Journal of Affective Disorders 190 (2016) 599–606

Contents lists available at ScienceDirect

Journal of Affective Disorders

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

Research report

Prevalence and correlates of bipolar disorders in patients with eating disorders

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ARTICLE INFO

Article history:
Received 23 August 2015
Received in revised form
15 October 2015
Accepted 23 October 2015
Available online 6 November 2015

Keywords:
Anorexia nervosa
Binge-eating disorder
Bipolar disorders
Bulimia nervosa
Comorbidity
Correlates
Eating disorders

ABSTRACT

Background: To investigate the prevalence and correlates of bipolar disorders in patients with eating disorders (EDs), and to examine differences in effects between major depressive disorder and bipolar disorder on these patients.

Methods: Sequential attendees were invited to participate in a two-phase survey for EDs at the general psychiatric outpatient clinics. Patients diagnosed with EDs ($n=288$) and controls of comparable age, sex, and educational level ($n=81$) were invited to receive structured interviews for psychiatric co-morbidities, suicide risks, and functional level. All participants also completed several self-administered questionnaires assessing general and eating-related pathology and impulsivity. Characteristics were compared between the control, ED-only, ED with major depressive disorder, and ED with bipolar disorder groups.

Results: Patients with all ED subtypes had significantly higher rates of major depressive disorder (range, 41.3–66.7%) and bipolar disorder (range, 16.7–49.3%) than controls did. Compared to patients with only EDs, patients with comorbid bipolar disorder and those with comorbid major depressive disorder had significantly increased suicidality and functional impairments. Moreover, the group with comorbid bipolar disorder had increased risks of weight dysregulation, more impulsive behaviors, and higher rates of psychiatric comorbidities.

Limitations: Participants were selected in a tertiary center of a non-Western country and the sample size of individuals with bipolar disorder in some ED subtypes was small.

Conclusion: Bipolar disorders were common in patients with EDs. Careful differentiation between bipolar disorder and major depressive disorder in patients with EDs may help predict associated psychopathology and provide accurate treatment.

1. Introduction

The co-existence of affective disorders and eating disorders (EDs) has been well documented in prior research (Godart et al., 2007). However, the relationship between ED and bipolar disorder has not gained much attention until recently (McElroy et al., 2006). A literature review indicated that the phenomenology, course, comorbidity, family history, and pharmacologic treatment response of bipolar disorders and EDs show considerable overlap between the two disorders, and further, that the overlap is particularly prominent when these disorders include full spectrum or subsyndromal definitions (McElroy et al., 2005). Misdiagnosis of bipolar spectrum disorders can have negative effects on the course of treatment, including more frequent occurrences of episodes (Ghaemi et al., 1980), increased risk of suicide (Berk and Dodd, 2005), and more severe role impairments (Angst et al., 2010) in general psychiatric patients with depression, and similar conditions may occur in the ED population (McElroy et al., 2011b).

There has been debate concerning the diagnosis of bipolar disorder, especially hypomania episodes, in terms of interview methods used (Benazzi and Akiskal, 2003), stem symptom recognition (Benazzi, 2004), and minimum duration of mania/hypomania symptoms (Angst et al., 2003). With the re-definition of

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http://dx.doi.org/10.1016/j.jad.2015.10.062
0165-0327/

the "soft bipolar spectrum", some researchers have suggested that EDs, especially those that involve binging and purging behaviors, might belong to this spectrum disorder (Gamma et al., 2008; Perugi and Akiskal, 2002). With varied sample characteristics, assessment tools, and threshold criteria of bipolar disorder, lifetime prevalence rates of bipolar disorder in patients with ED in earlier studies have ranged from 0% to 19% in community or outpatient ED samples (Halmi et al., 1991; Hudson et al., 2007, 1987; Javaras et al., 2008; Joyce et al., 2004; Lewinsohn et al., 1993; Simpson et al., 1992; Swanson et al., 2011), and 36–64% in ED inpatients (Hudson et al., 1988; McElroy et al., 2011b). One recently published article reported that 34.8% of patients with EDs had comorbidity with bipolar I and II disorders, and up to 68.1% had bipolar spectrum disorder (Campos et al., 2013). These studies tended to be limited by a small sample size (Campos et al., 2013; Halmi et al., 1991; Hudson et al., 1987; Simpson et al., 1992), lack of a control group (Campos et al., 2013; Simpson et al., 1992), use of a relatively strict interview method for diagnosis of bipolar disorders (McElroy et al., 2011b), i.e., the Structure Clinical Interview for the DSM-III-R or IV (SCID) (Benazzi and Akiskal, 2003), and restriction to one specific ED group (Hudson et al., 1988; Javaras et al., 2008; Joyce et al., 2004).

While several studies have examined the effects of EDs on bipolar disorder patients (McElroy et al., 2011a; Wildes et al., 2008), little is known about the effects of bipolar disorders on patients with EDs. Two studies found that self-destructive behavior in patients with EDs is associated with bipolar disorder (Favaro et al., 2008; Stein et al., 2004). One study reported that comorbidity with bipolar disorders is associated with higher family income, proportion of married people, and comorbidity with substance use (Campos et al., 2013). The present paper aims to investigate the prevalence and correlates of bipolar disorders in ED patients as assessed with a structured clinical interview. We hypothesize that bipolar disorder is more prevalent among ED patients compared to control participants, and that the presence of a bipolar disorder comorbidity is associated with increased risks of being overweight, general pathology, suicide and other impulsive behaviors, co-morbidities with other psychiatric disorders, and impaired work performance. Considering the potentially discriminative effects between comorbid major depressive disorder and comorbid bipolar disorder on patients with EDs, we also included individuals with comorbid major depressive disorder along with an ED-only group and a control group to compare the above variables.

2. Methods

2.1. Participants and procedures

The participants were patients with EDs aged 18–45 who were enrolled consecutively from the general outpatient clinics of the Department of Psychiatry at a teaching hospital via a two-phase method from August 2010 to July 2014. Patients with active psychotic conditions, organic mental disorders, mental retardation, and severe physical conditions were excluded from participation in phase one screening. Each psychiatric outpatient who agreed to participate completed a brief paper-form screening questionnaire (SCOFF) (Liu et al., 2015) and was interviewed by one of two trained research assistants using the ED Module of the Structured Clinical Interview for DSM-IV-TR Axis I disorders Patient version (SCID-I/P) (First et al., 2002). The SCOFF comprises five dichotomous questions regarding binge eating, purging, and body dissatisfaction (Morgan et al., 1999) and the name "SCOFF" is the acronym from the five questions. In total, 2306 patients completed the diagnostic procedure and the participation rate of men and women was 96.9% and 96.4%, respectively. Of them, 288 ED patients completed the rest of the study with a completion rate of 90.1% for those who consented to participate. Age, gender, and educational level comparable controls without EDs (confirmed by the SCID-I/P) were enrolled from the advertisement via internet or fliers. Both patients ($n=288$) and controls ($n=81$) received further face-to-face interviews, assessing co-morbid psychiatric diagnosis, suicidality, and functional impairment. Diagnostic raters were one psychiatrist and two research assistants with college degrees in psychology. The diagnostic raters were highly trained and monitored throughout the study period to minimize rater drift. Participants also completed several questionnaires concerning eating pathology, general psychopathology, and impulsivity. The Institutional Review Board of National Taiwan University Hospital approved this study.

2.2. Measures

2.2.1. SCID-I/P

An ED diagnosis in last 3 months and further in the past was established by the SCID-I/P. This study was conducted during the period of transition from the DSM-IV to the DSM-5, and we adopted the relaxed criteria of EDs according to the modification (Wilson and Sysko, 2009). Patients were not required to meet the anorexia nervosa (AN) criteria for amenorrhea and the minimal frequency and duration of bulimia nervosa (BN) and binge-eating disorder (BED) was once per week for 3 months. These were consistent with the revised criteria of AN, BN and BED in the DSM-5 (American Psychiatric Association, 2013). We paid special attention to the frequency and the duration of binge eating and recorded the exact frequency and duration of binge eating occurred in order to re-assign their ED diagnosis according to the different threshold criteria from the DSM-IV to the DSM-5. Participants who reported extreme weight or shape concerns, regular binge-eating symptoms without adequate frequency or without feeling distress about binge eating, and those who did not meet criteria for the previous three disorders were diagnosed with ED, not otherwise specified (EDNOS).

2.2.2. Mini International Neuropsychiatric Interview (MINI)

The MINI is a short structured diagnostic interview for the DSM-IV and ICD-10 psychiatric disorders (Sheehan et al., 1998). It is divided into many modules including diagnoses of major depression, bipolar disorder, anxiety disorders, alcohol use disorder, and substance use disorders. Interviews of the first 40 participants were audiotaped. The κ coefficients of inter-rater reliability for all diagnoses were 0.60 (social phobia) to 1.00 (major depressive episode) except substance use disorder (0.47).

2.2.3. Assessment of functional impairment and suicide risks

The 87-item SIAB-EX covers a wide range of symptoms frequently seen in EDs—body image disturbances, bulimic symptoms, social integration problems, problems associated with sexuality, depression, compulsion, and anxiety (Fichter and Quadflieg, 2001). Each item was rated for present status (the last 3 months) and for maximum pathology in previous years (lifetime). Responses were rated on a severity scale, ranging from 0 for "symptom not present" to 4 for "symptom very much/very severely present." Following an independent translation of the Chinese version of the SIAB-EX by a professional translator, all items were reviewed by two psychiatrists (Tseng MM and Chen KY). The assessment of functional impairment was adopted from item 53, "Was your work performance objectively impaired at work or in your household?". Suicide risks were rated by item 68, 'Did you think about commit suicide in the last 3 months or in the past?', item 69, 'Did you ever attempt to commit suicide?',