

A Self-Rating Depression Scale

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The fact that there is a need for assessing depression, whether as an affect, a symptom, or a disorder is obvious by the numerous scales and inventories available and in use today.

The need to assess depression simply and specifically as a psychiatric disorder has not been met by most scales available today. We became acutely aware of this situation in a research project where we needed to correlate both the presence and severity of a depressive disorder in patients with other parameters such as arousal response during sleep and changes with treatment of the depressive disorder. It was felt that the general depression scales used were insufficient for our purpose and that the more specific scales were also inadequate. These inadequacies related to factors such as the length of a scale or inventory being too long and too time consuming, especially for a patient who is already depressed and having psychomotor difficulties. Another factor was that some of the scales were not self-administered but based and relied on interpretation by the interviewer. We were interested in having a scale for assessing depression in patients whose primary diagnoses were that of a depressive disorder, which would fulfill the following: it should be all inclusive with respect to symptoms of the illness, it should be short and simple, it should quantitate rather than qualitate, and it should be self-administered and indicate the patient's own response at the time the scale is taken.

This report summarizes our efforts at devising a depression scale which we felt fulfilled our needs and purposes.

Method

In the construction of any depression scale, the question comes up as to what symptoms are characteristic of a depressive disorder. Numerous authors have dealt extensively with the problem of symptomatology as found in this disorder, using factor analysis in their investigation. The application of factor analysis assumed that the complex nature of the symptoms are determined by a set of underlying patterns or factors. Grinker et al¹ have furnished us with one such set of results. In their large series, they factored out five such patterns descriptive of the feelings and concern of the patients and ten factors derived from a current behavior check-list. Overall² used 31 depression measures and with factor analysis derived seven factors which are meaningful in depressive symptomatology. Friedman et al³ explored this area by the use of factor analysis of 22 symptoms and trait variables and came up with four "types" as delineated by the four main factors. The factors of these three studies have been compiled in Table 1, with some attempt at "matching" the results, for purposes of comparison.

In devising our Self-Rating Depression Scale (SDS), the clinical diagnostic criteria used comprised of the most commonly found characteristics of depression, such as those listed in Table 1. These were divided into the following: pervasive affect, physiological equivalents or concomitants, and psychological concomitants. Once the diagnostic criteria were established, the next step was to devise a scale using these symptoms. For this purpose, illustrative verbatim records were made from patient interview material, and examples selected for the SDS were based on those statements which were most representative for the particular symptom. The diagnostic criteria for depression and the SDS items using these are found in Table 2.

The scale was devised so that of the 20 items used, ten were worded symptomatically positive, and ten symptomatically negative. For the purpose of

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TABLE 1.—*Factors or Patterns of Traits Found in Depressive Disorders*

Grinker ¹	Overall ²	Friedman ³
1. Dismal, hopeless	1. Depression in mood a. depressed b. preoccupation with death c. hopelessness d. helplessness	1. Classical mood or affective depression a. guilt b. loss of self-esteem c. doubting d. psychological internalizing tendencies
2. Concern over material loss		
3. Guilt over wrong doing by patient	2. Guilt a. shame, remorse b. blames self c. self-depreciation d. unworthiness e. personal failures	
4. Anxiety-laden	3. Anxiety, apprehension	
5. Demanding, angry		
1. Isolated, withdrawn		2. Withdrawn, apathetic, retarded
2. Retardation of speech and thought	4. Psychomotor retardation a. speech b. body movements	
3. Disinterested, apathetic	5. Subjective experience of impairment in functioning a. intellectual b. can't work, loses interest c. can't make decisions d. loss of sexual potency e. general fatigue	
4. Demanding, angry		
5. Hypochondriacal with dizzy spells, constipation	6. Abnormal preoccupation with physical health	3. Hypochondriacal type a. demanding b. complaining c. marked bodily consciousness and physical complaints
6. Cognitively disturbed a. memory impairment b. confusion c. inability to concentrate		
7. Agitated		
8. Rigid, immobile		
9. Clinging, pleading		
10. Somatic disturbance	7. Physical response to stress a. loss of appetite b. loss of sleep c. loss of weight	4. Biological reaction with a. loss of appetite b. sleep disturbance c. constipation d. work inhibition e. loss of satisfaction

this paper, those items in the scale which have been worded negatively are shown by the italicized word or words in Table 2. The actual form of the scale as it was used is found in Table 3.

In using the scale, the patients were asked to rate each of the 20 items as to how it applied to them at the time of testing, in the following four quantitative terms: a little of the time, some of the time, good part of the time, or most of the time. The SDS is constructed so that the less depressed patient and his complaint will have a low score on the scale, and the more depressed patient and his complaint will have a higher score. In scoring the SDS, a value of 1, 2, 3, and 4 is assigned to a response depending upon whether the item was worded positively or negatively. For example, for Item 1: I feel down-hearted and blue, a response

of: a little of the time, some of the time, good part of the time, or most of the time, would be scored 1, 2, 3, and 4, respectively. For Item 2: Morning is when I feel the best, a response of: a little of the time, some of the time, good part of the time, or most of the time, would be scored 4, 3, 2, and 1, respectively. A key for scoring this scale can be simply made up, as in Table 4.

An index for the SDS was derived by dividing the sum of the values (raw scores) obtained on the 20 items by the maximum possible score of 80, and expressed as a decimal (see Table 5).

The SDS was given to all patients who were admitted during a five-month period to the psychiatric service of the hospital with a primary diagnosis of depressive disorder on admission. A total of 56 patients was tested. Of these patients who

TABLE 2.—*The Criteria for the Diagnosis of Depressive Disorders and the Self-Rating Scale Items Utilizing These Diagnostic Criteria*

Diagnosis of Depressive Disorders	Self-Rating Depression Scale Items
I. Pervasive affect	
A. Depressed, sad, and blue	1. I feel down-hearted and blue
B. Crying spells	2. I have crying spells, or feel like it
II. Physiological equivalents	
A. Rhythmic Disturbances	
1. Diurnal variation: exaggeration of symptoms in the AM and some relief as the day goes on	3. Morning is when I feel the best
2. Sleep: characteristically early or frequent waking	4. I have trouble sleeping at night
3. Appetite: decreased food intake	5. I eat as much as I used to
4. Weight loss: associated with decreased food intake, or increased metabolism and decreased rest	6. I notice that I am losing weight
5. Sex: decreased libido	7. I still enjoy sex
B. Other Disturbances	
1. Gastrointestinal: constipation	8. I have trouble with constipation
2. Cardiovascular: tachycardia	9. My heart beats faster than usual
3. Musculoskeletal: fatigue	10. I get tired for no reason
III. Psychoclogical equivalents	
A. Psychomotor activities	
1. Agitation	11. I find myself restless and can't keep still
2. Retardation	12. I find it easy to do the things I used to
B. Ideational	
1. Confusion	13. My mind is as clear as it used to be
2. Emptiness	14. My life is pretty full
3. Hopelessness	15. I feel hopeful about the future
4. Indecisiveness	16. I find it easy to make decisions
5. Irritability	17. I am more irritable than usual
6. Dissatisfaction	18. I still enjoy the things I used to
7. Personal devaluation	19. I feel that I am useful and needed
8. Suicidal rumination	20. I feel that others would be better off if I were dead

were admitted with the primary diagnosis of depressive disorder, 31 of them were eventually treated and discharged as depressive disorders (D-D). They either received a series of electric convulsive therapy (ECT) treatments or were maintained on antidepressant pharmacotherapy for a minimum of four weeks, and usually longer. Follow-up SDS indices were obtained from 22 of

these patients after the completion of treatment for their illness, usually a day before discharge. These patients at that time were observed to be free of their previous complaints and symptoms and improved clinically.

Of the patients who were admitted as having depressive disorders, 25 of them after further evaluation were diagnosed and treated as other psychi-

TABLE 3.—*The Self-Rating Depression Scale (SDS)*

	A Little of the Time	Some of the Time	Good Part of the Time	Most of the Time
1. I feel down-hearted and blue				
2. Morning is when I feel the best				
3. I have crying spells or feel like it				
4. I have trouble sleeping at night				
5. I eat as much as I used to				
6. I still enjoy sex				
7. I notice that I am losing weight				
8. I have trouble with constipation				
9. My heart beats faster than usual				
10. I get tired for no reason				
11. My mind is as clear as it used to be				
12. I find it easy to do the things I used to				
13. I am restless and can't keep still				
14. I feel hopeful about the future				
15. I am more irritable than usual				
16. I find it easy to make decisions				
17. I feel that I am useful and needed				
18. My life is pretty full				
19. I feel that others would be better off if I were dead				
20. I still enjoy the things I used to do				

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TABLE 4.—Key for Scoring the SDS

	A Little of the Time	Some of the Time	Good Part of the Time	Most of the Time
1. I feel down-hearted and blue	1	2	3	4
2. Morning is when I feel the best	4	3	2	1
3. I have crying spells or feel like it	1	2	3	4
4. I have trouble sleeping at night	1	2	3	4
5. I eat as much as I used to	4	3	2	1
6. I still enjoy sex	4	3	2	1
7. I notice that I am losing weight	1	2	3	4
8. I have trouble with constipation	1	2	3	4
9. My heart beats faster than usual	1	2	3	4
10. I get tired for no reason	1	2	3	4
11. My mind is as clear as it used to be	4	3	2	1
12. I find it easy to do the things I used to	4	3	2	1
13. I am restless and can't keep still	1	2	3	4
14. I feel hopeful about the future	4	3	2	1
15. I am more irritable than usual	1	2	3	4
16. I find it easy to make decisions	4	3	2	1
17. I feel that I am useful and needed	4	3	2	1
18. My life is pretty full	4	3	2	1
19. I feel that others would be better off if I were dead	1	2	3	4
20. I still enjoy the things I used to do	4	3	2	1

atric disorders (D-O). These fell mostly into the categories of anxiety reactions, personality disturbances, and psychophysiological disturbances, who were treated with psychotherapy, subcoma insulin, or limited symptomatic drug therapy. None of them received either ECT or long term antidepressant drug therapy.

Patients who were admitted and treated for depressive disorders (D-D) were also selected for a study on arousal during sleep by auditory stimulation, using electroencephalographic techniques. The results of this study have been reported elsewhere.⁴

TABLE 5.—A Table for the Conversion of Self-Rated Raw Scores to the SDS Index

Raw Score	SDS Index	Raw Score	SDS Index	Raw Score	SDS Index
20	0.25	40	0.50	60	0.75
21	0.26	41	0.51	61	0.76
22	0.28	42	0.53	62	0.78
23	0.29	43	0.54	63	0.79
24	0.30	44	0.55	64	0.80
25	0.31	45	0.56	65	0.81
26	0.33	46	0.58	66	0.83
27	0.34	47	0.59	67	0.84
28	0.35	48	0.60	68	0.85
29	0.36	49	0.61	69	0.86
30	0.38	50	0.63	70	0.88
31	0.39	51	0.64	71	0.89
32	0.40	52	0.65	72	0.90
33	0.41	53	0.66	73	0.91
34	0.43	54	0.68	74	0.92
35	0.44	55	0.69	75	0.94
36	0.45	56	0.70	76	0.95
37	0.46	57	0.71	77	0.96
38	0.48	58	0.73	78	0.98
39	0.49	59	0.74	79	0.99
				80	1.00

The SDS was given to a normal control group of 100 individuals. They consisted of approximately equal number of professional staff, nonprofessional staff, and patients who were hospitalized on the medical and surgical services. These individuals were free of observable symptoms of depression and had no history of recent depressive illnesses.

Results

The SDS indices for all 56 patients who had admitting diagnoses of depressive disorders ranged from 0.38 to 0.90. However, a breakdown of this population into those who were eventually treated and discharged as depressive disorder (D-D) and those who were treated and discharged as other disorders (D-O) reveal the following. The SDS indices for the D-D group, before treatment, ranged from 0.63 to 0.90 with a

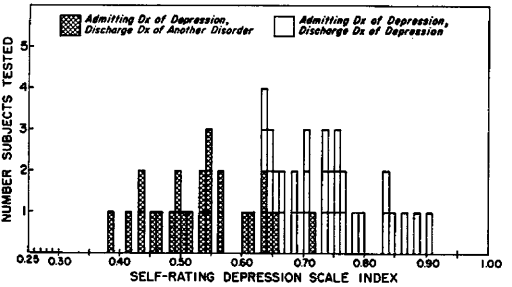


Fig 1.—SDS indices of 56 patients with admitting diagnoses of depressive disorder.

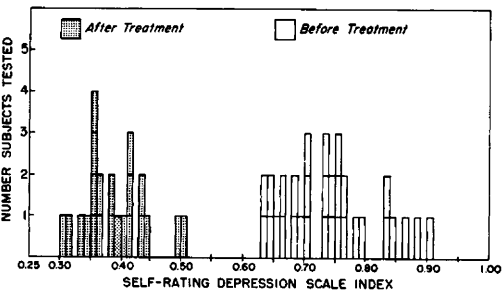


Fig 2.—A comparison of the SDS indices of the depressive disorder group, before and after treatment.

mean index of 0.74. The SDS indices for the D-O group ranged from 0.38 to 0.71 with a mean index of 0.53 (see Fig 1).

The SDS indices for the D-D group, after treatment of their illnesses, ranged from 0.30 to 0.50 with a mean index of 0.39 (see Fig 2).

The range of SDS indices for the control group was from 0.25 to 0.43 with a mean index of 0.33 (see Fig 3).

The results of the statistical analyses in comparing the various mean indices using the *t*-test are found in Table 6.

The raw score values for each of the 20 items in the SDS of the different subject groups tested were tabulated and their means calculated. This data for the D-D before treatment, D-O, and control groups are graphically illustrated by Fig 4. Fig 5 illustrates the mean raw score values for the 20 items in the SDS of the D-D group, before and after treatment.

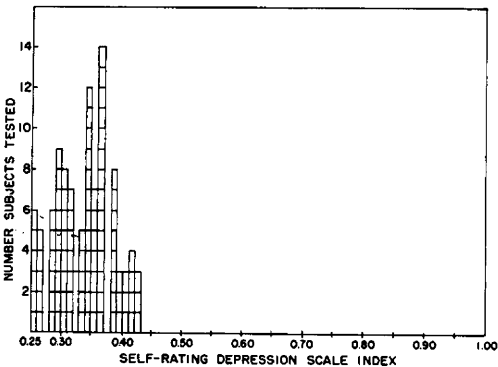


Fig 3.—SDS indices of 100 normal controls.

TABLE 6.—Statistical Analyses Comparing the Mean SDS Indices of the Various Groups Tested Using the *t*-Test

Group	N	Mean SDS Index	t-Test Comparing Groups	P
1. Control	100	0.33	1-2	<0.01
2. D-D, a tx	31	0.74	1-3	>0.10
3. D-D, p tx	22	0.39		
4. D-O	25	0.53	1-4	<0.01
			2-4	<0.01

Tables 7-10 rank the 20 items of the SDS as quantitated by the groups tested and the resulting list of symptoms are then arbitrarily divided into fractional thirds for purposes of comparing the results.

It is evident from Table 7 that the symptoms of the D-D patient group before treatment involved mainly the physiological concomitants with the presence of a depressed affect as being the worst complaints (upper third), and the somatic complaints least (lower third), and the psychological complaints in between (middle third). These patients, after treatment, saw most symptomatic improvement (Table 8) in the physiological concomitants and in affect (upper third), with improvements in psychological concomitants next, and somatic complaints remained last. On the other hand, the D-O group of patients rated as their worst symptoms (Table 9, upper third) a mixture of physiological and psychological concomitants, and this admixture of symptoms carried through to the other “thirds” without any clear-cut grouping of symptomatology. Lastly, in analyzing the data to see in what

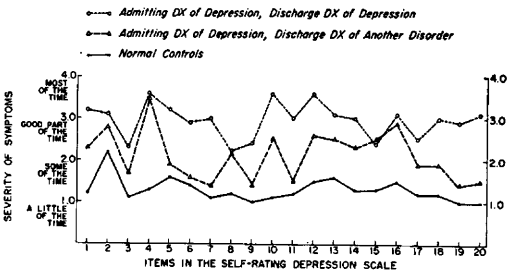


Fig 4.—The mean self-rated raw score values for the 20 items in the SDS, by the various groups tested.

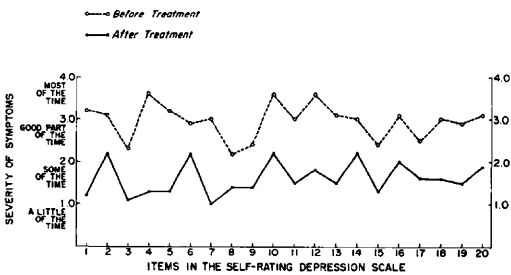


Fig 5.—A comparison of the mean self-rated raw score values for the 20 items in the SDS, by the depressed patient group, before and after treatment.

way symptomatically the D-D and D-O groups looked alike, their mean raw scores for each of the 20 items were subtracted and the results listed in rank order in Table 10. The indications are that the D-O group present themselves as being more irritable, with about as much difficulty with constipation, sleep, and indecisiveness (upper third) as the D-D group. If this is the picture which the D-O group presents to the examining physician initially, it can be seen how the diagnosis of depressive disorder was made. On the other hand perusal of the symptoms grouped in the lower third reveal the dis-

TABLE 7.—Severity of Symptoms of Depressed Patients (D-D) Before Treatment

Rank Order	Mean SDS Score	Item No.	Items: in Decreasing Order of Severity
1	3.6	4	Sleep disturbance
	3.6	10	Fatigue
	3.6	12	Psychomotor retardation
2	3.2	1	Depressed affect
	3.2	5	Decreased appetite
3	3.1	2	Diurnal variation
	3.1	13	Psychomotor agitation
	3.1	16	Indecisiveness
	3.1	20	Dissatisfaction
4	3.0	7	Weight loss
	3.0	11	Confusion
	3.0	14	Hopelessness
	3.0	18	Emptiness
5	2.9	6	Decreased libido
	2.9	19	Suicidal rumination
6	2.5	17	Personal devaluation
7	2.4	9	Tachycardia
	2.4	15	Irritability
8	2.3	3	Crying spells
9	2.2	8	Constipation

TABLE 8.—Improvement in Symptoms of Depressed Patients (D-D) After Treatment

Rank Order	Mean SDS Score	Item No.	Items: Improvement of Symptoms, From Most to Least, in Decreasing Order
1	2.3	4	Sleep disturbance
2	2.0	1	Depressed affect
	2.0	7	Weight loss
3	1.9	5	Decreased appetite
	1.9	19	Suicidal rumination
4	1.8	12	Psychomotor retardation
5	1.7	20	Dissatisfaction
6	1.6	13	Psychomotor agitation
7	1.5	11	Confusion
8	1.4	10	Fatigue
	1.4	18	Emptiness
9	1.2	3	Crying spells
10	1.1	15	Irritability
	1.1	16	Indecisiveness
11	1.0	9	Tachycardia
12	0.9	2	Diurnal variation
	0.9	17	Personal devaluation
13	0.8	8	Constipation
	0.8	14	Hopelessness
14	0.7	6	Decreased libido

similarities between the D-D and D-O patients and it is perhaps these symptoms which should be stressed in the diagnosis of depressive disorders, rather than the affective state itself.

TABLE 9.—Severity of Symptoms of Patient Group Admitted as Depressive Disorder, but Discharged as Other Disorders (D-O)

Rank Order	Mean SDS Score	Item No.	Items: in Decreasing Order of Severity
1	3.5	4	Sleep disturbance
2	2.9	16	Indecisiveness
3	2.8	2	Diurnal variation
4	2.6	12	Psychomotor retardation
5	2.5	10	Fatigue
	2.5	13	Psychomotor agitation
	2.5	15	Irritability
6	2.3	1	Depressed affect
	2.3	14	Hopelessness
7	2.2	8	Constipation
8	1.9	5	Decreased appetite
	1.9	17	Personal devaluation
	1.9	18	Emptiness
9	1.7	3	Crying spells
10	1.6	6	Decreased libido
11	1.5	11	Confusion
	1.5	20	Dissatisfaction
12	1.4	7	Weight loss
	1.4	9	Tachycardia
	1.4	19	Suicidal rumination

TABLE 10.—*A Comparison of Similarities in Symptomatology of the D-D Patient Group Before Treatment With the D-O Patient Group*

Rank Order	Mean SDS Score	Item No.	Items: Symptoms That Are Most Alike to Least Alike, in Decreasing Order
1	−0.1	15	Irritability
2	0.0	8	Constipation
3	0.1	4	Sleep disturbance
4	0.2	16	Indecisiveness
5	0.3	2	Diurnal variation
6	0.6	3	Crying spells
	0.6	13	Psychomotor agitation
	0.6	17	Personal devaluation
7	0.7	14	Hopelessness
8	0.9	1	Depressed affect
9	1.0	9	Tachycardia
	1.0	12	Psychomotor retardation
10	1.1	10	Fatigue
	1.1	18	Emptiness
11	1.3	5	Decreased appetite
	1.3	6	Decreased libido
12	1.5	11	Confusion
	1.5	19	Suicidal rumination
13	1.6	7	Weight loss
	1.6	20	Dissatisfaction

Comment

The various scales extant today may be grouped as those which assess depression in more general terms and those which assess depression as a psychiatric disorder. They may also be grouped as those which are self-administered and those which are given by a trained interviewer.

Wessman et al ⁵ have devised a scale which measures depression as an affect, by the use of a set of ten phrases which ranged from expressions of elation, through more neutral feelings, to those of extreme depression. The Clyde Mood Scale ⁶ measures depression as an affect, along with other moods, including: friendly, energetic, clear-thinking, aggressive, and jittery. The depressed scale is based on assessing 59 words by applying the terms: not at all, a little, quite a bit, and extremely, to each of the test words. These words include: rebellious, contented, sluggish, sulky, skeptical, gloomy, worthless, withdrawn, serious, stubborn, etc. Hildreth ⁷ devised a feeling and attitude scale for the measurement of current feeling state of an individual. The scale consisted of 76 statements in the following six general areas: (1) feeling

state, (2) energy amount, (3) outlook-future, (4) mental state, (5) attitude toward work, and (6) attitude toward people. Other often used methods of quantitating depression in general terms include the Minnesota Multiphasic Personality Inventory or MMPI.⁸ This inventory has a D (depression) scale composed of 60 items, relating to matters such as somatic preoccupations, self-esteem, and social interaction.

More recently, scales and inventories have been published which aim toward assessment of depression as an illness and a disorder. Hutchinson and Smedberg ⁹ used a 4 point scale, from 0 to 3, rating the following items: feelings of depression, ideas of reference, suicidal ideas, ideas of unworthiness, hypochondriasis, initial insomnia, early waking, retardation, agitation, self-neglect, daily mood swing, constipation, anorexia, and weight. This rating was performed by the clinician on the basis of his observation. Beck et al ¹⁰ developed an inventory composed of 21 categories of symptoms and attitudes of depression. The inventory itself consists of 89 sentences which were read to the patient by a trained interviewer who after asking the patient to select statements that seemed best to fit him, would circle the appropriate response. Fleming and Groden ¹¹ in evaluating clinical response to pharmacotherapy of depressive disorders, used a 12 clinical feature checklist, rated as present or absent, for evaluating depression. These features which the clinician evaluated included: agitation, anorexia, anxiety, apathy, compulsive, early waking, hypochondriasis, organic, paranoid, retardation, self-reproach, and suicidal. Grinker et al ¹ in their study of depression from a phenomenological point of view did an exhaustive study on the adequacies and usage of checklists, for rating feelings, concern, and behavior. Wechsler et al ¹² published a depression rating scale, which contained items which are to be based on both the patient's subjective report and on observed functioning. The method for obtaining the information needed for completion of the

questionnaire is obtained during a routine psychiatric interview, and the interviewer then checks the point on the scale which most closely characterizes the patient.

In developing the presently reported depression scale, we felt that it would fulfill the previously mentioned criteria and that it would be a useful tool for our purpose. From the results obtained, it did appear to us that the SDS was useful in quantitating depression as a disorder, and furthermore, it brought out some other pertinent data. Sleep disturbance in depressive disorders has always been considered as one of its cardinal symptoms. The SDS corroborates this and also points out that patients also feel that this is the symptom which had improved most after treatment of their illnesses, with improvement in affect next. The role of sleep disturbance in other psychiatric disorders is less known, but interestingly enough, this was also the symptom which the D-O patient group subjectively rated as their worst symptom. This group included patients who were diagnosed as anxiety reactions, personality disturbances, and psychophysiological reactions. It was our interest in studying sleep disturbances in depressive disorders which first prompted us to develop this scale.

Summary

A self-rating depression scale was devised as an attempt to quantitate the symptoms of depression, using the diagnostic criteria of the presence of a pervasive depressed affect, and its physiological and psychological concomitants as test items.

Mean indices achieved on the scale for patients diagnosed as depressive disorders, before and after treatment were 0.74 and 0.39, respectively. The mean index for patients who were initially diagnosed as depressive disorder, but discharged as other disorder was 0.53. The mean index for the control group was 0.33.

The presence of sleep disturbance appears to be an important, if not the most important symptom in depressive disorder, with respect to diagnosis and as a prognostic sign.

There appears to be a high correlation of clinical evaluation of patients for the presence of depressive disorders, their self-rating depression indices, and their EEG responses to auditory stimulation during sleep as reported previously.

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