

# Use of a Structured Diagnostic Interview to Identify Bipolar Disorder in Adolescent Inpatients: Frequency and Manifestations of the Disorder

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*The authors interviewed 17 adolescent inpatients and their mothers with the Schedule for Affective Disorders and Schizophrenia for School-Aged Children and Adolescents, Epidemiological Version (K-SADS-E), a semistructured interview that generates RDC and DSM-III diagnoses for major affective disorders and nonaffective psychoses and DSM-III diagnoses for dysthymic, cyclothymic, and other selected disorders. Five of the patients (29%) satisfied DSM-III criteria for bipolar disorder or atypical bipolar (bipolar II) disorder, although these diagnoses had not been identified in the hospital charts. These data support previous findings that bipolar disorder occurs moderately frequently in adolescent inpatients, although it is often unrecognized. Moreover, the disorder can be readily identified with structured diagnostic methods.*

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While it is generally recognized that bipolar disorder often appears initially in adolescence (1–7), the disorder seems to be underdiagnosed and often misidentified (2–6). The reasons given for the failure to correctly identify bipolar disorder in adolescents include the confounding effects of adolescent turmoil (6, 8, 9), the atypical presentation of the disorder in this developmental phase (9), and the low index of suspicion that clinicians have for the presentation of this disorder in adolescence (5, 6, 8, 10).

Traditionally, adolescence has been seen as a phase of great psychological and behavioral instability (11–13). Proponents of this view regard the distinction between normal and psychopathological development

to be blurred and believe attempts at formal diagnosis in this period to be problematic and often unproductive. Modern empirical studies provide little support for this view (14–16).

Moreover, evidence suggests that bipolar disorder with onset in adolescence can be identified with standardized adult diagnostic criteria (2–8, 10). Engstrom and associates (10) reported a case of adolescent bipolar disorder and reviewed 4 case reports of manic-depressive illness with onset in adolescence. These cases all satisfied Feighner and associates' criteria (17) for the disorder. Hudgens (2) and King and Pittman (3), using the same criteria, found that 30%–40% of the adolescent inpatients they studied had typical affective disorders—including bipolar disorder. Carlson and Strober (6) applied Feighner and associates' criteria (17) and the Research Diagnostic Criteria (RDC) (18) to 6 adolescent patients who were initially admitted to the inpatient unit of the University of California, Los Angeles, Neuropsychiatric Institute with the diagnosis of schizophrenia. The illnesses of all 6 patients satisfied both sets of criteria for bipolar disorder.

In this paper we present results from a cross-sectional study of hospitalized adolescents in which we compared the hospital's clinical diagnoses with those derived from independent interviews of the patients and their mothers. We also discuss the clinical symptoms that met the *DSM-III* criteria for bipolar disorder and the history of each patient.

## METHOD

The study was conducted at a small university-affiliated psychiatric hospital that specializes in the residential care of adolescents and young adults. There were 21 inpatients (ages 13–18 years) on the hospital's adolescent ward at the time of the study (March–June 1981). The criteria for admission to the study were that patients be between the ages of 13 and 18 years inclusively, that the patient and his or her mother agree conjointly to participate, and that there be no evidence of organic mental disorder.

Seventeen (81%) of the patients (13 males and 4

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females) and their mothers who were eligible to participate at the time entered the study. Three of the 21 patients were judged by the staff and the research team as too disturbed to participate in the lengthy interview (although some actively psychotic patients were able to participate), and 1 patient refused.

The study was designed to pretest a battery of self-administered questionnaires and semistructured interviews for feasibility of administration, reliability, and validity. The battery included demographic, medical, developmental, familial, and psychosocial assessments and a diagnostic interview that generates selected RDC and *DSM-III* diagnoses in children and adolescents from ages 6 to 18 years. The interviews can be administered, with minor modifications, to children and adolescents about themselves and to mothers about their children. Four highly trained raters blind to each other's findings independently interviewed the mothers and children or reviewed the charts. Patients, mothers, and selected hospital staff independently completed self-administered reports. The study design and training and evaluation procedures have been described in detail elsewhere (G.D. Gammon, K. John: Yale Psychiatric Institute pilot study protocol: pretest of reliability and validity of child assessment batteries, 1981, unpublished paper).

The assessment battery is organized around the Schedule for Affective Disorders and Schizophrenia for School-Aged Children and Adolescents, Epidemiological Version (K-SADS-E), a semistructured interview developed and validated by Orvaschel and associates (19) for administration to children and adolescents aged 6 to 18 years. Structured similarly to the SADS, Lifetime Version (20), from which it was adopted, the K-SADS-E is intended for use by highly proficient clinical raters. The interview takes about 30 min with subjects who have no clinical disorders and no longer than 90 min with subjects who have multiple disorders.

The K-SADS-E was designed to generate RDC diagnoses for the nonaffective, nonorganic psychoses and major affective disorders and to generate *DSM-III* diagnoses for infantile autism, anorexia nervosa, attention deficit disorder, conduct disorders, separation anxiety disorder, generalized anxiety disorder, panic disorder, phobic disorders, obsessive-compulsive disorder, and alcohol or substance abuse disorders. We modified it slightly to generate *DSM-III* diagnoses for the nonaffective psychoses, major affective disorders, dysthymic disorder, and cyclothymic disorder and constructed a precoded scoring sheet that we used to record diagnostic data from the K-SADS-E interview and chart information.

## RESULTS

We found no diagnosis of bipolar disorder in the hospital charts of the 17 patients. Interviews with the K-SADS-E, however, yielded 3 patients whose illnesses

satisfied *DSM-III* criteria for bipolar (bipolar I) disorder and 2 patients with atypical bipolar (bipolar II) disorder (29% of the sample; see table 1). In each case, the independent interview of the patient's mother confirmed the diagnosis derived from the patient's interview, although minor discrepancies in the phenomenology of the disorder were reported.

## CASE REPORTS

*Case 1.* Ms. A, who was 18 years old, had an illness that satisfied all *DSM-III* criteria for bipolar (bipolar I) disorder (see table 1). In addition, she manifested mood-incongruent psychotic features only in depressed and manic states. The psychotic symptoms noted after the onset of the major affective episodes were thought withdrawal, religious and somatic delusions, delusional guilt, and delusions of reference and persecution. During interpol periods, while in the hospital, she manifested frequent swings between hypomanic and dysthymic states. The states were relatively brief, lasting from a few hours to several days; mood impairment was relatively mild, and secondary symptoms were less evident than when she experienced episodes of major depression or mania. During interpol periods, Ms. A was free of psychotic symptoms, which disappeared with the resolution of major affective episodes, but she continued to adhere to subcultural religious beliefs and to participate in the dietary and hygienic practices of the Hare Krishna cult, to which she had belonged before admission. She led a somewhat isolated life on the ward. When she interacted with others, the focus was usually religious. She frequently got into protracted discussions about abstruse religious points and into heated arguments when patients disagreed with her. Her religious preoccupation impeded psychosocial treatments and normal social relations with her peers.

The year before the onset of the bipolar disorder Ms. A experienced symptoms that satisfied *DSM-III* criteria for dysthymic disorder. The onset of the patient's bipolar illness occurred at age 16 with a major depressive episode lasting 20 weeks. During a period of marked psychosocial stress in the second month of the major depressive episode—she had moved out of her parents' home—she noted the gradual onset of the characteristic psychotic features. She gradually recovered, with abatement first of the psychotic features and then of the most intense features of her depression. During this period she became involved with the Hare Krishna cult and lived for a while in one of the organization's temples. Five months later she noted the rapid onset of a manic syndrome and, within a week, the onset of the characteristic psychotic features. This episode led to her first hospital admission at another institution, where she was diagnosed as schizophrenic and treated with high doses of neuroleptics.

Ms. A was transferred to our institution 2 months later on the recommendation of the staff of a second hospital, where she was also regarded as schizophrenic and treated with neuroleptics. When she entered our study she was still receiving high doses of neuroleptics, and her chart diagnosis was schizophrenia. Neuroleptic treatment had controlled the flagrant manic and psychotic symptoms but had had little effect on her affective symptoms and social functioning. Shortly after the research diagnosis of bipolar disorder in her seventh month of treatment, she developed another manic episode. She was treated with lithium and haloperidol initially; after several weeks the dose of haloperidol was reduced

TABLE 1. *DSM-III* Criteria for Bipolar Disorder Met by 5 Patients

Criteria	Patient				
	1	2	3	4	5
Manic episode					
Elevated or irritable mood	Yes	Yes	Yes	Yes	Only irritable
Duration of mood disturbance of at least 1 week or any duration if hospitalization is necessary and at least 3 of the following symptoms (4 if only irritable):	Yes	Yes	Yes	Less than 1 week	Less than 1 week
Increase in activity or physical restlessness	Yes	Yes	Yes	Yes	Yes
More talkative than usual or pressure to keep talking	Yes	Yes	Yes	Yes	
Flight of ideas or subjective experience that thoughts are racing	Yes	Yes	Yes	Yes	
Inflated self-esteem (grandiosity that may be delusional)	Yes	Yes	Yes		
Decreased need for sleep	Yes	Yes	Yes		
Distractibility, i.e., attention is too easily drawn to unimportant or irrelevant external stimuli	Yes	Yes	Yes	Yes	Yes
Excessive involvement in activities that have a high potential for painful consequences, which is not recognized	Yes	Yes	Yes	Yes	Yes
Major depressive episode					
Prominent and persistent mood disturbance	Yes	Yes	Yes	Yes	Yes
At least 4 of the following symptoms have been present every day for at least 2 weeks	Yes	Yes	Yes	Yes	Yes
Anorexia or weight loss, increased appetite or weight gain	Yes	Yes	Yes	Yes	Yes
Insomnia (initial, middle, terminal) or hypersomnia	Yes	Yes	Yes	Yes	Yes
Psychomotor agitation or retardation	Yes	Yes	Yes	Yes	Yes
Loss of interest or pleasure in usual activities or decrease in sexual drive	Yes	Yes	Yes	Yes	Yes
Loss of energy, fatigue	Yes	Yes	Yes	Yes	Yes
Feelings of worthlessness and self-reproach or excessive or inappropriate guilt	Yes	Yes	Yes	Yes	Yes
Complaints or evidence of diminished ability to think or concentrate	Yes	Yes	Yes	Yes	Yes
Recurrent thoughts of death, suicidal ideation, wishes to be dead, or suicide attempt	Yes	Yes		Yes	Yes
Melancholia	Yes	Yes		Yes	Yes

considerably. Her response was gratifying; lithium therapy—in combination with a low dose of a neuroleptic—not only brought about a rapid lysis of and sustained remission in her affective and psychotic symptoms but also markedly stabilized her inter-polar functioning. Those treating her felt that she had become much more available to psychosocial treatments and noted a marked improvement in her peer relations, which apparently resulted from a decrease in religious preoccupation. The staff revised her treatment plan and prepared for her early transfer to the hospital's transitional unit.

*Case 2.* Ms. B, who was 17 years old, had an illness that also satisfied all *DSM-III* criteria for bipolar (bipolar I) disorder (see table 1). In manic and depressed states she manifested mood-congruent psychotic features that included severe delusions of guilt and sin, as well as delusions of reference and grandiosity.

According to the patient and her mother, Ms. B had manifested behavior satisfying *DSM-III* criteria for cyclothymic disorder beginning at age 7. The first episode of major depression occurred when she was 9 years old and lasted several months. This episode, and others when she was 11, 14, 16, and 17, were of rapid onset, lasted several months, and appeared to satisfy all *DSM-III* criteria for major depression with melancholia; the characteristic mood-congruent psychotic features were also present at some point during each episode but remitted before the resolution of the episode.

Ms. B's first manic episode, when she was age 16, occurred during her initial hospitalization at another institution after a suicide attempt. She was treated with neuroleptics and was transferred to the treatment unit on which our study was conducted before a definitive diagnosis of the psychotic episode could be made. The unit's clinicians came to regard her as suffering from a borderline personality disorder with

transient, reactive psychotic episodes. They were influenced by her flamboyant and exhibitionistic character style, multiple suicidal gestures, sexual hyperactivity and other disruptive behavior, poor scholastic performance, and impaired peer relations.

During Ms. B's 8 months on the unit, which preceded the research diagnoses, the course of her illness had been intractable. During a lengthy depressive episode she suffered unrelenting suicidal ideation, and, despite special nursing care, she managed to make several mutilating suicide attempts. During periods of manic episodes when she was not psychotic she demonstrated markedly impaired judgment, which led to elopement from the hospital on one occasion and to much inadvisable sexual and aggressive behavior. Her psychotic episodes were usually brief but required special supervision. Moreover, during inter-polar periods her disruptive and antisocial behavior continued, although it was somewhat lessened, and her peer and staff relations and school performance remained poor.

Institution of lithium therapy, in combination with amitriptyline, during a depressive episode in Ms. B's ninth month on the unit led to improvement in psychosocial functioning and to reduction in affective symptoms. By 6 weeks, after a therapeutic serum level of lithium had been attained—approximately 4 weeks after therapeutic doses of a tricyclic antidepressant had been instituted—she became euthymic. Concomitantly, the oppositional and antisocial behavior that had marked her course diminished. In subsequent months her school performance and peer relations also improved significantly. The staff, who had believed her treatment had become stalemated because they “could not reach her,” expressed renewed optimism, and her treatment progressed well in the 4 months after the initiation of lithium and antidepressant therapy. Discharge planning was begun much earlier than would have been anticipated otherwise.

*Case 3.* Mr. C, 16 years old, had an illness that satisfied *DSM-III* criteria for bipolar disorder (see table 1). The patient experienced symptoms satisfying *DSM-III* criteria for dysthymic disorder in the year before the onset of his first episode of major depression, which occurred when he was 13 and lasted several months. Recovery was incomplete, and he continued to suffer dysthymia. The episode appeared to be precipitated by his parents' divorce and by a subsequent cross-country move. After the move his school adjustment deteriorated, and he became involved with a delinquent peer group.

At age 16 Mr. C experienced the sudden onset of symptoms meeting *DSM-III* criteria for manic disorder with mood-congruent psychotic features. Psychotic features included delusions of reference, paranoid and grandiose delusions, and auditory hallucinations of largely grandiose content. During this episode he was hospitalized for 2 weeks at another institution with a diagnosis of atypical psychosis and was treated with neuroleptics. He improved rapidly and was discharged; he refused follow-up treatment. The patient required rehospitalization approximately 2 weeks later for essentially the same symptoms and was transferred to the unit on which this study took place. After his admission he was maintained on neuroleptics for several weeks, at which point they were withdrawn without any evidence of relapse.

On the unit Mr. C interacted with patients and staff in a cool and haughty manner and was frequently condescending and egocentric. Because of his comportment, the clinical staff believed that he suffered a narcissistic character disorder. They were uncertain how to understand the psychotic episode but suspected that "the narcissistic defenses may have supported the patient against an underlying schizophrenic organization." Because of the staff's uncertainty about the psychotic episode, they also designated it as atypical psychosis.

Because the staff had not observed any evidence of mania, they were understandably reluctant to accept the research diagnosis of bipolar disorder. Although Mr. C had again satisfied criteria for major depression in an episode that began after his first month of hospitalization, the staff attributed the event to the effects of psychotherapy and to interventions that curtailed his acting out. However, when he had another psychotic episode approximately 7 months after the research interviews, it was recognized as mania with mood-congruent psychotic features. Lithium therapy was begun in conjunction with neuroleptic treatment. After several weeks the neuroleptic was discontinued, and Mr. C was maintained on lithium therapy.

He continued to do well on lithium therapy. Not only was the manic episode controlled, but his baseline psychosocial functioning improved. His school performance was better and the haughty comportment, which had been a major factor in his relative social isolation, was less evident.

*Cases 4 and 5.* Mr. D and Ms. E had illnesses that satisfied *DSM-III* criteria for atypical bipolar (bipolar II) disorder. Each suffered recurrent episodes of major depression with melancholia but experienced frequent hypomanic episodes instead of the full-blown manic syndrome. Both patients manifested a variety of antisocial and self-destructive behaviors and evinced severely compromised scholastic performance and interpersonal relations. Hospital clinicians gave both patients diagnoses of personality disorder; their depressions were understood to be the psychodynamic concomitant of their characterological difficulties.

Further, Mr. D, who was 17 years old, had a manic

reaction to tricyclic antidepressant therapy that had been instituted during a depressive episode. Strober and Carlson (21) have recently shown that such a reaction to tricyclic antidepressants is a strong predictor of bipolar illness in adolescents. Ms. E, who was 16 years old, had experienced hypomanic episodes interspersed with episodes of minor depression since age 12. She thus appeared to have suffered from cyclothymic disorder before the onset of atypical bipolar (bipolar II) disorder with her first episode of major depression at age 16.

#### COMMENT

Our results support previous findings that bipolar disorder is not uncommon among adolescent inpatients, although it is often unrecognized (1-10): 5 (29%) of our subjects satisfied *DSM-III* criteria for bipolar disorder or atypical bipolar (bipolar II) disorder according to a structured diagnostic interview, although none had been previously identified. The charts of 4 patients contained diagnoses of personality disorder, and the chart diagnosis of the fifth patient, who had mood-incongruent psychotic features, was schizophrenia.

The clinical underdiagnosis of bipolar disorder in our sample bespeaks the low index of suspicion of the hospital clinicians, most of whom considered the disorder to be extremely uncommon in adolescence. Moreover, mania and major depression were obscured in these 5 patients by the prominence of psychotic features, antisocial and impulsive behavior, and poor academic and psychosocial performance, much of which persisted in interpolary periods. Consequently, the flagrancy of the patients' presentations, which represented a mix of developmental and atypical symptomatic features, confounded the identification of the disorder. Since 4 of the patients showed evidence of dysthymia or cyclothymia before the onset of the major disorder, clinicians who initially ascribed the lability concomitant of these syndromes to "adolescent turmoil" might have been inclined to interpret the patients' decline to the consolidation of an underlying personality disorder.

Nonetheless, when systematic structured interviews were used in conjunction with strictly specified diagnostic criteria such as the *DSM-III* and RDC, the salient features of bipolar disorder were reliably identified. Moreover, for these 5 cases at least, the patients and their mothers agreed completely when interviewed independently with the K-SADS-E. Extraneous aspects of the presentation such as antisocial behavior, impaired peer relations, and scholastic performance, which may also be important in planning an integrated biopsychosocial treatment approach, did not confuse the diagnostic picture. Structured diagnosis by independent interviewers thus appears to be a useful adjunct to the more informal clinical diagnostic procedures. In our experience, the information provided from our structured interviews was readily accepted by the hospital's clinical staff and was helpful in the

subsequent treatment of these 5 patients. More research in the form of clinical trials is of course necessary before the usefulness of the structured diagnostic approach to adolescent inpatients can be evaluated fully. The onset of bipolar disorder in adolescence requires timely intervention. Correct diagnosis of the disorder and proper treatment are critical to offset the negative impact of the illness on adolescent developmental tasks (9).

#### REFERENCES

1. Winokur G, Clayton PJ, Reich T: Manic Depressive Illness. St Louis, CV Mosby Co, 1969
2. Hudgens RW: Psychiatric Disorders in Adolescents. Baltimore, Williams & Wilkins Co, 1974
3. King LJ, Pittman GD: A six-year follow-up study of sixty-five adolescent patients. *Br J Psychiatry* 115:1437-1441, 1969
4. Ansell AL: Lithium in the treatment of children and adolescents. *Acta Psychiatr Scand (Suppl)* 207:19-30, 1969
5. Bowden CL, Sarabia F: Diagnosing manic-depressive illness in adolescents. *Compr Psychiatry* 21:263-269, 1980
6. Carlson GA, Strober M: Affective disorder in adolescence: issues in misdiagnosis. *J Clin Psychiatry* 39:63-66, 1978
7. Hassanyeh F, Davison K: Bipolar affective psychosis with onset before age 16 years: report of 10 cases. *Br J Psychiatry* 137:530-539, 1980
8. Carlson GA, Strober M: Manic-depressive illness in early adolescence. *J Am Acad Child Psychiatry* 17:138-153, 1978
9. Preodor D, Wolpert ES: Manic-depressive illness in adolescence. *Journal of Youth and Adolescence* 8:111-130, 1979
10. Engstrom FW, Robbins DR, May JG: Manic-depressive illness in adolescence: a case report. *J Am Acad Child Psychiatry* 17:514-520, 1978.
11. Freud A: Adolescence as a developmental disturbance, in *Adolescence*. Edited by Chaplon G, Lebovici S. New York, Basic Books, 1969
12. Spiegel LA: Disorder and consolidation in adolescence. *J Am Psychoanal Assoc* 9:406-417, 1961
13. van Krevelen DA: Psychoses in adolescence, in *Modern Perspectives in Adolescent Psychiatry*. Edited by Howells JG. London, Oliver and Boyd, 1971
14. Offer D, Offer JL: *From Teenager to Young Manhood*. New York, Basic Books, 1961
15. Weiner IB: *Psychological Disturbance in Adolescence*. New York, John Wiley & Sons, 1970
16. Masterson J: The psychiatric significance of adolescent turmoil, in *The Psychology of Adolescence*. Edited by Esman A. New York, International Universities Press, 1968
17. Feighner JP, Robins E, Guze SB, et al: Diagnostic criteria for use in psychiatric research. *Arch Gen Psychiatry* 26:57-63, 1972
18. Spitzer RL, Endicott J: Research Diagnostic Criteria: rationale and reliability. *Arch Gen Psychiatry* 35:773-782, 1978
19. Orvaschel H, Puig-Antich J, Chambers W, et al: Retrospective assessment of prepubertal major depression with the Kiddie-SADS-E. *J Am Acad Child Psychiatry* 21:392-397, 1982
20. Endicott J, Spitzer RL: A diagnostic interview: the Schedule for Affective Disorders and Schizophrenia. *Arch Gen Psychiatry* 35:837-844, 1978
21. Strober M, Carlson G: Bipolar illness in adolescents with major depression: clinical, genetic, and psychopharmacologic predictors in a three- to four-year prospective follow-up investigation. *Arch Gen Psychiatry* 39:549-555, 1982

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