

Depressive and Negative Symptoms in Major Psychiatric Disorders

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Among 193 inpatients with Research Diagnostic Criteria (RDC) major psychiatric disorders, the scores in Hamilton's Rating Scale for Depression (HRSD) were higher among those patients with RDC schizoaffective disorder depressed type and major depressive disorder, whereas the scores in the Scale for Assessment of Negative Symptoms (SANS) were higher among patients with these two disorders, as well as those with RDC nonaffective psychoses (schizophrenia and unspecified functional psychosis). The HRSD and SANS items were factor-analyzed, yielding nine factors that discriminated depressive and negative symptoms. These findings suggest that although depressive and negative symptoms frequently coexist, they constitute discrete syndromes.

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ALTHOUGH depressive and negative symptoms are usually thought to constitute distinct syndromes seen mainly among patients with depression and schizophrenia, respectively, the two sets of symptoms have recently been recognized to appear frequently among patients with the opposite condition. For example, Barnes et al.¹ found a 13% prevalence of depressive mood among chronic schizophrenic inpatients, and in a 7-year follow-up study of schizophrenics, Curson et al.² observed occurrence rates of 24%, 23%, and 27% of the Present State Examination (PSE) syndromes "simple depression," "special features of depression," and "somatic symptoms of depression," respectively. Other studies have also reported a high incidence of depressive symptoms during the course of schizophrenia.³⁻¹⁰ Kulhara and Wig¹¹ reported a rate of depression of 18% among 100 newly admitted schizophrenics in India. On the other hand, Chaturvedi and Sarmukaddam¹² reported that negative symptoms are a common feature of depressive disorder, ranging from 32% for affective nonresponsivity to 77% for inability to enjoy recreational activities and interest.

However, the association between the two sets of symptoms is still unclear. Some investigators¹³⁻¹⁵ have studied the association among schizophrenic populations, whereas a few¹⁶ have done so among depressive populations. However, the psychopathological importance of the two symptom sets may differ between schizophrenics and depressives. Patients with schizoaffective disorder form another population that should receive more attention. Therefore, it seems imperative to study the association of depressive and negative symptoms among patients with a wide range of major functional psychiatric disorders using instruments specially designed for measuring them separately. This report presents details of such an attempt.

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METHOD

A total of 193 subjects used in this study were selected from psychiatric patients consecutively admitted to one of the seven units collaborating in the multicenter project on major psychiatric disorders¹⁷ sponsored by the National Institute of Mental Health, Japan, between 1984 and 1987 with a definite or probable diagnosis of Research Diagnostic Criteria (RDC)¹⁸ major depressive disorder (MDD) ($n = 75$), manic disorder (MAN) ($n = 24$), schizoaffective disorder depressed type (SADD) ($n = 24$), schizoaffective disorder manic type (SADM) ($n = 13$), or schizophrenia and unspecified functional psychosis (nonaffective psychoses [SCHZ]) ($n = 57$).

Patients were excluded if they had epilepsy, mental retardation, or any organic lesion, or if age 65 years or more. Patients with any previous psychiatric disorders were not excluded.

The patients comprised 95 men and 98 women; the sex ratio was not different between the five patient groups ($\chi^2 = 2.27$, $df = 4$, $P = .6859$). The mean age (\pm SD) was 34.2 ± 12.5 years; the SCHZ group's mean age (29.6 ± 9.5 years) was significantly (Scheffe test, $P < .05$) lower than that of the MDD (38.7 ± 13.1) (analysis of variance [ANOVA], $F(4,188) = 5.49$, $P = .0003$).

After entering the project, all the subjects were examined using Hamilton's Rating Scale for Depression (HRSD)¹⁹ and the Scale for Assessment of Negative Symptoms (SANS).²⁰ The interrater reliability of the HRSD and SANS was tested in a test-retest design; the mean correlation coefficients of the scale items were 0.54 ± 18.6 (SD) for the HRSD and 0.48 ± 0.23 (SD) for the SANS.²¹

Because of its naturalistic nature of the study, almost all patients were on medication when investigated. Multiple medication was not unusual practice. Thirty-nine percent of depressives, 42% of manics, 75% schizodepressives, 39% of schizomanics, and 40% of nonaffective psychotics were on neuroleptics; 52%, 8%, 13%, 0%, and 4% were on antidepressants, respectively.

The five patient groups were compared for the mean HRSD total score (i.e., the sum of HRS item scores) and for the mean SANS composite (i.e., the sum of all the SANS item scores) and symptom subscale (i.e., the sum of items for each symptom) scores. Then, all the HRSD and SANS items were factor-analyzed with varimax rotation. All the statistical analyses were conducted using the SPSS-X program.²²

RESULTS

As expected, the HRSD total score was significantly higher among patients with SADD or MDD than those with SCHZ, SADM or MAN ($F(4,188) = 22.66$, $P = 0.0000$) (Table 1). The SANS composite score was significantly higher among patients with SCHZ, as well as those with SADD or MDD than among those with SADM or MAN ($F(4,188) = 14.05$, $P = .0000$). Almost the same findings were observed with regard to each symptom subscale score. Thus the SADD and MDD patients had high HRSD and SANS scores, whereas the SCHZ patients had high scores only for the SANS.

Among the patients as a whole, the total HRSD score was correlated significantly with the total SANS score ($r = .49$) and each subscale score for the SANS ($r = .49$ with affective flattening, $r = .44$ with alogia, $r = .53$ with avolition-apathy, $r = .53$ with anhedonia-asociality, and $r = .38$ with inattentiveness). When the same analyses were repeated for those patients with each RDC diagnosis (Table 2), similarly significant correlations were observed among MDD,

Table 1. HRSD and SANS Scores

Rating Scores	RDC Diagnosis					Range
	MDD	MAN	SADD	SADM	SCHZ	
HRSD						
Total score	22.8 \pm 7.5	9.7 \pm 9.5	24.2 \pm 8.8	11.9 \pm 6.9	14.4 \pm 7.1	SADD,MDD>SCHZ,SADM, MAN
SANS						
Composite score	53.2 \pm 28.8	20.4 \pm 28.4	74.2 \pm 33.0	25.0 \pm 16.7	58.1 \pm 30.0	SADD,SCHZ,MDD>SADM,MAN

Table 2. Correlation of HRSD Total Score With Composite and Symptom SANS Scores

HRSD Total Score Versus	RDC Diagnosis					
	MDD	MAN	SADD	SADM	SCHZ	Total
SANS						
Composite score	0.51 [‡]	0.82 [‡]	0.64 [‡]	0.30	0.15	0.49 [‡]
Affective flattening	0.52 [‡]	0.73 [‡]	0.67 [‡]	-0.18	0.20	0.49 [‡]
Alogia	0.47 [‡]	0.72 [‡]	0.66 [‡]	0.33	0.10	0.44 [‡]
Avolition-apathy	0.50 [‡]	0.83 [‡]	0.50 [‡]	0.17	0.29*	0.53 [‡]
Anhedonia-asociality	0.55 [‡]	0.90 [‡]	0.67 [‡]	0.18	0.29*	0.53 [‡]
Inattentiveness	0.42 [‡]	0.61 [‡]	0.54 [‡]	0.21	0.12	0.38 [‡]

**P* < .05.†*P* < .01.‡*P* < .001.

MAN, and SADD patients; the SADM patients lost all significant correlations, whereas the SCHZ patients showed significant correlations of the HRSD total score only with SANS avolition-apathy and anhedonia-asociality subscales.

When all the HRSD and SANS items were factor-analyzed after varimax rotation, nine factors emerged (Table 3). The first factor seemed to represent three negative symptoms, i.e., affective flattening, alogia, and avolition-apathy; the second factor, avolition-apathy and anhedonia-asociality; the third factor, anxiety symptoms; the fourth factor, depressed mood; the fifth factor, insomnia; the sixth factor, inattentiveness; the seventh factor, paranoid symptoms; the eighth factor, loss of appetite. The last factor did not produce any meaningful interpretation. Thus, the depressive and negative symptoms were all divided in a way that conformed to constellations fitting the usual psychopathological tradition; the former were subgrouped into depressed mood, insomnia, anxiety, loss of appetite, and paranoid symptoms, and the latter into three negative constellations. Among items considered depressive, only work and interest, an HRSD item, was allocated to a negative constellation. Because some negative symptoms may be secondary to neuroleptic medication, the same analysis was repeated with the number of factors restricted to eight, after those patients on neuroleptics were excluded. This yielded a similar factor structure (not shown here; a table of the factor loadings may be available from the senior author on request).

DISCUSSION

Recognition that depressive and negative symptoms are not limited to patients with affective and schizophrenic disorders, respectively, seems to demand both detailed studies on the symptoms of these two syndromes, and reconsideration of their definitions. Like other studies, ours indicates that negative symptoms often appear not only in patients with RDC schizophrenia, but also in patients with major depressive and schizoaffective disorders, and that such symptoms do coexist with depressive symptoms.

To clarify the relationship between the two syndromes, it seems useful to study the correlation of their respective severities. Kulhara et al.,¹³ studying schizophrenic patients diagnosed by the PSE²³ and also measured by the Brief Psychiatric Rating Scale (BPRS) and SANS, found that negative symptoms were correlated significantly with retardation, lack of energy, slowness, and other

Table 3. Factor Analysis of HRSD and SANS Items

Rating Items	Factors							
	I	II	III	IV	V	VI	VII	VIII
HRSD								
Depressed mood				.64				
Guilt				.78				
Suicide				.66				
Insomnia/initial					.79			
Insomnia/middle					.83			
Insomnia/delayed					.80			
Work and interest		.60						
Retardation								
Agitation			.58					
Anxiety/psychic			.48					
Anxiety/somatic			.73					
Somatic symptoms/GI tract								.63
Somatic symptoms/general			.64					
Genital symptoms								
Hypochondriasis			.78					
Loss of weight								.70
Insight						.73		
Diurnal variation								
Depersonalization								
Paranoid symptoms						.79		
Obsessional symptoms								
SANS								
Unchanging facial expression	.84							
Decreased spontaneous movement	.79							
Paucity of expressive gestures	.84							
Poor eye contact	.85							
Affective nonresponsivity	.81							
Inappropriate affect	.61							
Lack of vocal inflection	.85							
Subjective complaint of emotional emptiness	.61	.51						
Poverty of speech	.80							
Poverty of content of speech	.67							
Blocking	.70							
Increased latency of response	.77							
Subjective rating of alogia	.65							
Grooming and hygiene	.58							
Impersistence at work or school		.58						
Physical anergia	.53	.67						
Subjective complaint of avolition and apathy		.75						
Recreational interests and activities		.73						
Sexual interest and activity		.64						
Ability to feel intimacy and closeness	.61							
Relationship with friends and peers	.59	.53						
Subjective awareness of anhedonia-asociality		.66						
Social inattentiveness	.56					.62		
Inattentiveness during testing						.75		
Subjective complaint of inattentiveness		.47						
Variance explained (%)	36	10	5	4	3	3	3	2

NOTE. Only items with factor loadings of 0.4 or more are shown.

symptoms of depression, but not with the depressed mood itself. Whiteford et al.¹⁵ found a significant correlation of the total HRSD score with avolition-apathy and anhedonia-asociality, but not with the other SANS negative symptoms. Both Kulhara et al.¹³ and Whiteford et al.¹⁵ studied only schizophrenics. We examined patients with major functional psychiatric disorders and, unlike Whiteford et al.,¹⁵ found that the severity of depressed syndrome was correlated with all the negative symptoms. This disagreement between our findings and those of Whiteford et al.¹⁵ seems to be due to the fact that we included depressive and schizoaffective patients. Thus, among SCHZ patients, the HRSD total score showed significant correlations only with the SANS avolition-apathy and anhedonia-asociality subscales. This is in accordance with the findings of Whiteford et al.¹⁵

Of interest is that significant correlations between the HRSD total score and the SANS subscales were prominent among the MDD, MAN, and SADD patients. Reduced correlations between the HRSD and SANS scores among the SCHZ and SADM patients may be explained by lower scores and thereby narrower ranges of the scores. However, this cannot be in concordance with significant correlations of the HRSD and SANS scores among the MAN patients with similarly low scores. It might be that although phenomenologically undiscriminable, either depressive or negative symptoms (or both) are of a different nature across RDC diagnoses. This hypothesis may be supported by findings that antidepressants can not ameliorate the depressive syndrome of schizophrenic patients.^{6,24} Shima et al.⁸ found among chronic schizophrenic inpatients that the post-dexamethasone suppression test (DST) level of cortisol was significantly correlated with the SANS score, but not with the HRSD score. Whiteford et al.²⁵ found no correlation of the post-DST cortisol level with the SANS score or HRSD score among chronic schizophrenics. Further studies on the relationship between depressive and negative symptomatology and biological variables may be warranted.

A high prevalence and correlation of depressive and negative syndromes indicate a strong relationship between them and may even suggest phenomenological overlap. The findings that the composite and subscale SANS scores were high among not only patients with SCHZ and SADD, but also those with MDD, and that there appeared to be a significant correlation between the SANS and HRSD scores may favor the argument that the negative syndrome is in reality a slightly modified manifestation of the depressive syndrome, at least among certain patient populations. However, factor analysis revealed that depressive and negative symptoms could be allocated to discrete factors. Eight factors were found to be meaningful, representing different aspects of depressive and negative syndromes. Of interest was that the item "work and interest" belonged to a negative symptom constellation. This anhedonic item may be more negative (anhedonia) than depressive (loss of interest).

A possible bias may come from the fact that neuroleptics can cause phenomena very similar to negative symptoms.²⁶ This issue cannot be discussed directly in this study because the naturalistic nature of the study could not allow a drug-free examination. However, one may argue that the different patterns of correlations between the HRSD total scores and the SANS scores is not spurious, because not only schizophrenics, but also the majority of schizoaffectives, were on neurolep-

tics. The factor structure of the negative and depressive symptoms found in this study may not be very much influenced by the administration of neuroleptics because the elimination of the patients treated with neuroleptics from the analysis had little effect on the result.

In summary, the present findings suggest that depressive and negative symptoms, though coexisting in depressive, schizophrenic, and schizodepressive disorders, are phenomenologically distinct.

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