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Emotional Indicators across Pakistani Schizophrenic and Normal Individuals Based on Draw a Person Test

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We investigated the drawing signs in 200 schizophrenic and 200 normal individuals on Draw A Person test in Pakistan. The sample consisted of men and women between ages of 20 to 50 years in two provinces (Punjab and Khyber Pakhtun-Khwa) of Pakistan. We used Koppitz (1971) method to administer and score the test and selected 40 Emotional Indicators (EIs) from the literature and found 26whichsignificantly differed ($p< .001$ and $p< .05$) between schizophrenic patients and normal controls. Data also found that 9 exclusive and 4 frequent EIs on Draw a Person test can be significant diagnostic drawing signs for schizophrenic patients.

Keywords: comparison, emotional indicators, Schizophrenic, normal individuals, DAP test

Psychological and psycho-diagnostic measurements have become a valuable focus in Pakistani clinical psychology. Due to this, awareness has arisen to train Pakistani psychologists in the clinical field and develop standardized tests for such purposes. In addition, educators, planners and other professionals are focusing on the need for such assessment so that policy makers in field of education, law, health, industry, government, semi government and private organization can benefit from it. To realize the importance of different psychological tests in the clinical field in Pakistan, the present study is an effort to investigate the drawing signs of schizophrenic patients in DAP test. To the best of the researcher's knowledge no study has been conducted so far on DAP test as a clinical instrument in Pakistan. Further this study is an efforts to explore information either DAP test can be used as an important diagnostic battery in clinical setup for schizophrenia, as evidence been provided in literature. This study may also help the researchers to develop norms and standardized DAP test in clinical context in Pakistani culture. Further this study will provide basis for researchers for further exploration in clinical field regarding DAP test in Pakistan. DAP is an expressive projective instrument used for the assessment of personality. The subject is simply required to *draw a person*. Since DAP does not require verbal behavior it is used by those who are interested in the assessment of the personality dynamics of children, deaf and dumb, those who speak a different language or come from different cultures. The DAP shares many characteristics with projective tests, and it is for this reason it has been widely used for the assessment of personality of children, along with other tests.

The DAP is used in educational and medical settings. One of the most striking characteristic of this projective test is drawing a human figure that is nearly universal form of drawing. It is easy to administer the test, and with good consistency it can be used in a variety of age and cultural groups. The reality that the response is not interceded by language suggests that the technique may be less subject to cultural and age restrictions than many other projective techniques. It can be administered alone or in group settings in a short period of time (Machover, 1947).

Machover (1947) was the first who got interested in the human figure drawings as projective technique, and used DAP test on male adolescents and adult patients for assessment purposes. She later extended her findings to children which led her to evaluate and classify signs on the human figure drawings based on psychoanalytic theories.

The emotional signs and symbols are interpreted for personality dynamics. Koppitz(1968)) theorized that Human Figure Drawings (HFD) reproduce mainly a child's level of development and his interpersonal relationships i.e., his attitudes toward himself and toward the important others in his life. His attitude toward life's stresses and strains and his possess way of meeting them; drawings may also reproduce strong fears and anxieties which may relate the child, consciously or unconsciously at that given instant. Koppitz (1968) does not necessarily accept as valid the "body image" hypothesis that is generally accepted for drawings of human figure. Koppitz (1968) believes that the HFD reflect the child's current stage of mental development and his attitudes and concerns of the given moment, all of which will change in time due to maturation and experience. Particular value of HFD is seen in its very sensitivity to change within the child, and these changes may be both developmental and emotional. The HFD is regarded by Koppitz (1968) as a portrait of the inner child of the moment.

Various scales have been developed for scoring the DAP, the most popular are the Goodenough (1926), Machover (1947), Harris & Goodenough (1963) and Koppitz (1968) scales. There are quantitative and qualitative measures used to assess the DAP for various aspects of personality assessment. Some use the overall quality of the DAP for assessment signs (Goodenough, 1926; Lewinsohn, 1965).

Koppitz, (1966) developed 30 Emotional Indicators (Els) for the DAP, based on criteria that age and maturation will not bias them, and they would rare or unusual (15% or less). Koppitz(1966) used DAP as a developmental and as a projective test. Her work encouraged other clinicians to begin exploring the potential value of the test for diagnosing schizophrenia. Albee and Hamlin (1949, 1950) for example, presented early evidence that global assessments of adjustment based on the DAP had sufficient validity to warrant further study of the technique as a psycho-diagnostic tool, Holzbergand Wexler (1950) made an initial attempt to derive specific DAP indicators of schizophrenia.

Reliability

Gonzales (1982) obtained a .99 inter-rater reliability among four raters using the Kuder-Richardson formula. Ireton, and found a high degree of interval reliability in scoring the HFD for IQ. Harris

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(1963) reported inter-judge agreement consistency among trained judges in scoring DAP along a number of dimensions. Koppitz (1968), obtained a perfect inter-scorer reliability on 10 out of 25DAP EIs, the other 15 the scores differed by one or two points only. The DAP test-retest reliability (r = .94 ± .006) was obtained on two consecutive days (Goodenough, 1926) and a retest reliability of (r = .68) after a one week interval and an inter-scorer reliability of (r = .90) (McCarthy, 1944).

Harris & Goodenough (1963) for developmental scores; and Emotional Indicator (EI) scores for Koppitz (1968) concluded that these scores were more reliable at some ages than at others. Harris (1963) re-administered the DAP test to 4 groups of kindergarten children on each of ten consecutive days, and no significant differences in performance on different days suggesting high reliability.

Validity

Goodenough (1926) found significant correlation (r-.005) between test scores on the DAP and grade placement. In another study she obtained .38 correlations between the drawing test and the grade progress ratio 0.5. In yet another study a correlation of .74 was obtained between the Stanford Binet IQ scores and DAP (Test). And an average correlation of .44 was obtained between teachers' judgments of intelligence and DAP in primary grade students. Wanderer (1969) investigated the clinical judgments based on DAP and found that the DAP experts were capable of identifying mental defectives beyond chance expectations.

Koppitz (1968) conducted a series of studies to determine the validity of the 30 developmental items used in her scoring method of the DAP. Thirteen basic items on the DAP were found to be truly developmental indicators for young children and were not much influenced by the drawing medium used or the instructions given. There was some difference between the DAP of the boys and girls. Boys of 5 1/2 to 6 1/2 years did better on the crayon than on the pencil drawings. The drawing medium had little effect for the girls.

Norms

Phatak (1957) in India correlated the DAP test with Kamats test of intelligence. Adler (1970) notes, chat one should question the certainty about psychopathology when the drawings on DAP are primordial. Such infantile behavior may compromise analysis because of cultural backdrop, life experiences, or inborn cognitive aptitudes.

Uman (1972) used Goodenough-Harris DAP test on a Turkish sample found that the mean scores increased consistently and significantly with the children's socioeconomic level. Harris (1974) found DAP led to significant differences on 7 of the 14 criteria analyze ethnic groups and sex and concluded that norms of DAP from the Anglo-American culture cannot be applied to other cultures, and that further research should be done to establish norms for other groups.

Cultural Influence on the DAP Test

Many psychologists refute the claim that the DAP test is a culture free test. As stated by Anastasi (1958) that no test can be truly culture free, therefore the DAP test has been called a culture fair test. Every test tends to favor persons from the culture in which it was developed. It is recognized now that the task of drawing the human figure is significantly affected by cultural experiences Aiken (1971). He further states that the Goodenough--Harris drawing test can be said to be culture fair. Studies of children's drawings have shown that they reflect their environment and their culture (Seemen, 1934).The DAP test has received relatively wide cross-cultural application (Lindzey, 1961); and is considered a projective measure by eminent sociologists like Mead (1954) to be an efficient device for the cross-cultural study of children's personality.

Gonzales (1982) in a cross-cultural comparison of five ethnic groups used the HFD as a measure of intellectual development using the Koppitz method of scoring. He found that a significant number of items for each of the five ethnic groups changed categories with final score interpretation being affected. A significant difference in percentage of items drawn by the five ethnic groups was also found as were regional differences on certain items. The conclusions disclose that when individual items on the DAP are used in scoring, an irregularity subsists between cultures and geographic areas on items integrated or expelled at definite ages. Gonzales (1982) further recommended that local and ethnic norms require to be developed not only for the DAP but for all other tests having a momentous collision on the future of children. Assessments into cultural variables that may report for an items insertion or elimination on the DAP, alike regional cross-cultural studies are immediately required which would explore the use of EIs with children's drawings of the DAP. Exclusion or omission of items due to possible culture variables have resulted in unwarranted statements concerning emotional disturbance.

Koppitz (1963) found that when the DAP and Bender Gestalt test were used the Ethnic and underprivileged tended to mature at a slower rate, e.g. the Puerto Rican, Indian and Black children. The Japanese were much better than the children of USA; also the Chinese were better than USA children. As specific training in visual motor perception of school-age children has only a limited impact it is then a question to what extent do early childhood training and the values of a given culture affect the rate of development in visual motor perception of school age children. If it is genetic then the Japanese and Chinese children should do better no matter where they live but this is not true. Thus Koppitz (1963) concludes that it must be due to the culture they live in. The late of development of visual motor perception may be at least in part determined by the child rearing practices of a people and by the values they place on certain abilities and skills.

There is a vast difference between the Western and Pakistani culture. The schizophrenic patients in Pakistan belong to orthodox, conservative and religious families. It is fact that there is a dearth of all kinds of psychological tests in Pakistan DAP was especially chosen because it is not only an intelligence test but also a diagnostic test and helps in the early detection of mental retardation, learning disabilities, severe psychopathologies and psychopathic tendencies, as pointed out by various psychologists in various developed countries. The DAP is used cross-culturally to evaluate personality by anthropologists and social psychologists Dennis (1966), Gardiner (1969), Gonzales (1982) effectively but they also found some special cultural aspects which were affecting the drawings of the children and adults. These differences could only be explained in the context of the specific culture. Pakistani culture has its own special features, which can definitely affect the types of drawings of our population**.**

Purpose

The purpose of the present study was to investigate the drawing signs of schizophrenic patients on DAP test in Pakistan and to

compare the drawing signs to normal (non-psychotic) individuals, and that schizophrenic patients specific drawing signs on DAP test can be used as diagnostic indicators for the disorder in clinical context.

Hypotheses

Majority of drawing signs on DAP test will be significantly different between schizophrenic patients and normal individuals.

Method

Participants

Group A was consisted of 200 schizophrenic patients (women =8, men =192), and Group B consisted of 200 normal (non-psychotic) individuals (women =56, men =144).They ranged from 20 to 50 years and were residents of the two provinces (Punjab, Khyber Pakhtun Khwa) of Pakistan. Educational and socioeconomic status of these groups was not ascertained. Schizophrenic patients, who did not respond, were excluded.

Materials

In order to maintain the uniformity in the administration of DAP test, the following material was used: The tests were administered on plain sheets of white paper (29 cm X 21 cm; A4 size).

1. Sharpened HB-2 pencils.
2. Standardized English Instruction given by Koppitz (1971) on this piece of paper, "I would like you to draw a whole person. It can be any kind of person you want to draw. Just make sure that it is a whole person and not a stick figure or a cartoon figure" you may draw a man, or a woman or boy or a girl, whichever you want to draw".
3. Standardized Urdu translation of instructions given by Koppitz (1971).

Measures

A list of 40 signs on HFD was selected, which were believed to possess all the characteristics of EIs. These items were derived from the work of Mach over (1949), Hammer (1955) and Koppitz (1968). The list consists of three different types of items: The first type includes items related to the quality of the HFD. The second group of signs is made up of "special features" not usually found on Human Figure Drawings (HFDs); and the third group consists of items omitted. At least two experts, the researcher and another clinical psychologist evaluated the drawings of the subjects in DAP test, according to Koppitz scoring criteria.

Procedure

The DAP Test was administered to schizophrenic patients (Group A) as a group test by the researcher himself who was the examiner for the entire administration of the test. About five to ten patients were tested in their respective wards in the hospitals at a time. The data was collected during regular working hours with the prior permission of the director.

The patients were asked to sit on the floor. These patients were provided a clipboard of the size (29cm X 21cm) of the paper under the plain piece of paper in order to facilitate the drawings. The patients were asked to write their names and age, on the top right hand corner of the sheets of paper with the pencils. The researcher requested the attendants to write down these particulars for uneducated patients or patients who could not do the same themselves. The researcher waited till all the patients in the group had written these particulars on the papers. The patients were then told by the researcher to turn the paper with the other unwritten side facing up.

The researcher made sure that all the patients were ready to start and then read out the following Urdu version of the instructions, which had been written on separate sheets of paper, every time the test was administered to a group of Schizophrenic patients. Whenever necessary; the instructions were given in Pashto and Punjabi languages.

In case a patient said that he/she could not know how to draw an person, the researcher on such occasions did encourage the patients by saying "please try as everyone can draw, you too". This usually helped. Nothing more was said by the researcher to the patients in order to maintain the reliability of the test. Since there was no time limit in the test therefore as soon as a patient finished his/her drawing the researcher took back the paper and the pencils. The researcher also obtained the case history/bio-data from the patient's hospital files on a demographic form in order to check the reliability of the information.

The DAP test was administered to normal individuals (Group B) as an individual test, by the researcher who was the only examiner for the entire administration of the test. The participants were provided a clipboard with a plain piece of paper in order to facilitate the drawing. The subject was asked to write his/her name and age on the top right hand corner of the sheet of paper with pencil. Then the subject was told by the researcher to turn the paper with the other unwritten side facing up. The researcher made sure the subject was ready and then read out the instructions in Urdu, which had been written on separate sheet of paper. Whenever necessary the instructions were given in Pashto and Punjabi languages as well. The above practice was continued till the test was administered to all the normal individuals.

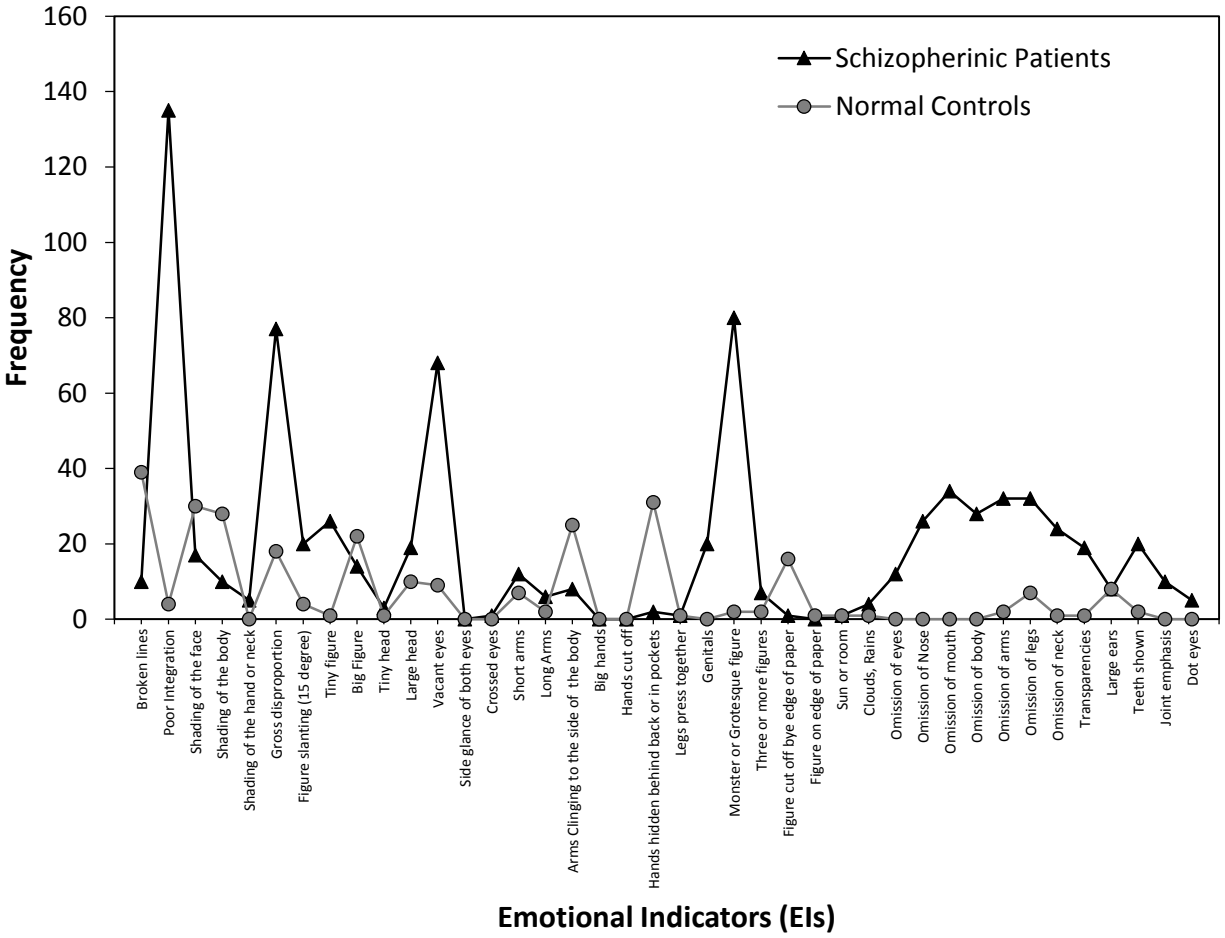
Discussion

Table 1 and Figure 1 show that there are four prominent EIs that differ significantly ($p< .001$) across schizophrenic patients and normal individuals. These include poor integration, gross disproportion, vacant eyes, and monster or grotesque figures. Likewise statistical computations (Chi-Square values) revealed that another 22 EIs significantly differed across schizophrenic patients and normal controls. Broken line, Poor integration, Gross Disproportion, Figure Slanting (15 degree), Tiny Figure, Vacant Eyes, Genitals, shading of body, Arms clinging to side of the body, Han hidden behind the back or in pockets, Figure cut off, Monster or Grotesque Figure, Omission of Nose, Omission of eyes, Omission of mouth, Omission of body, Omission of arms, Omission legs, Omission of neck, Transparencies, Large ears, Teeth shown, Joint emphasizes were significantly different at $p<.001$ level and Dot Eyes, Shading of hand and neck, Shading of the face were significant at $p< .05$ level.

Results

Table 1
Statistical comparison of EIs on HFD of schizophrenic patients (N = 200) and normal individuals (N = 200)

EI	Patient	%	Normal	%	χ^2	*p*
Broken lines	10	5	39	19	19.54	0.001
Poor Integration	135	67.5	4	1	128.50	0.001
Shading of the face	17	8.5	30	15	4.04	0.05
Shading of the body	10	5	28	14	8.42	0.001
Shading of the hand or neck	5	2.5	0	0	5.06	0.05
Gross disproportion	77	38.5	18	9	48.04	0.001
Figure slanting (15 degree)	20	10	4	1	11.28	0.001
Tiny figure	26	13	1	0.5	24.80	0.001
Big Figure	14	7	22	11	-	ns
Tiny head	3	1.5	1	0.5	-	ns
Large head	19	9.5	10	5	-	ns
Vacant eyes	68	34	9	4.5	55.70	0.001
Side glance of both eyes	0	0	0	0	-	ns
Crossed eyes	1	0.5	0	0	-	ns
Short arms	12	6	7	3.5	-	ns
Long Arms	6	3	2	1	-	ns
Arms Clinging to the side of the body	8	4	25	12.5	9.52	0.001
Big hands	0	0	0	0	-	ns
Hands cut off	0	0	0	0	-	ns
Hands hidden behind back or in pockets	2	1	31	15.5	27.68	0.001
Legs press together	1	0.5	1	0.5	-	ns
Genitals	20	10	0	0	21.04	0.001
Monster or Grotesque figures	80	40	2	1	93.00	0.001
Three or more figures	7	3.5	2	1		ns
Figure cut off bye edge of paper	1	0.5	16	8	13.80	0.001
Figure on edge of paper	0	0	1	0.5	-	ns
Sun or room	1	0.5	1	0.5	-	ns
Clouds, Rains	4	2	1	0.5	-	ns
Omission of eyes	12	6	0	0	12.36	0.001
Omission of Nose	26	13	0	0	27.80	0.001
Omission of mouth	34	17	0	0	37.00	0.001
Omission of body	28	14	0	0	30.10	0.001
Omission of arms	32	16	2	1	17.74	0.001
Omission of legs	32	16	7	3.5	17.74	0.001
Omission of neck	24	12	1	0.5	22.40	0.001
Transparencies	19	9.5	1	0.5	17.04	0.001
Large ears	8	4	8	4	8.40	0.001
Teeth shown	20	10	2	1	15.40	0.001
Joint emphasis	10	5	0	0	10.24	0.001
Dot eyes	5	2.5	0	0	5.06	0.05
Mean	19.93		6.90			



Differentiating EIs

Poor Integration. In HFD more schizophrenic patients drew their pictures with *poor integration* than controls. The present findings are consistent with other investigators showing this affect in other adult patients. Tomblen and Reznikoff (1956) found that poor integration of figure drawings was associated with organicity in adults. Machover (1949) found that it was due to either organicity or mental retardation. Koppitz (1968) found that poor integration was most frequent on HFD of clinic patients and particularly on the drawings of brain injured youngsters. Arieti (1974) had found that schizophrenic patients show bizarre and poor integrations in their drawings.

Gross Disproportion. Significantly greater number of schizophrenic patients had *gross disproportion* in their drawings than normal controls. Koppitz (1968) found gross disproportion on the drawings of the clinical patients, aggressive children and the brain-injured subjects. Machover (1949) hypothesized that the general disturbance in proportion in human figures is a neurotic manifestation but also reflects in coordination physical awkwardness, physical inadequacy or confusion of lateral dominance.

Monster or Grotesque Figures. *Monsters or grotesque figures* were significantly drawn more by schizophrenic patients than controls. Koppitz (1968) found this drawing sign primarily on the HFD of the clinical patients. He found that the drawing of monster or grotesque figures did not seems to be associated with any specific type of behavior but rather reflected feelings of intense inadequacy and very poor self-concept.

Vacant Eyes. *Vacant eyes* were another frequent drawing signs on the HFD which differed across schizophrenic patients and controls. Koppitz (1968) found that vacant eyes could not be considered clinically meaningful signs for children but it could be meaningful for adult patients. In that case it could be associated with vague perception of the world, with emotional immaturity, dependency, a lack of discrimination and depression.

Exclusive EIs

Dot eyes. *Dot eyes* were noted exclusively and significantly more on the HFD of schizophrenic patients, than the drawings of controls.

Omission of the body. *Omission of the body* was another EI that was found exclusively and significantly more on HFD of schizophrenic patient than the drawings of normal controls. Koppitz (1968) found that omission of the body occurs significantly more often on the HFD of the clinic patients and the brain injured subjects.

Omission of Mouth. *Omission of mouth* was found exclusively and significantly more on the HFD of schizophrenic patients than the drawings of normal controls. Koppitz (1968) observed that

omission of mouth appeared to be clinically meaningful on the HFD of the clinical patients.

Omission of Nose. *Omission of nose* was also found exclusively and significantly more on the HFD of schizophrenic patients than the drawing of normal controls. Koppitz (1968) found that omission of nose occurred significantly more often on the HFD of the clinic patients and the children suffering from psychosomatic complains.

Omission of Eyes. *Omission of eyes* were found significantly more and exclusively on the HFD of schizophrenic patients. Koppitz (1968) observed that omission of eyes always has clinical significance on HFD of clinical patients.

Genitals. *Genitals* were found exclusively and very significantly more on HFD of schizophrenic patients than the drawings of normal (non psychotic) population. Koppitz (1968) found that genitals were occurred more often on the HFD of clinical patients who were extremely disturbed and overtly aggressive. The occurrence of genitals on HFD must be considered a sign of serious psychopathology.

Shading of Hand and Neck. *Shading of Hand and Neck* was found exclusively and significantly more on HFD of schizophrenic patients than the Drawings of normal controls. Koppitz (1968) observed that Shading of Hands and/or Neck occurred most often on the drawings of clinical patients.

Large ears. *Large ears* were found exclusively and significantly more on the HFD of schizophrenic patients than the drawings of normal controls. Machover (1948) claims that large ears reflect paranoid thinking when they occur on the drawings of adults.

Joint emphasis. *Joint emphasis* was exclusively and more significantly drawn on the HFD of schizophrenic patients than the drawings of normal (non psychotic) population.

Rare EIs

EIs such as, *Cloud or Rain, Figure cut off by edge of paper, Three or more figures, Hands hidden behind back or in pockets, Crossed eyes, Arms clinging to the side of the body, Legs pressed together, Tiny head, and Long arms"* were found rarely on HFD of schizophrenic patients compared to controls.

EIs that occurred more often in normal controls

Broken lines were found more often on HFD of normal controls. Other EIs included, *Shading of the face, Shading of body, Big figure, Arms clinging to the side of the body, Hands hidden behind or in pocket, Figure cut off by the edge of the paper*, were found more often but less than sixteen percent on HFD of normal controls.

EIs depicted equally on HFD of Schizophrenic patient and normal controls

Sun or Room and *Legs pressed together* were depicted equally on HFD of both schizophrenic patients and normal controls.

EIs that were not found on any HFD of schizophrenic patients and normal (non p psychotic) population.

Hands cut off, Big Hands and side glance of both eyes were not found on any HFD of both schizophrenic patients and normal controls.

Implication

The findings of the present study seems to support that DAP test can be used as a diagnostic tool for schizophrenia with a battery of other psychological tests. It may be assumed that EIs, which occur exclusively on HFD of schizophrenic patients (e.g. *Large ears, Omission of mouth, Omission of nose, Omission of eyes, Omission of body, Genitals, Shadings of hand or neck, Joint emphasis, Dot eyes*) are diagnostically more significant than those EIs which are found to some extent on the HFD of controls (e.g. *Figure slanting, omission of arms, omission of neck, transparencies*).

It may also be assumed that EIs, which occur more frequently on HFD of schizophrenic patients (e.g. poor integration, gross disproportion, vacant eyes, monster or grotesque figure), can be significant diagnostic drawing signs for schizophrenia.

Limitations

Sample for the present study is selected only on basis of age levels. Other factors, such as gender, education background and socioeconomic status are not considered.

Recommendations

DAP Test should be tested on a large sample of schizophrenic population in different provinces of Pakistan with different age level, educational background and socioeconomic status. This would give a clearer picture of the usefulness and applicability of the test in clinical context in Pakistan. EIs on DAP Test should be related to mood, anxiety and personality disorders. EIs on DAP Test should be related to paranoid and other sub-groups of schizophrenia.

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