Unmasking Masked Depression in Children and Adolescents

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The authors examined depressive symptoms and behavior disorders in 102 systematically interviewed children aged 7 to 17 years to elucidate the category of masked depression. They found that it was possible to diagnose these children using adult research criteria and that more children with depression were identified using a systematic interview than were identified using standard evaluation procedures. Although children with a depressive disorder may also exhibit behavior disorders that overshadow the depression, an alert clinician conducting a thorough interview should be able to identify the "masked" depression.

Recent attempts to clarify the nosology of childhood depression have concentrated appropriately on distinguishing depression as a symptom (dysphoric mood) from depression as a syndrome (with accompanying cognitive, psychomotor, and vegetative manifestations) from depression as a disorder (with a characteristic clinical picture, natural history, and biological correlates) (1-3). We also need to know not only what percentage of unhappy children are suffering primarily from an affective disorder but also the converse—what percentage of children who deny depression and have other symptoms are actually suffering from a depressive disorder. Although these issues exist for phenomenologists interested in adult psychopathology, the child psychiatrist contends with the additional influence of different stages of development on the manifestations of mood disorders.

As Kovacs and Beck noted in 1977 (2), there are two basic viewpoints on the manifestation of childhood depression. One view holds that except for some development-specific modifications, childhood depressions resemble adult depressions. The following depressive symptoms are most often agreed on, according to Kovacs and Beck (2): 1) dysphoric mood (sadness, unhappiness), irritability, and weepiness, 2) low self-esteem, self-depreciation, hopelessness (suicidal ideation), morbid ideas, recent poor school performance, and disturbed concentration, 3) diminished psychomotor behavior, social withdrawal, and increased aggressiveness, and 4) fatigue, sleep problems, enuresis or encopresis, weight loss or anorexia, and somatic complaints.

The alternative view essentially states that most children do not express depression directly and that it must be inferred from behaviors and symptoms "masking" the underlying depressive feelings. Many problems have been implicated as so-called depressive equivalents. Conduct disorders (hyperactivity, delinquency, aggressiveness, irritability) (4), psychological reactions (1), somatic complaints (especially headaches, stomachaches, and enuresis) (1, 5, 6), and school problems (school phobia, poor school performance) (6) are the most frequently cited. Since these problems account for most child psychiatric referrals, it is unlikely that depression is behind all of them.

In this paper we propose to examine depressive symptoms and conduct problems in 102 systematically interviewed children between ages 7 and 17 to elucidate the category of so-called masked depression.

METHOD

As part of a study to determine the prevalence of depressive symptoms and depressive disorders in a child psychiatric population (7, 8) and to validate Kovacs and Beck's Children's Depression Inventory (CDI) (2), a randomly selected sample of 210 English-speaking children (7 to 17 years old) seen for evaluation in a children's outpatient department were given the CDI. One-hundred-two children and their parents agreed to take part in the systematic evaluation portion of the study as well. This consisted of a 1½-hour interview with the parents, a 1-hour interview with the child, and, when possible, the child's academic performance record and the Connors Teachers Rating Scale completed by the child's teacher.

The CDI has evolved from the adult Beck Depression Inventory (9), which is a 21-item questionnaire composed of questions tapping mood as well as vegetative, cognitive, and psychomotor aspects of depression. Kovacs and Beck modified the wording of some

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TABLE 1
***DSM-III* Codes and Diagnoses[a] of 102 Children[b]**

Diagnosis	Children with Diagnosis	
	Number	Percent
Axis I		
Behavior disorders	36	35.3
Attentional deficit disorder	28	27.5
Conduct disorder	10	9.8
Drug use disorder	2	2.0
Emotional disorders	17	16.7
Phobias and special childhood disorders	3	2.9
Phobias and special childhood disorders	9	8.8
Phobias and special childhood disorders	5	4.9
Physical disorders	11	10.8
Anorexia nervosa	9	8.8
Gilles de la Tourette syndrome	2	2.0
Psychotic disorders	8	7.8
Pervasive developmental disorders	5	4.9
Schizophrenia	3	2.9
Affective disorders	28	27.5
Major depression	23	22.5
Cyclothymia	2	2.0
Dysthymic disorder	2	2.0
Adjustment reaction with depressive symptoms	1	1.0
Undiagnosed, other, and no mental disorder	11	10.8
Axis II		
Personality disorders	9	8.8
Developmental disorders	17	16.7

[a]Based on the January 1978 draft.
[b]Numbers add up to more than totals because some children were given more than one diagnosis.

of the adult Beck items to comply with meaningful experiences of a child (e.g., work became homework and guilty became ashamed). Items in the CDI are scored from 0 (the symptom is absent) to 3 (the symptom is present all the time or in its most severe form).

The interview with the parent or parents consisted of a semi-structured questionnaire eliciting information about reasons for seeking psychiatric help for their child; history of psychiatric, medical, or developmental problems; family and peer relationships; and the presence or absence in the past or present of specific mood, somatic, academic, and behavioral symptoms in sufficient detail to enable diagnosis according to *DSM-III* criteria. A systematic family history of psychiatric illness in the parents and known first-degree relatives of the child was also obtained.

The diagnostic interview with the child consisted of an unstructured part during which the examiner established rapport and a structured part that systematically examined the child's view of his problems, his peer, family, and school relationships, his academic performance, his physical symptoms, and any anxiety, obsessional, delusional, and antisocial symptoms and behaviors. Finally, specific questions relating to mood, self-esteem, psychomotor behavior, ability to have fun, appetite, sleep, and suicidal ideation, as required by the Research Diagnostic Criteria (10), were asked. Responses were rated on a scale of 1-5: 5 represented most severe pathology. Similar ratings were also made on 6 nonverbal items, such as relationship with the examiner, depressed or anxious appearance, audibility of speech, spontaneity of comments, and activity level. Although the maximum total score on all these items was 30, the scores were more meaningful if ranged as follows: 6-9, "normal"; 10-13, appearing somewhat sad; and 14-30, very sad, withdrawn, and slowed down. At the conclusion of the interview the child was given a global depression rating from 1 (not depressed) to 5 (severely depressed).

A five-axis diagnosis according to *DSM-III* criteria was made on the basis of all of the information gained except the CDI scores. Diagnoses were further grouped into the larger categories noted in table 1. We examined the following specific items from the child interview for this study: 1) depressive symptoms reported by the child, 2) depressive behavior (i.e., nonverbal expressions of depression manifested during the interview), and 3) irritability manifested by fighting, tantrums, and antisocial behavior. From the parent interview we reviewed the following items: 1) whether behavior problems were very serious and the major reason for bringing the child for evaluation or whether they were secondary to the chief complaint and 2) chronicity of psychiatric problems (chronic was defined as lasting for 2 years or more).

RESULTS

Ninety-three of the 102 children were given Axis I *DSM-III* clinical diagnoses (see table 1). Five children were undiagnosed, and 4 had no mental disorder. The discharge *DSM-II* diagnoses from concurrent evaluations on the 28 children diagnosed as having affective disorder according to *DSM-III* were as follows: depressive neurosis or manic-depressive psychosis (N=11), feeding disturbance (anorexia nervosa) (N=3), adjustment reaction (N=4), unsocial aggressive reaction (N=7), personality disorder (N=2), and encopresis (N=1).

The 28 children diagnosed as having an affective disorder according to *DSM-III* were further subdivided. Twelve were judged to have a primary affective disorder (11). Sixteen were considered as having a secondary depressive disorder (11): 8 met criteria for both a major depressive disorder (usually of relatively recent onset) and for either an attention deficit disorder (hyperactivity) or conduct disorders (which were more chronic) and were thus given both diagnoses, and 8 had depression plus another problem, most often anorexia nervosa. Twenty-seven children had behavior disorders without depression, and 6 adolescent girls had anorexia nervosa alone. The mean ages of the children in all of the groups were not significantly different; these are noted in table 2.

TABLE 2
Depression Variables in 61 Children Grouped According to *DSM-III* Diagnosis

Diagnosis	Mean Age (years)	Mean CDI Score[a]	Mean Interview Response Rating[b]	Mean Rating of Nonverbal Behavior[c]	Ratio of Boys to Girls, in percents	Ratio of Acute to Chronic Illness, in percents
Primary affective disorder (N=12)	13.8	20.0	3.7	11.3	55:45	70:30
Secondary affective disorder						
With behavior disorder (N=8)	11.6	27.8	3.8	13.8	63:37	25:75
With other disorders (N=8)	14.5	23.4	4.3	15.2	38:62	75:25
Behavior disorder alone (N=27)	12.6	14.6	1.5	8.6	85:15	24:76
Anorexia nervosa alone (N=6)	13.6	9.3	2.0	14.0	0:100	83:17

[a]The criteria have not been established, but the test on which the CDI is based states that a score of 16 or more indicates moderate depression and 24 or more indicates severe depression.
[b]Range, 1-5: 5=most severe pathology.
[c]Range, 6-30: 6-9, not depressed; 10-13, somewhat depressed; 14 and over, obviously depressed.

TABLE 3
Depressive Symptoms in 61 Children Grouped According to *DSM-AII* Diagnosis

	Primary Affective Disorder (N=12)		Secondary Affective Disorder with Behavior Disorder (N=8)		Behavior Disorder (N=27)		Secondary Affective Disorder with Behavior Disorder (N=8)		Anorexia Nervosa (N=6)		
Symptom	N	%	N	%	N	%	N	%	N	%	Significance[a]
Dysphoric mood	9	75	5	63	10	37	6	75	2	33	$p<.003$
Low self-esteem	8	66	7	88	12	44	6	75	1	16	$p<.09$
Anhedonia	8	66	7	88	10	37	4	50	0		$p<.05$
Fatigue	8	66	7	88	5	19	4	50	4	67	$p<.001$
Somatic complaints	9	75	4	50	8	30	7	88	2	33	$p<.007$
Suicidal ideation	10	83	8	100	10	37	7	88	3	50	$p<.05$
Hopelessness	8	66	6	63	10	37	7	88	3	50	$p<.05$

[a]The children with diagnoses of affective disorder were compared with those with no affective disorder.

Symptoms of Depression

A comparison of the self-rating CDI scores across the five groups of children with different *DSM-III* diagnoses shows striking differences (see table 2). Children with affective diagnoses had higher scores, ranging from 20 for the children with primary affective diagnoses to 27.8 for the children with diagnoses of secondary affective disorder. (Although severity criteria for the CDI have not been established, the Beck Depression Inventory [9], from which the CDI is adapted, states that a score of 16 or over signifies moderate depression and a score of 24 and over indicates severe depression.) Children with behavior disorders alone or anorexia nervosa alone scored much lower; these differences are significant at $p<.001$ according to chi-square analysis.

The global depression ratings given at the end of the interview without knowledge of the CDI score showed a similar trend. Children with affective disorder diagnoses were judged moderately depressed, but children with behavior disorders alone or anorexia nervosa alone were given low depression ratings (see table 2). These differences are also significant at the $p<.001$ level.

The difference between children with a diagnosis of affective disorder and those without such a diagnosis holds true for specific symptoms (see table 3). Two-thirds of the children with a diagnosis of affective disorder and behavior disorder said they were unhappy; only one-fifth of the children with behavior disorder alone said they felt unhappy. Children with anorexia nervosa and depression felt sad; children with anorexia alone did not. These trends were also true for the symptoms of low self-esteem, anhedonia, somatic complaints, suicidal ideation, and hopelessness.

Impaired school performance did not distinguish the subjects from each other, but in general the children with anorexia and those with primary depression alone were functioning better than other groups. Sleep problems were present in all groups; appetite disturbance was present in the children with anorexia by definition.

Depressive behavior, that is, looking sad or tearful, psychomotor retardation, and speaking quietly with little spontaneity were most prominent among the children with anorexia nervosa, whether or not they also had affective disorder, but they did not look significantly more sad than the other children with affective disorder. Children with behavior disorders alone, however, appeared significantly less depressed (see table 3).

TABLE 4
Parents' View of Intensity of Behavior Problems in Children Grouped According to *DSM-III* Diagnosis

Intensity of Problem	Primary Affective Disorder (N=14)[a]		Behavior Disorder Alone (N=28)		Secondary Affective Disorder with Behavior Disorder (N=8)	
	N	%	N	%	N	%
No behavior problems	3	21	3	11[b]	0	
Incidental behavior problems	10	71	6	21	2	25
Major behavior problems	1	7	19	68	6	75

[a]The parents' view of the intensity of their child's behavior problem was significantly different for the children with primary affective disorder compared with the two other groups of children ($p<.01$).
[b]These children had an attention deficit disorder but no hyperactivity.

Behavior Problems and Irritability

Children with anorexia nervosa alone were rarely brought for treatment of behavior problems except when the behavior was related to their aberrant eating. We therefore excluded them from our analysis of behavior difficulties. We combined the groups of children with affective disorder and compared the frequency of behavior problems and irritability among them with that among children with behavior disorders (with or without affective diagnoses).

Table 4 shows the parents' view of the intensity of their children's behavior problems. Most noteworthy is the fact that although the majority of the children with primary affective disorder had behavior problems that were viewed by their parents as disturbing (such as fighting, arguing, and being disobedient), these behavior problems were not seen as the child's major problem. This is in contrast to the groups of children with secondary affective disorder and behavior disorder alone, whose behavior problems were more serious, including more reckless hyperactivity, truancy, more antisocial acts, and fighting leading to school suspension. The parents viewed these problems as the major motivating force for bringing the child for evaluation.

Finally, we compared the children's own ratings of their irritability. We asked the children about how they viewed their tempers, fighting with their brothers and sisters, parents, peers, and teachers, and whether they felt that their tempers, if short, were troublesome to them. With 3 as a minimum score and 15 as a maximum, children with affective disorders without a diagnosis of behavior disorder noted some problems (5.9 ± 2.4) but had significantly lower scores than children with behavior disorders alone (9.7 ± 2.8) and those with depressive and behavior disorders (8.9 ± 2.5) ($p<.01$, Student's t test).

DISCUSSION

On the basis of this comparison of the frequency of depressive symptoms, depressed appearance, behavior problems, and irritability in children with systematically diagnosed affective disorders, behavior disorders, and anorexia nervosa, we have drawn several conclusions:

1. It is possible to diagnose children over age 7 as having a major depressive disorder using adult research diagnostic criteria. The fact that the sex ratio for children with depression showed more girls than boys suggests that the preponderance of affective disorders in female adults was already beginning to show.

2. When children are interviewed systematically about their symptoms, a much higher incidence of depressive disorder is found than by the usual evaluation procedure. In fact, more traditional evaluation methods overlooked the diagnosis of depression in 60% of the cases. The depressed children rated themselves as depressed on the CDI as well. Some children were more articulate at describing their symptoms than others, but in only one case was the parent's history necessary to confirm the diagnosis.

3. Some children who meet criteria for depression also meet criteria for other disorders—most often attention deficit disorders (hyperactivity), conduct disorders, and anorexia nervosa. These are the problems that most often bring them to psychiatric attention and thus may divert attention away from the concomitant depression. The fact that the majority of missed depressions fell into the category of unsocialized aggressive reactions or adjustment reactions suggests that this is precisely what happened. We hypothesize that these children have what has been called "masked depression," although it has been our experience that the mask, if present, is very thin. Kovacs and Beck (2) made similar observations after reviewing the literature; they noted that "masking behaviors" are often nothing more than presenting complaints.

4. Not all children with behavior disorders or anorexia nervosa are depressed. In fact, a majority of the children we studied neither described depression nor appeared depressed. Although one might hypothesize that these children had masked depressions with more successful masks, it would seem a difficult hypothesis to prove.

5. There are two differences between the behavior problems of children who are simply depressed and those who have diagnoses of both depressive and be-

havior disorders. In children with depression, behavior problems were seen as less severe and postdated the onset of depressive symptoms. In children with both diagnoses and in children with behavior disorders alone, the behavior problems were chronic and of greater magnitude. Future follow-up and family studies are needed to determine the continuity, if any, between these childhood affective disorders and adult psychopathology and the relationship between depressive and behavior disorders.

Children with anorexia nervosa and depression posed a somewhat different dilemma. Feighner and associates (12) suggested that anorexia nervosa should not be diagnosed if the criteria for affective disorder are met. We chose to make both diagnoses so we could study this group of children and compare them with children with uncomplicated depression and uncomplicated anorexia nervosa. It is interesting that a recent follow-up study of adolescents with anorexia nervosa (13) found that the anorexia symptoms subsided but that one-third of the group met criteria for affective disorder. Moreover, there was a high incidence of positive family history of depression as well. There is, then, a complex relationship between these two disorders, but we did not find any evidence to support the contention that the anorexia nervosa masks depression.

In summary, although we have not addressed ourselves to all types of masked depression, we conclude that in some children with hyperactivity, aggressive behavior, and some antisocial behavior, a depressive disorder coexists. Insofar as the behavior disturbance is most outstanding, it may be said to overshadow the depression. To an alert clinician conducting a thorough interview, however, the depression will not be masked.

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