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The Use of the Center for Epidemiologic Studies Depression Scale in Adolescents and Young Adults

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The existence of depression in children and adolescents is well established, but debate remains about the phenomenology of the depressive syndrome in the young. In order to discover possible age differences in rates and etiology, the definition and measurement of depression must be comparable across the ages to be studied. A widely used self-report depression symptom scale, the Center for Epidemiologic Studies Depression (CES-D) Scale, was administered to convenient (and not necessarily representative) samples of high school and college students. The scores and patterns of responses to the 20 symptom items of the scale were compared with already existing data from junior high school students, from depressed patients, and from a representative community sample of adults and young adults. The results of the analyses suggest that the CES-D Scale is acceptable and reliable in all the groups studied. The scores of the junior high school group may be inflated by an excess of transient symptoms and should be interpreted with caution, but the scale seems to be very suitable for the high school and older groups.

INTRODUCTION

The debate about depression in the young has been well summarized in recent reviews (e.g., Schoenbach *et al.*, 1984; Ebata *et al.*, 1987) and will not be repeated in detail here. The existence of depression in children, adolescents and young adults seems to be well established (Kashani *et al.*, 1981). The debate now centers more on possible age differences in phenomenology and rates. Young people, even prepubertal children, have been diagnosed

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with major depressive disorder by the Diagnostic and Statistical Manual (third edition; DSM-III) criteria (e.g., Puig-Antich, 1987). However, developmental factors, especially during the adolescent period, may complicate the symptom picture. Epidemiologic data suggest that major depression by adult criteria is probably rare in young children (Kashani and Simonds, 1979; Kashani *et al.*, 1983) but increasingly common over the adolescent and young adult years (Rutter, 1986). It has also been suggested (Wells *et al.*, 1985) that rates in the young have increased over time (Hagnell *et al.*, 1982). This is supported by apparent increases in suicide rates (Carlson, 1983), treatment rates (Milazzo-Sayer, 1978), and self-reported depressive symptoms and syndromes (Boyd and Weissman, 1984).

To adequately follow through these intriguing findings and especially to compare rates across different age groups, the criteria and measures of depression must be validated in all of the groups to be compared. Brief self-report symptom scales have been very useful in epidemiologic surveys of depression, but most of them were developed and validated on adults. Validity in college students and young adults (age 18 and over) has traditionally been taken for granted, while lack of validity has usually been assumed for younger ages. However, due to legitimate questions raised about interpretation of such scales (e.g., Gotlib, 1984, but see Hirschfeld and Cross, 1982), there is a growing literature on the validity of self-report measures in specific population subgroups. For example, Wells *et al.* (1987) tested the Center for Epidemiologic Studies Depression (CES-D) Scale in a sample of college students; Teri (1982) tested the Beck Depression Inventory in adolescents, Grades 9–12; Kandel and Davies (1982) developed and tested a depression scale for high school students (ages 14–18); Smucker *et al.* (1986) reported on the use of the Children's Depression Inventory (Kovacs, 1983) in children ages 8–16; Schoenbach *et al.* (1982, 1983) tested the CES-D scale in junior high school students; Brooks-Gunn *et al.* (1989) tested measure equivalence across ages 10–19 for three emotional dysfunction scales from the Self-Image Questionnaire for Young Adolescents (Petersen *et al.*, 1984).

The current study was designed to extend Schoenbach's test of the CES-D, by comparing his junior high sample with samples of high school and college students and community young adults (ages 18–25), and comparing these youth groups with community adults and with adult diagnosed depressed patients. Acceptability of the scale and reliability based on internal consistency measures can be estimated with the available data. There are no external criteria of validity (such as clinical diagnosis) in these data sets. However, internal analyses of the CES-D data can address some of the suggested sources of invalidity in the young. These include a variety of ways in which scores

on the scale might be inflated by normative developmental factors, even in the absence of significant psychopathology. The analytic strategy is to operationalize these artifactual factors in terms of patterns of responses on the CES-D, as follows:

- Interpersonal problems would be especially likely to reflect normal adolescent concerns with peer relationships rather than depression. This can be tested by comparing elevation on the two interpersonal items across age groups and with other types of items.
- It has been suggested that young people are subject to emotional volitility, experiencing mood swings that may be extreme but are also transient and that include as many happy moods as sad ones. Short of bipolar illness, such lability is not considered indicative of pathology. This can be tested by comparing happy and sad mood items, and by considering the persistence vs. transience of the symptoms.
- Also related to the transience of reported symptoms is the suggestion that young people are more self-aware and more willing to report the presence of moderate or mild levels of negative subjective experiences than are adults.
- The adolescent struggle toward independence and with identity issues may cause conflict with conventional society. This may manifest itself in demoralization or "anomie," which would be picked up on symptom scales as mild depression. It should include psychological but not somatic symptoms, and should be milder than clinical depressive disorder.

The above are normative factors that would inflate scores on symptom scales in the absence of disorder. There have also been suggestions that even when disorder is present, the young depressed person would differ from adult depressives in the nature and pattern of symptoms (e.g., see Cantwell, this volume, for more detail). Two such issues that can be tested here are the following:

- Young people may be more likely than adults to experience all of the symptoms of depression except the dysphoria ("masked depression"). This can be tested by comparing dysphoria with other symptoms of the CES-D Scale in the different age groups.
- It has been suggested that symptom patterns in the young may be so different that adult criteria are totally inappropriate. This issue will be addressed by comparing the different age groups on a variety of ways of scoring the CES-D, including approximations of adult criteria for clinical disorder.

METHODS

Samples

1. The community samples were from the Community Mental Health Assessment (CMHA) Survey sponsored by the Center for Epidemiological Studies of the NIMH (Radloff, 1977; Radloff and Locke, 1986). Data were collected in 1971–1972 in Kansas City, Missouri and Washington County, Maryland. The samples were representative of the general population in each community. Three subsamples are used here:
   – CMHA youth, ages 18–25
   – CMHA adults, ages 26 and over
   – CMHA well adults, a subset of all adults, based on their answer to the question "In the past month, did you have an emotional problem for which you wanted help?" If the answer was "no, no such problem," the respondent was classed as well.
2. The patient sample (referred to as the acutely depressed sample) was from the Yale Depression Research Unit (Weissman *et al.*, 1977). Subjects were outpatients diagnosed as acutely depressed, with Raskin Depression ratings greater than six, admitted to the Yale Depression Research Unit project. Intake counselors completed the Raskin Scale immediately after the interview with the client (without seeing the CES-D Scale results).
3. The college sample came from three different colleges (one large Western university, two small Eastern colleges). Data were collected from psychology classes in 1976–1977. These are "samples of convenience," and are not necessarily representative of college students in general. The mean scores of the three samples were almost identical, however, so it was considered reasonable to combine the three samples to simplify the analyses.
4. The high school sample came from two different Grade 10–12 high schools (one large Eastern urban school and one Eastern small town school). Data were collected from students in English classes and high school psychology classes in 1977–1978. These are also samples of convenience, not necessarily representative of high school students in general. The mean scores of the three samples were almost identical, so they were combined for the analyses.
5. The junior high school sample came from Schoenbach *et al.* (1982, 1983). The CES-D scale was used in a study of biosocial factors in adolescent sexual behavior (J. Richard Udry, Principal Investigator).

Data was collected from about 63% of all students in a single Southeastern urban junior high school, Grades 7–9, in 1978–1979. Schoenbach reported a high nonresponse rate, which resulted in an underrepresentation of students with low SES and with low reading skills. To the extent that these are related to a higher risk of depression, the level of depressive symptoms may be an underestimate. These results were probably reasonably representative of this junior high school since they were replicated in the same school by Garrison *et al.* (1984), but are not necessarily representative of all junior high school students.

The CES-D Scale

The CES-D Scale is a 20-item self-report scale designed to measure depressive symptomatology in the general population. The items of the scale are symptoms associated with depression that were chosen from previously validated scales. The scale has been tested in household interview surveys and in psychiatric settings, and has been found to be readily acceptable to respondents and very quick and easy to use. It has very high internal consistency and adequate test–retest repeatability. Validity has been established by patterns of correlations with other self-report measures of depression, by correlations with clinical ratings of depression, by discrimination of clinical from nonclinical groups, and by relationships with other variables that support its construct validity. Reliability, validity, and factor structure have been found to be similar across a wide variety of demographic characteristics, including age (18 and up), in the general population samples tested (Radloff, 1977; Radloff and Locke, 1986).

Methods of Scoring

The complete scale is shown in Table I. The usual scoring is a simple sum of the item weights (with positive items reversed as shown). A higher score indicates greater frequency and number of symptoms of depression. The usual way of reporting "percent above cutoff" uses percent at and above a score of 16. This was the approximate 80th percentile in the original Community Mental Health Assessment (CMHA) study. Studies testing the utility of this cutoff for screening purposes were summarized in Radloff and Locke (1986) and Radloff and Teri (1986). Based on factor analysis of the CMHA data, four subscales (Depressed Affect, Happy, Somtic and Interpersonal) were identified for use in psychometric analyses of the CES-D Scale

Table I. Center for CES-D Scale

Circle the number for each statement which best describes how often you felt or behaved this way—DURING THE PAST WEEK

	DURING THE PAST WEEK	Rarely or None of the Time (Less than 1 Day)	Some or a Little of the Time (1–2 Days)	Occasionally or a Moderate Amount of Time (3–4 Days)	Most or All of the Time (3–7 Days)
		Item Weights			
1.	I was bothered by things that usually don't bother me	0	1	2	3
2.	I did not feel like eating; my appetite was poor	0	1	2	3
3.	I felt that I could not shake off the blues even with help from my family or friends	0	1	2	3
4.	I felt that I was just as good as other people	3	2	1	0
5.	I had trouble keeping my mind on what I was doing	0	1	2	3
6.	I felt depressed	0	1	2	3
7.	I felt that everything I did was an effort	0	1	2	3
8.	I felt hopeful about the future	3	2	1	0
9.	I thought my life had been a failure	0	1	2	3
10.	I felt fearful	0	1	2	3
11.	My sleep was restless	0	1	2	3
12.	I was happy	3	2	1	0
13.	I talked less than usual	0	1	2	3
14.	I felt lonely	0	1	2	3
15.	People were unfriendly	0	1	2	3
16.	I enjoyed life	3	2	1	0
17.	I had crying spells	0	1	2	3
18.	I felt sad	0	1	2	3
19.	I felt that people disliked me	0	1	2	3
20.	I could not get "going"	0	1	2	3

(Radloff, 1977). The items in the four subscales are shown in Table II. Each subscale score is the sum of the weights for the items in the subscale. For the analyses here, these scores were divided by the number of items in the subscale, to facilitate comparison of the mean scores of the different subscales across the samples.

Alternative scoring methods used here, to emphasize severity or approximate "caseness," are as follows:

1. A higher cutoff score was used to select more severe cases. A variety of cutoffs have been suggested by those who have used the CES-D. For example, Husani *et al.* (1980) suggested cutoffs of 17 for "possible" and 23 for "probable" cases, based on discrimination between their general population and treated samples. It was decided here to use a cutoff of 28 because it would select about 5% of the CMHA Adult sample as "cases." This was done because the current prevalence of major depressive disorder in the general adult population is estimated to be about 5% (from the Epidemiologic Catchment Area studies as reported by Weissman *et al.*, 1986).
2. Craig and Van Natta (1976) proposed and tested a "persistence" score, which is the number of negative items with item weight of three (i.e., "all or most of the time"). This score (based on all 20 items, with

Table II. Subscales for the CES-D Scale

Depressed affect (D)	
3	Blues
6	Depressed
14	Lonely
17	Cry
18	Sad
Happy (H)	
4	Good as other people
8	Hopeful
12	Happy
16	Enjoy life
Somatic and retardation (Som)	
1	Bothered
2	Eat
5	Mind on things
7	Effort
11	Sleep
20	Get going
Interpersonal (IP)	
15	People unfriendly
19	People dislike me

positive items appropriately reversed) was used in the current study in order to estimate persistent symptomatology and omit symptoms that are transient.

3. Discriminant function analysis was used as another method of classifying individuals in this study as cases. Because of the suggestion that problematic peer relationships might be normative for adolescents, the two interpersonal items were omitted for these analyses. The linear function of the remaining 18 items was calculated, based on discrimination between the acutely depressed sample and the CMHA well adult sample. Since the well adult sample was so large, it was divided into random halves, using one to create the function and the other to cross-validate it. Identical results were found. The function was used to classify individuals in the other samples as most like the acutely depressed or the well adults. The assumption of a 5% prevalence rate for depression in the general population was used to set the "priors" (preselected percents to be classified in each direction). The same priors were used for all groups, under the null hypothesis that they were all general population samples.
4. Schoenbach *et al.* (1982) developed a way to score the CES-D Scale based on the Research Diagnostic Criteria (RDC; Endicott and Spitzer, 1979). The current study did a similar scoring, but based on DSM-III (see Appendix for details). In consultation with a psychiatrist, the CES-D items were matched as well as possible with the DSM-III criteria. The persistance weights were taken into account (for example, "pervasive anhedonia" required an answer of "rarely or none of the time" to the item "I enjoyed life" or the item "I was happy"). Since there is no suicide item in the CES-D and since the time frame is only one week rather than two, any matching with diagnosis can be only approximate. Therefore, several DSM-III relevant scores were produced. Part A of DSM-III (dysphoric mood) and Part B (other symptoms) were scored separately, and each was given a rating of probable or definite, depending on the number of symptoms and item weights. An individual was classified as having 'DSM-III-like" depression only if both Part A and B were "definite." This resulted in very stringent criteria for the classification.

RESULTS

Acceptability

The CES-D has been found to be acceptable to a wide variety of populations, whether given by face-to-face interview, telephone interview, or self-

administration (Radloff and Teri, 1986). Once an individual agrees to participate in an overall study, the CES-D as a whole is rarely refused. However, missing items do sometimes occur as a result of carelessness, misunderstanding, or refusal. There are more likely to be missing items when the scale is self-administered, probably due to carelessness and reading difficulty (e.g., see National Center for Health Statistics, 1980). In the current study, if more than five items were missing, the scale was considered unusable. Table III gives rates of unusable scales and missing items in usable scales for the samples reported here. The CMHA adults and youth were interviewed face-to-face and had very low rates of missing data (less than half a percent in each category). The scale was self-administered in the acutely depressed patients, but an interviewer was available to give assistance where needed. This resulted in very low rates of missing data. The college and high school samples were given the scale in a brief, self-administered class exercise. The college students had less than one percent missing in each catetory. The high school students had higher rates: 6% unusable scales and 1.1% missing items. For the junior high school sample, the CES-D was embedded in a very long self-administered questionnaire, done in the home. Here, there were many more cases where the whole CES-D Scale was unusable (19% reported by Schoenbach; 23.1% by the criteria used here) but a reasonable rate of missing items in usable scales (1.3%). Most of the unusable scales were completely blank. Schoenbach *et al.* (1982) suggested reading difficulty as the major reason for his high rates of missing data. Interviewer assistance might improve the quality of data where reading or vision problems are suspected.

Reliability

Internal consistency measures of reliability in the three school samples were remarkably similar to those for the CMHA youth and adults. Reliability in the acutely depressed was slightly lower but still quite satisfactory. This was true for the average interitem correlation, the reliability coefficient the intraclass correlation and coefficient alpha, the total scale, and the four subscales. (See Table IV for coefficient alpha).

Table III. Acceptability: Unusable Scales and Missing Items

Group	Participant	Unusable		Usable	Missing items	
	N	*N*	%	*N*	*N*	%
Acutely depressed	148	0	0.0	148	1	0.03
Junior high school	502	116	23.1	386	100	1.30
High school	317	19	6.0	298	64	1.10
College	216	2	0.9	214	10	0.20
CMHA youth	383	0	0.0	383	9	0.10
CMHA adult	2463	7	0.3	2456	99	0.20

Table IV. Coefficient Alpha for CES-D and Subscales

Group	Whole scale	Subscales			
		D	H	Som	IP
Acutely depressed	.79	.65	.62	.58	.73
Junior high school	.85	.74	.72	.58	.65
High school	.86	.85	.64	.60	.60
College	.87	.84	.68	.64	.73
CMHA youth	.87	.81	.66	.62	.53
CMHA adult	.84	.81	.62	.68	.56

Traditional Scoring

The overall means and percent at and above the traditional cutoff of 16 for the three school groups were significantly higher than those for the CMHA youth which were in turn significantly higher than the CMHA adults. The acutely depressed group was substantially and significantly higher than all of the other groups (see Table V). Multivariate analysis of variance (MANOVA) confirmed the same pattern for all four subscales, with certain exceptions (see Table VI). The CMHA youth did not differ significantly from the CMHA adults on the Happy subscale ($p = .09$), from the college sample on Somatic ($p = .17$), and from the junior high sample on Somatic ($p = .28$) and Depressed ($p = .07$). Of more interest is the fact that the acutely depressed did not significantly exceed the junior high ($p = .13$) and high school ($p = .16$) samples on the Interpersonal subscale. This is partly be-

Table V. Conventional Scoring, CES-D Scale

Group	*N*	Mean (SD)	% GE 16
Acutely depressed	148	38.07 (9.00)	99.32
Junior high school	355	16.60 (9.19)	49.48
High school	282	17.88 (10.31)	53.36
College	214	15.46 (9.67)	40.65
CMHA youth	382	12.51 (9.41)	29.24
CMHA adult	2440	8.97 (8.50)	18.00

Table VI. Subscales of the CES-D Mean Values per Item and Coefficients of Variation (CV)

Group	Depressed mean/item (CV)	Happy mean/item (CV)	Somatic mean/item (CV)	Interpersonal mean/item (CV)
Acutely depressed	2.30 (.245)	2.00 (.343)	2.03 (.291)	.77 (1.12)
Junior high school	.65 (.923)	1.14 (.636)	.84 (.590)	.69 (1.09)
High school	.84 (.922)	1.02 (.725)	1.05 (.543)	.69 (1.06)
College	.77 (.890)	.83 (.831)	.95 (.597)	.47 (1.38)
CMHA youth	.57 (1.10)	.58 (1.10)	.88 (.670)	.35 (1.61)
CMHA adult	.37 (1.54)	.52 (1.28)	.65 (.941)	.16 (2.75)

cause the acutely depressed were not as elevated on this subscale as on the other three subscales, and partly because the junior high and high school samples were more elevated on it. On the Interpersonal subscale, the acutely depressed had an average item score of less than 1.0 (i.e., less than the "some or a little of the time" response choice), while they averaged 2.0 or more ("a moderate amount of the time") on the other three subscales. The significant discrimination between acutely depressed and CMHA adults on this subscale was partly due to the extremely low score of the adults (average per item = .16).

A MANOVA of the 20 items of the CES-D confirmed the impression given by the subscale analysis, that all of the items of the scale were contributing to the scores of all of the groups. The overall, the MANOVA pairwise, and the univariate overall tests were all highly significant. Most of the univariate pairwise tests (20 items by six groups) followed a pattern similar to the total scale mean scores (i.e., AD > HS > JH = Coll > Y > A). There were, of course, a few exceptions, most notably the two interpersonal items on which the acutely depressed did not differ significantly from any of the three school groups. However, the acutely depressed were higher and the adults lower than all the youth groups on at least 15 items per comparison.

Scoring for Severity

Table VII shows the groups as scored in the alternative ways. The percent above the higher cutoff (28, or the 95th percentile for the CMHA adults)

Table VII. Scoring for Severity

Group	GE 28 %	Persistence mean	Patient-like %	DSM-like A %	DSM-like B %	DSM-like Both %
Acutely depressed	87.84	8.83	89.80	89.19	77.70	76.35
Junior high school	12.95	1.36	8.16	24.93	7.09	4.99
High school	17.79	2.05	15.97	27.70	13.18	10.47
College	13.55	1.29	12.25	21.03	10.28	7.48
CMHA youth	7.31	1.40	6.68	15.97	8.90	6.02
CMHA adult	5.01	1.28	4.53	15.55	5.99	4.72

showed the same pattern as the more conventional scoring methods. Almost 90% of the acutely depressed met this more stringent criterion, which was selected to give the CMHA adults a realistic "rate" of about 5%. The CMHA youth at 7% were still intermediate between the adults and the three school groups. The high school group at 18% was more noticeably higher than the college and junior high groups at about 13%.

The persistence scores eliminated most of the variation among the groups, except that the acutely depressed were significantly higher than all groups and the high school sample was significantly higher than the other four groups.

The discriminant function analysis was used as a way to classify respondents as having symptom profiles similar to the acutely depressed patient sample. The CMHA well adult group was used as the contrast group. The two interpersonal items were omitted because of their questionable validity in the youth groups. Less than 2% of the CMHA well adult cross-validation sample was classified as "patient-like," while almost 90% of the acutely depressed were so classified. The total CMHA adult group had a realistic rate of about 5%. As with the percent above the high cutoff of 28, the high school group stood out as more severe and the junior high as less severe than in more conventional scores. A stepwise discriminant function was done separately for the two random halves of the CMHA well adults (contrasted with the acutely depressed). In both replications, the same five items gave maximum discrimination. These were Items 3 (blues), 18 (sad), 9 (failure), 17 (cry), and 12 (happy).

The DSM-III-like scoring was another way to classify respondents according to clinically meaningful symptom profiles. As shown in Table VII, more respondents met criteria for the Affective (Part A) than the Additional (Part B) symptoms listed in DSM-III. The ratio of Part A to Part B was smallest in the acutely depressed, larger in the high school, college, and CMHA youth groups, and largest in the junior high and CMHA adult groups.

The proportion who met both criteria is smaller than the proportion who met Part B, giving a realistic 5% for the CMHA adults and junior high students. The high school group stayed noticeably higher at 10%, with the college and CMHA youth groups at an intermediate 6–7%. The acutely depressed maintained close to their Part B level of over 75%.

Summary of Results

The acutely depressed group was clearly highest by conventional scoring methods and stayed highest across all scoring methods. The CMHA adults were low by all methods, including those designed to obtain a 5% "rate" or to be clinically meaningful. The youth groups changed their rank order depending on the scoring method. The high school sample was high by both conventional scoring and by methods designed to reflect severity and clinical symptom profiles. The college and CMHA youth samples had scores moderately but consistently higher than the CMHA adults, but lower than the high school sample. The junior high group made the most changes according to the scoring method, scoring high on conventional methods but lower and closer to the CMHA adult levels when severity or patient-like methods were used.

DISCUSSION

The CES-D was found to be acceptable to all the samples, including respondents as young as junior high school. Problems of missing data were thought to be mainly due to poor reading skills rather than age. Interviewer-assisted administration might improve response rates in groups where this is a problem. Internal consistency measures of reliability were high for the total scale and the four subscales in all the samples. No particular age trends were noted.

There were no external criteria of validity in this study, but some suggested sources of invalidity could be tested withint the CES-D data itself. First, it should be emphasized that except for the CMHA sample, the data are from samples of convenience, which are not likely to be representative of their peers in general. No estimates of prevalence can be made and the rank order of the school groups should be interpreted only as results for *these particular* samples. The consistency of this rank order across different scoring methods was used as one piece of evidence about the validity of the scale across the age groups.

All of the youth groups had significantly higher average CES-D scores than the CMHA adults, but substantially and significantly lower scores than

the acutely depressed patients. The high school group was higher than the other two school groups, but statistical significance of this difference was borderline. The same pattern held for the percent above the usual cutoff of 16 (the 80th percentile for the CMHA adults). Analysis of the four subscales and the twenty individual items of the scale clearly indicated that there was no small subset of items that accounted for all the difference in total scores. The two interpersonal items (making up the interpersonal subscale) were particularly high in the young, but the other three subscales were also significantly elevated. This means that the high-scoring young had somatic/vegetative symptoms and anhedonia, as well as depressed mood and interpersonal problems. This is consistent with the findings of Wells *et al.* (1985) on the CES-D in college students and with studies of symptom patterns cited by Cantwell (this volume).

The contention that the young have only "mild" depression was partly addressed by using a high cutoff score. Since the prevalence of depressive disorder in adults is estimated at about 5%, a cutoff was chosen to select 5% of the CMHA adults. The porportions in the young samples were still higher than in the CMHA Adults, with almost 18% of the high school group and 13% of the junior high and college groups above this very high cutoff. A score of 28 can hardly be considered "mild."

The suggestion that transient mood swings inflate the scores of the young was partially supported by the analyses of the "persistence" scores. All of the young groups except the high school group were equivalent to the adults on this score. The persistence scoring used here may have been so stringent that some true variation among the groups was obscured. Wells *et al.* (1987) found that the percent of a college student sample exeeding a cutoff was reduced dramatically (from 33% to 16% to 2%) as the persistence criterion was changed (from item weight 1 to 2 to 3). However, Schoenbach *et al.* (1983) used a less stringent defintion of persistence (item weights two *or* three) in the junior high sample and reached the conclusion that reporting of transient symptoms did unduly inflate the scores in this group.

Both the discriminant function analysis and the DSM-III-like scoring were intended to test whether adult symptom patterns and criteria for depression can reasonably be applied to the young. The discriminant function analysis gave the proportion of individuals who were more like the acutely depressed than the CMHA well adults on a linear combination of CES-D items (excluding the two interpersonal items). This method showed the high school group noticeably high at 25%, and the junior high much lower, at 8%. The DSM III-like scoring had very similar results. The percent classed as "cases" was reduced (compared with the discirminant function method) in all groups, with the junior high group very close to the CMHA adult level of about 5%. It is very possible that the transience of symptoms revealed by the persist-

ence score accounts for a large part of the difference between conventional and DSM-III-like scores, especially in the junior high group.

Parts A and B of the DSM-III scores are instructive. In all groups, a larger proportion met the Part A (dysphoria) criterion than Part B or both. Note that the Part A criterion is not trivial; it requires dysphoric mood or anhedonia, which is "prominent and relatively persistent." Nevertheless, more people reported this level of dysphoria than reported the necessary number of somatic and cognitive symptoms in Part B. This difference was most marked in the junior high group. Almost 25% met the dysphoria criterion, but only about 5% met both A and B. Compare this with the adults, where about 5% also met both criteria but only 16% met Part A. This would certainly suggest that, in the ages studied here, "masked depression" (disorder without dysphoria) is unlikely to be a problem.

These results, and those of Schoenbach, do suggest that the CES-D scores in the junior high group were probably inflated by both transient symptoms and an excess of interpersonal and affective symptoms. Scores of the conventional sort may be misleading. However, there was a small group (about the same percent as among the adults) who met all the adult DSM-III criteria for depressive disorder that can be tapped by the CES-D.

On the other hand, the present analyses give no reason to doubt the suitability of the CES-D in the high school, college, and CMHA youth samples. The samples used here happened to have scores higher than the adults and they were reasonably consistent across the various ways of scoring. An elevated proportion of each group met even the most stringent criteria for severity and symptom pattern.

More definitive information on the validity of the CES-D in these age groups would require specific clinical validation studies, some of which are currently in progress. But it should be remembered that the CES-D was designed as a measure for epidemiologic research and was never intended to be used for clinical diagnosis. It has been found useful as a first-stage screening instrument (Radloff and Locke, 1986; and Teri, 1986), but interpretation of individual scores should always be deferred for a more comprehensive diagnostic procedure.

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APPENDIX

To Score the CES-D Scale for DSM-III-like Categories

Start with positive item scores reversed, so that an item score of 3 always represents the most symptomatic direction.

DSM-III Part A counted as definite positive if any one (or more) of the following items has a score of 3:

3 blues
6 depressed
18 sad
12 happy
16 enjoy
17 cry

DSM-III Part B counted as definite positive if the score is 3 on at least 4 of the following items:

2 eat
11 sleep
13 talk
12 or 16 happy or enjoy
7 or 20 effort or get going
4 or 9 good or failure
5 mind

If the score is 3 on 3 of the above items, and 2 on at least 2 of them, then Part B is also counted as definitie positive.