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REPRESSION-SENSITIZATION AND MEDICAL DIAGNOSIS

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The trans-situational consistency of trait measures can be demonstrated best through the establishment of relationships between personality test responses and nontest behaviors. The Repression-Sensitization Scale shows promise as a correlate of both psychological disturbance and physiological malfunctioning. The association between Repression-Sensitization Scale responses and medical diagnoses was investigated in 360 medical patients representing three age levels (20–29 yr., 40–49 yr., and 60–69 yr.), three repression-sensitization levels (repressors, neutrals, and sensitizers), and both sexes, with 20 patients in each group. Repressors tended to have purely organic diagnoses, whereas sensitizers received diagnoses involving psychologic components ($p < .001$). Organic diagnoses increased with age, but the proportional increase for repressors and sensitizers did not differ.

Critics of personality tests (Mischel, 1968) correctly point out that the trans-situational consistency of trait measures is greatest when the situations are maximally similar. Thus, evidence for the utility of any given paper-and-pencil test tends to be based in large part on the correlations between that test and other paper-and-pencil measures. Though theoretical formulations usually are concerned with the relationship between Construct A and Construct B, empirical support for such a relationship often may be explained in terms of structural similarities between Test A and Test B (Jackson & Messick, 1958). Beyond the theoretical difficulties occasioned by these disturbing considerations, the utility of personality tests is also questioned. That is, if the primary use of Test A is to predict responses on Test B and on other similarly constructed scales, the practical uses to which Test A may be put are rather limited. A hopeful solution to this validity problem is to seek relationships between test responses and nontest behaviors. In this way, both theoretical generality and practical utility are well served.

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The Repression-Sensitization Scale is widely used in research. The scale consists of 127 items derived from the Minnesota Multiphasic Personality Inventory (Byrne, Barry, & Nelson, 1963), and it is designed to measure a continuum of psychological defenses that range from anxiety-avoidance behavior (repression and denial) to anxiety-approach behavior (obsessive thinking and ruminative worrying). Responses to the test items are marked as "true" or "false," and much of the validational evidence concerning this test consists of its correlation with other relatively similar response measures (Byrne, 1964). In fact, the correlation is high ($r > .90$) between the Repression-Sensitization Scale and the other theoretically different constructs measured on true-false answer sheets, such as the Manifest Anxiety Scale and the Edwards Social Desirability Scale (Joy, 1964). The primary justification for giving different labels to these three instruments is that they originated in different theoretical systems and hence lead to different kinds of research (Farber, 1964).

Work on repression-sensitization has led to one line of research that promises to circumvent the content-versus-style problem and suggests the Repression-Sensitization Scale as being useful for something other than predicting scores on the Manifest Anxiety Scale and the Social Desirability Scale. That is, relationships between test response and the presence of medical symptoms have been

found. First, there is consistent evidence that high scores (sensitization) are associated with psychological disturbance, as indicated by comparisons of samples of normals with alcoholics (M. D. Gynther, personal communication, 1963), psychiatric patients (Feder, 1967; Ullmann, 1962), and patients at a mental health center (Tempone & Lamb, 1967). These results are paralleled by numerous studies with paper-and-pencil measures which indicate that repressors are better adjusted, less anxious, and more self-accepting than sensitizers, as indicated by such instruments as the Minnesota Multiphasic Personality Inventory (Joy, 1964; Pivik & Foulkes, 1966), California Personality Inventory (Byrne, Golightly, & Sheffield, 1965), *Q* sort (Feder, 1968), Adjective Check List (Lucky & Grigg, 1964), and Incomplete Sentences Blank (Tempone & Lamb, 1967). Second, and perhaps more surprisingly, there is also consistent evidence that high scores on the Repression-Sensitization Scale are associated with physical illness or other physiological malfunctioning. In comparison with male repressors, male sensitizers have a lower tolerance for the pain of electric shock (Merbaum & Badia, 1967), overestimate the intensity of the shock (Barton & Buckhout, 1969), and more frequently seek medical aid at a university health center (Byrne, Steinberg, & Schwartz, 1968). Female sensitizers have a greater incidence of obstetric complications than do female repressors (McDonald, Gynther, & Christakos, 1961). Again, a paper-and-pencil inventory has been shown to support the finding that sensitizers exceed repressors in the frequency and severity of medical problems (Byrne, Steinberg, & Schwartz, 1968). The latter series of investigations (with the exception of that carried out by McDonald et al., 1963) can be explained on the basis of differential perceptions of and response to illness and pain rather than of physiological differences. Thus, compared to repressors, sensitizers may report greater discomfort, complain more about their symptoms, and seek medical help more frequently as part of their defensive style. Although these data alone would be interesting, they leave unanswered the question of whether there are objective repressor-sensitizer differences in susceptibility to illness. To resolve these conflicting explanations, detailed and objective medical diagnostic information (not dependent on *S*'s memory or self-report) must be obtained concerning individuals who differ in repression-sensitization. If diagnostic differences are found, this would constitute strong support for the proposition that individual differences on this paper-and-pencil scale are associated with important differences in illness potential. The present investigation was designed to test that hypothesized relationship.

A second aspect of this research stems from additional theoretical considerations with respect to repression-sensitization. There is much evidence indicating that the verbal reports of repressors who express low anxiety or lack of concern are not consistent with indicators of their physiological responsiveness to stress or threat. Whereas sensitizers report greater negative affect in such situations, repressors tend to show the greater physiological responsiveness (Davison, 1963; Hare, 1966; Parsons, Fulgenzi, & Edelberg, 1966; Merbaum & Kazaoka, 1967). If repressors consistently respond with greater physiological distress than do sensitizers, it might be expected that over a sufficiently long time span, the differential illness rate would be equalized or even reversed. That is, among relatively young college students, as in the Byrne, Steinberg, and Schwartz (1968) study, repressors may reveal a more physically healthy pattern. With increased age, however, the effects of a long-term repressive adjustment would be revealed in a sharp increase in physical symptoms. It was hypothesized, then, that there is a positive relationship between age and incidence of organic diagnosis among repressors.

METHOD

Preliminary Sample

A group of 50,000 medical patients who had registered at the Mayo Clinic during 1963-1965 completed the Minnesota Multiphasic Personality Inventory as part of a research project conducted by Pearson and Swenson.[2] These tests were scored for repression-sensitization (Byrne, Barry, & Nelson, 1963). For males and females separately, frequency distributions for each of seven age groups were determined (Table 1).

[2] J. S. Pearson and W. M. Swenson. An MMPI source book: Basic item, scale and pattern data on 50,000 medical patients. Unpublished manuscript.

TABLE 1

REPRESSION-SENSITIZATION SCORES AMONG 50,000 MEDICAL PATIENTS

Age	Males						Females					
	N	$\bar{X}$	*SD*	Q_1	*Mdn*	Q_3	*N*	$\bar{X}$	*SD*	Q_1	*Mdn*	Q_3
<20	550	38.8	18.6	24	30	53	695	41.1	20.5	25	39	55
20–29	1,298	35.5	19.2	21	33	48	1,690	39.6	20.7	23	36	54
30–39	2,905	33.8	18.9	19	30	45	3,474	39.2	19.7	24	36	55
40–49	5,379	33.4	18.3	19	30	45	5,955	38.5	18.7	24	36	51
50–59	7,097	34.2	17.7	20	31	46	7,209	37.3	17.9	23	35	49
60–69	5,315	33.1	16.6	20	30	44	5,229	36.7	17.3	23	35	48
≥70	1,733	33.0	16.3	20	30	44	1,471	36.8	16.6	24	35	48

Although the means were consistently lower (more repressing) than those reported for a student population, the difference is probably a function of the method of testing; Simmons (1966) found that Repression-Sensitization Scale means are approximately 10 points lower when obtained from the total Minnesota Multiphasic Personality Inventory as compared to those obtained from the 182-item form used in the Byrne et al. (1963) study of college students.

Research Sample

From the larger sample, 360 patients (180 males, 180 females) were selected. Each *S* represented one of three age groups (20–29 yr., 40–49 yr., 60–69 yr.) and one of three levels of repression-sensitization (extreme sensitizer, neutral, extreme repressor). These divisions constituted a $2 \times 3 \times 3$ design (sex, age, repression-sensitization), with 20 patients in each of 18 groups.

From the appropriate age and sex distributions, *S*s were chosen whose Repression-Sensitization Scale scores placed them in the upper or lower 100 scores. The neutral group was selected from a range that included the mean and median scores. A random sample of 20 medical histories was selected for each group. Relatively strict selection criteria[3] made it necessary to discard many of the histories chosen in this way and to randomly select additional histories until 20 usable protocols were obtained. Table 2 shows the mean ages and Repression-Sensitization Scale scores of the 18 groups, plus the range of Repression-Sensitization Scale scores represented in each group.

Diagnostic Data

Each medical record was examined by the first author or a research assistant, who recorded age, sex, and medical diagnoses of each *S*. All diagnoses were then reviewed by the second author, who had no information concerning R-S scores or other MMPI data Initially, diagnoses were classified into five major categories for study.[4] Subsequently, the four categories involving psychological factors were combined because of the meaningful medical decision question to which, in part, this research is addressed, namely: Can an MMPI index (in this case the R-S scale) help discriminate between medical patients with purely organic diagnoses and those with some significant psychologic factor to one or more of their diagnoses? The categories (II–III) involving only psychological factors in the diagnoses were also combined and were contrasted with combined categories that involved some organic factor (I, IV, V) because of the meaningful contrasting decision. Another relevant practical variable that limited more detailed category analyses was the small sample size of several groups.

Admissible diagnoses were those at the time of the MMPI. To allow for conditions that were significant and likely to persist and for those that became apparent somewhat later but were likely present and undiagnosed or unrecorded at the time of the MMPI, however, all diagnoses within a ±1-yr. period were considered. Thus, a patient returning within 1 yr. for

[3] The final 360 *S*s were selected from a large group on the basis of having fewer than 20 unanswered Minnesota Multiphasic Personality Inventory items, having sought medical help for other than a routine examination, and having received one or more classifiable diagnoses. The MMPI was excluded, in 398 cases, for the following reasons: greater than 25 unanswered questions (Q), 205; 16 to 24 unanswered questions, 45; clinic number errors, 23; general examination was incomplete or negative or *S* was not the primary patient, 59; random elimination to maintain equal *N*'s, 43; and classification problems, 23. Of the final 360 *S*s, only 56 had a Q between 11 and 20 and, with one exception, all groups had 5 or less such cases, with a mean of less than 3 such cases. More importantly, of the six repressor groups, one had four such cases and the others two or less.

[4] Original categories included (I) organic disease without apparent psychological component (e.g., cancer of the breast, myocardial infarction); (II) functional disorders without organic lesion or specific psychiatric diagnosis (e.g., tension headache, irritable bowel syndrome); (III) specific psychiatric disorder without organic pathology (e.g., psychoneurosis, schizophrenia); (IV) mixed organic and psychological diagnoses (e.g., coronary sclerosis and psychoneurosis, herniated intervertebral disk, and conversion reaction); and (V) psychophysiological disorders with organic lesion and believed wholly or partly the result of reaction to emotional stress (e.g., bronchial asthma, duodenal ulcer).

TABLE 2

MEANS AND RANGES OF REPRESSION-SENSITIZATION SCALE SCORES OF SUBJECTS AT THREE AGE LEVELS SELECTED FOR THE STUDY

Group	20–29 yr.		40–49 yr.		60–69 yr.	
	Males	Females	Males	Females	Males	Females
Sensitizers						
$\bar{X}$	84	87	89	88	83	84
Range	71–104	76–103	80–108	83–102	77–90	77–91
Neutrals						
$\bar{X}$	34	38	31	37	31	36
Range	31–37	34–41	30–33	36–38	30–33	35–37
Repressors						
$\bar{X}$	7	7	5	7	7	7
Range	3–10	2–12	2–7	3–8	2–8	3–9

postsurgical cancer recheck was classified in Category I even though he was asymptomatic at the time of the MMPI. Similarly, the patient with a recently diagnosed psychoneurosis in whom acute appendicitis developed was included in Category IV, mixed. Diagnoses judged to be incidental, insignificant, and not related to the patient's chief complaints were omitted (for example, presbyopia, hemorrhoidal tags, diverticulosis, plantar wart, acne, obesity, asymptomatic duodenal ulcer, varicose veins). Whenever possible, the final official diagnoses were used for classification, but whenever these were indefinite or confusing, the original medical records were reviewed. If the results of such review were still inconclusive, the patients were eliminated from the study.

RESULTS

The hypothesized relationships among medical diagnosis, repression-sensitization, and age were analyzed by means of a series of chi-square tests. Sex differences were also tested, but there were no significant male-female effects ($p > .30$).

TABLE 3

NUMBER OF PATIENTS ($N = 20$ PER GROUP) RECEIVING PURELY ORGANIC DIAGNOSES AS A FUNCTION OF SEX, AGE, AND REPRESSION-SENSITIZATION

Group	20–29 yr.	40–49 yr.	60–69 yr.
Repressors			
Males	15	14	17
Females	8	12	16
Neutrals			
Males	10	8	12
Females	7	11	11
Sensitizers			
Males	3	1	6
Females	3	4	10

The first hypothesis, that individual differences in repression-sensitization are associated with diagnostic differences, was clearly supported in a comparison of Category I with the remaining categories. The number of patients with purely organic diagnoses in each of the 18 groups are shown in Table 3. Purely organic diagnoses were found for 67.5% of the repressors, 49.2% of the neutrals, and 22.5% of the sensitizers. Thus, Repression-Sensitization Scale scores were inversely and linearly related to the likelihood of receiving a purely organic diagnosis, as compared to a diagnosis involving psychological components. Conversely, Repression-Sensitization Scale scores were positively related to the likelihood of receiving a diagnosis with psychological components. The overall chi-square value was 63 ($df = 12$, $p < .001$). These findings are depicted graphically in the figure. There was

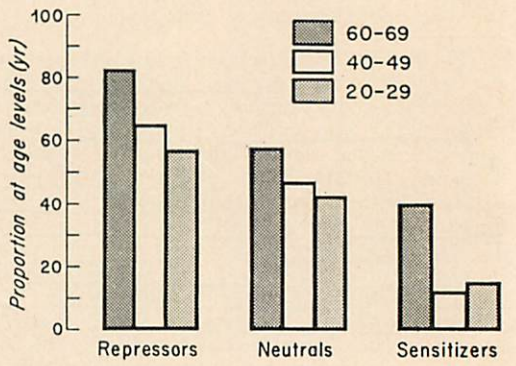

FIG. 1. Proportion of purely organic diagnoses (Category I) among repressors, neutrals, and sensitizers at three age levels.

no significant difference between the categories with only psychological factors (II, III) versus those with some organic factor (I, IV, V).

The second hypothesis, that the incidence of organic diagnosis increases among repressors as a function of age, was not confirmed. Organic diagnoses were found to increase significantly as a function of age ($\chi^2 = 22.9$, $df = 12$, $p < .03$), but the increase was not different for sensitizers and repressors.

DISCUSSION

The present investigation indicated that in a sample of medical patients with extremely high and low Repression-Sensitization Scale scores, repressors and sensitizers fall into different general diagnostic categories to a statistically significant extent. Organic illness alone is more likely among repressors, whereas psychological diagnoses are more prevalent among sensitizers. These findings suggest that the Repression-Sensitization Scale successfully differentiates among the nontest behavior classification of medical diagnoses.

It is possible that for some patients the MMPI influenced the eventual diagnoses because of a referral for psychiatric consultation. Sensitizers have higher profile elevations and more emotional problems expressed; thus, there is a possible confounding influence for some of the original diagnoses. However, it is more likely that fewer physicians referred to the MMPI in the years in which these data were gathered because the policy at that time was for all patients registered to the medical sections (not the Section of Psychiatry) to receive an MMPI, and most MMPIs were therefore considered as research and routine. There is no way to completely control retrospectively the possible influence, although the authors believe that the effect was minor.

The success of the present investigation suggests additional investigations of the relationship between type of organic diagnosis and repression-sensitization, the search for variables that would differentiate repressors with and without organic diagnosis, and the determination of the best possible set of MMPI items for differentiating organic from psychological diagnoses. Furthermore, these results suggest utilizing the Repression-Sensitization Scale, or a revised MMPI scale, to help differentiate whether a patient will more likely receive an organic diagnosis only or receive at least one with major psychological involvement.

The potential practical usefulness of the present results is to help identify patients, prior to medical examination, who are more likely to receive diagnoses with or without significant psychological factors. In combination with other information such as presenting complaints and medical history, the Repression-Sensitization scale could be a useful part of prescreening, intake assessment, assigning patients to medical specialty sections, and setting up advanced psychological and psychiatric consultation.

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