Research Paper

Diagnostic Effectiveness of Perceptual Thinking Index (PTI) In Patients with Alcohol Induced Psychosis in Rorschach

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ABSTRACT

This study investigates effectiveness of Rorschach's Perceptual Thinking Index (PTI) in alcoholic patients and non-patients. The PTI is a revision of the Rorschach Schizophrenia Index (SCZI), designed to achieve several criteria, including an increase in the diagnostic utility of the Rorschach for assessing thought disorder and to increase clinical focus on the dimensional aspects of impaired perceptions and thoughts (Exner, 2000a; 2000b). A group of 15 alcohol induced psychosis male patients already diagnosed with a psychiatrist as per the ICD-10 criteria and meeting their inclusion and exclusion criteria were selected from Disha de-addiction center, Lucknow, Uttar Pradesh and Normal control group of 15 persons screened out from the general population as per their inclusion and exclusion criteria. The results of this study indicated that there is significant difference between alcoholic patients and non-patients on Rorschach Perceptual Thinking Index (PTI). The adequate results were found from all the patients on all The Perceptual Thinking Index (PTI) criteria. Thus, it is concluded that The Perceptual Thinking Index (PTI) is helpful in identifying Alcohol Induced Psychosis among Alcoholic Patients.

Keywords: *Perceptual Thinking Index (PTI), Alcohol Induced Psychosis.*

Alcohol has been widely used throughout history. Scientists found evidence of wine or beer in pottery jars at the site of a Sumerian trading post in western Iran that dates back 6,000 years (Goodwin & Gabrielli, 1997). For hundreds of years, Europeans drank large amounts of beer, wine, and hard liquor. When they came to North America in the early 1600s, they brought their considerable thirst for alcohol with them. In the United States during the early 1800s, consumption of alcohol (mostly whiskey) was over seven gallons per year for every person older than 15. This is more than three times the current rate of alcohol use in this country (Goodwin & Gabrielli, 1997; Rorabaugh, 1991).

Alcohol-Induced Psychotic Disorder
Alcohol has a central role in substance use disorders, and alcohol use disorders are associated with a considerable burden in terms of morbidity and mortality. Psychotic symptoms can occur in several clinical conditions related to alcohol such as intoxication, withdrawal,

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alcohol-induced psychotic disorder and delirium. In alcohol-induced psychotic disorder, the psychotic symptoms should be prominent and in excess of those usually associated with alcohol intoxication or withdrawal with perceptual disturbances, and severe enough to warrant clinical attention.

Rorschach test: Also known as the "inkblot test," the Rorschach is the most widely known and commonly used projective tests. Projective tests use the patient's perceptions, or projections, of symbols or stories to identify signs of thought disorders or to analyze personality traits. Initially developed by Swiss psychoanalyst Hermann Rorschach in 1921, the Rorschach Test is based on the patient's analysis of a series of abstract inkblots.

The *Perceptual-Thinking Index* was significantly related to criteria assessing Disturbed Thinking and Distorted Perceptions (r ! .39, S ! 17; autogenous or highly unrealistic obsessions, bipolar disorder, high risk for psychosis, and psychotic disorders; higher for borderline and other personality disturbances with distorted thinking vs. nonpatients).

Rorschach Inkblot Test
The most popular projective technique is the Rorschach Inkblot test developed by Hermann Rorschach, a Swiss psychiatrist in 1921, to make a diagnostic investigation of personality as a whole. At the outset, it must be borne in mind that the Rorschach test is a measure of both the intellectual and non-intellectual traits of personality. He investigated with a large number of inkblots out of which only 10 inkblots that differentiated most between various psychiatric syndromes were selected to constitute a test. Thus the Rorschach test consisted of ten cards, each of which contained a bilaterally symmetrical printed inkblot. Five inkblot cards (Cards I, IV, V, VI and VII) are made in shades of black and gray; two cards (Cards II and III) contain bright patches of red in addition to the shades of black and gray and the remaining three cards (Cards VIII, IX and X) contain several pastel shades.

Development of Rorschach Perceptual Thinking Index (PTI)
The PTI was recently developed as a more accurate Rorschach indicator of psychosis designed to have a lower false positive rate than the SCZI (Exner, 2000, 2001). As reviewed by Smith, R. S., Baity, R. M., and Knowles, S. E. (2001), research on the SCZI has shown unacceptably high false positive rates in child and adolescent samples. To create the PTI, the specific variables within the SCZI that had high false positive rates were revised (Exner, 2000; Smith, R. S., Baity, R. M., and Knowles, S. E. 2001). Like the SCZI, the PTI contains Rorschach variables such as poor Form Quality (X– % and M–) and Special Scores (e.g., Wsum6), which in various forms have been shown to be empirically related to thought disturbance, perceptual distortion, and cognitive slippage(Perry, W., and Viglione, D. J. 2003; Smith, R. S., Baity, R. M., and Knowles, S. E. 2001; and Stokes 2001). To date, there are scant data on the psychometric properties of the PTI, but initial studies indicate that it may indeed outperform the SCZI in accurately classifying persons with and without psychosis (Exner, 2000; Smith et. al., 2001). In terms of its cross-cultural validity, preliminary results from the international non-patient samples suggest that the PTI scores are very low in each of these normative groups (Erdberg and Schaffer, 2001).

Perceptual Thinking Index (PTI)
The Perceptual Thinking Index (PTI) is the latest revision of the SCZI, and it was developed in an effort to improve its validity in detecting cognitive impairments and to reduce overly high scores among children (Exner, 2000). Two new variables are included in its formula:

XA% (Form Appropriate), which indicates the percent of responses with reasonable form and is computed as the sum of FQ+, FQo, and FQu divided by R; and WDA%(Form Appropriate—Common Areas), which indicates the percent of appropriate form responses given to common detail areas and is calculated as the sum of FQ+, FQo, and FQu responses to W and D locations divided by the number of W and D responses (Exner, 2001). The PTI also includes age adjustments for R in those age 13 years and younger. Previous findings indicated the SCZI and PTI have a similar distribution of scores. In an initial comparison of 110 individuals diagnosed with schizophrenia, 62 had SCZI values of 5 or 6, while 61 had PTI scores of 4 or 5 (Exner, 2000).

S.No.	The Rorschach Perceptual Thinking Index (PTI)
1	XA%<.70 and WDA%<.75
2	X-%>.29
3	Level 2>2 and FAB 2>0
4	R<17 and WSUM6>12 or R>16 and WSUM6>16
5	M->1 or X-%>.40

If four of these criteria are met in a given protocol, the diagnosis of schizophrenia should be given serious consideration (Exner, 1993).

Aim of the Study
To see the effectiveness of Rorschach's Perceptual Thinking Index (PTI) in alcoholic patients and non-patients.

Objectives Of The Study
1. To see the profile of alcohol induced psychosis patients and non-patients,
2. To see the Rorschach Protocol of alcohol induced psychosis patients and non-patients,
3. To see the perceptual thinking index in alcohol induced psychosis patients and non-patients, and
4. To see the effectiveness of Rorschach's perceptual Thinking Index in alcohol induced psychosis patients.

Hypothesis of the Study
On the basis of previous research and theoretical considerations, following hypotheses were framed:
1. There will be significant difference between patients with alcohol induced psychosis and non-patients on PTI, and
2. PTI will be effective in identifying and assessing the severity of cognitive and perceptual problems in alcohol induced psychosis patients.

METHODOLOGY
Participants
A purposive sampling method has been used to collect the data. A group of 15 alcohol induced psychosis male patients already diagnosed with a psychiatrist as per the ICD-10 criteria and meeting their inclusion and exclusion criteria were selected from Disha de-addiction center, Lucknow, Uttar Pradesh and Normal control group of 15 persons screened out from the general population as per their inclusion and exclusion criteria.

♣ **For Patients:**
♦ **Inclusion Criteria (Patients)**
- Alcohol Induced Psychosis patients already diagnosed according to ICD-10,
- Patients aged between 18-50 years,
- Only male patients were taken, and
- Patients scored more than 14 on Rorschach protocol.

♦ **Exclusion criteria (Patients)**
- Patients with other co-morbid psychiatric illness,
- History of any organic lesion in brain
- Patients scored less than 14 on Rorschach protocol.

♣ **For Non-Patients:**
♦ **Inclusion Criteria (Non-patients)**
- Male person from general population,
- Person aged between 18-50 years, and
- Occupational and educational status was same as patients.

♦ **Exclusion Criteria (Non-patients)**
- History of any Psychiatric illness, and
- Substance Abuse or Dependence Syndrome

Instruments
1. **SOCIO-DEMOGRAPHIC DATA SHEET & CLINICAL DATA SHEET***:* A self-made, semi structured socio-demographic sheet especially designed for the study was developed to collect information from the participants. It included details of sex, education, occupation, religion, marital status, domicile, family type and monthly family income.
2. **GENERAL HEALTH QUESTIONNAIRE:** It includes recently lost much sleep over worry, recently felt constantly, recently been Able to Enjoy Day to Day Activities, recently Been Feeling Unhappy and Depressed and recently Been Feeling Reasonably Happy.
3. **CLINICAL DETAILS OF PATIENTS***:* The clinical details include age of onset, mode of onset, course of illness, nature of treatment, relapse, family Psychiatric illness and precipitating factor.
4. ***RORSCHACH INKBLOT TEST (RORSCHACH, 1921)***: The Rorschach Inkblot Test (Rorschach, 1921) is one psychological assessment instrument, which measures functioning across a wide range of indices perceptual, cognitive, affective, and interpersonal and others. It also gives information about ones personality. The Rorschach Inkblot Test is a very popular instrument among clinicians (Lubin et al., 1984) as well as among researchers, with over 6000 research studies published by early 1980 (Aiken, 1993). The utility of this instrument in quantitative research has improved by the work of Exner, whose comprehensive system (Exner, 1991,1993, 2003) has distilled the several older, competing methods of scoring and interpretation into one uniform systematic and empirically validated system. Its reliability as investigated with different method is between 0.85 to 0.94 (Mattlar, 2004) and validity is also reported to be high (Weiner, 1997, 2000 and 2001).

Procedure
The study was conducted at Disha de-addiction center, Lucknow, Uttar Pradesh on the sample group of 15 alcohol induced psychosis male patients already diagnosed with a psychiatrist as per the ICD-10 criteria Normal control group of 15 persons screened out from the general population. After taking the consent of the subjects Rorschach Inkblot test was administered on both the groups individually. Administration, scoring and interpretation of Rorschach were done according to Exner's comprehensive system.

RESULTS

Table No. 1 Age Of Patients And Non-Patients

Variable	Groups	N	Mean
Age (in years)	Patients	15	32.6
	Non-Patients	15	38

Table no. 1 (b) SOCIO-DEMOGRAPHIC DETAILS					
Variables		**No. of Non-Patients (N=15)**	**Percent**	**No. of Patients (N=15)**	**Percent**
Sex					
	Male	15	100.0	15	100.0
EDUCATION					
	Intermediate	4	26.7	2	13.3
	Graduation	4	26.7	8	53.4
	Post Graduation	7	46.7	5	33.3
OCCUPATION					
	BUSINESS	7	46.7	8	53.3
	SERVICE	2	13.3	3	20
	NOT WORKING	6	40.0	4	26.7
RELIGION					
	HINDU	15	100.0	15	100.0
MARITAL STATUS					
	DIVORCED	1	6.7	2	13.3
	MARRIED	6	40.0	6	40
	UNMARRIED	8	53.3	7	46.7
DOMICILE					
	SUBURBAN	5	33.3	3	20
	URBAN	10	66.7	12	80
FAMILY TYPE					
	JOINT	6	40.0	3	20
	NUCLEAR	9	60.0	12	80
MONTHLY INCOME					
	Rs 10,000-20,000	2	13.3	1	6.7
	Rs 21,000-30,000	6	40.0	3	20
	Rs 31,000-40,000	2	13.3		-
	Rs 41,000-50,000	5	33.3	8	53.3
	Rs 51,000 and above	-		3	20

Table no. 3 RESPONSES ON GENERAL HEALTH QUESTIONNAIRE

Variables	No. of Non-Patients (N=15)	Percent
Recently lost much sleep over worry		
Not at all	7	46.7
No more than usual	6	40.0
Rather more than usual	2	13.3
Recently felt constantly		
Not at all	5	33.3
No more than usual	9	60.0
Rather more than usual	1	6.7
Recently Been Able to Enjoy Day to Day Activities		
Not at all	6	40.0
No more than usual	6	40.0
Rather more than usual	3	20.0
Recently Been Feeling Unhappy and Depressed		
Not at all	7	46.7
No more than usual	8	53.3
Recently Been Feeling Reasonably Happy		
Not at all	10	66.7
No more than usual	5	33.3

Figure no. 1 Age of onset (in years)
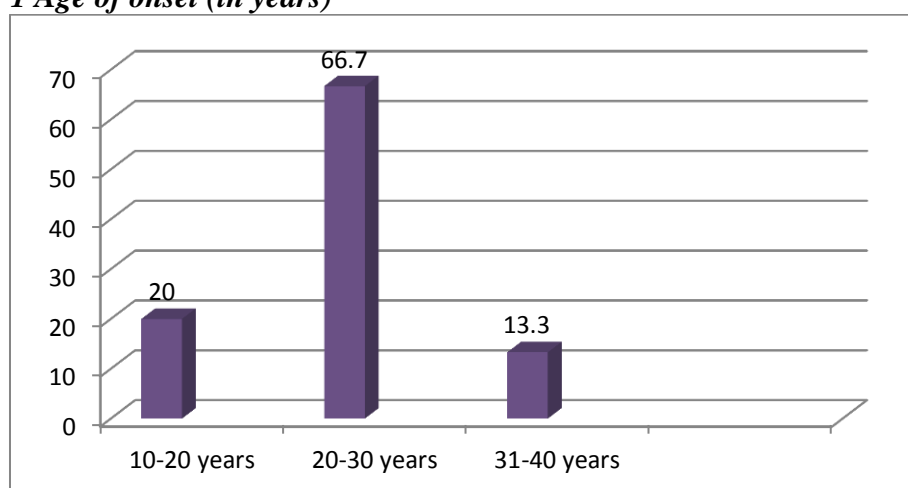
Table no. 4 CLINICAL DETAILS OF PATIENTS

Variable		No. of Patients (N=15)	Percent
Mode of onset			
	Abrupt	6	40
	Acute	8	53.3
	Insidious	1	6.7
Course of illness			
	Continuous	4	26.7
	Episodic	11	73.3
Nature of treatment			
	Alcohol	15	100
Relapse			
	Present	11	73.3
	Absent	4	26.7

Family Psy. Illness			
	Absent	15	100
Precipitating factor			
	Absent	15	100

Table no. 5 PERCEPTUAL THINKING INDEX

Variable			Groups			
Perceptual Thinking Index			Patients (N=15)		Non-patients (N=15)	
PTI Criteria1	X+%<.70 and WDA%<.75	Present	10	66.7	0	-
		Absent	5	33.3	15	100
PTI Criteria2	X-%>0.29	Present	13	86.6	0	-
		Absent	2	13.3	15	100
PTI Criteria3	LVL2>2 and FAB 2>0	Present	7	46.7	0	-
		Absent	8	53.3	15	100
PTI Criteria4	R<17&WSUM6>12 or R>16&WSUM6>16	Present	11	73.3	0	-
		Absent	4	26.7	15	100
PTI Criteria5	M-> or X-%>.40	Present	12	80	0	-
		Absent	3	20	15	100

DISCUSSION

The present study "A Comparative study on Effectiveness of Rorschach's Perceptual Thinking Index (PTI) in alcoholic patients and non-patients" was conducted on patients residing in DISHA de-addiction-cum-rehabilitation centre, Lucknow and on Non-patients from general population. The aim of the study was to see the effectiveness of Rorschach's Perceptual Thinking Index (PTI) in alcoholic patients and non-patients. The sample of 15 patients and 15 non-patients were included in this study, among which one group of 15 alcoholic patients and another is non-patients selected from general population. The sample was selected using purposive sampling method, as per their inclusion and exclusion criteria. The Socio-demographics were used to take general information of both patients and non-patients. Clinical data sheet were used for the patients having alcohol induced psychosis and General Health Questionnaire was administered on general population. Then Rorschach inkblot tests were administered on all the patients individually. Administration, Scoring and Interpretation on Rorschach were done according to Exner's Comprehensive System (Exner, 1991, 1993).

For the purpose of study, the age of patients having Alcohol Induced Psychosis and non-patients were studied. The data presented in the above table no. 1 shows that the mean age of patients was 32.6 percent and for non-patients the mean age is 38 percent.

The table presents the socio demographic details **(table-1b)** of patients and non-patients, included variables like sex, education, occupation, religion, marital status, domicile, type of family and monthly income.

In the research study, all of the sample (patients and non-patients) were males. The data mentioned above comprises of the categorized education of patients and non-patients. Less then half (46.7%) of the non-patients were post graduate followed by more than one forth (26.7%) of them were graduate and Intermediate, each. On the other hand, the distribution of patients regarding qualification shows that more than half (53.4 %) of patients were graduate

followed by one third (33.3%) of them were post graduate and only 13.3 percent were intermediate.

The table reveals the occupational status of the patients and non patients. In terms of the occupation, it was found that less than half (46.7%) of the non-patients and more than half (53.3%) of the patients have their family business. Further, table depicts that 40 percent of non-patients and 26.6 percent of patients were not involved in any occupation. However, only 13.3 percent of non-patients and 20 percent of patients were involve in either government jobs or private jobs.

Religion in India is characterized by a diversity of religious beliefs and practices. Data related to religion have been taken from the patients residing in DISHA de-addiction-cum-rehabilitation centre and non-patients from general population. The table indicates that, all the patients and non-patients were belonged to Hindu religion.

The data gathered from the present study given in above table reveals that majority of non-patients (53.3%) and patients (46.7%) were unmarried followed by 40 percent of non-patients and patients, each were married. However, only 6.7 percent of non-patients and 13.3 percent of patients were divorced.

Majority of both non-patients (66.7%) and patients (80%) belonged to an urban background. However, only one third (33.3%) of non-patients and 20 percent of patients belonged to suburban area. Thus, it may clearly note that most of the non-patients and patients had an urban background.

Families in India may be viewed from different view-points and the classifications obtained thereby are indeed varied in nature. Based on this, the above table examines the type of family each patient and non-patient had. Majority, of non-patients (60%) and patients (80%) were having a nuclear family type. However, only 40 percent of non-patient and 20 percent of patients had joint family.

Data pertaining to family income contained in table reveals that 40 percent of non-patient has told that the monthly family income is between Rs. 21,000- Rs. 30,000 on the other hand more than half i.e. 53.3 percent of patients expressed it between Rs. 41,000- Rs. 50,000. Further, table shows that 33.3 percent of non-patients have monthly family income between Rs. 41,000- Rs. 50,000 and 20 percent of patients have told that the monthly family income is between Rs. 21,000- Rs. 30,000 and Rs. 51,000 and above, each. According to 13.3 percent of non-patients the monthly family income is between Rs. 31,000-Rs. 40,000 and only 6.7 percent of patients mentioned the monthly family income between Rs. 10,000 – Rs. 20,000.

The non-patients from general population were interviewed with the help of general health questionnaire to get an idea about their mental status. The data presented in table no. 3 have been taken over the variable such as are they recently lost much sleep over worry, it was reported by 46.7 percent of them that not at all followed by 40 percent no more than usual and only 13.3 percent rather more than usual.

The above table shows that whether they recently felt constantly or not. It was mentioned by 60 percent of them that, no more than usual. One third (33.3%) of them explained that, not at all. However, only 6.7 percent of them said that rather more than usual.

Another variable can be seen from the table that are they recently been able to enjoy day to day activity. 40 percent of them explained that not at all and no more than usual, each. Remaining 20 percent said, rather more than usual.

The variable recently been feeling unhappy and depressed shows that, more than half 53.3 percent of them were explained that no more than usual and 46.7 percent were not at all.

Further, table depicts that are they recently been feeling reasonably happy. Two third i.e. 66.6 percent of them were said that not at all and one third 33.3 percent were, no more than usual. All the patients were interviewed with the help of Clinical Data Sheet to know about their clinical status. It was found that for two third (66.7 %) of patients the age of onset was between 20-30 years. However, for 20 percent, the age of onset was between 10-20 years, followed by 13.3 percent, between 31-40 years as presented in figure no. 1.

The above table no. 4 presents the clinical details of patients. More than half i.e. 53.3 percent of the patients having acute mode of onset, and in 40 percent of them, abrupt mode of onset were found. However, only 6.7 percent were those who were having insidious mode of onset. In terms of the course of illness, majority (73.3 %) of the patients were having episodic course of illness, it was only close to one forth of patients who were having continuous course of illness.

Further, table depicts that all the patients covered under study were alcoholic. Table also shows that there were relapse presents in less then three fourth i.e. 73.3 percent of patients on the other hand in 26.7 percent of patients relapse were not present.

Family history of any significant physical and psychiatric illness and precipitating factor were absent in all the patients. The reason for absence of family history of any significant psychiatric illness might be due to lack of information from their relatives and sometimes it has been left unnoticed by their family members. The precipitation factor is usually not recognized or could not be elicited.

The above table no. 5 shows the data which have been taken from the patients residing in DISHA de-addiction-cum-rehabilitation-centre, Lucknow and non-patients from general population. Both the group has compared on PTI index of Rorschach Inkblot Test. It was found from the study that there was significant difference between the two groups.

The above table depicts that the (PTI Criteria1, X+%<.70 and WDA%<.75) were present in close to two third (66.7 %) of patients. However, It was not present in only one third (33.3 %) of patients. On the other hand the criteria was absent in all the non-patients.

The results on PTI Criteria 2 (X-%>0.29) shows that majority of patients (86.6 %) were fulfilled the criteria, however, it was only 13.3 percents of patients who were not fulfilling the criteria. On the other hand the symptoms were not presented in non-patients.

On PTI Criteria 3 (LVL2>2 and FAB 2>0) 53.3 percent of patients were absent and the criteria were presented in 46.7 percent of patients. On the other hand the non-patients didn't fulfill the criteria 3.

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Table shows that 73.3 percent of patients were presented with the symptoms which fulfill the PTI Criteria 4 (R<17&WSUM6>12 or R>16&WSUM6>16). However, close to one forth of them were not fulfill the criteria. On the other hand the criteria were not presented in non-patients.

Further, table depicts that PTI criteria 5 (M-> or X-%>.40) was presented on 80 percent of patients, however, the criteria was absent in only 20 percent of patients. On the other hand the criteria were not presented in non-patients.

Very few studies have been conducted by researchers, scholars and subject experts in India as well as abroad to analyze the effectiveness of Rorschach's Perceptual Thinking Index in patients with alcohol induced psychosis. However, an overview of those studies has been presented below to have an idea of the relevant condition.

It has been found that The *Perceptual-Thinking Index* was significantly related to criteria assessing Disturbed Thinking and Distorted Perceptions (r ! .39, S ! 17; autogenous or highly unrealistic obsessions, bipolar disorder, high risk for psychosis, and psychotic disorders; higher for borderline and other personality disturbances with distorted thinking vs. nonpatients). (Joni L. Mihura and Gregory J. Meyer, Nicolae Dumitrascu and George Bombel, 2013).

Substances abuse can cause psychosis in non-psychotic persons. The psychosis exists in continuum. It has been found from the study that a substantial proportion of substance users experience psychosis. Use of cocaine, amphetamines, cannabis and alcohol seems to be associated with greater risk for psychosis. Severity and duration of use, age at the time of first use and vulnerability to develop psychosis by virtue of familial, possibly genetic and personality factors seem to be the determinants for the development of psychosis. (Jagadisha Thirthalli and Vivek, 2006).

Persons abusing alcohol may experience psychotic symptoms in relation to several clinical conditions, each involving, possibly, different mechanisms: intoxication, withdrawal, delirium tremens, Wernicke–Korsakoff syndrome, alcohol-induced psychotic disorders and alcoholic dementia. (Johns LC, Cannon M, Singleton N, et al, 2004).

It has been found from the study that patients with psychotic symptoms were significantly more likely to have alcohol-use disorders than patients without psychotic symptoms. (Olfson M, Lewis-Fernandez R, Weissman MM, et al, 2002).

The PTI is a revision of the Rorschach Schizophrenia Index (SCZI), designed to achieve several criteria, including an increase in the diagnostic utility of the Rorschach for assessing thought disorder and to increase clinical focus on the dimensional aspects of impaired perceptions and thoughts (Exner, 2000a; 2000b). The PTI can be reliably scored and it's internally consistent. It can also be employed for classification purposes in ways that are clinically meaningful in the diagnosis of a psychotic disorder. (Hilsenroth, Mark J.; Eudell-Simmons, Erin M.; DeFife, Jared A.; Charnas, Jocelyn W., 2007)

Limitation
The history of psychosis is a variable which affected the result of the study. The severity and treatment history also affected the result of the present study. At the time of Data collection four Subjects were disoriented which affect negatively the results**.**

Suggestions
Sample size can be increased for generalization of the results. The future studies can examine the psychometric properties of the PTI in various clinical populations.

REFERENCES
Asthana, H. S. (1971). Normative data on Rorschach inkblots for Indian sample. Personal Communication.23

Akiskal, H.S. (1983). The bipolar spectrum: New concepts in classification and diagnosis. In L.Grinspoon (Ed.), Psychiatric update: The American Psychiatric Association annualreview (Vol. 2, pp.271- 292).

Acklin, M.W. (1990). Personality dimensions in two types of learning disabled children: A Rorschach study. Journal of Personality Assessment, 54, 67–77.

Acklin, M.W.(1999).Behavioural science foundation of Rorschach Test: Research and clinical applications. Assessment, 6, 319-324.

Acklin, M.W.,McDowell, C.J., &Verschell, M.S. (2000). Inter-observer agreement, Intraobserverreliability, and the Rorschach Comprehensive System. Journal of Personality Assessment,74, 15–47.