

48

PROGNOSTIC VALUE OF RORSCHACH CRITERIA IN CLINICAL RESPONSE TO CONVULSIVE THERAPY

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ABSTRACT

In this study of the relationship between premorbid personality factors and clinical responses to convulsive therapy, the Rorschach test was administered to 87 unselected patients prior to the beginning of ECT. A favorable clinical response to ECT was observed in subjects whose Rorschach records revealed a basically conventional and unimaginative personality, generally lacking in empathy, introspectiveness or facility of verbal communication. Post-treatment records (of 41 patients) showed no significant changes. It is therefore concluded that Rorschach patterns reflect basic personality rather than prevailing mood or type of illness. These results indicate that Rorschach patterns can be useful adjuncts in the selection of patients for convulsive therapy.

In a series of studies of convulsive therapy we have observed marked individual differences in behavioral response. It has been shown that the induction of a behavioral change is related to the presence of altered brain function.^{2,5} Yet, among those with equivalent degrees of physiologic change, there are still differences in the clinical patterns of behavior. While some patients become hypomanic, others show paranoid reactions, withdrawal, increased somatization or expressions of fear.³

We have postulated that personality is one of the significant factors affecting this variability. This hypothesis was tested in a previous study,⁶ in which each patient's premorbid personality was evaluated by means of structured interviews with members of his family and with the patient himself. We found that the patients who were rated as recovered or much improved after electroshock treatment were those with the follow-

ing personality pattern: they were generally nonempathic, nonintrospective, verbally noncommunicative, highly conventional and stereotyped, with little imagination or creative capacity.

The concepts derived from these observations lend themselves to study by other methods. In the present study the Rorschach test, another measure of personality, was used. The Rorschach technique has particular advantages in that it is both an instrument for testing the patient directly and, at the same time, a standardized procedure providing data which can be verified by others.

The specific purpose of the present study was to determine: (1) the relationship between Rorschach findings and personality aspects previously found to be significant in family interviews; and (2) the applicability of Rorschach criteria in the prognosis of the clinical response to convulsive therapy.

METHOD

The population consisted of 87 consecutive, unselected patients referred for convulsive therapy in a voluntary mental hospital. All patients received electroconvulsive therapy (with either unidirectional or alternating-current instruments) three times a week. A mini-

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mum of 12 treatments was given, with the staff psychiatrist in charge of the treatment determining the final number on the basis of clinical criteria. The improvement evaluation, made by the staff psychiatrist, was based on the patient's behavior in the hospital setting during the period of two to four weeks following termination of treatment. In this manner each patient was rated as either much improved, moderately improved or unimproved.

As previously described,⁵ patients were rated "much improved" if they no longer showed the symptoms which had brought them into the hospital; if, in addition, their doctors felt they were better; and if the nurses' notes confirmed such aspects as ability to sleep without medication, better appetite, and improved capacity to get along with other patients and participate in hospital activities. "Moderately improved" patients typically showed some symptomatic relief (*i.e.*, acute depressive features might be gone), but not the dramatic changes so evident in the first group. Each of these patients continued to show some noticeable disturbance such as obsessional thinking, paranoid ideas or somatic preoccupation. In the "unimproved" patients, change was either not clearly noticeable or only equivocal or transient. Some showed fluctuations in behavior, at times appearing somewhat improved; but the change was not sustained, so that by the end of treatment they appeared much the same as before.

The Rorschach test was given to each patient prior to the beginning of electroconvulsive therapy and, in 41 cases, two weeks after electroconvulsive therapy. The Rorschach records were scored according to the criteria of Klopfer and Kelley.⁹ Only those common components were studied, however, which could be analyzed quantitatively. These included:

1. Total number of responses.
2. Per cent whole responses (responses in which a subject uses all of a card for the formation of a concept).
3. Per cent form responses (responses in which the shape of the blot is the sole determinant in the concept formation).

4. Number of content categories included in the responses.

5. Number of movement responses (references to any action or movement).

6. Per cent popular responses (responses statistically given most frequently to a particular blot area).

7. Presence or absence of shading responses (responses in which a subject incorporates the darker and lighter aspects of a blot into his description).

8. Type of movement responses (*e.g.*, human movement, animal movement, etc.).

9. Type of color responses (responses in which the color in a blot plays a recognizable role in the concept formation; when form and color are both significant, color-form [CF] or form-color [FC] is scored, depending on the predominant influence).

RESULTS

The relation of the various Rorschach factors to clinical changes following ECT is shown in Tables I-IV.

In Table I, comparison is made between those patients who were rated as having a good clinical response and those whose response was moderate or poor. The much improved patients had significantly fewer total number of responses, and significantly more per cent whole and form responses.

TABLE I

RELATION OF RORSCHACH FACTORS TO CLINICAL RESPONSE IN CONVULSIVE THERAPY
(NUMBER, PER CENT WHOLE, PER CENT FORM RESPONSES)

	Mean	S.D.	Diff.	t
<i>Number of Responses</i>				
Much Improved (38)	13.0	6.7	6.5	2.7 **
Moderate or Unimproved (48)	19.5	12.8		
<i>Per Cent Whole Responses</i>				
Much Improved (38)	37.6	21.0	13.	3.0 **
Moderate or Unimproved (48)	24.4	18.2		
<i>Per Cent Form Responses</i>				
Much Improved (38)	71.8	19.0	9.9	2.2 *
Moderate or Unimproved (48)	61.9	21.4		

* Significant at .05 level

** Significant at .01 level

An analysis of content categories, movement responses and popular responses (presented in Table II) reveals that there were significantly fewer content categories and movement responses, and a greater per cent of popular responses in the Rorschach records of the much improved patients, as compared with the records of the unimproved and moderately improved groups.

As shown in Table III, the much improved patients were also less likely to have any kind of shading response. This table also presents an analysis of the different types of movement and color responses. Those patients who gave human-movement (M) responses had the

poorest clinical responses (28% much improved), while those with no movement of any kind had the best clinical results (63% much improved). Patients with animal-movement (FM) or inanimate-movement (m) responses were rated better than those with human movement but not as well as those with no movement at all. With respect to color, those patients with form-color (FC) responses had the poorest results; those with no color at all, the best—although patients with CF or C responses did almost as well.

In Table IV the patients are grouped according to combinations of human-movement (M) and form-color (FC) responses. Of those who had both M and FC, only 17% were rated as much improved; 25% were considered unimproved. In contrast, of those with neither M nor FC, 66% were much improved and only 3% were unimproved. The ratings of the group with one or the other of these determinants (M or FC) fell in between.

As mentioned, post-treatment records were obtained from 41 patients. Comparison of the pre-treatment and post-treatment records of these patients revealed little change in the types of responses found. With respect to human movement (M), for example, 34 of the records showed no change. In four cases patients with M responses prior to treatment showed none afterward; three other patients with no M response had such response following treatment. These small changes could be expected on a chance basis.

TABLE II

RELATION OF RORSCHACH FACTORS TO CLINICAL RESPONSE IN CONVULSIVE THERAPY (CONTENT CATEGORIES, MOVEMENT AND PER CENT POPULAR RESPONSES)					
	Mean	S.D.	Diff.	t	
<i>Number of Content Categories</i>					
Much Improved (38)	3.8	2.2			
Moderate or Unimproved (48)	4.9	2.3	1.1	2.1	*
<i>Number of Movement Responses</i>					
Much Improved (38)	2.3	2.7			
Moderate or Unimproved (48)	4.9	5.1	2.6	2.7	**
<i>Per Cent Popular Responses</i>					
Much Improved (38)	37.7	21.6			
Moderate or Unimproved (48)	26.6	14.3	11.1	2.8	**

* Significant at .05 level

** Significant at .01 level

TABLE III

RELATION OF RORSCHACH FACTORS TO CLINICAL RESPONSE IN CONVULSIVE THERAPY (SHADING, MOVEMENT AND COLOR)					
	Total No.	Much Improved	Moderately Improved	Unimproved	
Shading	46	15 (33%)	20 (43%)	11 (24%)	
No Shading	40	23 (58%)	15 (38%)	2 (5%)	
					$X^2 = 8.12$ $p < .02$
Human Movement (M)	39	11 (28%)	19 (49%)	9 (23%)	
Animal Movement (FM) and/or Inanimate Movement (m)	29	16 (55%)	9 (31%)	4 (14%)	
No Movement	19	12 (63%)	7 (37%)	0	
					$X^2 = 10.49$ $p < .05$
Form-Color (FC)	34	7 (21%)	18 (53%)	9 (26%)	
Color-Form (CF) and/or Pure Color (C)	27	16 (59%)	8 (30%)	3 (11%)	
No Color	26	16 (62%)	9 (35%)	1 (4%)	
					$X^2 = 14.98$ $p < .01$

TABLE IV

RELATION OF RORSCHACH FACTORS TO CLINICAL
RESPONSE IN CONVULSIVE THERAPY
(HUMAN MOVEMENT AND FORM-COLOR)

Human Movement (M) and Form-Color (FC)	Total No.	Much Improved	Moderately Improved	Unimproved
(FC)	24	4 (17%)	14 (58%)	6 (25%)
M or FC	25	10 (40%)	9 (36%)	6 (20%)
Neither M nor FC	38	25 (66%)	12 (32%)	1 (3%)

M and FC vs. M or FC vs. Neither M nor FC:
 $X^2 = 17.82$ $p < .01$

M and FC vs. Neither M nor FC: $X^2 = 12.26$ $p < .001$

EPICRISIS

The results of this study confirm the findings previously reported concerning the relationship of personality to clinical response after convulsive therapy. Patients who had a good clinical result showed Rorschach records characterized by few responses and little variety of content, no shading or movement or color responses, and a high percentage of whole, form and popular responses. This kind of record indicates a personality pattern which is nonempathic, nonintrospective, verbally noncommunicative, highly conventional and stereotyped and with little manifestation of imagination or creative capacity. These characteristics are identical with those described in the previous study based on interviews with family members.⁶

The prognostic value of the Rorschach as a clinical instrument is demonstrated by these data. While there are a number of studies in the literature on the prognostic value of the Rorschach in somatic therapy, the results have not been consistent. Rabin,¹³ for example, states that "single Rorschach factors cannot serve . . . as predictors of improvement." On the other hand, Piotrowski¹² describes specific prognostic criteria. It is likely that the difference in point of view, as well as in the varying criteria offered, reflects differences in the type of population and the variety of somatic treatment observed. Despite these problems, however, those studies^{12, 14} with the largest series of patients have obtained results similar to those of the present study. For example, their data show that the absence of

human movement (M) is more often associated with a favorable clinical response, and that patients with form-color (FC) responses are more likely to have a poor result.¹⁴

The significance of our findings might be questioned on the basis that we have demonstrated a relationship merely between clinical response and type of illness, rather than between clinical response and personality pattern. This objection would appear to be supported by the numerous studies^{4, 10, 15, 16} which have reported that depressed patients, the most likely candidates for convulsive therapy, show no human-movement or color responses. Our observations, however, substantiated by other studies,^{1, 7, 8, 11} show a constancy of the Rorschach before and after treatment, and indicate that the response pattern reflects aspects of the basic personality rather than transient features such as the prevailing mood or type of illness.

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Prognostic Value of Rorschach Criteria in Clinical
Response to Convulsive Therapy

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In a series of studies of convulsive therapy we have observed marked individual differences in behavioral response. It has been shown that the induction of a behavioral change is related to the presence of altered brain function (2, 5). Yet, among those with equivalent degrees of physiologic change, there are still differences in the clinical patterns of behavior. While some patients become hypomanic, others show paranoid reactions, withdrawal, increased somatization or expressions of fear (3).

We have postulated that personality is one of the significant factors affecting this variability. This hypothesis has been tested in a previous study using structured interviews with members of the patient's family (6). It was reported that patients who were rated as recovered or much improved following treatment were generally non-empathic, non-introspective, non-verbally communicative, highly conventional and stereotyped, with little imagination or creative capacity.

The concepts derived from these observations lend themselves to study by other methods. The Rorschach test, another measure of personality, was used in this study. The Rorschach technique had the advantages both of testing the patient directly and of being a standardized procedure providing data which could be verified by others.

The specific purpose of the present study was to determine:

- 1) the relationship between Rorschach findings and personality aspects previously found to be significant in family interviews, and

- 2) the application of Rorschach criteria in the prognosis of the clinical response to convulsive therapy.

METHOD:

The population consisted of 86 consecutive, unselected patients referred for convulsive therapy in a voluntary mental hospital. All patients received electroconvulsive therapy three times a week, using either unidirectional or alternating current instruments. A minimum of 12 treatments was given, with the supervising psychiatrist in charge of the treatment determining the final number on the basis of clinical criteria.

The improvement evaluation was made by the supervising psychiatrist and was based on the patient's behavior in the hospital setting in a period of two to four weeks following the termination of treatment. In this manner each patient was rated as either much improved, moderately improved or unimproved, using criteria previously described (5).

Each patient was given the Rorschach test in the standard manner in the week prior to treatment. This data constituted the main focus of this study. To determine stability of the Rorschach pattern with treatment, however, the test was readministered two weeks following the termination of treatment.

RESULTS:

A. Relation of Rorschach Factors to Clinical Change:

The Rorschach records were scored according to the criteria of Klopfer and Kelley (9). Only these common components were studied, however, which could be analyzed quantitatively. These included 1) total number of responses, 2) per cent whole responses, 3) per cent form responses, 4) number of content categories included in the responses, 5) number of movement responses, 6) per cent popular responses, 7) presence or absence of shading responses, 8) type of movement responses, and 9) type of color responses.

In Table I the comparison is made between those patients who were rated as having a good clinical response and those whose response was moderate or poor. The much improved patients had significantly fewer number of responses, and significantly more per cent whole and form responses.

TABLE I

TABLE I

Relation of Rorschach Factors to Clinical Response in Convulsive Therapy:

Number, Per Cent Whole, Per Cent Form Responses

<u>Number of Responses</u>	<u>Mean</u>	<u>S.D.</u>	<u>Diff.</u>	<u>t</u>
Much Improved (38)	13.0	6.7	6.5	2.7 **
Moderate or Unimproved (48)	19.5	12.8		
<u>Per Cent Whole Response</u>				
Much Improved (38)	37.6	21.0	13.2	3.00 **
Moderate or Unimproved (48)	24.4	18.2		
<u>Per Cent Form Response</u>				
Much Improved (38)	71.8	19.0	9.9	2.2 *
Moderate or Unimproved (48)	61.9	21.4		

* Significant at .05 level

** Significant at .01 level

There were significantly fewer content categories in the Rorschach records in the much improved patients. (Table II). They also demonstrated fewer movement and a greater per cent of popular responses, than the unimproved and moderately improved groups.

TABLE II

The much improved patients were also less likely to have any kind of shading responses, as shown in Table III. In this table the comparison is also shown for the different types of movement and color responses. Those patients who had human movement responses (M) had the poorest clinical responses (28% much improved), while those with no movement of any kind had the best results (63% much improved). Patients with animal (FM) or inanimate movement (m) responses were rated better than those with human movement but not as well as those without any movement at all. With respect to color, those patients with form color (FC) responses had the poorest results, those with no color at all the best, although patients with CF or C responses did almost as well.

TABLE III

TABLE II

Relation of Rorschach Factors to Clinical Response in Convulsive Therapy:
Content Categories, Movement and Per Cent Popular Responses

		<u>Mean</u>	<u>S.D.</u>	<u>Diff.</u>	<u>t</u>
<u>Number of Content Categories</u>					
Much Improved	(38)	3.8	2.2		
Moderate or Unimproved	(48)	4.9	2.3	1.1	2.1 *
<u>Number of Movement Responses</u>					
Much Improved	(38)	2.3	2.7		
Moderate or Unimproved	(48)	4.9	5.1	2.6	2.7 **
<u>Per Cent Popular Responses</u>					
Much Improved	(38)	37.7	21.6		
Moderate or Unimproved	(48)	26.6	14.3	11.1	2.8 **

* Significant at .05 level

** Significant at .01 level

TABLE III

Relation of Rorschach Factors to Clinical Response in Convulsive Therapy:

	<u>Shading, Movement and Color</u>				
	<u>N</u>	<u>Much Improved</u>	<u>Moderately Improved</u>	<u>Unimproved</u>	
Shading	(46)	15 (33%)	20 (43%)	11 (24%)	
No Shading	(40)	23 (58%)	15 (38%)	2 (5%)	$\chi^2 = 8.12 \quad p < .02$
Human Movement (M)	(39)	11 (28%)	19 (49%)	9 (23%)	
Animal Movement (FM) and/or Inanimate Movement (m)	(29)	16 (55%)	9 (31%)	4 (14%)	
No Movement	(19)	12 (63%)	7 (37%)	0	$\chi^2 = 10.49 \quad p < .05$
Form Color (FC)	(34)	7 (21%)	18 (53%)	9 (26%)	
Color Form (CF) and/or Pure Color (c)	(27)	16 (59%)	8 (30%)	3 (11%)	
No Color	(26)	16 (62%)	9 (35%)	1 (4%)	$\chi^2 = 14.98 \quad p < .01$

In Table IV the patients were grouped according to combinations of M and FC responses. Of those who had both M and FC only 17% were rated as much improved and 25% were considered unimproved. In contrast, of those with neither M nor FC, 66% were much improved and only 3% were improved. The ratings of the group with one or the other of these determinants fell in between.

TABLE IV

B. Comparison of Pre- and Posttreatment Records

Posttreatment records were obtained from 41 patients. These showed little difference from the types of responses found prior to treatment. With respect to human movement (M), for example, 34 of the records showed no change. In four cases patients with M responses showed none afterwards; three other patients with no M response had such response following treatment.

TABLE IV

Relation of Rorschach Factors to Clinical Response in Convulsive Therapy:

Human Movement (M) and Form Color (FC)Rorschach

	<u>N</u>	<u>Much Improved</u>	<u>Moderately Improved</u>	<u>Unimproved</u>
M and FC	(24)	4 (17%)	14 (58%)	6 (25%)
M or FC	(25)	10 (40%)	9 (36%)	6 (20%)
Neither M nor FC	(38)	25 (66%)	12 (32%)	1 (3%)

$$x^2 = 17.82 \quad p < .01$$

M and FC/Neither M nor FC

$$x^2 = 12.26 \quad p < .001$$

DISCUSSION:

The results of this study confirm the findings previously reported concerning the relationship of personality to clinical response after convulsive therapy. Patients who had a good clinical result showed Rorschach records characterized by few responses and little variety of content, no shading or movement or color response, and a high percentage of whole, form and popular responses. This pattern indicates a personality pattern which is non-empathic, non-introspective, non-verbally communicative, highly conventional and stereotyped and with little manifestation of imagination or creative capacity. These aspects are identical with those described in the previous study based on interviews with family members (6).

The prognostic value of the Rorschach as a clinical instrument is demonstrated by this data. While there are a number of studies in the literature on the prognostic value of the Rorschach in somatic therapy, the results have not been consistent. While Rabin (3), for example, has stated that "single Rorschach factors cannot serve ... as predictors of improvement," Piotrowski has described specific prognostic criteria (12). It is likely that the difference in point of view, as well as in the varying criteria offered, reflects differences in the type of population and the varieties of somatic treatment observed. Despite these problems, however, the results of those studies with the largest series of patients (12, 14) report similar observations to those in the present study. For example, their data shows that the absence of human movement (M) is more often associated with a favorable clinical response, and that patients

with FC responses are more likely to have a poor result (14).

The significance of these results might be questioned on the basis that we have demonstrated a relationship between clinical response and type of illness rather than the personality pattern. In this regard numerous studies have reported that depressed patients, the most likely candidates for convulsive therapy, show no human movement or color responses (4, 10, 15, 16). Our observations, however, substantiated by other studies (1, 7, 8, 11), show a constancy of the Rorschach before and after treatment, and indicate that the response pattern reflects aspects of the basic personality rather than transient features as the prevailing mood or type of illness.

SUMMARY AND CONCLUSION:

1. Eighty-seven unselected cases referred for convulsive therapy were administered a Rorschach test prior to, and two weeks following, treatment.

2. A favorable clinical response was observed in subjects with pretreatment records characterized by few responses, a small number of content categories, absence of shading, movement and color responses (particularly lack of human movement and form color), and a high percentage of whole, form and popular responses.

3. This data confirms previous observations on the relation of personality factors to clinical outcome in convulsive therapy. A favorable evaluation is most likely in patients who are predominantly non-empathic, non-introspective, non-verbally communicative, highly conventional and stereotyped, with little imagination or creative capacity.

4. There was no significant change in Rorschach records obtained following treatment. It is concluded that pretreatment Rorschach patterns in this population reflect the basic personality rather than the prevailing mood or type of illness.

5. Rorschach patterns, by providing a set of prognostic criteria, can be useful adjuncts in the selection of patients for convulsive therapy.

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