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Original article

Mood Disturbance in Adolescents Screened by the Mood Disorder Questionnaire Predicts Poorer Social Adjustment

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A B S T R A C T

Purpose: Early-onset bipolar disorder is associated with a more severe illness course and poorer outcome. Its identification in adolescents may provide the opportunity for adequate intervention to improve global functioning and long-term prognosis. Thus, this study aimed to screen mood disturbance in a sample of high school students using Mood Disorder Questionnaire (MDQ) and follow up their adaptive functioning 1 year later.
Methods: In the first year, adolescents aged 15–17 years old from a Taiwanese senior high school (N = 1,151) completed the Chinese version of MDQ, the Impulsiveness Scale, and a set of questions about risky behaviors. A subgroup of respondents (N = 184) picked randomly were interviewed to validate the diagnosis of bipolar disorder. In the second year, the Social Adjustment Inventory for Children and Adolescents was applied for the same sample of subjects for the measurement of their adaptive functions.
Results: The intraclass correlation coefficient and the Cronbach α coefficient of the MDQ were .68 and .61, respectively. MDQ score of at least 7 showed modest sensitivity (.57) and specificity (.64) for bipolar disorder. Higher MDQ score predicted risky behaviors in adolescents at baseline measurement. MDQ score was found significantly correlated with Impulsiveness Scale total score. In follow-up evaluation, participants with an MDQ score of ≥7 had poorer social adjustment.
Conclusions: Our findings suggest that untreated mood disturbance among adolescents leads to impaired social adaptive functioning in the next year. The application of MDQ in adolescents may help clinicians in early intervention for their emotional disturbance.

IMPLICATIONS AND CONTRIBUTION

Mood disturbances among adolescents predict risky behaviors and social maladjustment in the next year. The Mood Disorder Questionnaire is a useful instrument for screening emotional disturbances among adolescents and may facilitate early intervention for mood stabilization to improve psychosocial functioning and long-term outcomes.

Bipolar disorder has an early age of onset [1] and peaks in adolescence and young adulthood [2]. Up to 60% of adults have their disorder onset before the age of 18 years [3]. Its prevalence rate in adolescents is reported to be 1%, with approximately 5% of this population having subsyndromal manic symptoms [4]. Adolescents with mood disturbance are commonly associated with psychosocial disability, severe behavioral dysregulation, suicide attempts, and increased medical utilization in adulthood [3,5,6]. Meanwhile, early-onset mood disturbance indicates a more severe illness course with chronicity, increased comorbidity, and poorer long-term prognosis [3]. Thus, the identification of this illness in adolescents may allow for early intervention to improve psychosocial functioning and prevent risky behaviors [7–9].

For the generally underdiagnosed bipolar disorder in adolescents in the community, screening for mood disturbance using a self-applied instrument is of great clinical significance, with the advantage of easy to performance and less time

Conflicts of Interest: None of the authors declare a potential conflict of interest.

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consumption, especially in a large sample of subjects. A well-developed standardized rating tool can help correctly recognize individuals at risk of bipolar disorder before psychiatric evaluation and overcome the difficulty of prohibitively high costs of specialized interviews in an epidemiologic study. The most frequently used self-assessed questionnaires for adolescents to screen for bipolar disorder are the Youth Self-Report (YSR) [10], General Behavior Inventory (GBI) [11], and Mood Disorder Questionnaire (MDQ) [12]. Although all these instruments are reported to have high sensitivity for detecting bipolar disorder, the YSR and GBI are not primarily intended to be diagnostic inventories. Instead, they measure broader dimensions of affective and behavioral symptoms and do not evaluate the core symptom features of bipolar disorder [12,13]. As such, adolescents with higher scores in the YSR and GBI may be not specific to the diagnosis of bipolar disorder. Therefore, a scale that covers a more narrowly defined domain will be more useful for identifying adolescents in the community who need detailed assessments for bipolar disorder.

The MDQ is a self-reporting questionnaire developed for screening bipolar disorders [14]. Its reliability and validity have been verified in previous studies conducted in various settings, including psychiatric outpatients, family medicine clinics, and the general population [14–16], as well as using its different versions in languages other than English [17–19]. For the child and adolescent population of age 5–17 years, the MDQ has also been reported as a valid measure for recognizing bipolar disorder, albeit less sensitive than the Parent MDQ form [20]. However, no investigation has been performed using the MDQ in the school sample for detecting mood disturbance in adolescents.

Therefore, this study aimed to identify emotional disturbance in a sample of senior high school students by the application of MDQ and evaluate their social adjustment in the subsequent year. Subjects aged 15–17 years old are at risk for the onset of bipolar disorder and have comparable comprehension awareness of their affective symptoms compared with young adults. Besides, the core symptoms of mania or hypomania in adolescents are similar to those in adults, despite the fact that they had more dysphoric mood, mixed symptoms, and less discrete episodes [21]. The MDQ is suitable as screening by self-administration and may help in the early identification of at-risk groups for bipolar disorders among adolescents.

Methods

Participants and procedures

A total of 1,151 first-year high school students aged 15–17 years (mean, 15.6, standard deviation, .4) from a high school in Taipei City were recruited. All the respondents completed the MDQ, Impulsiveness Scale (IS), and a set of self-reported questions about risky behaviors in the past 6 months. To investigate the test–retest reliability of the MDQ, the school nurse who was blind to the data or results of this study randomly picked three classes of students (n = 84), who received the retest with the MDQ 2 weeks after the baseline assessment.

In addition, students from six classes (n = 184) were randomly selected and interviewed to validate the diagnosis of bipolar disorder and other comorbidities based on the DSM-4, text revision criteria. The interviews were performed by the principal investigator, a senior psychiatrist who was blind to the results of MDQ before interview, using the Schedule for Affective Disorders and Schizophrenia for School-Age Children–Present and Lifetime Version.

In the second year, the participants (n = 970) were asked to respond to the Social Adjustment Inventory for Children and Adolescents (SAICA) for assessing the impact of mood disturbance on their social adjustment (Figure 1).

All the participants provided a signed informed consent after the procedures for data collection and protecting the confidentiality of responses were thoroughly explained to them. The Institutional Review Board of Tri-Service General Hospital, National Defence Medical Centre, Taipei, Taiwan, approved the study protocol.

The response rates of the students were 97.3% (1,120/1,151) for the MDQ, 97.3% (1,120/1,151) for IS, 96.9% (1,115/1,151) for all of the risky behavior questions (i.e., habitual use of tobacco, alcohol or illicit drug, and suicidal attempts), and 89.7% (870/970) for SAICA.

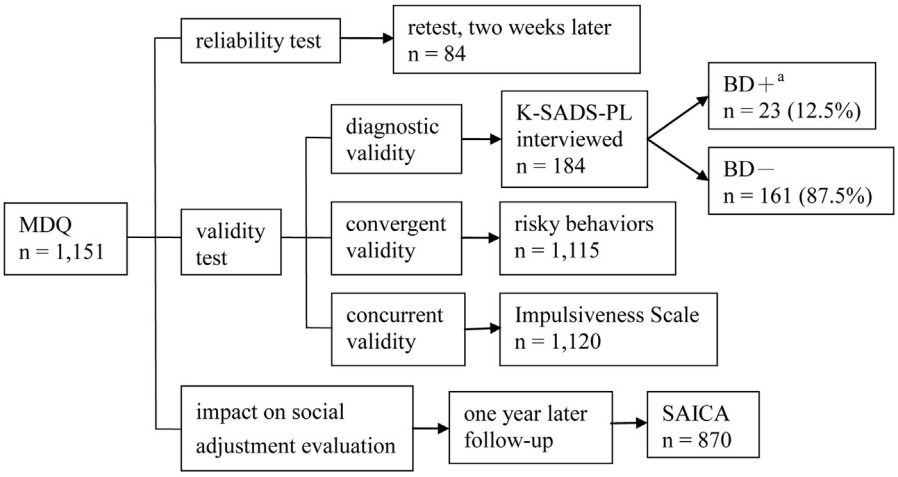

Figure 1. The procedure and instruments used in this study are MDQ; Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL); bipolar disorder (BD); and SAICA. [a]Bipolar I disorder (n = 9); bipolar II disorder (n = 2); bipolar disorder, not otherwise specified (n = 12).