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## Personality disorders and body weight



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## ABSTRACT

We examine the impact of Axis II personality disorders (PDs) on body weight. PDs are psychiatric conditions that develop early in life from a mixture of genetics and environment, are persistent, and lead to substantial dysfunction for the affected individual. The defining characteristics of PDs conceptually link them with body weight, but the direction of the relationship likely varies across PD type. To investigate these links, we analyze data from Wave II of the National Epidemiological Survey of Alcohol and Related Conditions. We measure body weight with the body mass index (BMI) and a dichotomous indicator for obesity ( $BMI \geq 30$ ). We find that women with PDs have significantly higher BMI and are more likely to be obese than otherwise similar women. We find few statistically significant or economically meaningful effects for men. Paranoid, schizotypal, and avoidant PDs demonstrate the strongest adverse impacts on women's body weight while dependent PD may be protective against elevated body weight among men. Findings from unconditional quantile regressions demonstrate a positive gradient between PDs and BMI in that the effects are greater for higher BMI respondents.

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## 1. Introduction

This study examines the impact of Axis II personality disorders (PDs) on body weight. PDs are a class of psychiatric conditions that lead to diminished social functioning and impose substantial costs on both the disordered person and individuals with whom they interact. As defined by the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders*

(American Psychiatric Association, 2000), PDs are “pervasive, inflexible and enduring patterns of inner experiences and behavior that can lead to clinically significant distress or impairment in social, occupational, or other areas of functioning.” The psychiatric literature attributes the development of PDs to a confluence of genetics and early childhood (ages 0–3) environment (American Psychiatric Association, 2000; Yudofsky, 2005). Given that PDs manifest themselves early in life and are exceedingly difficult if not impossible to treat (American Psychiatric Association, 2000; Yudofsky, 2005), they are considered lifetime conditions. Unlike better-known Axis I conditions (e.g., depression, generalized anxiety, schizophrenia, bipolar disorder), being diagnosed with a particular PD implies a lifetime with the disorder. Some of the most common PDs

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among the general public include antisocial, borderline, narcissistic, and obsessive-compulsive.

Although defining features of PDs (described in detail in Section 2) conceptually link these disorders with body weight, empirical evidence is scant. To the best of our knowledge, only two studies examine PDs and body weight using nationally representative data (Mather et al., 2008; Petry et al., 2008). Findings from both studies indicate a positive correlation between body weight and having a PD with the magnitude and statistical significance of the relationships varying across specific PD types. Although these studies are important and interesting, several key questions remain unanswered. Specifically, both Mather et al. (2008) and Petry et al. (2008) regress PD outcomes on measures of body weight. Because PDs develop early in life and are persistent, however, the implied direction of causality in these studies is counter to the psychiatric understanding of PDs. Nothing in the psychiatric literature supports the hypothesis that body weight in adulthood leads to the development of PDs. Instead, PDs manifest early in life and thus predate adult body weight by many years. In addition, neither Mather et al. (2008) nor Petry et al. (2008) examine the full set of PDs recognized by the APA (schizotypal, narcissistic, and borderline PDs are not available in their data sets) nor do they consider heterogeneity across PD type. Moreover, these studies rely on self-reported weight and height without correcting for the potential measurement error contained in self-reports, particularly for overweight and obese individuals (Cawley and Burkhauser, 2006; Rowland, 1990).

The paucity of rigorous empirical research is surprising given that PDs are prevalent in society and obesity is a major public health concern. Statistics based on nationally representative community-based samples from the early 2000s suggest that 9–15% of American adults meet clinical PD criteria (Grant et al., 2004; Lenzenweger et al., 2007). Moreover, PDs are documented risk factors for poor health and health behaviors (Brent et al., 1994; Chen et al., 2008; Compton et al., 2005, 2007; Eaton et al., 2008; Grant et al., 2004; McWilliams et al., 2008; Pietrzak et al., 2007; Samuels, 2011; Skodol et al., 2002), and increased utilization of health care and social services (Feenstra et al., 2012; Gustavsson et al., 2011; Maclean et al., 2013; Samuels, 2011; Soeteman et al., 2008; Vaughn et al., 2010).

In 2010, 35.7% of adult men and 35.8% of adult women in the U.S. were obese (Flegal et al., 2012). Obesity is the second leading cause of preventable death and contributes to a host of morbidities including Type II diabetes, asthma, cancer, and heart disease (Dixon, 2010). As a result of these health problems, obesity raises annual health care costs by an estimated \$2741 per obese adult (\$190.2 billion per year overall) representing 20.6% of U.S. national health care expenditures (Cawley and Meyerhoefer, 2012). Moreover, obesity leads to lower productivity in the labor market (Baum and Ford, 2004; Cawley, 2004; Han et al., 2009) and the intergenerational transfer of obesity may result in spillover effects for future generations (Agras and Mascola, 2005). Thus, identifying important risk factors for obesity and leveraging this information to design effective health policies and health care interventions can improve

population health, reduce health care costs, and enhance labor market productivity.

## 2. Background on Axis II personality disorders

This section describes the etiology and common features of PDs, and discusses how these disorders are conceptually related to body weight.

### 2.1. Background on Axis II personality disorders

To be diagnosed with a PD, an individual must exhibit “an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual’s culture” (American Psychiatric Association, 2000). This pattern must manifest itself in at least two of the following ways: (1) cognition, (2) affectivity, (3) interpersonal functioning, and (4) impulse control. Furthermore, the pattern must be inflexible and pervasive across a broad range of personal and social situations; must lead to clinically significant distress or impairment in social, occupational, or other important areas of functioning; must be stable and of long duration, with onset traceable back to adolescence or at least early adulthood; and cannot be attributable to a manifestation or consequence of substance use, a medical condition, or another mental disorder.

The DSM divides PDs into three clusters. Cluster A, which incorporates a cognitive dimension (Paris, 2003), includes paranoid, schizoid, and schizotypal PDs. People with Cluster A disorders are often viewed as odd or eccentric, have abnormal cognitions or ideas, speak and act in strange ways, and have difficulty relating to others. Cluster B, which corresponds to externalizing dimensions (Paris, 2003), includes antisocial, borderline, histrionic, and narcissistic PDs. People with Cluster B disorders tend to act in dramatic, hostile, emotional, and erratic fashions; have difficulty with impulsive behavior; act out; and often violate social norms. Cluster C, which corresponds to internalizing dimensions (Paris, 2003), includes avoidant, dependent, and obsessive-compulsive PDs. People with Cluster C disorders are regularly anxious, fearful, and excessively afraid of social interactions and of feeling out of control. Appendix A offers a summary of the traits associated with each specific PD.

Based on their defining characteristics PDs could be related to body weight, and the relationships might differ across PDs. For example, borderline PD is associated with impulsivity. Persons affected by this condition may have problems with binge eating, which may increase body weight. Those who suffer from avoidant, schizoid, and schizotypal PDs shun activities that require personal interactions while those who suffer from paranoid PD are deeply distrustful of others. Persons affected by these conditions may avoid personal interactions and this may extend to exercise. Moreover, increased time in solitary activities may promote excess food consumption and corresponding weight gain.

Alternatively, specific PDs may protect against elevated body weight. Persons affected by dependent PD are easily hurt by criticism or disapproval and may maintain a healthy weight to prevent unwanted criticism. A defining

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