

Prognostic Application of Psychological Techniques in
Convulsive Therapy

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One of the more important clinical applications of psychological testing techniques is the prediction of the results in psychiatric treatment. In particular, there has been a considerable effort to determine valid psychological prognostic criteria for the somatic therapies. The results to date, however, have not found clinical acceptance.

Using the Rorschach, for example, Rabin (1) has stated that "single Rorschach factors cannot serve as indices or as predictors of improvement." In contrast Piotrowski has published a number of papers on the prognostic use of the Rorschach in insulin coma and convulsive therapy (2, 3, 4, 5, 6). Unfortunately, his criteria, as reported in successive papers, are vague and contradictory. In 1941 he reported six explicit prognostic signs which were applied in predicting clinical response over a period of several months after the termination of treatment. But Rees and Jones (7), in a study of schizophrenic patients receiving a variety of somatic therapies, found that Piotrowski's signs were related to the results on a chance basis only.

The differences in the studies of various investigators can be accounted for by methodological variables. These variables include factors of population, number of patients observed, the method of analyzing data, the kind of somatic therapy utilized, and the criteria for evaluating improvement,

including the time at which the clinical evaluation is made in relation to the course of treatment. Another basis for inconsistent results may be the lack of an adequate theoretical framework.

For the past several years we have been engaged in studies of the convulsive therapy process. These studies were initiated to test a hypothesis concerning the mode of action of convulsive therapy which was derived from observations on a brain-damaged population. According to the hypothesis of Weinstein and Kahn (8, 9) the therapeutic effect of convulsive therapy was related to the induction of altered brain function creating the necessary conditions for a new type of symbolic adaptation, mainly denial, in characterologically disposed persons. Our previous studies have already shown that altered brain function is a necessary condition for behavioral change (10, 11) and that the manifestation of denial language patterns with treatment is related to the evaluation of improvement (12). The purpose of the present report is 1) to summarize the findings on personality factors, and 2) to demonstrate the application of these findings as prognostic criteria for convulsive therapy.

Method:

These studies were conducted at Hillside Hospital, a non-profit, voluntary, mental hospital, admitting patients who are considered as having early and curable illnesses. Psychotherapy is the principal treatment employed, with somatic therapies available when needed. The material presented was collected in a series of studies during a period of three and a half years. While a total of 180 patients have been investigated, varying numbers were tested with each of the techniques of personality evaluation. The patients ranged in age from 20 to 66, with a median of 45, and included twice as many women as men.

All patients received convulsive therapy administered three times a week, using either a Medcraft alternating current instrument or a Reiter C-47 electrostimulator. A minimum of 12 treatments was given, with the total course determined by the supervising psychiatrist in charge of the convulsive therapy unit. All psychological procedures were administered in the week prior to the start of treatment.

The determination of the patient's response to treatment was based on the medical director's evaluation at the time of discharge, usually within six to eight weeks following treatment.

Procedures and Results:

1. Family Interviews. According to the original theory, it was considered that persons showing characteristics of the "explicit verbal denial" personality, as described by Weinstein and Kahn (13) would be most likely to show a behavioral change rated as improvement following treatment. This was tested in a standardized interview with members of the patient's family, eliciting information on the patient's attitudes, mode of communication and reactions to stress. Fifteen areas of behavior considered to be related to denial tendencies were scored from the interview material. A score of 0, 1 and 2 was given for each item, depending on whether the designated behavior was minimally, moderately or markedly shown. The sum of the scores thus obtained was used as the denial score.

The relatives of 47 patients were interviewed, and denial personality scores ranged from 0 to 25, with a median of 11. The patients were divided into two groups: those with scores from 11 to 25 were classed as "high denial," and those from 0 to 10 as the "low denial" group.

The results of this analysis were significant, showing that of the patients with high denial scores, 58% were in the much improved group and only one patient was unimproved. Of the patients with low denial scores, on the other hand, only 30% were much improved and an equal number were unimproved (14).

Although these results based on family interviews were promising, we felt that our conceptions of prognostic personality factors could be extended and made more amenable to practical application by the use of standardized psychological procedures.

For this purpose the Rorschach test was used.

2. The Rorschach Test: We have obtained Rorschach protocols in 87 patients receiving convulsive therapy. The records were scored according to the criteria of Klopfer & Kelley (15). Only those components were analyzed which were considered related to the personality aspects under study.

It was found (16) that the much improved patients had significantly fewer total number of responses, and a significantly greater per cent of whole and form responses than did those patients who were rated as unimproved. The stereotypy and limited imaginative capacity of the much improved patients was also shown by their giving a greater percentage of popular responses, with little diversification of content categories. They were less likely to have any kind of shading response. Those patients who had human movement (M) responses had the poorest clinical responses, while those with no movement of any kind had the best results. With respect to color, an FC response was associated with a poor clinical result, while those with no color at all did very well.

Combining some of these factors tended to sharpen the differentiation in terms of outcome. Thus, of those who had

both M and FC, only 17% were rated as much improved. In contrast, of those with neither M nor FC, 66% were much improved and only one patient was unimproved.

We have converted these results into prognostic criteria, as shown in Table I. In one column are listed those Rorschach factors which have been most closely related to a favorable prognosis. In the other column are those factors which are prognostic of an unfavorable clinical outcome. For example, of those patients with ten or less responses 67% were much improved. Only 28%, however, of those with 16 or more responses had a good result.

TABLE I

Prognostic Rorschach Indices of Improvement

	<u>Favorable Prognosis</u>		<u>Unfavorable Prognosis</u>	
		<u>% Much Improved</u>		<u>% Much Improved</u>
Number of Responses	10 or less	(67%)	16 or more	(28%)
Movement	None	(63%)	M present	(28%)
Color	No FC	(60%)	FC present	(21%)
F %	75 - 100	(59%)	0 - 59	(27%)
Shading	None	(58%)	Present	(33%)
M and FC	Neither Present	(66%)	Both Present	(17%)

It should also be noted that comparison of post treatment Rorschach records with those obtained prior to treatment failed to show any significant change. This confirms similar observations by others (6, 17, 18, 19) and indicates that the Rorschach pattern is probably a reflection of the basic personality rather than transient aspects of the disease process.

3. Social Attitudes: The F Scale. While these Rorschach results amply confirm the concept of the relation of personality factors and results of treatment, further data was obtained in application of measures of social attitude such as the California F Scale. This scale, originally developed in studies of ethnocentrism and authoritarianism (20) has been increasingly used in the study of more central psychological processes. In our laboratory the F Scale has been regarded primarily as a reflection of stereotyped thinking and communication. It has been observed that patients who receive convulsive therapy at Hillside Hospital have significantly higher F scores than those given psychotherapy alone (21).

In these studies a ten-item modification of the F Scale (22) has been used. The test is rapidly administered, taking no longer than 10 minutes in most cases. The subject reads 10 ambiguous statements and indicates whether he agrees or disagrees with each statement, and to what extent. The score given for each item ranges from one to seven and the range of total scores is 10 to 70. The greater the agreement, the higher the score

obtained. The statements themselves are extreme, conventional or stereotyped expressions. For example, one of the statements is: "If people would talk less and work more, everybody would be better off."

This test has been given to 96 patients prior to convulsive therapy. Using a score of 40 as a cut-off point, we found that of those patients with scores of 40 or more 71% were rated as recovered or much improved. In contrast, only 36% of those with scores below 40 were so rated. In general, the higher the score, the better the clinical result.

We have also tested an additional 13 patients, referred for convulsive therapy, but who either refused treatment or terminated it of their own accord prior to completion. Of these, eleven had F scores below 40, an observation consistent with the general expectation that such persons have a poor response to convulsive therapy.

Discussion:

These observations have shown that in the course of the investigation of theoretical problems of convulsive therapy, certain standard psychological procedures have provided data which is significantly related to the therapeutic outcome. This data can now be applied to the practical problem of clinical prognosis.

We have found that a favorable improvement rating is given to those patients who develop euphoric, hypomanic or denial modes of adaptation following treatment (23). Such behavioral change is most likely to occur in persons whose premorbid personalities may be characterized as non-empathic, non-introspective, non-verbally communicative and highly conventional and stereotyped with little imaginative or creative capacity (14). On the Rorschach prior to treatment these patients give few responses, fail to show human movement, shading or integrated color responses (FC) and have little variety of content. On the F Scale, their scores were apt to be over 40, showing a high degree of stereotypy in their communication.

In contrast to such patients, others are either unchanged by convulsive therapy or develop such modes of reaction as panic, paranoid behavior, or increased somatic concern, such as complaints about their memory. These patients are rated as unimproved. While this latter group of patients showed diverse patterns in their premorbid personality characteristics, they were more apt to be imaginative, introspective and less stereotyped in their communications. On the Rorschach they gave human

movement, integrated color and shading responses, and were more diversified in their content than the good prognosis patients. On the F Scale their scores were most likely to be under 40.

The finding that meaningful prognostic criteria can be derived on the basis of personality constellation rather than in terms of nosological entities has important implications. For one thing, this conception leads to the use of further psychological techniques for prognostic purposes. Such application is currently under way in our laboratory at Hillside Hospital. Secondly, it is possible to derive an increased understanding of mental disorders, their management and prevention. Thus, we have previously noted (14) that the same personality factors which are related to a good prognosis with convulsive therapy, are etiologically important in the development of certain types of psychiatric disorder. Studies of patients with psychiatric depression, for example, demonstrated a prominence of premorbid personality patterns characterized by the inability to communicate verbally (24), and rigidity and lack of imagination (25). Such persons are generally refractory to conventional verbal techniques and require non-verbal therapeutic techniques. It seems that the same personality factors which make a person responsive to non-verbal forms of therapy are involved in his susceptibility to a depressive reaction. The same stereotypy and conventionality which lead to a catastrophic response in the individual faced by the sudden loss of a job or close relative, permit the development of denial, minimization and displacement under the conditions of altered brain function and are considered "improved" by the family and the therapist.

Summary and Conclusion:

We have shown that in the course of investigation of theoretical problems of convulsive therapy, certain standard psychological procedures have provided data which is significantly related to the therapeutic outcome. This data can now be applied to the practical problem of clinical prognosis.

On the Rorschach test, those patients without human movement, shading or integrated color (FC) responses, few total responses, and with little originality or variety of content have the best prognosis. On the F Scale, a score of less than 40 is prognostic of a poor clinical response.

The theoretical conception developed in these studies leads to the application of additional psychological techniques for prognostic purposes, and to an increasing understanding of the etiology of psychiatric syndromes with its implications for management and prevention of such disorders.

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