Personality and Individual Differences 56 (2014) 100–104

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Impulsivity mediates the association between borderline personality pathology and body mass index

Juliette M. Iacovino [a], Abigail D. Powers [a], Thomas F. Oltmanns [a,*]

Washington University in St. Louis, Psychology Department, Campus Box 1125, One Brookings Drive, St. Louis, MO 63130, USA

ARTICLE INFO

Article history:
Received 25 March 2013
Received in revised form 7 August 2013
Accepted 20 August 2013
Available online 11 September 2013

Keywords:
Borderline personality disorder
Personality pathology
Obesity
Body mass index
Impulsivity
Inhibitory control
Affective instability
Emotion dysregulation

ABSTRACT

Borderline personality disorder (BPD) is associated with obesity, a major risk factor for a number of chronic illnesses (e.g., cardiovascular disease). We examined whether impulsivity and affective instability mediate the association between BPD pathology and body mass index (BMI). Participants were a community sample of adults ages 55–64 and their informants. The Structured Interview for DSM-IV Personality measured BPD symptoms and the Revised NEO Personality Inventory measured self- and informant-report impulsivity and affective instability. Mediation analyses demonstrated that only higher self-report impulsivity significantly mediated the association between greater BPD pathology and higher BMI. A subsequent model revealed that higher scores on the impulsiveness (lack of inhibitory control) and deliberation (planning) facets of impulsivity mediated the BPD–BMI association, with impulsiveness exerting a stronger mediation effect than deliberation. Obesity interventions that improve inhibitory control may be most effective for individuals with BPD pathology.

1. Introduction

A large body of evidence shows that personality predicts important health outcomes (e.g., mortality, blood pressure, health perceptions) (Mroczek & Spiro, 2007; Powers & Oltmanns, 2012; Turiano et al., 2012). As such, researchers have become increasingly interested in identifying the affective and behavioral mechanisms by which personality processes impact health. Borderline personality disorder (BPD), characterized by pervasive emotional and behavioral dysregulation, is associated with elevated risk for chronic illnesses such as cardiovascular disease, type 2 diabetes, osteoarthritis, and hypertension, above and beyond the risk afforded by general personality pathology (El-Gabalawy, Katz, & Sareen, 2010; Flegal, Carroll, Ogden, & Curtin, 2010; Frankenburg & Zanarini, 2011; Powers & Oltmanns, 2012, 2013). Obesity is also associated with BPD and is a major risk factor for a number of these illnesses (e.g., type 2 diabetes, cardiovascular disease) (Flegal et al., 2010; Frankenburg & Zanarini, 2004, 2006, 2011; Powers & Oltmanns, 2013; Sansone, Wiederman, & Monteith, 2001).

Obesity is influenced by behavioral processes associated with personality (e.g., disinhibited eating) (Elfhag & Morey, 2008; Mobbs, Ghisletta, & Van der Linden, 2008; Provencher et al., 2008), and thus may play an important role in the association between BPD and chronic illness. Recent data supports this contention (Frankenburg & Zanarini, 2011; Powers & Oltmanns, 2013). Frankenburg and Zanarini (2011) followed individuals with BPD over 10 years and found that increases in body mass index (BMI) during this time predicted a greater likelihood of having medical problems, being on disability, and utilizing costly health care resources (Frankenburg & Zanarini, 2011). A recent study utilizing a subset of the current sample found that obesity mediated the association between BPD pathology and obesity-related chronic illnesses (i.e., diabetes, osteoarthritis, and asthma) (Powers & Oltmanns, 2013). Further specifying the nature of the association between BPD pathology and obesity has implications for understanding the development of chronic illnesses among individuals displaying BPD features.

BPD is composed of multiple maladaptive personality traits and is associated with a number of normal personality variants (e.g., neuroticism and conscientiousness) (Mullins-Sweatt et al., 2012). Particularly in community samples, BPD pathology may be associated with obesity through normal personality mechanisms, such as affective instability and impulsivity. These traits are independently associated with BPD pathology in both clinical and community samples (Tragesser & Robinson, 2009; Zanarini, Frankenburg, Hennen, & Silk, 2003), may account for differential features of BPD (Tragesser & Robinson, 2009), and are associated with obesogenic behaviors and weight status (Heatherton & Baumeister, 1991; Rieger et al., 2010).

Affective instability in the context of BPD refers to the tendency to experience rapid shifts in negative mood states in response to

* Corresponding author. Tel.: +1 314 935 6595.
E-mail addresses: jcmcclen@wustl.edu (J.M. Iacovino), adpowers@wustl.edu (A.D. Powers), toltmann@artsci.wustl.edu (T.F. Oltmanns).

0191-8869/$ - see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.paid.2013.08.028

events or challenges (APA, 2000; Koenigsberg et al., 2002). The affect regulation model of binge eating (Heatherton & Baumeister, 1991) posits that eating narrows cognitive focus away from aversive self-awareness to concrete behaviors, momentarily reducing negative affect. This process may promote both binge eating and other obesogenic eating behaviors, such as emotional overeating (Elfhag & Morey, 2008). Thus, affective instability may lead to weight gain as eating is used to cope with intense negative emotions (Rieger et al., 2010). No studies to date have directly examined the relationship between affective instability and obesity. Nonetheless, given the centrality of this construct to BPD and the body of evidence linking BPD pathology to BMI, it is important to clarify the associations among them.

Impulsivity is a multidimensional trait defined as the tendency toward deficient planning and control (Guerrieri, Nederkoorn, & Jansen, 2008). Impulsivity may impact weight by making it difficult for individuals to control habitual responses to food cues, and to plan and follow-through with healthy behaviors. The UPPS (Urgency, Premeditation, Perseverance, Sensation-Seeking) Impulsivity Scale was developed through a factor analysis of the Revised NEO Personality Inventory to encompass the major dimensions of impulsivity (Whiteside & Lynam, 2001), and is validated in clinical and community samples (Magid & Colder, 2007; Whiteside & Lynam, 2001; Whiteside, Lynam, Miller, & Reynolds, 2005). The four factors of the UPPS scales correspond to the following NEO facets: Impulsiveness (i.e., Urgency: the ability to control urges and delay gratification); deliberation (i.e., Premeditation: the tendency to think about and plan actions); self-discipline (i.e., Perseverance: the tendency to remain focused on a task); and excitement-seeking (i.e., Sensation-seeking: the tendency to pursue exciting activities).

In one study, the UPPS scales accounted for 64% of variance in BPD (Whiteside et al., 2005). Impulsiveness/urgency and self-discipline/perseverance have shown the strongest and most consistent associations with BPD pathology (Lynam, Miller, Miller, Bornovalova, & Lejuez, 2011; Tragesser & Robinson, 2009; Whiteside et al., 2005). In a large, 10 year longitudinal study of weight change over adult development, overweight and obese participants were found to be more impulsive and excitement-seeking, and less self-disciplined than normal-weight peers, with the impulsiveness facet showing the strongest association with overweight status (Sutin, Ferrucci, Zonderman, & Terracciano, 2011). Other studies have produced similar findings in relation to weight status (Mobbs, Crépin, Thiéry, Golay, & Van der Linden, 2010; Terracciano et al., 2009) and eating behavior (Elfhag & Morey, 2008; Mobbs et al., 2008). Studies have also found that impulsivity is predictor of success in weight loss treatment (Nederkoorn, Jansen, Mulkens, & Jansen, 2007; Sullivan, Cloninger, Przybeck, & Klein, 2007).

This is the first study to examine whether impulsivity and affective instability mediate the association between BPD pathology and BMI. Whereas most studies have relied on self-report questionnaires to measure personality, current analyses include both self and informant report of normal personality variants as informants provide an important and unique perspective on personality (Huprich, Bornstein, & Schmitt, 2011). To date most studies of BPD and obesity have focused on younger and clinical samples; the current study fills a gap in the literature by focusing on a community sample of older adults.

2. Methods

2.1. Participants and informants

Analyses include baseline data from a representative community sample 1630 adults (ages 55 and 64) residing in the St. Louis, Missouri area, who participated in a longitudinal study of personality, aging, and health (St. Louis Personality and Aging Network – SPAN) (Oltmanns & Gleason, 2011). Participants were recruited utilizing listed phone numbers that were crossed with census data in order to identify households with at least one member in the target age range. At baseline, each participant completed an assessment battery including a semi-structured diagnostic interview for personality disorders and self-report questionnaires. The research was approved by the Washington University in St. Louis Institutional Review Board and was carried out in accordance with the Code of Ethics of the World Medical Association.

Analyses included data from 1064 participants (mean age = 59.5 years; 62% female). Individuals were primarily excluded from present analyses because we did not begin collecting height and weight information until January 2009, resulting in missing baseline BMI data for the first 552 participants (34%). Additionally, fourteen individuals declined to provide weight data (<1%). One-third of participants identified as black ($N = 351$), 63.8% as white ($N = 679$), and 3.2% as other. Thirty-five percent of participants ($n = 373$) had a high school education or less, 54% ($n = 508$) completed a bachelor degree or higher. The majority of the sample was overweight (33.9%) or obese (42.1%).

Eighty-nine percent of all participants provided an informant. Twenty-eight percent of informants were black, 59% were white, and 13% identified as other. Participants reported knowing their informants for an average of 32 years. The majority of informants were significant others (45%), followed by other family members (e.g., sibling, child; 24.1%). The rest of informants were friends, neighbors, and co-workers. Half of informants resided with the participant.

2.2. Instruments

2.2.1. BPD pathology

BPD pathology was measured using the Structured Interview for DSM-IV Personality (SIDP-IV) (Pfohl, Blum, & Zimmerman, 1997), which is considered the "gold-standard" of personality disorder (PD) assessment. The SIDP-IV is a semi-structured diagnostic interview composed of 101 questions corresponding to DSM-IV criteria for the 10 PDs. Traits are rated on a 4-point scale ranging from 0 ("not present or limited to isolated examples") to 3 ("strongly present") based on the extent to which they have been present within the past 5 years. All interviews were video recorded and 265 interviews were randomly re-rated by independent observers. The inter-rater reliability of BPD diagnosis was ICC = .77. For analyses, the average of all BPD items was taken to create a mean score.

2.2.2. Mediators

Impulsivity and affective instability were measured with the Revised NEO Personality Inventory (NEO-PI-R) (Costa & McCrae, 1992). The NEO-PI-R is a 240-item questionnaire based on the five-factor model (FFM) of personality, and separates normal-range personality into 5 domains: Neuroticism, Conscientiousness, Agreeableness, Openness to Experience, and Extraversion. Each of these domains is further represented by 6 facets. Parallel forms of the NEO-PI-R were used for self and informant reports. Items are rated on a 5-point scale ranging from "strongly disagree" to "strongly agree."

Impulsivity scores were calculated by taking the average of NEO impulsiveness, excitement-seeking, deliberation (reverse scored), and self-discipline (reverse scored). Table 1 shows Pearson correlations between impulsivity facets. Significant correlations between facets ranged from .17 to .46 for self-report and .25 to .60 for informant-report (all p's < .001). Excitement-seeking and self-discipline were not significantly correlated. Cronbach's α is .80 for the self-report and .88 for the informant-report full scales. Cronbach's α of