

The Rorschach test in the differential diagnosis of 245 schizophrenic inpatients

Regular Article

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Abstract

This article has two different aims: first, to test whether the Rorschach Psychodiagnostic Test can confirm the psychiatric diagnosis of 245 schizophrenic inpatients when the initial diagnosis was based on the criteria of the RDC and DSM-IV for the differentiation of schizophrenia; and second, to determine whether there are statistically significant differences between two refined samples of 191 "acutely aggravated" and 54 chronic schizophrenic patients.

The following tests were used: the Rorschach Psychodiagnostic Test (Comprehensive System), the Research Diagnostic Criteria, the DSM-IV and the Katz Adjustment Scale.

A cross-sectional study design was used to compare the groups with the Mann Whitney U, in order to test for differences between the two refined acute and chronic samples.

Analysis of the data confirmed the precision and efficacy of the Rorschach test for the differential diagnosis of schizophrenia and distinguishes it from borderline personality and bipolar disorder.

Application of the Mann-Whitney U to the two refined samples of acute and chronic patients (refined due to the presence in their protocols of $L > 5$; $R < 14$; $X + \% > 70\%$; few M, no M- and no level 2 special codes), confirmed the existence of statistically significant differences at three confidence levels (< 0.01 ; 0.02 and 0.05).

In the two refined acutely aggravated and chronic groups, the presence of the mechanisms of splitting, loss of perceptual accuracy, dissociated and delusional thought, isolation and deficient interpersonal relationships was confirmed in 100% of cases and all of them complied with the six criteria of the Schizophrenia Index and the five criteria of the Perceptual Thinking Index. These features were also observed in the 245 patients from the overall sample, including those who did not fully comply with these indexes.

Analysis of the values of the Rorschach structural summary in the samples of acute and chronic patients studied revealed additional information about the personalities and behavior of these people and aided in focusing their treatment. However, the most important aspect of the Rorschach test is that it does not require a three-month, six-month or two-year period to perform a differential diagnosis of people with schizophrenia, as is the case with the RDC and the DSM-IV.

Key words: Schizophrenia, Rorschach test, differential diagnosis.

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INTRODUCTION

The concept of schizophrenia has evolved since Morel (1853, 1860) used the term "dementia praecox" and Bleuler (1911) replaced it with schizophrenia, or "group of schizophrenias," mentioning the splitting (*spaltung*) of the different psychic functions as one of its most important characteristics.

Many authors have described the causes and symptoms, as well as the classification and differential diagnosis criteria of schizophrenia (Kraepelin, 1896, 1918; Bleuler, 1911; APA; Arieti, 1955, 1959; Weiner, 1966; Ey, 1971, 1973; Portuondo, 1973; McReynolds, 1974; Jenkins, 1974; Jackson, 1974; Spitzer, Endicott & Robins, 1975, 1977, 1978; Crow, 1980, 1982; Obiols & Obiols, 1988; Obiols, 2000; Meyer (2002); Exner, 1968-2005; and many others).

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Weiner (1966) departed from the premise of four criteria for diagnosing a schizophrenic patient: the presence of a thought disorder, evidence of inaccurate perception of reality, poor emotional control and ineffectiveness in interpersonal relationships. Exner (1978) included these criteria in the first schizophrenia index of what would become his Comprehensive System. Two variables in the Rorschach are fundamental for demonstrating the presence of a psychological disorder: X-% and Wsum6. X-% (percentage of all answers with form quality minus) is an indicator of a disorder in the perception of reality (when X-% > 29%) and Wsum6 (weighted sum of level 2 special scores) indicates the presence of serious thought disorders when > 17 (Weiner, 2002; Exner, 2000, 2003). These two variables form part of the Schizophrenia Index (SCZI) and the Perceptual Thinking Index (PTI).

Before the implementation of the Perceptual Thinking Index (PTI), the Schizophrenia Index (SCZI) confirmed a diagnosis of schizophrenia if six, or in some cases only four or five, of its variables were fulfilled. The Perceptual Thinking Index was introduced as way to avoid the false positives of what was then considered to be the final Schizophrenia Index on the Rorschach (SCZI).

Box I. Variables of the Schizophrenia Index (SCZI) and the Perceptual Thinking Index (PTI)

Schizophrenia Index (SCZI)	Perceptual Thinking Index (PTI)
1.- $X+ \% < 61\%$	1.- $XA \% < 70\%$ and $WDA \% < 75\%$
2.- $X- \% > 29\%$	2.- $X- \% > 29\%$
3.- $FQx- = FQxu$ or $R.FQ- > FQo$ or $RFQ- > FQo + FQ+$	3.- level2 de $CE > 2$ and $FABC2 > 0$
4.- $SUM CE. level2 > SUM CE level1$ and $FABC2 > 0$	4.- $R < 17 Y WSUM6 > 12$ or $R > 16 Y WSUM6 > 17$
5.- $SUM6 > 6$ ó SUM or $WSUM6 > 17$	5.- $M- > 1$ or $X- \% > 40$
6.- $M- > 1$ ó $X- \% > 40$	

The review of diagnoses of people with schizophrenia performed via Rorschach by three Rorschachists from the European School (Loosli-Usteri, Bohm and Alcock) and Portuondo, amongst the Americans, provided information on the scope and usefulness of the Rorschach test for the diagnosis of schizophrenia. On tests of these patients, Loosli-Usteri (1965) obtained a low number of responses, failure on cards I and VII and “disjointed” content. In protocols of schizophrenic patients, Bohm (1972) observed a medium to high number of responses, a lack of popular responses on card V, failures on cards VIII, IX and X, sequences of well or badly viewed forms, an increase in W (whole) and W- responses and an increase in Dd (unusual details) among paranoid schizophrenics who occasionally presented delusional ideas. Alcock (1965) proposed three characteristics to be identified in the test for the presence of schizophrenia: flight of ideas, ideas of reference and hallucinatory perception. Alcock borrowed Bleuler’s concept of ‘flight of ideas’, which corresponds to a thought form which is interrupted in the middle of a thought and is followed by other ideas which are not interrelated (the DR2 in this study and the DR of Portuondo). As regards ‘ideas of reference’, according to Alcock, the frequent association of perceived images can be indicative of this characteristic when linked to personal experience, although they are not always pathognomonic in her opinion. In the case of ‘hallucinatory perception’, the reality of the inkblot is replaced by the sensations and feelings projected onto them by the patients, giving rise to movement, form quality minus and morbid content responses (M-, FQx-, MOR). Portuondo (1973) attributes the following characteristics to these patients: loss of the sense of reality (F+%), few popular responses (P), deviant verbalizations (DV) with a predominance of autistic logic, disjointed responses (DR), few responses with normal detail (D-), low emotional control (FC-), few human interests, H and Hd < 20%, predomination of destructive impulses (CF+C>FC), human movements (M) with low form quality, oppositionality (S) and animal and inanimate movement greater than human movement (FM+M>m).

The point of reference in this study comprises normative North American groups (samples from Exner, 2000, 2002) and an initial document on people with acute schizophrenia (Vives, 1984, 1989) cited by Exner (1986, 1994), in which the four basic criteria set out by Wiener (1966) were found to be present. In this investigation, we are interested in confirming the hypothesis of our initial study (1984) in samples which

are much broader –given the higher number of patients–, and refined –excluding very high or very low values of specific variables which could affect the overall interpretation— without ceasing to be considered schizophrenic.

As a result, the aim of this investigation consists of performing the differential diagnosis of inpatient schizophrenics via the Rorschach test and testing to see whether there are significant differences between two refined “acute” and chronic samples. Two hypotheses are proposed: 1) Whether the Rorschach test can confirm the psychiatric diagnosis of 245 schizophrenic inpatients when the initial diagnosis was based on Research Diagnostic Criteria and the criteria of the DSM-IV for the differentiation of schizophrenia, and 2) whether the values obtained in a refined sample of people with “acutely aggravated” schizophrenia differ significantly from those obtained in a refined sample of people with chronic schizophrenia, by applying the Rorschach test to both samples.

PARTICIPANTS

This study consisted of two groups of male participants, 191 acute and 54 chronic, between the ages of 19 and 45, with a mean age of 35. We believe that the interval between 19 and 45 years is sufficiently broad to cover a range of possibilities which, justified from the clinical perspective and that of the Rorschach, does not restrict the possibility of studying them. Their sociocultural level is medium to medium-low. The use of different approaches to perform this study (RDC, DSM-IV and Rorschach) ensures the differential diagnosis of schizophrenia and its differentiation from the diagnosis of other conditions. According to an argument by Weiner (1966, 1982) that is particularly important in clinical research, the use of the Rorschach requires that the subjects’ condition be confirmed before the test is applied, by taking into account which indexes best represent these characteristics.

The first group was composed of 191 patients in an acute phase of the illness (admitted for initial onset) who meet the criteria of defined and present schizophrenia of the RDC (Spitzer, Endicot & Robins, 1977) and the criteria of the DSM-IV (APA, 1997, 2002) which are defined in sections A, B, C (Continuous signs of disturbance for at least six months, and during more than one month if different symptoms of criteria A are met), D and E. With the exception of 5 illiterate

subjects, 95 had completed primary education, 67 primary and incomplete secondary education and 24 had an associate degree. Only 15 were currently married.

The second group was composed of 54 long-term inpatients with significant signs of schizophrenia, present more or less continuously during a minimum period of two years. They presented a set of symptoms which met the criteria described in the RDC and the DSM-IV for the definition of chronic schizophrenia. Their sociocultural level varied: 32 had completed primary education while 9 had not, 7 were illiterate and 6 had intermediate-level associate degrees. Regarding their marital status, 50 were single, 3 divorced and one widowed. 30 of them possessed a family history of the illness and 5 were unaware of this information. The two groups of participants came from a range of Spanish regions: Extremadura, Catalonia, Galicia, Andalusia, Castile and Zaragoza. The protocols of people with schizoaffective and mood disorders (criteria D* of the DSM-IV) were excluded, along with patients considered by the Rorschach to be depressive and "borderline", due to a failure to fulfill the variables of the Schizophrenia Index (SCZI) and the Perceptual Thinking Index (PTI) on the test.

INSTRUMENTS

The following tests were applied: the Rorschach Psychodiagnostic Test (Comprehensive System by J.E. Exner, 2000-2004), the RDC (1975, 1977) and the criteria of the DSM-IV (2002) for the differentiation of schizophrenia. Complementarily, the respective caregivers applied the Katz Adjustment Scale (Katz & Liberty, 1963) to their patients.

A cross-sectional study design was used to compare the groups via the Mann-Whitney U, after having performed a descriptive analysis of the variables of the structural summary of the Rorschach test on the 245 inpatients. The 191 "acute" patients had been given an initial diagnosis by the acute psychiatry service of three hospitals in the province of Barcelona. Two "judges" applied the criteria of the RDC (all met criterion no. 8) and the criteria specified in the DSM-IV for the diagnosis of schizophrenia to the interviews conducted. The chronic patients had been inpatients at the institution for a minimum of two years and were characterized by a gradual reduction in their cognitive ability as described by their respective psychiatrists and caregivers. In fact, it was not possible to include catatonic patients in the study, given the characteristics of rigidity and isolation which they presented. The Rorschach test was administered between 10 and 15 days

Sample of acute schizophrenic patients

Table I: Ideation variables

EB= M: SumC = 2.25:1.92	a:p=3.3:1.4	MOR=1.14	Lev-2=6.49
DR2= 3.30	INCOM2=2.24	FABCOM2= 1.67	CONTAM = 0.92
WSum6= 59.9 M=0.87			

after the acute patients had been admitted and two years following the admission of the chronic patients. The protocols obtained and reviewed by three "judges" (1998-2004) comprised the first results from people with schizophrenia obtained with the Rorschach in Catalonia and the first results with the Comprehensive System in all Spain. All of the patients arrived medicated with fluphenazine or thioridazine, sulpiride, eskazine or levomepromazine, and Risperdal (risperidone), Zyprexa (olanzapine), Clozapine, Seroquel (quetiapine) from their respective primary care centers and continued to receive medication on a daily basis once admitted.

RESULTS

Five stages of analysis were performed: 1) Descriptive analysis of the means and standard deviations of the SS variable groups of the Rorschach test of 191 "acutely aggravated" schizophrenic patients. 2) Descriptive analysis of the means and standard deviations of the SS variable groups of the Rorschach test of 54 chronic schizophrenic patients. 3) Analysis of the typology of the current period of schizophrenia in the two refined acute and chronic samples. 4) Comparative analysis of the two refined acute and chronic samples via the Mann-Whitney U. 5) Descriptive analysis of the human movement determinant, M, and its relation to human content, Pure H. Qualitative analysis of the Katz Adjustment Scale confirmed the characteristics provided by other variables and indexes.

1) Descriptive analysis of the means and standard deviations of the SS variable groups of the Rorschach test of 191 "acutely aggravated" schizophrenic patients.

According to observations, these groups consist of people without a defined response style (EB) who attempt to avoid any stimulus perceived as ambiguous or complex (Lambda) and have flattened mental activity (FM+m). They tend to be flexible in their ideation (a:p) and specify their experiences (pure form, F, and normal detail, D, responses). They also tend to isolate themselves and to dissociate and simplify reality (Lambda[↑]). They present severe thought disorders (DR2, INC2, FABC2, CONT), which together with the weighted sum of level 2 special codes (Wsum6) shows the presence of serious pathology. (Appendix: Tables XVI and XVII)¹.

Despite their limited initiative to observe and organize the stimulus field (Zf), the result of this organizational effort tends to fall within the parameters of non-patients (Zd), and their aspirations are slightly greater than their operational ca-

Table II: Information processing and cognitive mediation variables

Zf= 8.16	Zd= 0.32	W:M= 7.46: 2.25	PSV=0.53	DQ+=3.57	DQv=2.9
P= 3.6	X+%= 45%	XA%<70%	WDA%<75%	FQx>FQxu = 5.59>2.95	
FQf->FQfu= 3.24>1.80	X-%= 33%				

capacity (W:M). The low number of popular responses (P=3.6) on meaningful cards (I, III, V, VIII and X) may consist of a measure of their difficulty in partaking in common thought and a demonstration of their peculiarity (FQxu; Xu%). They possess poor perceptual adjustment (X+%; XA%, WDA%), with an increasing loss of perceptual accuracy (FQx->FQxu; FQf-> FQfu; X-%>29%) (Appendix: Tables X, XII, XIX).

They present low receptivity to emotional stimuli (Afr) and are unable to easily interact with their environment (lack of M in pure H). They show ambivalence, dissociation and convey a painful affective state (analysis of the blends or DM). They have difficulty in controlling their emotions, displaying behaviors such as "acting out" which may interfere with their cognitive processes (CF+C>FC) (suicide attempts, only one successful). Their affective restriction (SumC') predominates, as well as suffering, defenselessness (SumY), cautious pursuit (T) or resignation (T=0) of affective closeness, and

dix: Tables XX, XXI, XXII).

2) Descriptive analysis of the means and standard deviations of the SS variable groups of the Rorschach test of 54 chronic schizophrenic patients.

Likewise, according to observations, this group consists of people who attempt to avoid any stimulus perceived as ambiguous or complex (Lambda), whose psychological functioning leads them to control and restrict both affective and primitive needs, which are almost never satisfied (FM). They possess severe thought disorders, indicative of the severe cognitive disorganization from which they suffer (DR2, CONTAM), poor perceptual adjustment (X+%, F+%; X-%; XA%, WDA%) and loss of perceptual accuracy (X-%, FQ->FQu) (Appendix: Tables XVII, XIX, XX).

They tend to withdraw psychically (Afr⁻) for fear of feel-

Table III: Affect variables

Afr=.43	Blends:R= 1.72:17.01	CF+C>FC= 1.39>0.72
SumC'=1.46	SumY= 0.45	
T= 0.14	V= 0.04	S=1.93

negative introspection (V), associated with depression and suicide attempts – though globally these latter values were relatively low. The production of anatomical content (An) in response to an aggressive stimulus (S) which was not present may be related to the difficulty in expressing affect (SumC'), which they retain or somatize (Appendix: Tables X, XII, XXI).

¹ Another group of tables have been included (in the APPENDIX) with a view to clarifying the interpretation of the Rorschach variables used in this study (Tables X to XXII).

They possess low self-esteem (Egocentricity index), which together with the loss of perceptual accuracy (FQx-, X-%) and the complexity and mixture of the aforementioned painful feelings (DM, C', Y, V), cause them difficulties in interpersonal relationships (M=2.25; M-=0.87). They comply with the majority of the variables of the Schizophrenia Index (SCZI= 4.37) and those of the Perceptual Thinking Index (PTI= 4.79), the latter being more reliable (Box I and Appen-

ing overwhelmed or invaded by emotions which they cannot control (CF+C>FC). In addition to low self-esteem, they also present few human interests and deficient or highly deficient interpersonal relationships [M- in Hd, (H), (Hd), A, Ad contents]. Only a single participant was able to achieve appropriate interaction with the environment (Appendix: Tables XXI, XXII).

3) Analysis of the typology of the current period of schizophrenia in the two refined samples of 39 acute and 24 chronic patients.

The diagnoses made by applying the criteria of the RDC and the DSM-IV for the differentiation of schizophrenia were confirmed in each sample with the Rorschach test; a diagnostic coincidence of 98% was found in the acute patients and 97.8% in the chronic patients. The Schizophrenia Index (SCZI) and the Perceptual Thinking Index (PTI) were not met for only two acute patients and one chronic patient (Box I).

Table IV: Self-perception and interpersonal relationship variables

Ego [x de 3r +(2)/R =.25]	FD=0.15	MOR=1.14		
(M= 2.25; M- =0.87)	H=1.74	Hd=1.59	A=5.95	(A)=0.1
Ad=0.97 (Ad)=0.03				

Sample of chronic schizophrenic patients

Table V: Ideation, information processing and cognitive mediation variables

EB= 2:2	a:p=2.57:1.23	es = 3.53		
DR2= 2.04	CONT=.85	FABC2=1.67	INC2=1.63	MOR=1.83.
X+% =43%	X-%=44%	XA%<70%	WDA%<75%	
FQ _x >FQ _{xu}	Wsum6= 47.30	M=-.70		

4) Comparative analysis of the two refined acute and chronic samples via the Mann-Whitney U.

The comparative analysis of the two samples (N=39 and N=24) conducted by means of the Mann-Whitney U revealed statistically significant differences at three confidence levels < 0.01, 0.02 and 0.05.

The reduction and refinement of the protocols was based on the increase or decrease in the values of specific variables [high or very high Lambda (L>5); low number of responses (R<14); X+% greater than 70%; protocols without M and M-; few special codes (lack of DR and CONTAM), and one or two variables on the Schizophrenia Index (SCZI)] (Appendix: Table XVII).

When the Mann-Whitney U was applied, it was possible to observe the lack of perceptual adjustment or perceptual pe-

Table VI: Affect, self-esteem and interpersonal relationship variables

Afr=.50	CF+C>FC	SumC'= 73	SumY=.73		
T=.17	V=.03	S=1.63			
Ego=.25	Blends:R=.90:	17.50	FD=.03	MOR=1.83	
H=1.43	Hd=1.17	(H)=.87	(Hd)=.17	A=5.97	Ad=1.40

cularity (Xu% =.007. N of C < 0.01 and FQ_{xu}%=.013. N of C <0.02), loss of objectivity (dispersion and splitting of mental associations, DR2=0.02. N of C=0.02), and experiences of stress and dissatisfaction (FM+m=0.02. N of C= 0.02) in "acute" schizophrenic patients. In the chronic patients, the tendency to defend themselves from emotional stimuli was seen to be increased (Afr↓=.009) (anxieties resulting from the fear of interpersonal relationships. N of C <0.01); loss of perceptual accuracy (FQ_f↑=.045. N of C <0.05)

and the tendency to perform erroneous synthesis processes (DQ_y/+=.035. N of C <0.05). Table VIII shows all of the values obtained and their significance (Appendix: Tables XVII, XIX, XXI).

5) Descriptive analysis of human movement determinants, M, and their relation with human content, pure H (interest in people and interpersonal relationships).

The qualitative analysis of human movement determinants (M) in relation to human contents, H, provides information on the interest in people and the low quality of their interpersonal relationships [(M-, or Mo in Hd, A, (H, Hd)].

This table shows the proportion of the human movement determinant, M, the distribution of its form quality (+, o, u, -), the increase in M-, linked to deficient interpersonal relationships, as well as the increase in human detail, [Hd], and whole

animal (A) contents, aspects linked to partial object relationships and stereotyped thoughts respectively. The values of the chromatic (FC:CF+C) and achromatic (SUMC') color variables, and the relation between space responses, S, and An and AG contents (as escape routes from their aggressiveness) may reflect a lack of affective control (C) and difficulties in channeling their oppositionality or hostility (relationship between S, AG and An), which were more visible in "acute" patients (Appendix: Tables XII, XIV, XXI).

Box II: Typology of current period of schizophrenia. Diagnoses of two refined samples of 39 acute patients and 24 chronic patients via rdc, dsm-iv and roschach

DIAGNOSES VIA RDC AND DSM-IV:

"Acute" sample

- 36 paranoid schizophrenics
- 2 undifferentiated schizophrenics
- 1 hebephrenic schizophrenic (Do not comply with the variables of the SCZI or PTI indexes)

"Chronic" sample:

- 22 paranoid schizophrenics
- 2 residual schizophrenics

DIAGNOSES VIA RORSCHACH:

"Acute" sample

- 37 paranoid schizophrenics
- 2 non-schizophrenic patients via Rorschach

"Chronic" sample:

- 22 paranoid schizophrenics
- 1 residual schizophrenic
- 1 non-schizophrenic patient via Rorschach (SCZI, PTI)

Table VII: Statistically significant differences between “acute (n=39)” and “chronic (n=24)” patients via Mann-Whitney U

“Acute” schizophrenics	“Chronic” schizophrenics
- Xu% = .007 **	- Afr↓ = .009 **
- FQxu% = .013 *	- FQf-↑ = .045 .
- FM+m = .015 *	- DQy/+ = .035 .
- DR2 = .02.	

** p < 0.01 * p < 0.02 . p < 0.05

Table VIII: Comparative analysis of the variables of the structural summary of the rorschach test for two refined samples of acute and chronic schizophrenic patients via Mann-Whitney U

T-test: acute schizophrenic patients (mean 1: n = 39)

Chronic schizophrenic patients (mean 2: n = 24).

Variable	Mean 1	Mean 2	Z	Probability
Z Sum	35.55	26.23	19.615	.0498 .
Dd	35.69	26.00	20.791	.0376 .
DQy/+	29.06	36.77	21.018	.0356 .
FqXu	36.40	24.85	24.713	.0135 *
FQf-	28.46	37.75	19.983	.0457 .
Sum C'	35.54	26.25	20.494	.0404 .
Blends	35.55	26.23	20.396	.0414 .
DR2	36.10	25.33	23.093	.0209 .
FM+m	33.31	25.00	24.222	.0154 *
Es	35.73	25.94	20.804	.0375 .
S-%	35.64	26.08	20.641	.0390 .
Xu%	35.81	24.19	26.588	.0078 **
Afr	27.33	39.58	25.902	.0096 **

** p < 0.01 * p < 0.02 . p < 0.05

Table IX: Descriptive analysis of the m determinant in the sample of acute patients (n=39) and its relationship with human content, h.

Variable	Mean	Std. Dev.	Minimum	Maximum
M	2.25	1.98	0	7
MQ+	0	0	0	0
Mqo	1.15	1.21	0	5
Mqu	0.24	0.43	0	1
MQ ^{-*}	0.87	1.11	0	4
Ma	1.62	1.64	0	7
Mp	0.69	1.01	0	4
H	1.74	1.63	0	6
(H)*	0.97	1.14	0	5
Hd*	0.127	0.33	0	10
(Hd)	0.127	0.33	0	1
A	5.95	2.42	1	11
Ad	0.97	1.31	0	6

DISCUSSION

From the descriptive analysis of the acute and chronic samples, it is possible to infer that they are dissociated people who avoid complex situations ($L\uparrow$), tend to simplify reality and specify their experiences. If the splitting of mental associations constitutes one of the characteristics of the thought of these patients, the Rorschach test would confirm their presence through an increase in serious or level 2 special codes ($WSum6=56.9$ in acute patients; 47.30 in chronic patients) and specifically, through the production of deviant responses ($DR2 A=3.3$; $C=2.04$) and contaminations ($CONT A=0.93$; $C=0.80$) which demonstrate the delusional processes present in all acute patients and a large proportion of chronic patients. Their perceptual and cognitive peculiarity, together with the presence of serious thought disorders, is another indication of the severe disorganization from which they suffer ($X+\%$, $XA\%$ and $WDA\%$ much lower than 60% , 70% and 75% respectively). Their deficient affective control $CF+C>FC$, their affective restriction (C') and their intense painful experience affect the fragility of their interpersonal relationships, which is exacerbated by their low self-esteem. This contrast of painful feelings may motivate their suicide attempts, which was successful in the case of only one patient. Their Rorschach tests showed the variables which could alert us to possible suicide attempts ($S\uparrow+m$ +Multiple color-shading determinants + $\Lambda\uparrow$). All of these data match the variables obtained by Exner (2002) in his research on schizophrenic inpatients ($N=200$).

The aforementioned significant differences between acute and chronic patients underscore the increase in deviant responses ($DR2$), gradual loss of realistic perception and their influence on information storage processes present in both samples. Similarities with the study by Vives (1989) are observed in the predomination of $FM+m$ responses amongst acute patients and FQx - responses amongst chronic patients.

The descriptive analyses of negative human movement ($M-$) responses may confirm the presence of deficient interpersonal relationships, which were more pronounced amongst acute patients. Exner (1978, 1986) established that the presence of $M-$ confirmed the existence of a thought disorder, given that it is uncommon to find $M-$ amongst non-patients. Since then, it has formed one of the criteria of the SCZI and current PTI indexes. It was possible to confirm the presence of $M-$ in schizophrenic patients in the study of the initial samples by Vives (1984, 1989). Of the 25 patients who presented M , 17 were $M-$ while 20 of the 25 presented M together with Mu or Hd and (H), evidencing the precarious nature of their interpersonal relationships.

Upon comparing the results of the 191 acute patients with those of North American schizophrenic inpatients ($N=128$), we observed that in our sample 4 to 6 of the variables of the Schizophrenia Index and 4 of the Perceptual Thinking Index

(PTI) were met. The following special codes increase notably: $DR2$ and $CONTAM$; Λ ; S in location; the determinants $M-$, m , pure C , pure F and the contents of anatomy (An), clouds (Cl), sex (Sx) and X-ray (Xy). Meanwhile, the values of $WSumC$, EA , es , $Adj D$, Mov , active and passive decrease, reflecting that the characteristics which point to people with schizophrenia are much more marked in patients from our regions (Appendix: Table XVIII).

CONCLUSIONS

In terms of the question as to whether the application of the Rorschach test to schizophrenic inpatients can confirm the psychiatric diagnosis obtained via RDC and the DSM-IV for the differentiation of schizophrenia (1st hypothesis), we believe the answer is yes. The Rorschach adequately differentiates the illness and matches the diagnosis obtained via the application of both classificatory systems in 98% of "acute" patients and 97% of "chronic" patients from the refined samples. In the total sample of 191 acute and 54 chronic patients, the agreement between the diagnoses of both classificatory systems and the Rorschach is lower. However, in this case the precision and efficacy of the test in differentiating between patients with schizophrenia and people who are "borderline" or suffering from bipolar disorder is confirmed. This allowed the false positives to be eliminated from the SCZI index – due to the low number of responses, few or no M and $M-$, few special codes or with appropriate form quality. The 39 acute patients and the 24 chronic patients tested positive on all of the variables of the Schizophrenia Index and the Perceptual Thinking Index. Given the above, we believe that it would be advisable to avoid a differential diagnosis, in this case of schizophrenia, through the exclusive application of well-known classification systems.

One of the greatest achievements of this research was the continual discovery of level 2 special codes in acute samples, where it was possible to observe, in the same protocol, the presence of $DR2$ (splitting of verbal associations) and $CONTAM$ (delusional thought) and more florid responses than those given by chronic patients, the presence of which in the test constitutes an indicator of schizophrenia.

These results largely agree with those obtained by the pioneers of the European School (Alcock & Bohm) and those of more modern European (Rosell, Merceron and Hussein) and North American (Exner, Weiner, Meyer, Viglione and Portuondo) authors on the diagnosis of patients with schizophrenia.

The significant differences identified between the two refined samples of acute and chronic patients, as well as the analysis of each group, made it possible to confirm that an increase in serious thought disorders ($DR2$, $CONTAM$, $FABC2$), together with $M-$, high $WSum6$ and an increasing

loss of perceptual accuracy (PTI variables) on the Rorschach constitute an indicator of the thought and style of the schizophrenic patient and make the test the best instrument for its detection.

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APPENDIX

R coding process and interpretation of the main structural variables. includes means and sds of north american adult non patients (n=600).

Table X. Location: Manner of focusing and organizing the stimulus

SYMBOL	DEFINITION	CRITERION	INTERPRETATION AND CONTROL GROUP MEANS
W	Whole response	The whole inkblot is used; all of its parts.	Together with developmental quality + ordinary u: analysis and synthesis capacity. x=8.28; SD=2.36
D	Normal detail	A commonly identified part of the inkblot is used.	Ability to perceive the obvious. The subject partakes in common thought. x=12.88; SD=3.77
Dd	Abnormal detail	A rarely identified area of the inkblot is used.	Precision, attention to detail. x=1.16; SD=1.67
S	Space response	An area of white space is used, which is coded together with other location symbols (WS, DS, DdS).	May reflect oppositionality or hostility. x=1.57; SD=1.28

Table XI. Developmental quality: Quality of the selection of the area (linked to organizational activity, Zf and Zd)

SYMBOL	DEFINITION	CRITERION	INTERPRETATION
+	Synthesis response	Description of different but interrelated objects. At least one of them must have a specific form.	Ability to establish analysis and synthesis processes and relations between concepts. x=7.36; SD=2.23
v/+	Synthesis response	Description of two or more different but interrelated objects. None of them present a specific form.	Tendency to achieve more complex levels of cognitive activity (similar to DQ+). x=0.39; SD=0.61
o	Ordinary response	Description of objects with a specific form.	Simple but appropriate definition of the stimulus field. x=13.58; SD=3.67
v	Vague response	Description of objects with no specific form demand.	Overly simplistic cognitive function. x=0.98; SD=1.26

Table XII. Determinants: Manner in which the stimulus is interpreted, the information is processed and the response produced

CATEGORY	SYMBOL	CRITERION	INTERPRETATION
FORM R	F	Pure form response	Ability to perceive reality (F+, Fo). x=7.95; SD=2.83
MOVEMENT	M	Human movement	Appropriate and stable interpersonal relationships (Mo in pure H). x=4.30; SD=1.95
	Fm	Animal movement	Satisfaction of primitive needs. x=3.74; SD=1.31
	M	Inanimate movement	Anxiety in the form of tension. x=1.28; SD=1.28
CHROMATIC COLOR	Fc	Form predominates over chromatic color.	R. based exclusively on the pure color and color naming.
	Cf	Chromatic color predominates over form.	Spontaneous expression of affect. x=2.42; SD=1.31
	C, Cn	R. based exclusively on the pure color and color naming.	Impulsive expression of affect. x=0.12; SD=0.37 Failure of defenses.

ACHROMATIC COLOR	Fc', C'f, C'	Depending on the predominance of the form, achromatic color or pure achromatic color.	Inhibition of emotion. Flat affect. SumC' x=1.49; SD=1.16
SHADING-TEXTURE	Ft, Tf, T	The shading features are interpreted as texture. Form predominates over shading (FT), shading over form (TF) or lack of form (T).	↑ Need or ↓ resignation of affective closeness. SumT x=0.95; SD=0.61
SHADING-DIMENSION	Fv, Vf, V	The shading features are interpreted as depth, dimension, volume.	Painful introspection associated with depression and suicide. SumV x=0.28; SD=0.61
SHADING-DIFFUSE	Fy, Yf, Y	The shading is interpreted non-specifically where it is not texture or vista.	Anxiety in the form of defenselessness. SumY x=0.61; SD =0.96
FORM-DIMENSION	Fd	The impressions of depth, dimensionality and distance are created from the outline and not the shading of the inkblot as with V.	Ability to stand back and be objective. x=1.18; SD=0.94
PAIRS and REFLECTIONS	(2) Fr, Rf	Identical objects are described. Reflected identical objects are described.	Egocentricity. x=8.52; SD=2.18 Grandeur, narcissism. x=0.11; SD=0.09

Table XIII. Form quality: Perceptual accuracy of the object (goodness of fit) (Tables A of the CS)

SYMBOL	DEFINITION	CRITERION	INTERPRETATION
+	Superior	Enriched ordinary response.	Maximum form quality. Enriched ordinary response.
o	Ordinary	Specific answers which are easily seen.	Appropriate perception of form.
u	Unique	Responses which are given infrequently and whose basic outline is not forced.	May indicate both originality of the subject as well as a certain lack of perceptual adjustment.
-	Minus	The R is created using the form in a distorted and arbitrary manner which is imposed on the structure of the inkblot.	Severe distortion of form. Loss of perceptual accuracy.

Table XIV. Contents: Type of object selected

SYMBOL	CATEGORY	CRITERION	INTERPRETATION
H	Whole human figure	Perception of a whole human form.	Interest in people in their environment. x=3.21; SD=1.71
Hd	Human detail	Perception of an incomplete human form.	↑ Meticulousness. Partial description of object. x=0.84; SD=1.02
(H)	Whole fictional human figure	Perception of a fictional or mythological whole human figure.	Interest in people from fantasy. x=1.22; SD=1.02
A	Whole animal figure	Perception of a whole animal figure.	↑ Stereotyped thoughts. x=7.96; SD=2.25
An	Anatomy	Responses which identify skeletal, muscular or internal anatomy.	Preoccupation with the body. ↑ Self-aggression. Somatization. x=0.54; SD =0.77
Sx	Sex	Perception of sex organs or an activity of a sexual nature.	Preoccupation with sex. x=0.11; sd =0.47
Xy	X-ray	Perception of an x-ray of parts of the skeleton or internal organs.	Preoccupation with bodily aspects, linked to self concept. x=0.05; SD =0.24

Table XV. Populars: Vulgar responses according to H. Rorschach

SYMBOL	DEFINITION	CRITERION	INTERPRETATION
P	Popular R	Ability to perceive and react to the features of the inkblots "generally perceived by people".	Ability to perceive reality like the majority of people. $x=6.58$; $SD=1.39$

Table XVI. Special codes: Cognitive process deficiencies. Presence of thought disorders.

SYMBOL	DEFINITION	CRITERION	INTERPRETATION
DV	Deviant verbalization	Neologisms. Redundancies.	Fleeting signs of cognitive disorganization. $x=0.59$; $SD=0.78$
DR2	Level 2 deviant verbalization	Disturbed speech. Interruption of associations in the formulation of the R.	Loss of objectivity, splitting, dissociation of thought. $x=0.01$; $SD=0.11$
INCOM2	Level 2 incongruent combination	Condensation of inappropriate details on a single object.	Difficulties in developing symbolic thought. $x=0.02$; $SD=0.13$
FABCOM2	Level 2 fabulized combination	Inappropriate combination between two or more objects.	Possibility of distorting perception. The subject draws conclusions based on false premises. $x=0.03$; $SD=0.16$
CONTAM	Contamination	Two or more impressions are merged in a single area, seriously altering reality.	Severe thought process disorder. Applies to schizophrenic thought. $x=0.00$; $SD=0.00$
ALOG	Inappropriate logic	Use of excessive reasoning to justify the response	Fanciful logic, the result of a failed thought. $x=0.04$; $SD=0.20$
AG	Aggressive movement	Movement R which implies clearly aggressive actions.	Manifest aggressiveness. $x=1.11$; $SD=1.15$
MOR	Morbid content	Broken, destroyed, damaged objects. Dysphoric qualities.	Pessimistic, depressive thought. $x=0.79$; $SD=0.89$

Symbols, criteria and interpretation of the main groups of variables from the rorschach structural summary

Table XVII. Ideation

SYMBOL	DEFINITION	CRITERION	INTERPRETATION
R	Number of responses of the protocol	It is recommended not to exceed 5 R per card.	Affects the decision on the validity of the protocol if < 14 or $>$ the mean. $x=22.32$; $SD=4.40$
L	Lambda	Ratio of pure F R to the rest of the R of the protocol.	Affects the decision on the validity of the protocol. $x=0.60$; $SD=0.31$
EB	Erlebnistypus	Ratio of M to WSumC ($EB=M:C$)	Indicates the R style of the S, now extended by Exner. $x=4.30:4.36$; $SD=1.95:1.78$
FM+M	Animal movement, FM Inanimate movement, m	Sum of all animal and inanimate movement scores.	Mental activity induced by stress, unsatisfied needs or both at the same time. $x=5.01$; $SD=1.70$
A:P	Active and passive movements	Ratio of active to passive movements of the protocol.	Provides information on the flexibility or rigidity of cognitive operations. $x=6.44:2.90$ $SD=2.23:1.64$
MA: :MP	Active and passive human movements	Ratio of active to passive human movements of the protocol.	$Mp > Ma$ by more than one point indicates passivity, dependency. $x=2.90:1.42$; $SD=1.57:1.03$
DR2	Level 2 deviant verbalization	Disturbed speech. Interruption of associations in the formulation of the R. Greater severity than in level 1 R.	Loss of objectivity, splitting, dissociation of thought. $x=0.01$; $SD=0.11$
INCOM2	Level 2 incongruent combination	Condensation of inappropriate details on a single object.	Difficulties in developing symbolic thought. $x=0.02$; $SD=0.13$
FABCOM2	Level 2 fabulized combination	Inappropriate combination between two or more objects.	Possibility of distorting perception. The subject draws conclusions based on false premises. $x=0.03$; $SD=0.16$
CONTAM	Contamination	Two or more impressions are merged in a single area, seriously altering reality.	Severe thought process disorder. Applies to schizophrenic thought. $x=0.00$; $SD=0.00$
WSUM6	Weighted sum of the 6 special codes	Obtained by applying the corresponding value to each special code ($INC2 \times 4$; $DR2 \times 6$; $CONT \times 7$), etc.	Indicates the severity of the cognitive disorder and its repercussion on thought processes. $x=4.48$; $SD=4.8$

Table XVIII. Control, stress tolerance and situational stress

SYMBOL	DEFINITION	CRITERION	INTERPRETATION
D	D Score	Comes from the relationship between EA and (es), the resources available and the stimulation needs.	Reflects aspects of current control and stress tolerance. $x=-0.03$; $SD=0.97$
Adj D	Adjusted D score. More reliable and valid indicator than the D score.	Obtained by subtracting all of the m and Y but 1 of each value, and the (es) is obtained again, the result of which is subtracted from EA.	Ability to delay action, control, rigidity-resistance to change or emotional overload. Indicates whether they consist of habitual states. $x=0.15$; $SD=0.82$
CDI	Resources or Coping Deficit Index	Comprises a group of variables: EA; Adj D; COP; AG; SumC; a;p; Sum T, Fd.	Indicates aspects of immaturity, maladjustment, defenselessness and incompetence of the S. $x=0.79$; $SD=0.89$
EB	Erlebnistypus	Ratio of M to WSumC ($EB=M:C$)	Indicates the R style of the S. $x=4.30:4.36$; $SD=1.95:1.78$
EA	Experience actual or accessible	Result of the sum of the two sides of EB (M and SumC)	Reflects the reflexive ability of the S to access and benefit from their resources. $x=8.66$; $SD=2.38$.
Eb	Experience base	Ratio between two groups of variables: animal (FM) and inanimate (m) movement, and the sum of achromatic color (C') and shading (T,V,Y) R.	Weight of the immediate needs and tensions of the S in relation to their affective restriction and painful affect. $FM+m: SumC+SumShad$ $x=5.01:3.32$; $SD=1.70:2.09$
Es	Experienced or suffered stimulation	Result obtained from the sum of the two sides of eb, animal and inanimate movement determinants (FM+m) and those of achromatic color (C') and gray-black features (T+V+Y).	Includes needs, anxieties, restrictions and painful feelings which can act negatively on the subject. $x=8.34$; $SD=2.99$
M, Y, T	Inanimate movement and shading	R of inanimate movement, shading-diffuse and shading-texture.	Tension, defenselessness and affective closeness (by default ↓ or in excess ↑).
Dm	Many determinants or "blends"	Include all of the determinants issued in a R and in the order they are obtained, giving priority to human movement R.	Indicates the presence of complex psychological activity. $x=5.15$ $SD=2.08$

Table XIX. Information processing

SYMBOL	DEFINITION	CRITERION	INTERPRETATION
L	Lambda	Ratio of the No. of pure F R to the rest of the R of the protocol.	Affects the decision on the validity of the protocol and represents a certain economy in the use of resources. $L↑$ =tendency to avoid the complex. $x=0.60$; $SD=0.31$
Zf	Z frequency	The number of times that the S has given a synthesis R (W+, Wo) or has organized different areas of the card (D+, D'd+) or has included white space.	Ability to observe the environment. $x=11.84$; $SD=2.78$
Zd	Z difference	Difference between the sum of all of the Z scores obtained (ZSum) and the estimated Z corresponding to this value (Zest).	Effectiveness of effort confirmed in Zf. $x=0.57$; $SD=2.98$
W: D: Dd	Whole R, normal and abnormal detail	Ratio between the basic location codes.	Indicate the manner of interpreting reality: analysis-synthesis processes (W) or their replacement by other more economic (D), meticulous or partial (Dd) ones.
W:M	Economy index	Ratio of whole to human movement R.	Reflects the level of aspiration of the subject in relation to their natural ability.
DQ	Developmental quality	Selected, depending on the type of organization of the R and the type of developmental quality (DQ+, Dqo; DQv/+; DQv).	Consists of the ability to analyze and synthesize the stimulus field meaningfully, specifically, approaching synthesis or vague.

Table XX. Mediation

SYMBOL	DEFINITION	CRITERION	INTERPRETATION
p	Popular R	Perception of easily described objects on the cards.	Ability to perceive reality like the majority. $x=6.58$; $SD=1.39$
X+%	Conventional form	Percentage of R in which the form has been used conventionally in the protocol.	Conventional perception of reality. $x=0.77$; $SD=0.09$
Xu%	Unique form	Proportion of R in which the object has been used in a peculiar or original way.	Indicates original or slightly distorted perception of form. $x=0.15$; $SD=0.07$
X-%.	Distorted form	Proportion of R in which the use of the outline of the object has been severely altered.	Indicates a distorted perception of form. $x=0.07$; $SD=0.05$
XA%	Percentage of amplified form R	Proportion of R with form quality +, o and u in the entire protocol.	Ability for psychological adjustment. Contrasts the result obtained from X+%.
WDA%	Percentage of amplified form R	Proportion of R with form quality +, o and u in whole and normal detail responses.	Ability for psychological adjustment. Together with XA%, they are indicators of the perceptual ability of the subject, provided they are values below 70 and 75% respectively.
FQ-	Form quality minus R	Comprises the number of form quality minus responses.	Perceptual distortion and loss of perceptive perception.

Table XXI. Affect

SYMBOL	DEFINITION	CRITERION	INTERPRETATION
Afr	Affective ratio	Comparison between the number of R obtained on the 3 last cards and those obtained on the 7 remaining ones.	Ability to respond to affective stimuli. $X=0.67$; $SD=0.16$
DM	Many determinants or "blends"	Includes all of the determinants issued in a R and in the order they are obtained, giving priority to human movement R.	Indicates the presence of complex psychological activity.
CF+C>FC	Color ratio	Predomination of Color-F, pure color and color naming R over form-color ones.	Manner of modulating emotional discharge and exchange.
T	Sum of the achromatic color determinants (Fc', C'F, C').	Come from the sum of the production of black, grey and white objects in the protocol, where form, achromatic color or the absence of form predominate.	Represents a conscious defense of affective expression. $x=1.49$ $SD=1.16$
FT, TF, T	Shading-texture determinants	The shading features are interpreted as texture, where form (FT), shading (TF) or the absence of form (T) predominates.	Interpreted as a need for affective closeness. $\text{SumT } x=0.95$; $SD=0.61$
FV, VF, V	Shading-dimension	The shading features are interpreted as depth, perspective, volume.	Negative and painful introspection associated with depression and suicide. $\text{SumV } x=0.28$ $SD=0.61$
FY, YF, Y	Shading-diffuse	Identified by the exclusion of other shading categories.	Defenselessness, disorientation. $\text{Sum Y } x=0.61$ $SD=0.96$
AG	Aggressive movement	Movement R which imply clearly aggressive actions.	Movement R which imply clearly aggressive actions.
S	Space response	An area of white space is used, which is coded together with other location symbols (WS, DS, DdS).	May reflect oppositionality or hostility. $x=1.57$; $SD=1.28$

Table XXII. Self-esteem and interpersonal relationships

SYMBOL	DEFINITION	CRITERION	INTERPRETATION
EGO	Egocentricity index: 3r+(2)/R	Contains the R of pairs (2) and reflections (Fr, rF) of the protocol. The response is created from the impressions of depth, dimensionality and distance of the outline of the inkblot and not from the shading features as occurs in shading-dimension (V).	Self-concept, self-esteem, self-centeredness. $x=0.40$ SD=0.09
FD	Form-dimension	Perception of human, H, Hd and parahuman (H) (Hd) figures, either whole H (H) or in detail, Hd (Hd).	Ability to stand back and be objective. $x=1.18$; SD=0.94
H, Hd, (H) (Hd)	Human, parahuman and human detail content	Responses which identify skeletal, muscular or internal anatomy	Interest in people in reality, H and in fantasy (H). See contents table.
An	Anatomy	Vague responses, fabrications and strange elaborations regarding sex.	Lack of awareness of hostile impulses. $x=0.54$; SD =0.77
Sx	Sex	Human (M), animal (FM) and inanimate (m) movement R; broken, damaged objects (MOR), and R which entail inadequacy between the description and the outlines of the selected area (FQ-).	Preoccupation with sex. Suggestive of pathology in a restricted protocol. $x=0.11$; SD=0.47
M, FM, m; MoR, FQ-	Movements, morbid content, form quality minus responses	Includes all of the movement R of the protocol.	Represent the 3 projective R categories of the test.
A:p	Active and passive movements	Comprises responses of natural or seasoned food.	Provides information on the flexibility or rigidity of cognitive operations. $x=6.44$:2.90; SD=2.23:1.64
Fd	Food R	Movement R which imply clearly aggressive actions.	Passivity, dependency, immaturity. $x=0.21$; SD=0.47.
AG	Aggressive movement		Manifest aggressiveness. $x=1.11$; SD=1.15