorders, across a sample that represents the diverse racial and ethnic groups within the United States.

1.2. The present study

The present study is a secondary data analysis of the data from the Collaborative Psychiatric Epidemiology Surveys (CPES). The aim of this study is to examine if there is an association between obesity and psychiatric disorders in a representative United States sample, and to test whether those associations extend to specific mental disorders. The research reported here is one of the few studies to specifically look at the relationship between obesity and psychiatric disorders among ethnic or racial minority groups in the United States.

Unlike previous studies in this area, the CPES offers a level of specification that allows us to assess a number of specific disorders [e.g., generalized anxiety disorder (GAD), social phobia, agoraphobia without panic, panic disorder, and post-traumatic stress disorder (PTSD)] and their relationship with obesity, rather than being limited to aggregate disorder categories (such as “anxiety disorders”) or symptoms. The CPES data allow us to examine a potential relationship between psychiatric disorders and obesity, and to adjust for other indicators that may be important moderators, such as smoking and chronic conditions (Jia & Lubetkin, 2009; Lubetkin, Jia, Franks, & Gold, 2005; Muennig, Lubetkin, Jia, & Franks, 2006).

In addition, the sample consists not only of English speakers but also of speakers of other languages, which is more representative of

the diverse ethnic and racial groups living in the United States. Studies such as this one may further the scientific base and lead to the design of interventions better tailored for ethnic and racial minorities, thereby reducing some of the health disparities for these groups.

It was hypothesized that the relationship between obesity and psychiatric disorders such as depression and anxiety will be a strong positive association across all ethnic/racial groups represented in this study. This relationship may be stronger for females than for males in the sample. Further, it is hypothesized that obesity and substance-use disorders will have an inverse relationship across all the ethnic/racial groups represented in this study, even after adjusting for gender, age, household income, smoking and physical status as measured by chronic conditions, and WHO-DAS II scores. Selection of covariates was based on the published literature described previously. Covariates examined were age, gender, smoking, chronic conditions, and daily functioning.

2. Methods

2.1. Participants

The sample for the CPES dataset includes 4180 whites; 2554 Latinos; 2095 Asians; 3570 African-Americans; and 1438 immigrants of Afro-Caribbean heritage (total sample = 13,837), all adults 18 or older. The sampling frames and sample selection procedures are described in detail elsewhere (Heeringa et al., 2004).

2.2. Dataset

The CPES is unique in its ability to provide a large representative sample of diverse ethnic and racial minority groups (Colpe, Merikangas, Cuthbert, & Bourdon, 2004) uniform assessment of psychiatric diagnosis based on standardized measures, such as the Composite International Diagnostic Interview (Kessler & Ustun, 2004); and inclusion of other relevant sociocultural factors. We used the combined data set of the three large epidemiologic studies included in the CPES: the National Latino and Asian American Study (NLAAS) (Alegria et al., 2004), the National Comorbidity Survey Replication (NCS-R) (Kessler & Merikangas, 2004), and the National Survey of American Life (NSAL) (Jackson et al., 2004).

These studies collected epidemiologic information on mental health and substance disorders and service usage among the general population, with a special emphasis on ethnic minority groups in the NLAAS (Latino and Asian subgroups; Alegria et al., 2004) and NSAL (African-Americans and immigrant blacks of Afro-Caribbean heritage; Jackson et al., 2004). Non-Latino white comparisons are from the NCS-R (Kessler & Merikangas, 2004).

The University of Michigan Survey Research Center (SRC) collected data for the NLAAS, NCS-R, and NSAL studies using an adaptation of a multiple-frame approach to estimation and inference for population characteristics. This approach facilitated integration of design-based analysis weights to combine datasets as though they were a single nationally-representative study (Heeringa et al., 2004). Design and methodological information can be found at the CPES website (Heeringa, 2007). The sampling frames and sample selection procedures are described in detail elsewhere (Heeringa, 2007).

2.3. Procedures for data collection in diverse languages

Interviews for the studies were conducted by professional interviewers from the SRC. In the NSAL, interviewers were matched with respondents for race and ethnicity; for the NLAAS, interviewers were selected to accommodate the language preferences and match the cultural backgrounds of the sampled respondents. The majority of interviews were completed in person using a computer-assisted instrument. Interviewers attended extensive trainings and completed a

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