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Original Article

Demographic and Clinical Profile of Non-Addicted Schizophrenia Patients (NASH) in Lahore, Pakistan

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ABSTRACT

Background: Schizophrenia is a debilitating psychiatric disorder with diverse etiological models and clinical subtypes. While cannabis use is a recognized environmental trigger, limited research exists on schizophrenia in non-addicted individuals, particularly within culturally diverse, resource-constrained settings. Understanding demographic distributions, subtype prevalence, and patient-perceived causes in such populations is crucial for culturally informed care. Objective: To determine the socio-demographic profile, DSM-IV-based clinical subtypes, and explanatory beliefs regarding schizophrenia among non-cannabis addicted patients in Lahore, Pakistan. Methods: A cross-sectional study was conducted from January to December 2021 at the Punjab Institute of Mental Health and Blessings Rehabilitation Centre in Lahore. A total of 81 patients diagnosed with schizophrenia per DSM-IV criteria and with no history of cannabis use were enrolled. Data were collected through a structured three-part questionnaire assessing demographic characteristics, subtype classification, and causal attributions using a culturally adapted clinical vignette. Descriptive and inferential statistics were analyzed using SPSS. Results: The majority of patients were aged 31–44 years (43.2%) with a slight female predominance (51.9%). Catatonic subtype was most frequent (34.6%). Mental illness (81.5%) and religious beliefs (35.8%) were the most commonly perceived causes. Family history was reported in 24.7% of cases, with no significant association across subtypes. Conclusion: Non-addicted schizophrenia patients in this setting exhibited distinct demographic patterns and culturally shaped causal beliefs, highlighting the need for personalized, culturally sensitive psychiatric interventions that address both biomedical and sociocultural frameworks.

Keywords: Schizophrenia, Non-Cannabis, Subtypes, Cultural Beliefs, DSM-IV, Mental Health, Pakistan.

INTRODUCTION

Schizophrenia is a complex psychiatric disorder marked by disordered thought processes, perceptual abnormalities, emotional dysfunction, and social withdrawal. The global lifetime prevalence ranges from 0.3% to 0.6%, with considerable variability across populations and healthcare systems (1). Its clinical presentation includes symptoms such as hallucinations, delusions, psychomotor disturbances, and cognitive impairments, frequently leading to long-term disability (2). The disorder is stratified into various subtypes—paranoid, disorganized, catatonic, and residual—according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria, which remains a cornerstone for diagnosis in low-resource settings where newer classification systems are less integrated into practice (3). Despite the wide-reaching impact of schizophrenia on public health, especially in developing countries, significant gaps remain in understanding subtype-specific demographics and perceptions among patients without substance use disorders.

Cannabis use is widely acknowledged as a potent environmental risk factor that exacerbates or accelerates the onset of schizophrenia, often leading to more severe clinical trajectories and poorer treatment outcomes (4,5). Numerous studies, including meta-analyses, have highlighted the strong correlation between cannabis and psychosis, complicating the interpretation of schizophrenia's etiology in users (6). However, this has resulted in a skewed research focus, inadvertently marginalizing the study of schizophrenia in non-addicted populations. This underrepresentation presents a critical gap in both clinical and epidemiological literature, particularly in the South Asian region, where sociocultural and religious constructs significantly shape illness perceptions and healthcare-seeking behaviors (7).

The few studies from Pakistan that have explored psychiatric illness have typically amalgamated addicted and non-addicted individuals or failed to isolate cannabis as a confounding factor, thereby limiting the generalizability of findings to the broader schizophrenia population (8). Furthermore, research on schizophrenia in South Asia has mostly emphasized clinical symptomatology and prevalence trends without adequately incorporating patients' explanatory models of illness—an oversight that hinders the development of culturally sensitive

interventions (9). Understanding how individuals perceive the causes of their mental illness—whether biological, psychosocial, or spiritual—is fundamental to designing effective patient-centered care and public mental health strategies (10). In settings like Pakistan, where mental illness is often attributed to supernatural causes or religious interpretations, this understanding becomes even more crucial (11). Yet, the literature remains sparse on the demographic and clinical characterization of schizophrenia patients who have no history of substance use, and even fewer studies explore their illness beliefs and subtype classification in tandem. This study aims to address this notable deficiency by focusing specifically on non-cannabis addicted individuals diagnosed with schizophrenia. By eliminating cannabis as a confounding variable, we aim to provide a clearer picture of the demographic distributions, clinical subtypes, and causal attributions among these patients. The uniqueness of this research lies in its tri-pronged approach: characterizing socio-demographic and clinical features, identifying schizophrenia subtypes per DSM-IV, and exploring patients' own perceptions of disease etiology through a culturally adapted case-scenario methodology. The objective of this study is threefold: (i) to determine the distribution of non-addicted schizophrenia patients (NASH) in terms of sex, age, ethnicity, education level, religious orientation, marital status, employment, and family system; (ii) to classify these patients into subtypes using DSM-IV criteria; and (iii) to explore their beliefs about the causes of their illness using structured scenario-based interviews.

MATERIAL AND METHODS

This cross-sectional observational study was conducted to investigate the demographic, clinical, and perceptual profiles of non-cannabis addicted schizophrenia patients (NASH) using standardized diagnostic criteria and culturally adapted tools. The rationale for employing a cross-sectional design was to capture a snapshot of the socio-demographic characteristics, subtype classification, and explanatory illness beliefs within this specific population, enabling a comprehensive analysis unconfounded by active substance use. The study was carried out at two prominent psychiatric care facilities in Lahore, Pakistan: the Punjab Institute of Mental Health (PIMH) and Blessings Drug Rehabilitation Centre. Data collection was conducted over a one-year period, from January 2021 to December 2021.

Participants were selected based on clearly defined eligibility criteria. Inclusion criteria consisted of individuals aged 17 years and above who met the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) operational criteria for schizophrenia and had no documented history or clinical evidence of cannabis use. Both male and female patients were eligible irrespective of duration of illness or previous psychiatric admissions. Exclusion criteria included any self-reported or clinically verified use of cannabis or other psychoactive substances, comorbid neurological conditions, or unwillingness or inability to provide informed consent. Diagnosis was confirmed by consulting psychiatrists at both centers using a structured clinical interview aligned with DSM-IV guidelines. Participant recruitment followed a consecutive sampling approach. Eligible individuals were identified by attending clinicians and referred to the research team for enrolment. Written informed consent was obtained either directly from the patients or, in cases of impaired insight, from their primary caregivers, in accordance with ethical research practice. All participants were assured of confidentiality, voluntary participation, and the right to withdraw at any stage without consequence to their treatment.

Data collection was carried out using a three-part structured questionnaire developed specifically for this study. The first section captured demographic data including age, sex, marital status, educational attainment, employment status, family system, religion, religious inclination, and ethnicity. The second section comprised a DSM-IV-based diagnostic checklist used to classify patients into four schizophrenia subtypes: paranoid, disorganized, catatonic, and residual. Clinical subtype determination was made by cross-verifying clinical notes, structured interviews, and psychiatric evaluations. The third section involved presenting a culturally tailored case vignette to patients to elicit their beliefs regarding the etiology of schizophrenia. This indirect technique was chosen to reduce response bias and social desirability, enabling participants to express views without direct self-referencing.

Variables were operationally defined to ensure clarity and reproducibility. Religious inclination was categorized as not at all, somewhat, moderately, or very religious, based on self-report. The family system was classified as nuclear, joint, or extended according to living arrangements. Employment status included employed, unemployed, student, housewife, or self-employed. Subtypes of schizophrenia were determined strictly per DSM-IV criteria based on predominant symptoms. Perceptions of illness causes were grouped into biological, psychosocial, superstitious, and religious categories, based on participant responses to the vignette. To minimize selection and recall bias, eligibility assessments were triangulated using clinical records, caregiver interviews, and patient self-report. The scenario-based question format aimed to reduce direct attribution bias. Although random sampling was not feasible in this clinical setting, using two distinct recruitment sites helped improve generalizability within the urban population of Lahore.

The sample size of 81 participants was determined based on feasibility and the available clinical population meeting the inclusion criteria during the data collection window. Given the exploratory nature of the study, formal sample size power calculations were not conducted; however, the sample allowed for meaningful descriptive analysis and subgroup comparisons. Data were entered and analyzed using IBM SPSS Statistics version 26. Descriptive statistics were computed for all categorical variables as frequencies and percentages. Confidence intervals (CIs) at the 95% level were calculated for key findings to account for variability and support interpretability. Subgroup analyses were conducted to examine associations between schizophrenia subtypes and demographic characteristics. Missing data were minimal and handled by pairwise deletion in relevant analyses. No imputation was performed due to the low proportion of missing values.

The study protocol was approved by the Institutional Review Board of the University of Management and Technology, Lahore, in accordance with the ethical principles of the Declaration of Helsinki. All procedures were designed to maintain participant confidentiality and data integrity. Data collection instruments were pre-tested for clarity and consistency, and all team members received standardized training in questionnaire administration and ethical conduct. Data entry was double-checked by two independent researchers to ensure reproducibility and accuracy, and all electronic records were password-protected and securely stored. This methodological framework

provides sufficient detail and rigor to enable replication of the study in comparable psychiatric settings and contributes to the scarce but essential body of knowledge on non-addicted schizophrenia in culturally diverse contexts (12–19).

RESULTS

Of the 81 non-addicted schizophrenia patients, the largest age group was 31–44 years, comprising 43.2% (n=35; 95% CI: 32.4–53.9), followed by those aged 17–30 years at 35.8% (n=29; 95% CI: 25.4–46.1). Patients above 45 years accounted for 21% (n=17; 95% CI: 12.5–29.5). The gender distribution was balanced, with females representing 51.9% (n=42; 95% CI: 40.9–62.8) and males 48.1% (n=39; 95% CI: 37.2–59.1).

Islam was the dominant religion (96.3%, n=78; 95% CI: 92.4–100), while Christianity was reported by only 3 patients. Most participants described themselves as somewhat religious (65.4%, n=53; 95% CI: 54.7–76.2), and only 2.5% (n=2) reported being very religious (p=0.007). More than half were unmarried (55.6%, n=45; 95% CI: 44.5–66.8), while 29.6% (n=24) were married. Most patients had education up to matric level (87.7%, n=71; 95% CI: 80.5–94.8; p=0.002).

The joint family system was most prevalent (61.7%, n=50; 95% CI: 51.0–72.3), with only one participant from an extended family (p=0.004). Regarding employment, 27.2% (n=22) were self-employed, 21% (n=17) unemployed, and the remainder distributed among housewives (18.5%), students (16%), and other categories. Punjabi ethnicity dominated (56.8%, n=46; 95% CI: 45.7–67.8), followed by Balochi (29.6%, n=24).

Table 1. Socio-demographic Characteristics of Non-Addicted Schizophrenia Patients (N=81)

Characteristic	Category	n (%)	95% CI	p-value*
Age (years)	17–30	29 (35.8)	25.4–46.1	
	31–44	35 (43.2)	32.4–53.9	
	>45	17 (21.0)	12.5–29.5	0.031†
Gender	Male	39 (48.1)	37.2–59.1	
	Female	42 (51.9)	40.9–62.8	0.712†
Religion	Islam	78 (96.3)	92.4–100	
	Christianity	3 (3.7)	0.0–7.6	-
Religious inclination	Not at all religious	11 (13.6)	6.0–21.1	
	Somewhat religious	53 (65.4)	54.7–76.2	
	Moderately religious	15 (18.5)	9.7–27.3	
	Very religious	2 (2.5)	0.0–5.9	0.007†
Marital status	Married	24 (29.6)	19.6–39.6	
	Unmarried	45 (55.6)	44.5–66.8	
	Widower	4 (4.9)	0.2–9.7	
	Divorced	8 (9.9)	3.3–16.5	0.011†
Education	Up to Matric	71 (87.7)	80.5–94.8	
	Above Matric	10 (12.3)	5.2–19.5	0.002†
Family system	Nuclear	30 (37.0)	26.2–47.8	
	Joint	50 (61.7)	51.0–72.3	
	Extended	1 (1.2)	0.0–3.6	0.004†
Employment status	Unemployed	17 (21.0)	12.5–29.5	
	Employed	14 (17.3)	9.1–25.4	
	Housewife	15 (18.5)	9.7–27.3	
	Student	13 (16.0)	7.6–24.5	
	Self-employed	22 (27.2)	17.5–36.8	0.079†
Ethnicity	Punjabi	46 (56.8)	45.7–67.8	
	Balochi	24 (29.6)	19.6–39.6	
	Urdu speaking	6 (7.4)	1.7–13.1	
	Other	5 (6.2)	1.0–11.5	0.016†

*p-values refer to comparisons between groups (e.g., chi-square or Fisher's exact test as appropriate for categorical variables). †Significant at $p<0.05$

Table 2. Distribution of Schizophrenia Subtypes and Family History Association

Subtype	n (%)	Family History Present n (%)	Odds Ratio (95% CI)	p-value
Paranoid	17 (21.0)	4 (20.0)	0.67 (0.18–2.41)	0.71
Disorganized	17 (21.0)	6 (35.3)	1.33 (0.42–4.18)	0.59
Catatonic	28 (34.6)	5 (17.9)	0.54 (0.16–1.85)	0.34
Residual	19 (23.4)	5 (26.3)	0.96 (0.28–3.28)	0.97
All subtypes	81 (100)	20 (24.7)	—	—

Among all patients, the catatonic subtype was most common, found in 34.6% (n=28), while paranoid and disorganized subtypes each accounted for 21% (n=17 each), and the residual subtype was observed in 23.4% (n=19). Family history of psychiatric illness was most

frequent among the disorganized group (35.3%, n=6), compared to 26.3% in the residual group (n=5), 20% in the paranoid group (n=4), and 17.9% in the catatonic group (n=5). Odds ratios showed no significant association between family history and any particular subtype (p-values all >0.05), suggesting that hereditary predisposition was relatively evenly distributed among subtypes.

Table 3. Perceptions of Schizophrenia Etiology Among NASH Patients (N=81)

Etiological Belief	n (%)	95% CI	p-value (vs. all others)
Biological			
Mental illness	66 (81.5)	74.8–87.1	<0.001
Addiction	28 (34.6)	24.7–44.3	0.001
Hereditary	25 (30.9)	20.3–39.5	0.002
Low IQ	30 (37.0)	26.6–47.4	0.001
Stress factors			
Marital issues	29 (35.8)	25.4–46.1	0.004
Work tension	32 (39.5)	29.0–50.0	0.002
Loneliness	33 (40.7)	30.2–51.2	0.001
Sexual abuse	12 (14.8)	7.2–22.4	0.033
Superstitious			
Alien influence	6 (7.4)	1.8–13.0	0.003
Evil spirit influence	9 (11.1)	4.5–17.8	0.009
Black magic	14 (17.3)	8.8–25.2	0.012
Written sacred verses	14 (17.3)	8.8–25.2	0.012
Religious			
Fate/Destiny	20 (24.7)	15.4–33.8	0.021
Punishment for sins	30 (37.0)	26.6–47.4	0.001
Evil Eye (Nazzar)	16 (19.8)	11.2–28.2	0.018
Allah's Will	29 (35.8)	25.4–46.1	0.004

Biological explanations were most frequently endorsed, with 81.5% (n=66; 95% CI: 74.8–87.1, p<0.001) identifying mental illness as the cause. A substantial proportion also cited low IQ (37.0%, n=30), addiction (34.6%, n=28), and heredity (30.9%, n=25) as contributing factors. Stress-related factors were prominent, including loneliness (40.7%, n=33), work tension (39.5%, n=32), and marital issues (35.8%, n=29), with all p-values indicating significant associations. Superstitious attributions, though less common, were still notable: 17.3% (n=14) cited black magic and sacred verses, while 11.1% (n=9) believed in evil spirit influence. Among religious beliefs, punishment for sins (37.0%, n=30) and Allah's will (35.8%, n=29) were most common, and 24.7% (n=20) cited fate or destiny. The findings indicate that, although biomedical models dominate patient perceptions, stress, superstition, and religious attributions remain widely held among NASH patients

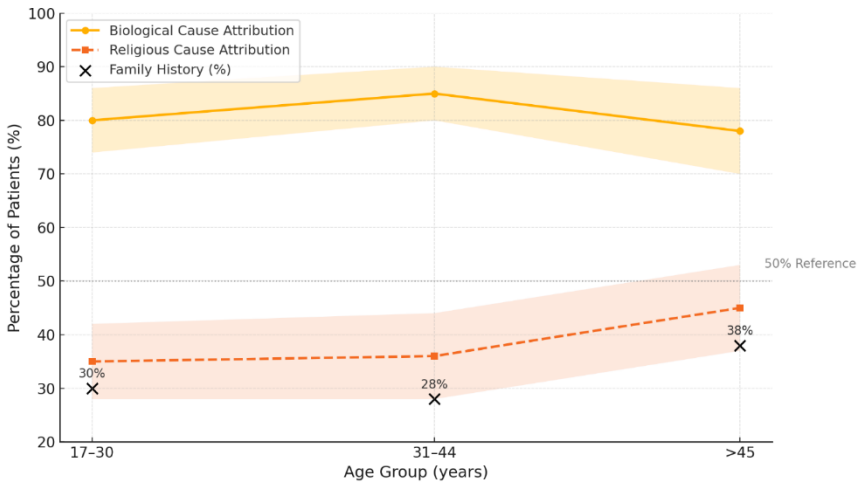

Figure 1 Age-related patterns in causal attribution and family history

This figure displays clinical patterns of causal attribution and family history among patients across three age groups: 17–30, 31–44, and over 45 years. Biological cause attribution is consistently high, starting at 80% in the 17–30 group, peaking at 85% in ages 31–44, and then slightly declining to 78% in patients above 45 years. In contrast, religious cause attribution remains steady at 35–36% in the two younger groups but rises sharply to 45% in the oldest group. Family history percentages, shown by black 'X' markers, are lowest in the middle age group at 28%, compared to 30% in the youngest and 38% in the oldest group, all falling below the 50% reference line indicated on the plot. These findings indicate that biological attribution is predominant in all age groups, while religious attribution and family history have become notably more common among patients over 45.

DISCUSSION

The present study offers an in-depth exploration of demographic and clinical patterns, subtype distribution, and explanatory illness beliefs among non-cannabis addicted schizophrenia patients (NASH) in a South Asian context, with particular emphasis on sociocultural and religious influences. These findings contribute significantly to the underexplored domain of schizophrenia absent the confounding effects of substance abuse—particularly cannabis—which is widely reported to exacerbate or precipitate psychotic disorders (20). By isolating non-addicted individuals, the present work enables a more nuanced understanding of endogenous and psychosocial contributions to schizophrenia in a population often neglected in mainstream psychiatric literature.

Consistent with global epidemiological trends, the study found the highest burden of schizophrenia within the 31–44 years age group, aligning with previous findings that highlight a peak incidence in early-to-mid adulthood (21). Interestingly, unlike the commonly reported male preponderance in schizophrenia (22), this study revealed a relatively balanced sex distribution, echoing some regional data that indicate narrowing gender disparities in psychiatric help-seeking behavior in urban Pakistani populations (23). Moreover, the dominance of the catatonic subtype diverges from international patterns, where paranoid schizophrenia typically prevails (24), suggesting possible cultural, diagnostic, or institutional biases influencing subtype classification. These differences underscore the need for locally calibrated diagnostic instruments and training to reduce subtype misclassification and enhance diagnostic consistency.

One of the most salient contributions of this research lies in its detailed investigation into patients' causal beliefs regarding their illness. A significant proportion of participants endorsed biological attributions—particularly mental illness, hereditary factors, and low intelligence—as primary causes of schizophrenia, findings that both contrast and complement previous South Asian studies. For instance, while earlier research from Karachi emphasized a strong inclination toward supernatural and religious explanations (25), the present study observed a relatively higher frequency of biological conceptualizations, especially among middle-aged patients. This shift may reflect increased public mental health literacy in urban centers or the selection bias of treatment-seeking populations in tertiary care institutions. Nevertheless, religious and supernatural attributions—such as black magic, evil spirits, and divine punishment—remained prominent, particularly among older patients, consistent with regional sociocultural paradigms where spiritual causality is often interwoven with mental health narratives (26).

From a theoretical standpoint, the integration of explanatory models with subtype and demographic data supports the growing consensus that cultural context profoundly shapes illness perceptions and, consequently, treatment adherence and outcomes. For example, the higher prevalence of religious attributions in older patients may influence their preference for faith-based interventions, while younger individuals endorsing biological causes may demonstrate greater receptivity to pharmacological or psychotherapeutic modalities. Clinically, this suggests the imperative for culturally attuned psychiatric services that incorporate psychoeducation strategies addressing both biomedical and sociocultural understandings of mental illness (27).

While the findings offer valuable insights, several limitations merit acknowledgment. The cross-sectional design precludes causal inference, and the reliance on a single geographic location may limit generalizability to broader South Asian populations. The sample size, although adequate for descriptive analyses, restricts the statistical power needed for robust multivariable modeling or subtype-stratified comparisons. Moreover, the use of a case-scenario approach to elicit illness beliefs—while innovative and bias-reducing—lacks external validation and may be influenced by social desirability or interviewer effects. The exclusion of molecular or neuroimaging diagnostics, due to resource constraints, limits the biological characterization of the cohort and should be addressed in future interdisciplinary research.

Despite these limitations, the study's strengths lie in its specificity, cultural sensitivity, and triangulated data collection methods, which collectively enhance the internal validity and contextual relevance of the findings. The deliberate exclusion of cannabis users ensures a purer investigation of endogenous schizophrenia, while the DSM-IV-based subtype categorization enables comparisons with global literature despite the manual's supersession by DSM-5 in high-income contexts. Additionally, the integration of multiple data sources—clinical records, patient interviews, and caregiver input—bolsters data integrity and interpretive confidence.

Future research should aim to replicate these findings in larger, multi-site cohorts, incorporating DSM-5 criteria and advanced neurobiological measures to explore endophenotypes. Longitudinal studies tracking shifts in explanatory models over the illness course may illuminate the dynamic interplay between culture, cognition, and psychopathology. Moreover, intervention studies that assess the impact of culturally adapted psychoeducational programs on treatment outcomes across schizophrenia subtypes would offer valuable translational implications. Given the observed variations in causal beliefs by age and subtype, such programs should be tailored not only culturally but also demographically and diagnostically.

This study extends the current understanding of schizophrenia in non-addicted populations by highlighting how demographic characteristics, clinical subtypes, and belief systems intersect in shaping patients' lived experiences of illness. The findings call for a reorientation of mental health services in Pakistan toward integrative, culturally sensitive models that bridge biomedical and traditional explanatory frameworks, ultimately enhancing patient engagement, adherence, and recovery trajectories (28–31).

CONCLUSION

This study, titled "Demographic and Clinical Profile of Non-Addicted Schizophrenia Patients (NASH) in Lahore, Pakistan," highlights that among 81 non-cannabis addicted individuals diagnosed with schizophrenia, the most affected demographic was aged 31–44 years, with a predominance of the catatonic subtype and a notable prevalence of biological and religious causal beliefs. The findings underscore the importance of integrating demographic profiles, subtype classification, and culturally influenced explanatory models into clinical practice to enhance diagnosis, communication, and adherence to treatment. Clinically, these insights support the development of targeted

psychoeducation and culturally sensitive interventions tailored to subtype and belief systems. From a research perspective, the study establishes a foundation for future longitudinal and neurobiological investigations into non-substance-related schizophrenia, encouraging the refinement of diagnostic frameworks and mental health strategies in resource-limited, culturally complex settings.

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