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Subtyping eating disordered patients along drive for thinness and depression

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ABSTRACT

Subtyping individuals who binge eat by "diet-DT" and "depression" has yielded two valid and clinically useful subtypes that predict eating severity, comorbid psychopathology and outcome. The present study aimed to find four subtypes based on these dimensions and test their validity. Besides, it explored the distribution of eating disorder (ED) diagnoses across subtypes given their known heterogeneity, crossover and binge-eating fluctuation.

Cluster analysis grouped 1005 consecutively admitted ED adult women into four subtypes, those previously described "DT" (22%), "DT-depressive" (29%), and "mild DT" (25%) and "depressive-moderate DT" (24%). Overall "mild DT" presented lower and "DT-depressive" greater eating and comorbid psychopathology than the rest, whereas "pure DT" and "depressive-moderate DT" presented no differences on bulimic symptoms but in psychopathology ($p < .01$). Finally, while BN–P patients were mostly and similarly distributed in the "DT" and "DT-depressive" subtypes than in the other, AN were in the new "mild DT" and "depressive-moderate DT" ($p < .01$). However, BN–NP, BED and EDNOS were similarly represented across subtypes.

Results are discussed with regard to 1) the newly emerged subtypes that may explain cases in which DT prevents or does not predict binge eating; 2) the confluence of DT-depression that signaled greater eating and comorbid pathology, particularly self-control problems; 3) ED-DSM-diagnostic criteria.

Introduction

Binge-eating behavior is the most common criterion across eating disorder (ED) diagnostic categories with the exception of the comparatively small number of restrictive anorexia nervosa patients (AN–R). However, even in AN–R, there is a strong likelihood that they end up crossing to another eating disorder diagnostic category over time (e.g., Eddy et al., 2008, 2002), which puts into question the clinical utility and validity of the current scheme established in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychological Association). Existing concerns about the validity of current DSM diagnoses could be partially remedied if the DSM were used in conjunction with alternative subtyping schemes that prove clinical utility in predicting features such as risk of binge-eating and related pathology. For example, Stice's etiologic and maintenance model of binge eating (Stice, 2001), which posits the importance of two factors, dietary restraint and affect dysregulation, has received extensive support. Cluster analytic studies have consistently and reliably yielded two "dietary" subtypes, a pure "dietary" and a mixed "dietary-depressive", in clinical populations of children with loss of control over eating (Goldschmidt et al., 2008), adolescent females with Bulimia Nervosa (BN) or eating disturbances (Chen & Le Grange, 2007; Grilo, 2004), and adult women with BN (Grilo, Masheb, & Berman, 2001; Stice & Fairburn, 2003) or binge-eating disorder (BED) (Grilo, Masheb, & Wilson, 2001; Stice et al., 2001). In addition, this subtyping scheme has been replicated in non-clinical undergraduate females showing that it is also useful to capture individuals at risk of binge-eating and related behaviors (Peñas-Lledó, Loeb, Puerto, Hildebrandt, & Llerena, 2008). The "dietary-depressive" type appears representative of about one third of ED patients and signals not only greater binge-eating severity, but also

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greater comorbid psychopathology and a poorer outcome than the other.

However, there is evidence that indirectly supports that two other differentiated groups could emerge from this "dietary"–"depression" subtyping scheme to predict severity of bulimic and comorbid psychopathology. Firstly, dietary restraint may not be a necessary precursor of binge eating for a percentage of BN (Bulik, Sullivan, Carter, & Joyce, 1997; Haiman & Devlin, 1999; Pederson Mussell et al., 1997; Vanderlinden et al., 2004) and BED (Grilo & Masheb, 2000) patients. Then, it is likely to assume that these individuals might be categorized within a third subtype characterized mostly by "depressive" pathology in confluence with "mild to moderate dietary restraint" levels, which may have appeared later to avoid consequent binge eating related weight gain (Stice, 1998). This hypothesized subtype might be similar to the "dietary" subtype with regard to binge eating but more severe than this one in relation to comorbid psychopathology since BED women with mild dietary restraint scores and depression presented more comorbid psychopathology but no differences in frequency of subjective binge eating than those in the dietary group (Stice et al., 2001). Secondly, successful dietary restraint (high restraint accompanied by a 10% decrease in body weight) shows a protective effect against binge-eating and related psychopathology including depression (Stice, Martinez, Presnell, & Groesz, 2006). By extension, traditional dietary restraint scales do not appear to correlate with restriction of energy intake (Stice, Fisher, & Lowe, 2004) but with weight gain (Stice, 2001). In keeping with, the Eating disorder Inventory (EDI; Garner, 1998) drive for thinness (DT) scale (Ricciardelli & McCabe, 2001), which has been also used to test Stice's model due to its high correlation with common dietary restraint measures (Williamson, Barker, Bertman, & Gleaves, 1995), appears to measure preoccupation with weight. A fear of weight gain, a diagnostic criterion for anorexia nervosa (AN) also met by many ED patients, leads to the consequent drive for and pursuit of thinness. However, previous evidence suggests that DT may not apply to those ED individuals that are not preoccupied with weight possibly because they are as thin as they desire and present a successful history at maintaining such thinness. In support of it there are studies showing ED patients without drive for thinness, mostly AN that have less pathology and a more self-directive character (Abbate-Daga, Pierò, Gramaglia, Gandione, & Fassino, 2007; Ramacciotti et al., 2002). Therefore, a fourth cluster might be expected from the present subtyping scheme consisting of low scores on both DT and depression, which it will be characterized by lower bulimic and related psychopathology as well as a stronger character (self-directedness) than the abovementioned subtypes.

The present study firstly examines if a large population of ED patients can be categorized into four different subtypes along drive for thinness and depression: the two "dietary" types previously found, "pure DT" and "DT-depressive", as well as two other characterized by lower scores on DT, "mild DT" and "depressive-mild/moderate DT". Secondly, it analyses the validity of this subtyping scheme by comparing these subtypes on different measures of bulimic behaviors, eating and comorbid psychopathology. Finally, it explores if there are differences in the distribution of DSM-ED diagnoses types across these newly emerged empirical subtypes in order to further understand ED within-diagnostic heterogeneity and crossover.

Methods

Participants

All case reports from female patients consecutively admitted to the Outpatient Clinic of the Eating Disorders Unit in the Department of Psychiatry at the University Hospital of Bellvitge, between January-2002 and December-2006, that completed the relevant measures considered for the present study were included. The final sample included 1005 female patients who met DSM-IV criteria for an ED (American Psychiatric Association, 2000) as determined by an SCID-I (First, Spitzer, Gibbon, & Williams, 1997) conducted by experienced research clinicians. Of these, 114 were AN–R, 80 anorexia nervosa-binge-eating/purging (AN–BP), 450 BN-Purging (BN–P), 54 BN-Non Purging (BN–NP), 251 EDNOS and 56 BED. The mean age of the participants was 26.1 years (SD = 7.3). The mean age of onset of the eating disorder was 19.3 yr (SD = 6.4) and the mean duration was 6.9 yr (SD = 5.8). The Ethics Committee of our Institution approved this study and informed consent was obtained from all participants.

Measures

Weekly binge-eating and purging frequencies

Throughout the duration of the study, patients kept a food diary (Fernandez-Aranda & Turon, 1998), which also recorded episodes of binge eating and purging. Patients were trained by the therapists on the fulfillment of these diaries on a previous session before starting treatment. Weekly binge and purge frequency was determined by examination of the food diaries by the assessing clinicians by face to face interviews.

Eating Disorders Inventory-2 (EDI-2; Garner, 1991)

This is a 91-item multidimensional self-report questionnaire that assess characteristics related to AN, and BN disorders subdivided into 11 different subscales: drive for thinness (DT), bulimia, body dissatisfaction, ineffectiveness, perfectionism, interoceptive awareness, interpersonal distrust, maturity fears, social insecurity, impulsivity and ascetism. The Spanish version of the EDI-2 has shown good psychometric properties (Garner, 1998). *The scores on the DT subscale* that specifically looks at preoccupation with weight were submitted to cluster analysis. This scale has been useful for differentiating clinical and non-clinical groups. A cut-off score of 14 in this subscale has been used to detect individuals at risk of an eating disorder (Garner, Olmsted, Polivy, & Garfinkel, 1984).

Symptom Check-List revised (SCL-90-R; Derogatis, 1983)

This questionnaire is widely used for the measurement of self-reported overall psychological distress and psychopathology. It is comprised of 90 items, each rated on a five-point scale of distress. The Global Severity Index (GSI), which is a widely used as an overall measure of distress, was used for the present study. The Spanish version of the SCL-90-R has shown good psychometric properties (González de Rivera, 2001). Additionally, the scores on the SCL subscale of Depression were submitted to cluster analysis. This scale highly correlates ($r = .89$) with another common measure of depression, the Beck Depression Inventory (Steer, Ball, Ranieri, & Beck, 1997). The depression subscale has been shown useful to differentiate non-clinical, mild to moderate depression (scores from 1 to 2) from severe depression (scores greater than 2) (Aben, Verhey, Lousberg, Lodder, & Honig, 2002; Walker et al., 2000).

Eating Attitudes Test (EAT-40; Garner & Garfinkel, 1979)

This questionnaire contains 40 items, including symptoms and behaviors common to individuals with AN, and provides a global index of the severity of the disorder. The higher the scores, the more disturbed the eating behavior. The Spanish version of this questionnaire has shown good psychometric properties (Castro, Toro, Salamero, & Guimerá, 1991).