

# The comorbidity of adult attention-deficit/hyperactivity disorder in bipolar disorder patients

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## Abstract

**Objective:** High comorbidity ratio of bipolar mood disorder (BMD) with Axis I and Axis II diagnoses is reported in the literature. The possible relationship between BMD and attention-deficit/hyperactivity disorder (ADHD) in all age groups has been attracting more attention of researchers due to highly overlapping symptoms such as excessive talking, attention deficit, and increased motor activity. In this study, we aimed to investigate the prevalence of ADHD comorbidity in BMD patients and the clinical features of these patients.

**Methods:** Of 142 patients, who presented to the Bipolar Disorder Unit of Zonguldak Karaelmas University Research and Application Hospital between the dates of August 1, 2008 and June 31, 2009 and diagnosed with BMD according to DSM-IV criteria consecutively, 118 patients signed informed consent and 90 of them completed the study. They all were in euthymic phase during the study evaluations. A sociodemographical data form, Wender-Utah Rating Scale (WURS), ADD/ADHD Diagnostic and Evaluation Inventory for Adults, and Structural Clinical Interview for DSM-IV Axis I Disorders, Clinical Version (SCID-I) were applied to all participating patients.

**Results:** A total of 23.3% of all patients met the criteria for A-ADHD diagnosis along BMD. No difference was detected regarding sociodemographical features between the BMD+A-ADHD and the BMD without A-ADHD groups. The BMD+A-ADHD group had at least one extra educational year repetition than the other group and the difference was statistically significant. The BMD starting age in the BMD+A-ADHD group was significantly earlier ( $p=0.044$ ) and the number of manic episodes was more frequent in the BMD+A-ADHD group ( $p=0.026$ ) than the BMD without ADHD group. Panic disorder in the BMD+A-ADHD group ( $p=0.019$ ) and obsessive-compulsive disorder in the BMD+C-ADHD group ( $p=0.001$ ) were most frequent comorbidities.

**Conclusions:** A-ADHD is a frequent comorbidity in BMD. It is associated with early starting age of BMD, higher number of manic episodes during the course of BMD, and more comorbid Axis I diagnoses.

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## 1. Introduction

The lifetime prevalence of bipolar mood disorder (BMD) ranges between 0.4% and 1.6% (average 1.2%) [1–3]. When the whole bipolar spectrum is considered, the rate exceeds 5% [3,4].

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It is known that BMD frequently co-occur with Axis I and Axis II disorders. The lifetime Axis I comorbidity rate of BMD is 50%–70% [5,6]. The presence of Axis I comorbidity has a direct correlation with the early onset of affective symptoms, rapid cycling type, long-lasting and severe episodes, and drug abuse problem among first-degree relatives of the patients [5]. The presence of comorbidities was also found to be associated with more negative course, increase in suicide attempts, onset with depressive episode, and lower response rate to lithium treatment [7].

The pathophysiology between BMD and comorbidities is still unknown. BMD can be a risk factor for some Axis I disorders, coexisting symptoms may have similar results, or all

comorbidities may stem from a general pathophysiological base [5]. The possible relationship between BMD and ADHD with highly overlapping symptoms such as excessive talking, attention deficit, and increased motor activity, has been gradually drawing more attention in all age groups [8–10]. Therefore the number of studies investigating the relationship between these two disorders has increased. Some studies reported that the patients diagnosed with BMD in the childhood and adolescent periods had ADHD comorbidity ranging from 38% to 98% [11–13]. The BMD patients with ADHD showed differences from BMD patients without ADHD in their core symptomatology, phenomenology, and disease course [14]. In BMD patients with ADHD compared to the ones without ADHD, BMD has earlier onset, depressive and mixed episodes are more frequent, all episodes occur more often, the euthymic periods between episodes are shorter, and alcohol–drug addiction is more prevalent [14–16].

The chronic course of ADHD, its high comorbidity with BMD, and the significant positive impact of treatment on the course of both disorders increase the importance of screening for ADHD even during the adulthood period.

The goal of this study was to assess adults with BMD for ADHD and other psychiatric comorbidities, sociodemographical profiles, and clinical features according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) [17].

## 2. Methods

### 2.1. Subjects and assessments

The study protocol was approved by the institutional review board of Zonguldak Karaelmas University and participating patients signed a written voluntary informed consent form before enrollment in the study. The Bipolar Disorder Unit of Zonguldak Karaelmas University is a specialty clinic and evaluates the patients with SCID in their first visit. The patients are followed up regularly and about 80% of patients attend to their scheduled appointments. Of 142 consecutive patients, who were diagnosed with BMD according to DSM-IV criteria at the Bipolar Disorder Unit between August 1, 2008 and June 31, 2009, 90 patients completed the study. They all were in euthymic phase throughout the evaluations for the study. All evaluation sessions were carried out at the clinic.

The exclusion criteria from the study were as follows: presence of psychiatric disorder due to general medical condition, significant cognitive deficiencies preventing completion of scales or understanding and participating in evaluations, age younger than 18 years, and illiteracy, as those patients could not read and understand study procedures. Twenty-four patients did not accept to participate in the study, 11 patients met the exclusion criteria (4 were younger than 18 years, 6 were illiterate, and 1 had psychiatric condition due to general medical condition), and 17 patients could not complete the scales adequately.

### 2.2. Data collection tools

#### 2.2.1. Sociodemographical data form

This is a questionnaire specifically developed for this study to gather data and determine the sociodemographical features of patients.

#### 2.2.2. ADHD diagnosis and evaluation tools

**2.2.2.1. Wender-Utah Rating Scale (WURS).** This scale was developed by a Utah group in 1993 to evaluate the symptoms and findings in A-ADHD patients during the childhood period [18]. It is a self-report measure with quinary Likert-type scale including choices from 0 to 4 (0 = none, 4 = severe). The validity and reliability for Turkish adaptation of the scale were performed and the cutoff score was determined at 36. When the cutoff score is taken as 36 or above, the sensitivity and specificity were calculated as 82.5% and 90.8%, respectively [19].

**2.2.2.2. Adult ADD/ADHD Diagnosis and Evaluation Inventory (Turgay, 1995).** This measure is a quinary Likert-type rating scale with three subscales. The three subscales of the measure are as follows:

1. Attention-Deficit Subscale (AD): There are a total of 9 questions, which are based on the attention-deficit (AD) symptoms taken from DSM-IV.
2. Severe Restlessness/Impulsivity Subscale (RE): In this section, there are nine questions based on the Severe Restlessness symptoms taken from DSM-IV, as well.
3. ADHD Associated Features (Problem) Subscale: This includes a total of 30 questions that are based on clinical experience and observations. These questions are scored between 0 and 3 according to the severity of the symptom.

Regarding DSM measure for diagnosis, if six of nine questions receive a score of 2 or 3, the patient is considered to have attention deficit (ADHD-AD). As for the second subscale, if six of nine questions receive a score of 2 or 3, the patient is considered to suffer from ADHD-RE. If both subscales have scores of 2 or 3 in at least six questions of each subscale, the likely diagnosis is ADHD combined type. The scores given to the questions in the third subscale are added and the score of ADHD related problems is calculated. The validity and reliability for Turkish adaptation of the measure were performed by Günay et al. [20].

**2.2.2.3. Structured Clinical Interview for DSM-IV Axis I Disorders, Clinical Version (SCID-I).** It is a semi-structured interview chart included in DSM-IV for the evaluation of Axis I psychiatric disorders. The responses of the patient to the questions, information from the relatives of the patient and his/her chart, and observations of the clinician are combined to determine the fulfillment of a criterion. The

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