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Research Paper

Rorschach's Perceptual Thinking Index as A Diagnostic Aid: Differentiating Schizophrenia and Spiritually Advanced Healthy Individuals

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ABSTRACT

Objective: Schizophrenia, characterised by profound psychotic symptoms is among the most baffling mental disorders. The nuanced resemblance between these psychotic symptoms and spiritual phenomena necessitates precise differentiation to avoid significant repercussions from misdiagnosis. Existing research lacks tools sensitive to such differentiation. While the Rorschach test-based perceptual thinking index (PTI) captures aberrations in thinking and perception in psychosis, its diagnostic potential to distinguish schizophrenia from spiritually advanced healthy individuals remains unexplored. **Method:** This comparative study involved 20 participants per group. Schizophrenia patients, adhering to ICD-10 (DCR) criteria, were purposively sampled from the Institute of Mental Health and Hospital, Agra. Spiritually advanced healthy individuals were convenience-sampled and screened using General Health Questionnaire-12 (GHQ-12) and Spiritual Personality Inventory-Revised (SPI-R). The Rorschach Inkblot Test was administered, and the PTI scores were analysed. **Results:** Statistically and practically significant differences were found between the two cohorts. However, analysis of sex-specific variations within each group yielded insignificant results. **Conclusion:** Results indicate that PTI holds diagnostic potential for distinguishing individuals with schizophrenia from spiritually advanced healthy individuals, regardless of the sex of the respondents; putatively reducing the risk of misdiagnosing a spiritual emergency as a psychotic episode, and aiding clinicians in effective case management.

Keywords: *Rorschach Inkblot Test, Perceptual Thinking Index, Schizophrenia, psychotic symptoms, spiritually advanced, diagnostic potential*

Schizophrenia is characterised by profound psychotic symptoms, cognitive dysfunction, and substantial psychosocial impairment, making it one of the most perplexing mental disorders (Semple & Smyth, 2013; Comer & Comer, 2019; Andreason, 2020). The disorder disrupts thought, perception, emotions, and behaviour, and its delineation remains controversial. The psychotic symptoms include hallucinations and delusions, which indicate a person's confusion regarding the blurred distinctions between themselves and the external world, signifying the "disruption of the ego boundaries". Hallucinations involve perceptions without external stimuli and resemble authentic perceptions; delusions are strongly held

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false beliefs that run counter to an individual's educational and cultural knowledge (Andreason, 2020).

Psychological tools, particularly the Rorschach technique, aid diagnostic decisions (Dubey et al., 1981; Singer & Brabender, 1993). The Rorschach Comprehensive System (CS) introduced the Schizophrenia Index (SCZI; Exner, 1991 & 1993), later revised to the Perceptual Thinking Index (PTI; Exner, 1993), offering psychometric improvements and conceptual refinements is sensitive to tap into psychosis. It comprises nine variables related to perception and thinking, grouped into five criteria (Exner & Erdberg, 2005):

- XA% < 0.70 and WDA% < 0.75: XA% represents suitable responses without disorganised speech; WDA% indicates the proper use of entire (W) and common detail (D) areas.
- X−% > 0.29: The total of disorganised speech answers divided by the total number of answers.
- LVL2 > 2 and FAB2 > 0: LVL2 indicates marked cognitive disruption; FAB2 signifies an implausible relationship between two objects.
- R < 17 and WSUM6 > 12 or R > 16 and WSUM6 > 17: WSUM6 is the weighted sum of six cognitive special scores, indicating aberrant cognitive functioning.
- M− > 1 or X−% > 0.40: M- represents human movement responses with poor form quality.

The PTI assesses difficulties in reality testing and ideational clarity and is dimensional in nature (Exner & Erdberg, 2005). Research suggests that a PTI score of three or more can distinguish individuals with psychosis from those without (Smith et al., 2001; Dao & Prevatt, 2006; Dao et al., 2008; Mario et al., 2015). This study considers PTI scores on a continuum, adhering to its dimensional nature.

That being said, spiritual phenomena often resemble psychotic symptoms, complicating differentiation. This complexity is evident in the literature, which, although sparse, provides intriguing insights grounded in cultural context. Silverman (1967) drew parallels between acute schizophrenic behaviours in Western cultures and shamanistic practices in aboriginal cultures, noting the role of cultural acceptance. Buckley (1981) explored autobiographical narratives of mystical experiences and schizophrenia, highlighting cognitive disruptions absent in mystical experiences but present in schizophrenia.

Stanislav Grof's book titled, "Beyond the Mind" (1985) delved into non-ordinary states of consciousness, suggesting that while psychosis is viewed as pathological, spiritual experiences can be transformative. Grof advocated for a broader understanding of consciousness. Greenberg et al. (1992) examined the experiences of four young men exploring Jewish mysticism, who subsequently developed psychotic symptoms, highlighting the importance of cultural context and personal history in diagnosis.

Fulford and Jackson (1997) further underscored the difficulty in distinguishing spiritual experiences from psychosis using standard diagnostic tools, emphasising the need for a nuanced approach in medical contexts. St. Arnaud and Cormier (2017) proposed a developmental psychopathology model to differentiate between psychosis and spiritual emergencies, stressing sensitive navigation to avoid misdiagnosis.

In a comprehensive study, Kovess-Masfety et al. (2018) found no significant correlation between religious affiliation and psychotic experiences overall. However, within religious groups, increased religiosity was associated with higher odds of experiencing psychosis. Rosmarin et al. (2018) critiqued this study, arguing its conclusions were not entirely warranted.

Most studies used qualitative methods and focused on Jewish or Christian populations, with none examining the Indian context. Despite surface similarities, subtle differences between spiritual experiences and psychotic symptoms are essential for accurate diagnosis. Recognizing the cultural and personal context of these experiences can aid in distinguishing between transformative spiritual phenomena and pathological psychosis but is an arduous endeavour.

In "The Innate Capacity: Mysticism, Psychology, and Philosophy," edited by R. Forman, Jonte-Pace's chapter provides a thorough analysis of various studies delving into the employment of the Rorschach as a means to investigate spirituality, religion, psychological processes, and cognition. The chapter intricately outlined the perceptual and cognitive process of consciousness as experienced by the spiritually advanced, via exploring their Rorschach profiles, thereby shedding light on the nuanced dynamics involved, and differentiating the non-ordinary states of consciousness from psychopathology, along with exploring the role of cultural and linguistic aspects in lending to the manifestation of such states (Jonte-Pace, 1998, as cited in Forman, 1998). The three pivotal studies discussed in Jonte-Pace's chapter comprised the works of Spiegelberg (1952), Boyer and Klopfer (1961, 1964, 1989), and Brown and Engler (1980,1984); Spiegelberg's 1950s study on an Indian Vedantic master, Swami Sivananda, Boyer & Klopfers 1960s study on Apache shamans and *pseudo-shamans*, Brown & Engler's 1980s complex study of proficient Buddhist meditators at various phases of advancement within the Vipassana tradition of mindfulness meditation. She emphasised how spiritual practices can influence one's perception and responses to psychological assessments like the Rorschach test, further elucidating the potential interplay between mystic/spiritual experiences and the ways such individuals interpreted and interacted with the ambiguous stimuli, as presented in the inkblot test. The analysis of the works highlighted in the text underscored that integrative approach and culturally embedded content discerned in the responses of the spiritual masters was seemingly obscure in the Rorschach literature, making it comparable to a psychopathological profile; the responses were more impersonal and culturally anchored than typical Rorschach norms; were integrated into a systematic whole across all the ten cards; a presence of more chiaroscuro, shading, amorphous form, and inanimate movement responses. However, it is worth noting that on close qualitative analysis of the responses, it was asserted that albeit the responses may seem akin to psychopathology, in verity, they were not indicative of ego disintegration but were reflective of the spiritually advanceds' mastery of the nuance and the knowledge of the non-ordinary states of consciousness, mediated the process of *perpetual deautomatization* (Jonte-Pace, 1998)

Overall, there is a significant lack of literature on the Rorschach Inkblot Test and spirituality. Only a few seminal works suggest superficial similarities between the Rorschach profiles of spiritually advanced individuals and those with psychopathology. However, qualitative investigations propose distinct differences in their ethos.

Existing literature provides valuable insights into the Rorschach PTI's role in distinguishing between psychotic and non-psychotic individuals. However, a critical gap exists in understanding how the PTI responds to non-ordinary states of consciousness in healthy, spiritually advanced individuals. These states are often termed "psychotic experiences/ symptoms" or "spiritual experiences" based on cultural and linguistic contexts. Limited studies highlight the parallels between psychotic and spiritual phenomena, raising concerns about misdiagnosis, especially within the culturally diverse Indian milieu.

The scarcity of research on the RIT's use in assessing spirituality underscores the need for a comprehensive investigation. This study aims to bridge these gaps by exploring the diagnostic potential of the PTI in differentiating between individuals with schizophrenia and healthy spiritually advanced individuals. By examining differences in Rorschach profiles and focusing on overall PTI scores, the study seeks to evaluate the PTI's efficacy in distinguishing between psychopathological and non-psychopathological states.

Aim of the study

The aim of this study is to compare the Perceptual Thinking Index amongst patients with schizophrenia and healthy individuals who are spiritually advanced, assessing the diagnostic potential of the Rorschach test-based PTI.

Objectives of the study

To achieve the aim, the following objectives were persuaded;

1. To assess and compare the Perceptual Thinking Index scores between patients diagnosed with schizophrenia and healthy individuals identified as spiritually advanced.
2. To investigate and compare the sex-specific variations in Perceptual Thinking Index scores within the two distinct groups: patients diagnosed with schizophrenia and healthy spiritually advanced individuals.

Hypotheses

- *For objective 1:* H_{01}: There is no significant difference in the Perceptual Thinking Index scores between patients diagnosed with schizophrenia and healthy individuals identified as spiritually advanced.
- *For objective 2:* H_{02}: There is no significant difference in PTI scores between male and female patients with schizophrenia.
- H_{03}: There is no significant difference in PTI scores between male and female healthy spiritually advanced individuals.

MATERIALS AND METHOD

Research tools

- General Health Questionnaire-12 (GHQ-12): The GHQ-12 is a condensed form of Goldberg's original 60-item instrument from the 1970s. It comprises 12 items and serves as a screening tool for general psychological distress. Anjara et al. (2020) reported the reliability of the bi-modal scoring method to be 0.84. Its validity has been affirmed in various studies (Kashyap & Singh, 2017).
- Spiritual Personality Inventory-Revised (SPI-R): This 28-item bilingual scale, developed by Husain and Anas in 2018, assesses spiritual personality on six dimensions: spiritual virtues, positive outlook in life, spiritual discipline, goodness, spiritual services, and moral rectitude. Percentile norms distinguish between different

levels of spiritual advancement. The Cronbach's alpha reliability of this version is 0.893, indicating high content validity verified by experts. Principal component factor analysis explained 52.28% of the variance, evidencing the scale's factorial validity (Anas & Husain, 2018).

- Rorschach Inkblot Test: The Rorschach Inkblot Test consists of 10 inkblots (5 achromatic, 5 chromatic) designed to assess perceptual processes and evaluate personality and emotional functioning. Numerous studies have examined the psychometric properties of the Rorschach Comprehensive System, finding satisfactory results in test–retest reliability (Gronnerod, 2003), interrater reliability (Archer & Krishnamurthy, 1997; Exner, 1993; McDowell & Acklin, 1996; Meyer et al., 2002), convergent validity (Archer & Krishnamurthy, 1997; Greenwald, 1997), and discriminant validity (Ball et al., 1991). The PTI, embedded in the Rorschach test, is a widely validated instrument across cultures, capable of differentiating individuals impacted by psychosis from their non-psychotic psychiatric or healthy counterparts (Dao & Prevatt, 2006; Ilonen et al., 2010; Mihura et al., 2013; Benedik et al., 2013).

Sampling procedure

The chosen sampling technique for generating the two samples, one from the clinical population and the other from the general/non-clinical population, was non-probability sampling. Participants from the clinical population were selected from the inpatient and outpatient facilities of the Institute of Mental Health and Hospital, Agra, with a diagnosis of schizophrenia according to ICD-10 (DCR). Those from the general population underwent a two-step screening procedure involving the GHQ-12 Questionnaire and the Spiritual Personality Inventory-Revised Questionnaire. In this context, the specific sampling techniques employed were:

- Clinical Population: Purposive sampling technique
- Non-clinical Population: Convenience sampling technique

Both samples consisted of males and females, with each sample comprising 20 individuals. The inclusion and exclusion criteria for the samples drawn from the two populations are detailed below;

1. Inclusion and exclusion criteria for the clinical population:

A. Inclusion Criteria

i) Confirmed diagnosis of schizophrenia as per ICD-10 (DCR).
ii) Ages between 18 and 50.
iii) Minimum educational attainment of at least eighth grade.
iv) Proficiency in Hindi and/or English to comprehend instructions.

B. Exclusion Criteria

i) Presence of a comorbid psychiatric condition, including substance use disorders (SUDS); except nicotine use disorder.
ii) History of fits or any other organic condition.
iii) Fewer than 14 responses on the Rorschach protocol.

2. Inclusion and exclusion criteria for the non-clinical population:

a. Inclusion Criteria

i) Ages between 18 and 50.
ii) Minimum educational attainment of at least eighth grade.
iii) Proficiency in Hindi and/or English to comprehend instructions.
iv) GHQ-12 score of less than or equal to 2.
v) Score in the 90th percentile on the SPI-R.

b. Exclusion Criteria

i) History of a diagnosis of psychotic, organic and/or SUDS.
ii) Fewer than 14 responses on the Rorschach protocol.

Procedure

Clearance from the Institutional Review Board was obtained, and the study protocol was undertaken. Samples were drawn from two distinct populations, adhering to the respective inclusion and exclusion criteria. Informed consent was sought from potential participants or their legally acceptable representatives (LAR). Note, the GHQ-12 was scored using the bimodal scoring system to screen probable participants. The Rorschach Inkblot Test was administered to participants from both populations in a congenial environment. Protocols with fewer than 14 responses were discarded. Data collection culminated in the generation of each participant's Rorschach profile according to the standard comprehensive system method, specifically calculating the PTI Scale. Appropriate statistical procedures were then employed to test the hypotheses and produce the study results.

Ethical considerations

Research entails gathering information from individuals, focusing on people, as emphasised by Punch (2014). Therefore, it is crucial for researchers to safeguard their participants, establish trust, uphold research credibility, prevent misconduct and impropriety that could impact their organisations, and address emerging and complex challenges (Israel & Hay, 2006). Ethical concerns were addressed immediately whenever they arose, prioritising issues such as consent, privacy, and the health of participants. Informed consent was obtained from potential participants through the completion of the respective form. For those in the clinical population, surrogate consent was obtained from the participants' LAR due to the perceived incompetence of the diagnosed individuals. Participants were informed of their right to withdraw from the study at any time at their discretion. Confidentiality was ensured for both data and participant anonymity. Additionally, all study data, including questionnaire responses and Rorschach scores, will be destroyed after a reasonable period of time.

Data analysis

Data analyses were conducted using IBM SPSS (version 29.0.2). Descriptive statistics were computed for both sociodemographic characteristics and the PTI total score variable. Skewness and kurtosis coefficients were calculated to assess the normality of the distributions, guiding the selection of appropriate statistical procedures for hypothesis testing. The Mann-Whitney U test was employed to test the hypotheses. Additionally, effect sizes were computed to provide insights into the practical significance of the results. Chi-Square (and Fisher's Exact Test) statistics were also computed to assess the homogeneity of categorical sociodemographic characteristics, determining whether any of these variables belonged to the same population.

RESULTS

Table 1. Descriptive Statistics of Age by Group: Patients with Schizophrenia and Healthy Spiritually Advanced Individuals

	Age				
	Maximum	Minimum	Range	Mean	Standard Deviation
Patients with Schizophrenia	49.00	22.00	27.00	33.85	8.52
Healthy Spiritually Advanced Individuals	50.00	20.00	30.00	36.10	9.54

For the clinical group with schizophrenia, ages ranged from 22 to 49 (Mean = 33.85, SD = 8.52). The spiritually advanced healthy group had ages ranging from 20 to 50 (Mean = 36.10, SD = 9.54). Descriptive statistics of socio-demographic variables of age are detailed in Table 1.

Table 2. Frequency Distribution of Socio-Demographic Characteristics by Group: Patients with Schizophrenia and Healthy Spiritually Advanced Individuals

		Group			
		Patients with Schizophrenia		Healthy Spiritually Advanced Individuals	
		Count	%	Count	%
Sex	Male	13	65.0%	12	60.0%
	Female	7	35.0%	8	40.0%
Educational Qualification	Middle School	4	20.0%	4	20.0%
	High School	5	25.0%	3	15.0%
	Intermediate	3	15.0%	3	15.0%
	Graduation	6	30.0%	6	30.0%
	Post Graduation & Above	2	10.0%	4	20.0%
Employment Status	Employed	7	35.0%	8	40.0%
	Unemployed	6	30.0%	4	20.0%
	Student	1	5.0%	3	15.0%
	Not in the Labour Force	6	30.0%	5	25.0%
Marital Status	Married	8	40.0%	12	60.0%
	Unmarried	9	45.0%	7	35.0%
	Separated	2	10.0%	1	5.0%
	Widowed	1	5.0%	0	0.0%
Religion	Hinduism	16	80.0%	13	65.0%
	Islam	4	20.0%	7	35.0%
Domicile	Urban	6	30.0%	9	45.0%
	Suburban	7	35.0%	7	35.0%
	Rural	7	35.0%	4	20.0%

The socio-demographic characteristics of participants, detailed in Table 2, reveal that in the clinical group (schizophrenia patients), 65% were male and 35% female, while in the non-

clinical group (spiritually advanced healthy individuals), 60% were male and 40% female. In terms of educational qualification, the clinical group included middle school (20%), high school (25%), intermediate (15%), graduation (30%), and post-graduation (10%). In contrast, the non-clinical group exhibited middle school (20%), high school (15%), intermediate (15%), graduation (30%), and post-graduation (20%). Employment status varied, with the clinical group having 35% employed, 30% unemployed, 5% students, and 30% not in the labor force, whereas the non-clinical group had 40% employed, 20% unemployed, 15% students, and 25% not in the labor force. Marital status in the clinical group was 40% married, 45% unmarried, 10% separated, and 5% widowed, compared to 60% married, 35% unmarried, 5% separated, and none widowed in the non-clinical group. Religious affiliations showed that 80% of the clinical group adhered to Hinduism and 20% to Islam, while 65% of the non-clinical group adhered to Hinduism and 35% to Islam. Regarding domicile, the clinical group was 30% urban, 35% suburban, and 35% rural, while the non-clinical group was 45% urban, 35% suburban, and 20% rural.

Table 3. Descriptive Statistics for Perceptual Thinking Index (PTI) by Group: Patients with Schizophrenia and Healthy Spiritually Advanced Individuals

		N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
Group		Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Patients with Schizophrenia	PTI	20	0	5	2.55	1.504	-.158	.512	-.805	.992
Healthy Spiritually Advanced Individuals	PTI	20	0	4	1.45	1.356	.328	.512	-1.350	.992

Descriptive statistics of the PTI for the two groups are presented in Table 3. In the schizophrenia group, PTI scores ranged from 0 to 5 (Mean = 2.55, SD = 1.504). In the spiritually advanced group, scores ranged from 0 to 4 (Mean = 1.45, SD = 1.356). For the schizophrenia group, kurtosis was -1.504 and skewness was -0.805, suggesting clustering of scores towards the high end (near 5). For the spiritually advanced group, kurtosis was 0.328 and skewness was -1.35, indicating clustering towards the low end (near 0), suggesting deviations from normality in both groups.

Table 4. Mann-Whitney U Test Results for Perceptual Thinking Index: Comparison between Patients with Schizophrenia and Healthy Spiritually Advanced Individuals

	Group	
	Patients with Schizophrenia	**Healthy Spiritually Advanced Individuals**
Median	3	1
Mean Rank	24.60	16.40
Mann-Whitney U	118	
Standardised Test Statistic (z)	-2.274	
Exact Sig. (2 sided-test)	0.026*	

Note. * $p < 0.05$

Thus, the Mann-Whitney U Test was employed for hypothesis testing. As detailed in Table 4, a significant difference in PTI scores was found between the schizophrenia group (Md = 3, n = 20) and the spiritually advanced group (Md = 1, n = 20), U = 118, z = -2.274, p = 0.026, r = -0.36. The null hypothesis was rejected, indicating higher PTI scores for the schizophrenia group. The effect size was medium, suggesting a meaningful practical difference.

Table 5. Mann-Whitney U Test Results for Sex-Specific Variations in Perceptual Thinking Index Scores: Patients with Schizophrenia Group

	Sex	
	Male	**Female**
N	13	7
Median	3	2
Mean Rank	11.42	8.79
Mann-Whitney U	33.500	
Standardised Test Statistic (z)	- 0.978	
Exact Sig. (2 sided-test)	0.351	

Note. * $p < 0.05$

Table 6. Mann-Whitney U Test Results for Sex-Specific Variations in Perceptual Thinking Index Scores: Healthy Spiritually Advanced Individuals

	Sex	
	Male	**Female**
N	12	8
Median	1	1.50
Mean Rank	10.13	11.06
Mann-Whitney U	52.500	
Standardised Test Statistic (z)	0.360	
Exact Sig. (2 sided-test)	0.734	

Note. * $p < 0.05$

No statistically significant sex-specific variations were found within either group, thereby accepting the respective null hypotheses. For the schizophrenia group, male participants had a median PTI score of 3 and female participants 2 (Mann-Whitney U = 33.5, z = -0.978, p = 0.351), as detailed in Table 5. For the spiritually advanced group, male participants had a median score of 1 and female participants 1.50 (Mann-Whitney U = 52.5, z = 0.360, p = 0.734), as shown in Table 6.

Additionally, the computed Chi-Square (and Fisher's Exact Test) statistics indicated non-significance, suggesting no significant differences between the two groups with respect to the socio-demographic variables. This implies that there is no confounding effect of these variables on the two groups under investigation (refer to the supplemental data for detailed statistics).

DISCUSSION

The research at the Institute of Mental Health and Hospital, Agra, involved two distinct populations using purposive and convenience sampling. The clinical group comprised 20 individuals diagnosed with schizophrenia (Mean age = 33.85 years; SD = 8.52; 65% male, 35% female). The non-clinical group comprised 20 spiritually advanced healthy individuals (Mean age = 36.10 years; SD = 9.54; 60% male, 40% female) who underwent a two-stage screening process before the RIT.

Descriptive statistics revealed notable distinctions across multiple socio-demographic variables. In the clinical group, most participants were graduates (30%), employed (35%), unmarried (45%), identified as Hindu (80%), and from suburban and urban areas (35% each). In the non-clinical group, most participants were graduates (30%), employed (40%), married (60%), adhered to Hinduism (65%), and resided in urban areas (45%).

PTI scores differed significantly between the groups. The schizophrenia group had scores ranging from 0 to 5 (Mean = 2.55, SD = 1.504), while the spiritually advanced group ranged from 0 to 4 (Mean = 1.45, SD = 1.356). The Mann-Whitney U test results (U = 118, z = -

2.274, p = 0.026) indicated a significant difference, suggesting the PTI can discriminate between individuals with schizophrenia and spiritually advanced healthy individuals. The medium effect size (r = -0.36) underscores the practical relevance of this finding. Thus, inferring that the PTI, as an integral component within the Rorschach, exhibits the capacity to discriminate between individuals diagnosed with schizophrenia (psychosis) and healthy individuals, even those who are spiritually advanced thereby being more susceptible to experience non-ordinary states of consciousness (which from a nominal vantage point hold semblance to the psychotic experiences).

While the existing literature lacks direct comparisons between these specific groups, it suggests PTI's efficacy in distinguishing psychotic individuals from those with mood disorders, personality disorders, or non-psychotic conditions. Studies by Dao and Prevatt (2006), Hilsenroth et al. (2007), and Dey et al. (2018) support PTI's discriminative power in various clinical contexts. Traditionally, many studies treat PTI as a categorical variable, unlike our approach. The statistically significant difference identified in our research highlights PTI's effectiveness in discriminating between these distinct groups, indicating that thinking and perceptual processes are more disrupted in schizophrenia patients.

That being said, the findings as highlighted in the chapter by Jonte-Pace, featured in the comprehensive book titled, "*The Innate Capacity: Mysticism, Psychology, and Philosophy*" edited by R. Forman (1997), drawn from the extensive analyses of various studies exploring the use of the Rorschach as a tool for investigating spirituality, religion, psychological processes, and cognition, suggested that albeit the responses from spiritually advanced individuals were initially unfamiliar and perceived as akin to a psychopathological profile indicative of ego disintegration, on close qualitative analysis revealed that these responses were more accurately reflective of the process of perceptual deautomatization. In this light, while our study did not delve into the qualitative aspects of the profiles, it can be said that the findings align with Jonte-Pace's insights and lend support to the PTI as a modern, robust discriminator between the two populations.

The medium effect size (r = -0.36) highlights a meaningful distinction in PTI scores, reinforcing their significance beyond statistical measures and emphasising their practical relevance in both clinical and theoretical contexts. These differences provide valuable insights into the cognitive and perceptual patterns associated with schizophrenia, underscoring the clinical importance of this metric. The medium effect size also suggests that these findings may be generalizable to a broader population of individuals with schizophrenia and healthy spiritually advanced individuals, positioning PTI as a discriminator between the two groups.

Regarding sex-specific variations, the null hypotheses were upheld. No statistically significant differences were found between male and female participants in either group. In the schizophrenia group, PTI scores for males (Md = 3, n = 13) and females (Md = 2, n = 7) showed a non-significant p-value (0.351) and a small effect size (r = -0.22). In the spiritually advanced group, males (Md = 1, n = 12) and females (Md = 1.50, n = 8) also showed a non-significant p-value (0.734) and a very small effect size (r = 0.08).

These findings suggest minimal real-world distinctions in PTI performance based on sex, indicating that PTI effectively captures deviations in thinking and perception uniformly, irrespective of the respondent's sex. This strengthens the robustness of PTI in differentiating

between the two populations—schizophrenia and healthy, spiritually advanced individuals—regardless of sex.

Limitations

In evaluating the results of this study, several limitations must be acknowledged. Firstly, the use of purposive and convenience sampling introduces selection bias, limiting the generalizability of findings. Secondly, the small sample size, despite a moderate effect size, compromises statistical power. Thirdly, the self-report questionnaires (GHQ-12 and SPI-R) used in screening spiritually advanced healthy individuals may introduce response bias. Participants' self-awareness during screening could affect the objectivity of selection. Lastly, owing to the limited participant pool, the study did not exclude individuals from either population with a high lambda (greater than 1), indicative of constricted Rorschach protocols, indicating defensive response tendencies. This inclusion of constricted protocols can introduce a potential confound in the results. These limitations necessitate caution in interpreting the findings and highlight areas for methodological improvement in future research.

Implications

Exploring the far-reaching implications of this research involves delving into potential applications and contributions emerging from our investigation into the Rorschach's Perceptual Thinking Index concerning schizophrenia and spirituality. The outcomes of this study carry implications that extend beyond academic inquiry into clinical practice.

Theoretically, this study fills a critical gap in the literature regarding the use of the Rorschach Inkblot Test in spiritual populations. It highlights pathways for future research on Rorschach's PTI, spirituality, and psychosis.

Pragmatically, this study extends the applicability of the PTI demonstrating its potential as a diagnostic tool to distinguish between manifestations of psychosis and experiences associated with mystical/spiritual phenomena, preventing misdiagnosis and reducing resource strain. This is particularly beneficial in culturally diverse settings like India, where cultural factors may influence mental health manifestations.

In this vein, this may contribute to the increased and appropriate utilisation of specific diagnostic categories, offering more accurate diagnoses, particularly in cases of spiritual emergencies. For instance, the diagnosis *"Religious and Spiritual Problem" (V62.89)* in accordance with DSM-5, and *"Other Specified Problems Related to Psychosocial Circumstances" (Z65.8)* as per ICD-10, could be more accurately applied. This would, in turn, impose limitations on clinicians' tendencies to label individuals, thereby reducing the stigma associated with both conditions. Moreover, precise diagnoses help plan effective management trajectories, ensuring sensitive handling of conditions.

Overall, these findings underscore the PTI's significance in both clinical and theoretical contexts, enhancing our understanding of the interplay between perception, thinking, spirituality, and psychological well-being.

Recommendations for future research

Several avenues for future research can deepen understanding and contribute to the evolving body of knowledge. Firstly, broadening the participant demographic, especially in terms of

religion and cultural backgrounds, will enhance external validity and provide a richer understanding of culturally embedded variables. Secondly, including "spiritual masters" in the sample can offer a more nuanced understanding of aberrations in thinking and perception, given their propensity for spiritual experiences. Note, as per existing literature, spiritual masters are more prone to experience spiritual phenomena. This will further validate the PTI's role as a discriminator. Thirdly, integrating qualitative analyses of Rorschach responses (e.g., content and thematic analyses) alongside quantitative measures can capture nuances that statistical measures alone may overlook, linking subjective and objective interpretations. These recommendations aim to propel future research, enhancing comprehension of the relationships between the Rorschach's PTI, schizophrenia, and spirituality.

CONCLUSION

This study highlights the pivotal findings regarding Rorschach's PTI and its capacity to distinguish between patients with schizophrenia and spiritually advanced healthy individuals. The substantial and meaningful differences observed in the PTI scores underscore its diagnostic potential. Despite methodological limitations, the study fills a critical gap in the literature, particularly in the Indian context, and extends the practical applicability of the PTI into spiritual/transpersonal psychology. The robust recommendations for future research and the outlined implications emphasise the importance of these findings, providing a clear direction for further exploration into the intricate relationships between these constructs.

Ethics statement

Ethical approval was obtained from the ethics committee at the Institute of Mental Health and Hospital (Ref. no. IEC/IMHH/N72/V1). Informed consent/surrogate consent along with consent to publish was obtained from the participants/LARs.

Data availability statement

The data that supports the findings of this study along with the supplementary data are openly available in Mendeley Data at 10.17632/nb4yzm6dp7.1.

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Conflict of Interest
There are no conflicts of interest.

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