Specific eating disorder clusters based on social anxiety and novelty seeking

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ABSTRACT

While social avoidance and distress (SAD), a key aspect of social phobia related to behavioral inhibition, is high in different eating disorders (EDs), novelty seeking (NS) is mainly linked to bulimic disorders. Since heterogeneity in NS levels (low/high) exists in social phobia and in about 55% of ED with a highly disturbed personality, we examined ED types based on SAD and NS and their relationships to eating and comorbid features.

Scores of 825 ED women on SAD and NS were submitted to cluster analysis. Five clinically differentiated ED clusters emerged: two without SAD (45%) and three with high SAD and low (13%), mid (34%), high NS (8%) levels. High vs. low SAD groups showed greater eating and social impairment, ineffectiveness, ascetism, suicide attempts, and lower education. Among SAD clusters, "SAD–low NS" had the lowest rate of binge eating, vomit, substance use, stealing and compulsive buying, whereas "SAD–high NS" presented the opposite pattern. However, no differences across SAD clusters were found with regard to ED diagnostic category distribution or history of treatment. Findings show that SAD-ED types present heterogeneity of NS and greater severity.

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1. Introduction

Among anxiety disorders, social phobia frequently overlaps with eating disorders (EDs). Social phobia appears to be the second most common comorbid diagnosis (about 20%) (Kaye, Bulik, Thornton, Barbarich, & Masters, 2004) and the most common comorbid lifetime diagnosis (55–59%) (Godart, Flament, Lecrubier, & Jeammet, 2000). These data, together with evidence regarding social phobia's earlier onset than ED in most cases, as well as of the absence of significant differences in the prevalence of social phobia across ED diagnostic categories (DSM; American Psychiatric Association (APA), 2000) (Godart et al., 2000; Kaye et al., 2004), led researchers to suggest that social anxiety might be a vulnerability factor for development of any ED (Kaye, 2008; Schwalberg, Barlow, Alger, & Howard, 1992). However, little is known about how social anxiety as a dimensional trait may link to ED symptoms and related features.

Research has identified three personality subtypes in adult patients with eating disorders: high functioning (42–45%), over-controlled and under-controlled. The latter two are characterized by greater comorbidity, poorer social functioning and outcome (Thompson-Brenner & Westen, 2005; Westen & Harnden-Fischer, 2001). Furthermore, the under-controlled personality type shows high comorbidity of disorders characterized by high social avoidance and distress (Heimberg, Hope, Rapee, & Bruch, 1988). For example, this type has shown higher rates of all anxiety and cluster C personality disorders than the high functioning type. Furthermore, it has even presented higher rates of dependent personality, panic and post-traumatic stress disorder than the over-controlled (Thompson-Brenner & Westen, 2005). Considering both that social anxiety is high and common in all ED types (Kaye et al., 2004) and the high degree of heterogeneity that characterizes ED diagnostic types (Peñas-Lledó et al., 2009), it is likely that both the over- and under-controlled personality prototypes may exist in ED with high social anxiety as has been shown in patients with social phobia (Kashdan, Elhai, & Breen, 2008; Kashdan & Hofmann, 2008; Kashdan, McKnight, Richey, & Hoffman, 2009) These prototypes are also likely to present specific relationships to eating and comorbid symptoms, which are characterized by higher psychiatric severity and poorer functioning.

Social anxiety is defined as the strong fear and distress accompanied by avoidance of social situations in which a person might be exposed to negative evaluation by others. Research suggests that social avoidance and distress (SAD) exists on a continuum

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referred to as the *social anxiety spectrum* that ranges from the absence of social fear to intense and functionally impairing levels that may include social phobia diagnostic criteria (DSM; APA, 2000) (McNeil, 2001). This is consistent with recent epidemiological studies showing that, increasingly, social fears are associated with severe manifestations of the disorder (i.e., psychiatric comorbidity, suicide attempts, lower levels of social function and education) (McNeil, 2001; Ruscio et al., 2008).

In addition, it is well established that an important feature and risk factor of social anxiety and other anxiety disorders is the temperamental trait of harm avoidance (Hayward, Killen, Kraemer, & Taylor, 1998; Kaye et al., 2004; Turner, Beidel, & Wolff, 1996). Harm avoidance has been also associated with vulnerability to ED (Klump et al., 2004), as well as with vulnerability to ED and other comorbid anxiety disorders (Kaye et al., 2004). Individuals with SAD consider that since they are socially inadequate, others will judge them negatively. Thus, they generally use behavioral inhibition and avoidance to suppress negative emotions whenever they cope with social threat cues such as rejection, punishment and novel stimuli. However, despite the fact that behavioral inhibition and avoidance may be effective in suppressing expression of emotions, it may impair regulation of the negative experience associated with them, thereby increasing feelings of worthlessness and inducing impulsive reactions (Gross & John, 2003; Vohs, Baumeister, & Ciarocco, 2005).

In relation to this, novelty seeking (NS), a qualitatively opposed temperamental trait to harm avoidance, has been found to characterize a percent of socially anxious individuals in independent cluster analytic studies (Kashdan et al., 2008, 2009; Kashdan & Hofmann, 2008). Such studies have shown this group of socially anxious individuals with high NS *vs.* the group with low NS to be characterized by greater use of impulsive behaviors such as substance abuse and greater social impairment. However, these impulsive socially anxious individuals were not found to be more likely to seek treatment for social phobia than other socially anxious individuals (Kashdan et al., 2009). Considering the high lifetime prevalence of social phobia among ED patients (Kaye et al., 2004) and that NS is a shared risk factor with anxiety and bulimia nervosa (BN), an eating disorder mostly characterized by the presence of recurrent binge eating and compensatory behaviors (Wade, Bulik, Prescott, & Kendler, 2004), a subset of ED women may be expected to present high scores on SAD and NS. Further support for this expectation comes from studies of ED patients in which NS explained the confluence of BN and lifetime impulse control disorders (Fernández-Aranda et al., 2006, 2008).

On the basis of the research described above, we expected to identify at least three clinically relevant groups of ED patients based on SAD and NS: one with low SAD levels, and the other two with high SAD levels in conjunction with low or high NS, respectively. We expected the latter to present the largest number of women with impulsive problems, including bulimic behaviors. Therefore, the aim of the present study was threefold: first, to find clinically relevant and specific eating disorder clusters based on the dimensions of SAD and NS; secondly, to examine their specific relationships to eating and comorbid symptoms; and finally, to explore the distribution of ED DSM diagnoses across the empirical clusters.

2. Methods

2.1. Participants

The final sample included 825 case reports from female patients consecutively admitted to the Eating Disorders Unit at the Department of Psychiatry in the University Hospital of Bellvitge, who met DSM-IV criteria for an ED (APA, 2000) as determined by a SCID-I (First, Spitzer, Gibbon, & Williams, 1997). The SCID-I was carried out by experienced psychologists who were trained in the administration of this instrument, although formal inter-rater reliability was not computed for this study. Of these, 100 (12.1%) were anorexia nervosa-restrictive (AN-R), 80 (9.7%) anorexia nervosa-binge eating/purging (AN-BP), 350 (42.4%) BN-purging (BN-P), 43 (5.2%) BN-non-purging (BN-NP), 252 (30.6%) eating disorders not otherwise specified (EDNOS) including 122 (14.8%) EDNOS-AN, 87 (10.5%) EDNOS-BN, 41 (5.0%) binge eating disorder and 9 (0.2%) night-time eating syndrome. The EDNOS diagnosis was given if the individual did not meet the minimal criteria for AN/BN (in the case of subthreshold AN: no amenorrhea, or could not meet the minimal BMI of 17.5; in the case of subthreshold BN: although meeting all criteria for BN, they could not, however, meet the frequency criteria). The mean age of the participants was 26.3 years ($SD = 7.3$). Mean age of onset of the eating disorder was 19.3 years ($SD = 6.5$) and mean duration was 7.0 years ($SD = 5.96$). The Ethics Committee of our Institution approved this study and informed consent was obtained from all participants.

2.2. Measures

2.2.1. Social avoidance distress scale (SAD; Watson & Friend, 1969)

The SAD is a 28-item true–false scale, which was designed to measure the degree of distress, discomfort, anxiety, and avoidance of social situations. Higher scores indicate greater social avoidance and distress. The Spanish version of the present scale has shown good psychometric properties (Bobes et al., 1999).

2.2.2. Temperament and character inventory-revised version (TCI-R; Cloninger, 1999)

The TCI-R is a 240-item, five-point Likert scale questionnaire that measures seven dimensions of personality: four temperament (harm avoidance, novelty seeking, reward dependence and persistence) and three character dimensions (self-directedness, cooperativeness and self-transcendence). Both the Spanish version of the original questionnaire and the revised version (Gutiérrez-Zotes et al., 2004) have shown good psychometric properties.

2.2.3. Weekly binge eating, vomiting and laxative use frequencies

Throughout duration of the study, patients kept a food diary (Fernández-Aranda & Turón, 1998), which also recorded episodes of binge eating and purging. Patients were trained by the therapists in diary-keeping in a session prior to starting treatment.

2.2.4. Bulimic investigatory test Edinburgh (BITE; Henderson & Freeman, 1987)

This questionnaire contains 33 items that measure the presence and severity of bulimic symptoms. There are two subscales: the symptomatology scale (30 items), which determines the seriousness of the symptoms, and the severity scale (3 items) that offers a severity index (i.e., the higher the scores, the greater the severity). The Spanish translation of this questionnaire has shown good psychometric properties (Rivas, Bersabé, & Jiménez, 2004).

2.2.5. Eating disorders inventory-2 (EDI-2; Garner, 1991)

The EDI-2 is a 91-item multidimensional self-report questionnaire, which assesses characteristics related to AN, and BN disorders, and is 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).