Socio-Cultural Predictors of First-Episode Psychosis and Symptom Severity

Aziz Mohammad[1], Imran Khan[1] and Sher Ayub[2]

[1]*Department of Psychiatry, Khyber Medical College, Peshawar, Pakistan*
[2]*Department of Psychiatry, Bannu Medical College, Bannu, Pakistan*

ABSTRACT

Objective: To examine the sociodemographic and clinical characteristics of patients with first-episode psychosis (FEP) and to explore their associations with symptom severity, length of hospital stay, and PANSS symptom clusters.

Study Design: A cross-sectional study.

Place and Duration of the Study: Department of Psychiatry, Khyber Medical College, Peshawar, Pakistan, from January 2021 to December 2024.

Methodology: A total of 104 inpatients with FEP were recruited. Sociodemographic and clinical data were collected, and symptom severity was assessed using the Positive and Negative Syndrome Scale (PANSS). Chi-square test, Fisher's exact test, ANOVA, and logistic regression identified associations and predictors of symptom severity and hospitalisation.

Results: Of 104 patients, 77.9% were male (mean age 23.4 years). Females were more likely to be married ($p = 0.002$), while substance misuse occurred only among males (28.7%, $p = 0.001$). Patients aged ≤18 years had significantly higher PANSS total scores ($p = 0.013$). Multiple regression revealed that younger age, lower socioeconomic status (SES), fewer years of education and unawareness or cultural barriers to referral predicted higher total PANSS severity (all $p < 0.05$). Longer duration of untreated psychosis (DUP) and tribal residence predicted elevated positive symptoms, whereas low education and tribal origin predicted thought disturbance. PANSS severity correlated strongly with longer hospital stay ($p < 0.001$). Age and gender were not significant predictors, and no major gender differences were observed across subscales.

Conclusion: Younger age, limited education, low SES, and sociocultural barriers were associated with more severe FEP. Enhancing community awareness and early referral pathways may improve outcomes in low-resource settings.

Key Words: *Acute psychosis, First-episode psychosis, Acute and transient psychotic disorder, PANSS*.

How to cite this article: Mohammad A, Khan I, Ayub S. Socio-Cultural Predictors of First-Episode Psychosis and Symptom Severity. *J Coll Physicians Surg Pak* 2026; **36(03)**:346-352.

INTRODUCTION

First-episode psychosis (FEP) marks the initial onset of psychotic symptoms such as hallucinations, delusions, disorganised speech, or catatonia, typically without organic causes. Based on symptom duration, the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) classifies these conditions as Brief Psychotic Disorder (≤1 month), Schizophreniform Disorder (1–6 months), or Schizophrenia (>6 months).[1] The International Classification of Diseases, Tenth Revision (ICD-10), classifies these conditions as Acute and Transient Psychotic Disorders (ATPDs), characterised by abrupt onset, polymorphic symptoms, affective features, and usually full remission within weeks.[2]

Correspondence to: Dr. Aziz Mohammad, Department of Psychiatry, Khyber Medical College, Peshawar, Pakistan
E-mail: aziz.mohammad@kmc.edu.pk

Received: August 23, 2025; Revised: November 20, 2025; Accepted: January 05, 2026
DOI: https://doi.org/10.29271/jcpsp.2026.03.346

ATPDs occur more commonly in low- and middle-income countries (LMICs), especially among women and those with psychosocial stressors.[3] Diagnostic stability varies widely, ranging from 63–100% in South Asia to ≤50% in many high-income countries.[4]

FEP typically arises in adolescence/early adulthood, disrupting education, identity, and social roles.[5] Early intervention improves outcomes.[6] However, in LMICs, delays are common due to low awareness, limited resources, and supernatural attributions.[7] Duration of untreated psychosis (DUP), time from symptom onset to adequate treatment, predicts prognosis; longer DUP worsens symptoms, treatment response, and chronicity.[8]

Symptom severity is often assessed using the Positive and Negative Syndrome Scale (PANSS), which evaluates positive, negative, and general symptoms, and supports clusters such as thought disturbance, activation, depression, and paranoid/belligerence. Demographic factors (age, gender, education, and socioeconomic status [SES]) influence PANSS scores, although findings remain inconsistent. Earlier age at onset predicts worse outcomes.[9]

South Asian research on psychosis remains limited, often characterised by small samples and infrequent use of structured tools, such as the PANSS. Cultural idioms, sociopolitical stressors, and stigma significantly shape illness presentation in the region. Evidence from the UK shows that South Asian youth report greater stigma and stronger adherence to supernatural explanations compared to their White peers,[10] while in Pakistan, beliefs in possession or black magic commonly delay psychiatric consultation.[11] Earlier work in Pakistan has primarily examined PANSS in chronic schizophrenia populations,[12] with little focus on early-phase illness. This study, therefore, represents one of the first systematic applications of PANSS in the FEP cohort in Pakistan, employing multivariate models to explore how demographic and cultural factors, including age, education, SES, and referral delays, predict symptom severity across PANSS total scores and subscales.

METHODOLOGY

This cross-sectional study was conducted at the Department of Psychiatry, Khyber Medical College, Peshawar, Pakistan, from January 2021 to December 2024. Consecutive inpatients with FEP requiring hospitalisation and with no prior antipsychotic use were included. A non-probability consecutive sampling technique was used. All patients meeting the inclusion criteria and admitted during the data collection period were invited to participate until the target sample size was reached. This pragmatic approach ensured complete enrolment of available cases within the defined accrual window. Exclusions were psychosis due to mania, organic brain disease, substance intoxication, unstable medical illness, CNS pathology, severe head trauma, cognitive disorders, or intellectual disability. Socio-demographic and clinical variables (age, gender, marital status, education, occupation, origin, SES, substance misuse, DUP, reasons for delay, and family psychiatric history) were recorded.

Symptom severity was rated using the 30-item PANSS,[13] covering positive, negative, general psychopathology, and derived symptom clusters. Although the two bilingual psychiatrists involved in the study were not formally certified in the Structured Clinical Interview for PANSS (SCI-PANSS),[14] they mutually agreed upon a standardised approach to its administration. Prior to data collection, both clinicians reviewed the SCI-PANSS manual and reached a consensus on interview sequencing, scoring anchors, and interpretation of symptom thresholds. Each assessment began with an introductory, non-confrontational phase to establish rapport and ease patient anxiety, followed by a gradual transition to core psychopathological domains. Delusions and hallucinations were explored sensitively, using context-appropriate prompts and collateral information from informants. This structured yet flexible method ensured consistency across interviews and enhanced the reliability of symptom ratings, particularly valuable in the context of FEP, where insight and cooperation may be limited. Inter-rater reliability was good ($\kappa = 0.67$, $p < 0.001$).

A precision-based sample size calculation was performed, assuming a worst-case prevalence $p = 0.5$, with a 95% confidence level and 10% absolute precision ($n = 96$). This was inflated by ~10% for exclusions (target sample size = 106). All consecutive eligible inpatients were then enrolled during the accrual window, yielding a final sample size of $n = 104$. Assessments were conducted prior to medication initiation whenever feasible.

Analyses were performed *via* SPSS version 25. Appropriate χ^2 tests examined the associations of gender, two-way ANOVA assessed the individual and interaction effects of age and gender on PANSS severity, and multiple linear regression was used to predict the effect of several socio-demographic variables on total PANSS score. Binary logistic regressions were used to predict the likelihood of scoring above average on PANSS subscales and symptoms clustered by sociodemographic variables. Model assumptions and fit were verified. Effect sizes were reported as Cramer's V for chi-square analyses, partial eta squared (η^2) for ANOVA, odds ratios (ORs) with 95% confidence intervals for logistic regressions, and standardised beta coefficients (β) and R^2 values for linear regression models. Statistical significance was set at $\alpha = 0.05$. This study adhered to current reporting guidelines for observational studies (STROBE).

RESULTS

A total of 104 patients were included, predominantly male (77.9%), with a mean age of 23.4 ± 8.4 years. No gender differences were found in age, education, SES, or geographic origin (all $p > 0.05$; Table I). Gender was significantly associated with marital status, with males most often single and females were more likely to be married [χ^2 (1, $n = 104$) = 9.72, $p = 0.002$, Cramer's V = 0.330]. Substance misuse was reported exclusively among males [(28.7%), χ^2 (1, $n = 104$) = 8.51, $p = 0.001$, Cramer's V = 0.29]. Among subs-tance users, nearly half reported use for >1 month but <1 year; no valid chi-square analysis was possible due to zero prevalence among females. DUP did not differ significantly by gender, with most presenting within one month. Reasons for delayed referral (RDR) were similar, with lack of awareness being the most common reason.

A two-way ANOVA was conducted to examine the effect of gender and age on PANSS total scores (Figure 1). Patients were divided into three age groups: 18 years and below (≤18 years; Group 1), 19–29 years (Group 2), and 30 years and above (≥30 years; Group 3). Model assumptions and fit

were verified. The interaction effect was not significant [F (2, 348) = 0.33, p = 0.72, partial η^2 = 0.002]. There was a significant main effect of age [F (2, 101) = 4.50, p = 0.013, partial η^2 = 0.08 (medium effect)]. Post hoc Tukey HSD tests indicated that Group 1 (mean = 103.6 ± 17.0) scored significantly higher than both Group 2 (mean = 88.8 ± 25.3) and Group 3 (mean = 82.1 ± 23.9). No significant difference was observed between Groups 2 and 3. The main effect of gender was nonsignificant (p = 0.87).

Multiple linear regression predicting PANSS total score was found to be significant [F (12, 91) = 2.73, p = 0.012, R^2 = 0.268, adjusted R^2 = 0.214 (Table II). Higher PANSS scores were predicted by younger age (B = -16.33, β = -0.48, p = 0.004), lower SES (B = -11.95, β = -0.25, p = 0.027), more than five years of education (β = 11.18, β = 0.23, p = 0.022), and unawareness/cultural RDR (β = 14.62, β = 0.27, p = 0.01). Gender, DUP, and most other variables were not significant predictors (all p > 0.05).

Table I: Sociodemographic characteristics by gender with chi-square analysis.

Variables	Categories	Male	Female	χ^2	p-values
Age	≤20	37 (45.7%)	14 (60.9%)	2.946	0.229
	21–30	30 (37.0%)	8 (34.8%)		
	≥31	14 (17.3%)	1 (4.3%)		
Marital status	Single	59 (72.8%)	8 (34.8%)	9.720	0.002
	Married	22 (27.2%)	15 (65.2%)		
Geographic origin	Peshawar zone[a]	40 (49.4%)	10 (43.5%)	1.416	0.702
	North KP[b]	17 (21.0%)	2 (8.7%)		
	South KP[c]	11 (13.6%)	5 (21.7%)		
	Tribal/remote[d]	13 (16.0%)	6 (26.1%)		
Education level	None/primary[e]	39 (48.1%)	15 (65.2%)	1.463	0.226
	Secondary+[f]	42 (51.9%)	8 (34.8%)		
SES	Lower class	45 (55.6%)	9 (39.1%)	1.334	0.248
	Middle and upper class[g]	36 (44.4%)	14 (60.9%)		
Substance misuse[h]	No	57 (71.3%)	23 (100%)	8.514	0.001
	Yes	23 (28.7%)	0 (0.0%)		
Duration of substance use	<1 month	6 (26.1%)	0 (0.0%)		
	>1 month <1 year	11 (47.8%)	0 (0.0%)		
	>1 Year	6 (26.1%)	0 (0.0%)		
DUP[i]	≤1 month[j]	61 (75.3%)	21 (91.3%)	1.438	0.230
	>1 month[k]	18 (22.2%)	2 (8.7%)		
RDR[l]	Unawareness	37 (45.7%)	11 (47.8%)	1.510	0.471
	Cultural	11 (13.6%)	5 (21.7%)		
	Other[m]	24 (29.6%)	4 (17.3%)		
Family history	1st Degree	13 (16.0%)	3 (13.0%)		0.916
	2nd Degree	8 (9.9%)	3 (13.0%)		

p-values were calculated using the chi-square test. a: Peshawar Zone: Peshawar (26M:7F), Charsadda (6M), Nowshera (4M:1F), Mardan (2M:2F), Swabi (2M); b: North KP: Chitral (6M), Dir (4M:1F), Swat (4M), Malakand (3M:1F); c: South KP: Karak (4M:2F), Bannu (6M:2F), D.I Khan (1M:1F); d: Tribal/remote: tribal districts (6M:6F), remote = Afghanistan (7M); e: None/primary: none (32M:10F), primary (14M:5F); f: Secondary+: secondary (29M:6F), higher secondary (12M:2F), bachelors (1M:0F); g: Middle (32M:13F) and upper (4M:1F) class: income >PKR 250,000/year and PKR 500,000/year, respectively; h: Substance misuse: cannabis (19M), opioids (1M), benzodiazepine (1M), multiple (2M); i: DUP: Duration of untreated psychosis; j: ≤1 month: Less than a week (30M:11F), k: 1 week-1month (31M:10F); >1 month: 1-2 months (5M:0F), 2-6 months (7M:2F), >6 months (6M:0F); l: RDR: Reason for delay in referral; m: Other: transportation (9M:3F), lack of social support (7M:1F), financial: (8M:0F). SES: Socioeconomic status.

Table II: Multiple linear regression model predicting PANSS total score.

Predictors	B	SE	β	t	p-values
(Constant)	72.516	19.120	–	3.793	0.000
Age group	-16.327	5.537	-0.483	-2.949	**0.004**
Gender	7.655	6.972	0.135	1.098	0.275
Age	0.357	0.451	0.125	0.791	0.431
Marital status	4.954	6.021	0.099	0.823	0.413
Occupation	1.792	3.037	0.068	0.590	0.557
SES	-11.945	5.302	-0.249	-2.253	**0.027**
Substance misuse	2.452	5.598	0.043	0.438	0.663
Duration of substance misuse	10.287	6.301	0.178	1.632	0.106
Family history	-1.794	3.404	-0.051	-0.527	0.599
Premorbid personality	0.138	4.188	0.004	0.033	0.974
Years of education	11.180	4.776	0.234	2.341	**0.022**
Geographical zones	1.989	2.070	0.097	0.961	0.339
DUP	-2.934	3.271	-0.101	-0.897	0.372
RDR	14.615	5.559	0.268	2.629	**0.010**

p-values were calculated using the t-test of regression coefficients within the multiple linear regression analysis (SPSS v25). DUP: Duration of untreated psychosis; RDR: Reason for delay in referral; SES: Socioeconomic status.

Table III: Binary logistic regression model predicting the likelihood of higher PANSS positive subscale scores.

Predictors	B	SE	Wald	p-values	Exp(B)
Gender (male)	-0.34	0.77	0.19	0.66	0.72
Age group (overall)	—	—	0.37	0.83	—
Age group (18 and below)	0.51	0.96	0.28	0.60	1.66
Age group (19–29)	0.18	0.88	0.04	0.84	1.20
Regional background (overall)	—	—	12.03	**0.007**	—
Zone: Peshawar	-2.84	0.89	10.26	**0.001**	0.06
Zone: North KP	-2.04	0.96	4.56	**0.033**	0.13
Zone: South KP	-3.26	1.11	8.68	**0.003**	0.04
Comorbid drug use	-1.08	0.79	1.86	0.17	0.34
Occupation (overall)	—	—	1.67	0.44	—
Occupation: students	-0.31	0.69	0.20	0.65	0.73
Occupation: employed	0.91	1.09	0.67	0.40	2.48
Marital status (married)	-0.53	0.83	0.41	0.52	0.59
DUP: <2 weeks *vs.* 2 weeks–1 month	2.87	0.90	10.11	**0.001**	17.60
DUP: <2 weeks *vs.* >1 month	2.14	0.94	5.15	**0.023**	8.46
Reason for delay (other)	-1.69	0.76	4.10	**0.025**	0.19
SES (satisfactory)	0.30	0.64	0.23	0.633	1.35
Education: more than 5 years	-2.17	0.65	11.12	**0.001**	0.12

Binary logistic regression with Wald χ^2 test.

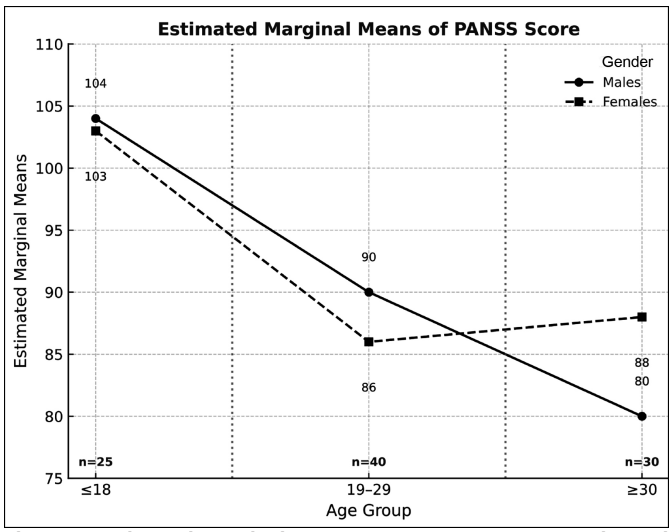

Figure 1: Estimated marginal mean PANSS scores across gender and age groups.

A binary logistic regression examined predictors of above-average PANSS positive scores. The model was statistically significant [χ^2 (15) = 39.76, p < 0.001, Nagelkerke R^2 = 0.455], correctly classifying 76.0% of cases (Table III). Significant predictors included patients from Peshawar (OR = 0.06, 95% CI [0.02, 0.27], p = 0.001), North Khyber Pakhtunkhwa (OR = 0.13, 95% CI [0.02, 0.85], p = 0.033), and South Khyber Pakhtunkhwa (OR = 0.04, 95% CI [0.01, 0.27], p = 0.003) had lower odds compared to Tribal/ Remote areas. Similarly, patients with longer DUP of 2 weeks to a month (OR = 17.60, 95% CI [3.22, 96.1], p = 0.001) and >1 month (OR = 8.46, 95% CI [1.33, 53.8], p = 0.023) had higher odds compared to <2 weeks. Cultural beliefs in supernatural causes and unawareness leading to longer DUP (OR = 0.19, 95% CI [0.05, 0.74], p = 0.025) were associated with lower odds compared to other reasons. More than 5 years of education was associated with lower odds of high positive symptoms (OR = 0.12, 95% CI [0.04, 0.37], p = 0.001).

A binary logistic regression was conducted to identify predictors of thought disturbance among 104 patients. The overall model was statistically significant [χ^2 (7) = 22.48, p = 0.002], explaining 19.4% of the variance (Cox and Snell R^2) and 26.7% (Nagelkerke R^2), and correctly classified 76.9% of cases. Gender was not a significant predictor (OR = 0.53, 95% CI [0.18–1.53], p = 0.238). Age showed a significant effect: compared to Group 1, Group 3 had higher odds of exhibiting thought disturbance (OR = 3.98, 95% CI [1.03–15.44], p = 0.046), while Group 2 did not differ significantly (OR = 3.06, 95% CI [0.74–12.75], p = 0.124). The geographical zone was also a strong predictor (p = .015). Patients from Peshawar (OR = 0.18, 95% CI [0.05–0.63], p = 0.007) and South KP (OR = 0.07, 95% CI [0.01–0.44], p = 0.005) were significantly less likely to show thought disturbance compared with those from tribal/remote areas, whereas patients from North KP showed a nonsignificant reduction (OR = 0.29, 95% CI [0.07–1.17], p = 0.082). Years of education also emerged as significant, with patients having more than 5 years of education showing reduced odds of thought disturbance (OR = 0.25, 95% CI [0.09–0.68], p = 0.006).

A multiple linear regression was performed to assess the effect of age, gender, and PANSS score on the number of days of hospital stay among patients. The model was statistically significant [F (3, 100) = 64.63, p < 0.001] and explained 66.0% of the variance in hospital stay (R^2 = 0.660, adjusted R^2 = 0.650). Of the predictors, PANSS score was the only significant factor, with higher scores strongly associated with longer hospital stay (B = 0.227, 95% CI [0.194–0.260], β = 0.804, t = 13.47, p < 0.001). This indicates that for every one-point increase in PANSS, hospital stay increased by about 0.23 days. Neither age (B = –0.029, 95% CI [–0.124–0.067], β = –0.036, t = –0.60, p = 0.553) nor gender (B = 0.394, 95% CI [–1.479–2.268], β = 0.024, t = 0.42, p = 0.677) were significant predictors.

DISCUSSION

A significant male predominance (77.9%) was observed, echoing the findings of Shaltout *et al*.[15] and McGrath *et al*., who consistently report a higher incidence of psychosis among males, migrants, and individuals in urban settings.[16] Despite this, no gender differences were identified in age of onset, PANSS subscales, or symptom clusters within this study sample. The mean age of onset (23.4 years) closely reflected meta-analytic estimates,[17] although a striking proportion of both females (60%) and males (45%) presented before the age of 20. Cannabis use, reported exclusively among males, reflects gender-gendered differences in acccess and social permissibility in Pakistan. Although cannabis is well-established as a risk factor for triggering and worsening psychosis, with strong dose–response evidence[18] and documented associations with relapse and nonadherence,[19] its overall effect on severity was comparatively weaker in this cohort. Most women were married, reflecting cultural expectations of early marriage in Pakistan, which is linked to emotional abuse, spousal violence,[20] and chronic stress, factors that may heighten vulnerability to psychosis in young females.

Younger age emerged as one of the strongest predictors of symptom severity, with patients aged ≤18 years showing significantly higher PANSS scores. The relationship was linear, suggesting that adolescence, characterised by neurodevelopmental transitions, immature coping abilities, and heightened sensitivity to stress, may amplify the severity of first-episode presentations.[21] Low SES was another powerful predictor, particularly for disorganised behaviour (OR ≈ 11), aligning with the broader understanding that chronic stress, deprivation, and limited access to timely care intensify psychotic symptoms.[22]

Education displayed a complex pattern: higher education correlated with greater total PANSS severity, whereas lower education predicted more severe positive symptoms and thought disturbance. This seeming paradox likely reflects contrasting pathways to care. Individuals with higher education may delay presenting due to stigma, fear of labelling, or denial, resulting in a broader symptom burden at the time of admission. Conversely, those with limited education, often facing social adversity, fewer coping resources, and reduced access to early intervention, may present with more florid or disruptive psychotic features. Cognitive reserve theory supports the notion that education may buffer against underlying neuropathology.[23] Low education commonly coincides with poor insight, low health literacy, and social isolation, all of which can undermine adherence and engagement with services.[24]

Delays stemming from unawareness or cultural interpretations of illness further contributed to higher PANSS scores. In South Asian societies, supernatural explanations, such as possession or black magic, remain common[25] and often lead families to seek help from faith healers or spiritual practitioners before consulting psychiatric services. Such pathways prolong the DUP, worsening clinical outcomes. In this study, although DUP was not associated with total PANSS severity, it was a strong predictor of positive symptom severity: delays of 2 weeks to 1 month increased the odds nearly 18-fold, while delays exceeding one month increased the odds more than eight-fold. These findings reaffirm the importance of intervening early, ideally within the first few weeks of symptom onset. Higher PANSS scores also independently predicted longer hospital stays, aligning with the existing literature.

Overall, these results underscore the dynamic interplay of biological, sociocultural, and systemic determinants that shape the presentation of FEP in low-resource contexts. Younger age, male gender, low SES, low education, cultural barriers, and remote residence emerged as key predictors of increased severity or certain symptom clusters. Sociocultural realities, such as early marriage among women, cannabis use among men, and culturally driven delays in help-seeking, illustrate that psychosis in Pakistan is deeply embedded within broader societal structures. Accordingly, effective interventions must extend beyond clinical treatment to include community engagement and culturally informed mental health education. Clinically, early detection and targeted screening for adolescents, men with depressive features, and high-risk individuals in underserved regions should be prioritised. School-based mental health programmes can play a crucial role in early identification. Socioeconomic and cultural realities should guide triage decisions, ensuring that resource allocation favours disadvantaged communities.

At a policy level, strengthening district-level psychiatric services, improving transport access for remote populations, and integrating culturally competent outreach, including constructive collaboration with faith healers, may reduce DUP and improve outcomes. Public awareness campaigns that challenge supernatural explanations and reduce stigma are essential to promote timely help-seeking.

Despite the strengths of this study, several limitations merit consideration. The sample size, although adequate, limits generalisability beyond Khyber Pakhtunkhwa. The cross-sectional design restricts causal inference. Self-reported variables, such as cannabis use and DUP, may be vulnerable to recall or reporting bias. Additionally, the PANSS was administered in its original English version due to the absence of a validated local adaptation. Although both assessors were trained bilingual psychiatrists who ensured consistency in rating, the lack of a culturally validated version may have introduced subtle interpretive biases.

CONCLUSION

This study highlights the significant role of younger age, low educational attainment, lower SES, and sociocultural barriers in shaping the severity of FEP presentations in Pakistan. The findings underscore the urgent need for contextually adapted, equity-focused mental health strategies to improve early detection and reduce illness burden. Community awareness programmes, school-based early screening, and collaboration with faith healers for early referral may help reduce treatment delays and improve outcomes for FEP in low-resource settings. Future research should adopt longitudinal designs to track symptom trajectories and recovery outcomes, and integrate neurocognitive and neurobiological markers to refine risk stratification and individualized care pathways.

ETHICAL APPROVAL:
Ethical approval was obtained from the Institutional Review Board of Khyber Medical College, Peshawar, Pakistan (IREB KMC, No. 623/DME/KMC).

PATIENTS' CONSENT:
Written informed consent was obtained from all participants.

COMPETING INTEREST:
The authors declared no conflict of interest.

AUTHORS' CONTRIBUTION:
AM: Conceptualised and designed the study, collected and supervised data, conducted statistical analysis, and drafted the manuscript.
IK: Contributed to study design, assisted in data interpretation, and critically reviewed the manuscript for intellectual content.
SA: Contributed to data acquisition, literature review, and manuscript editing.
All authors approved the final version of the manuscript to be published.

REFERENCES

1. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. Arlington (VA): American Psychiatric Publishing. 2013; 5th ed. Available from: https://psychiatryonline.org/doi/book/10.1176/appi.books.9780890425596.
2. World Health Organization. The ICD-10 classification of mental and behavioural disorders. Geneva: World Health Organization. 1993; 10th ed. Available from: https://www.who.int/publications/i/item/9241544228.
3. Malhotra S, Sahoo S, Balachander S. Acute and transient psychotic disorders: Newer understanding. *Curr Psychiatry Rep* 2019; **21(11)**:113. doi: 10.1007/s11920-019-1099-8.
4. Verma S, Subramaniam M, Abdin E, Poon LY, Chong SA. Symptomatic and functional remission in patients with first-episode psychosis. *Acta Psychiatr Scand* 2012; **126(4)**: 282-9. doi: 10.1111/j.1600-0447.2012.01883.x.
5. van Os J, Kenis G, Rutten BPF. The environment and schizophrenia. *Nature* 2010; **468(7321)**:203-12. doi: 10.1038/nature09563.
6. Correll CU, Galling B, Pawar A, Krivko A, Bonetto C, Ruggeri M, *et al*. Comparison of early intervention services *vs* treatment as usual for early-phase psychosis: A systematic review, meta-analysis, and meta-regression. *JAMA Psychiatry* 2018; **75(6)**:555-65. doi: 10.1001/jamap-sychiatry.2018.0623.
7. Khan Z, Qureshi O, Pasha A, Majid O, Saleem S, Fearon P, *et al*. Exploring biomedical and traditional care pathways for people with psychosis in Karachi, Pakistan. *Front Psychiatry* 2023; **14**:1086910. doi: 10.3389/fpsyt.2023.1086910.
8. Farooq S, Large M, Nielssen O, Waheed W. The relationship between duration of untreated psychosis and outcome in low- and middle-income countries: A systematic review and meta-analysis. *Schizophr Res* 2009; **109(1-3)**:15-23. doi: 10.1016/j.schres.2009.01.008.
9. Immonen J, Jaaskelainen E, Korpela H, Miettunen J. Age at onset and the outcomes of schizophrenia: A systematic review and meta-analysis. *Early Interv Psychiatry* 2017; **11(6)**:453-60. doi: 10. 1111/eip.12412.
10. Mirza A, Birtel MD, Pyle M, Morrison AP. Cultural differences in psychosis: The role of causal beliefs and stigma in White British and South Asians. *J Cross-Cult Psychol* 2019. doi: 10.1177/0022022118820168.
11. Ahmad SS, Koncsol SW. Cultural factors influencing mental-health stigma: Perceptions of mental illness (POMI) in Pakistani emerging adults. *Religions* 2022; **13(5)**:675. doi: 10.3390/rel13050401.
12. Malik MSA, Khan SM, Ataullah, Rana MH, Khan FH. Long term outcome of schizophrenia – A cross-sectional study: Long-term outcome of schizophrenia. *Pak Armed Forces Med J* 2016; **66(4)**:579-85.
13. Kay SR, Opler LA, Lindenmayer JP. The Positive and Negative Syndrome Scale (PANSS): Rationale and standar-disation. *Br J Psychiatry Suppl* 1989; **155(7)**:59-65.
14. Kay SR, Opler LA, Lindenmayer JP. Reliability and validity of the positive and negative syndrome scale for schizophrenics. *Psychiatry Res* 1988; **23(1)**:99-110. doi: 10.1016/0165-1781(88)90038-8.
15. Shaltout T, Bener A, Al Abdullah M, Al Mujalli Z, Shaltout HT. Acute and transient psychotic disorders in a rapidly developing country, the State of Qatar. *Medicina (Kaunas)* 2007; **43(7)**:575-9.
16. McGrath J, Saha S, Welham J, El Saadi O, MacCauley C, Chant D. A systematic review of the incidence of schizophrenia: The distribution of rates and the influence of sex, urbanicity, migrant status and methodology. *BMC Med* 2004; **2**:13. doi: 10.1186/1741-7015-2-13.
17. Solmi M, Radua J, Olivola M, Croce E, Soardo L, Salazar de Pablo G, *et al*. Age at onset of mental disorders worldwide: Large-scale meta-analysis of 192 epidemiological studies. *Mol Psychiatry* 2022; **27(1)**:281-95. doi: 10.1038/s41380-021-01161-7.

18. Di Forti M, Quattrone D, Freeman TP, Tripoli G, Gayer-Anderson C, Quigley H, *et al*. The contribution of cannabis use to variation in the incidence of psychotic disorder across Europe (EU-GEI): A multicentre case-control study. *Lancet Psychiatry* 2019; **6(5)**:427-36. doi: 10.1016/S2215-0366(19)30048-3.

19. Zammit S, Moore TH, Lingford-Hughes A, Barnes TRE, Jones PB, Burke M, *et al*. Effects of cannabis use on outcomes of psychotic disorders: Systematic review. *Br J Psychiatry* 2008; **193(5)**:357-63. doi: 10.1192/bjp.bp.107.046375.

20. Nasrullah M, Zakar R, Zakar MZ. Child marriage and its associations with controlling behaviours and spousal violence against adolescent and young women in Pakistan. *J Adolesc Health* 2014; **55(6)**:804-9. doi: 10.1016/j.jadohealth.2014.06.013.

21. Paus T, Keshavan M, Giedd JN. Why do many psychiatric disorders emerge during adolescence? *Nat Rev Neurosci* 2008; **9(12)**:947-57. doi: 10.1038/nrn2513.

22. Morgan C, Fisher H, Hutchinson G, Kirkbride J, Craig TK, Morgan K, *et al*. Ethnicity, social disadvantage and psychotic-like experiences in a healthy population-based sample. *Acta Psychiatr Scand* 2009; **119(3)**:226-35. doi: 10.1111/j.1600-0447.2008.01301.x.

23. Pettigrew C, Soldan A. Defining cognitive reserve and implications for cognitive ageing. *Curr Neurol Neurosci Rep* 2019; **19(1)**:1. doi: 10.1007/s11910-019-0917-z.

24. Lysaker PH, Pattison ML, Leonhardt BL, Phelps S, Vohs JL. Insight in schizophrenia spectrum disorders: Relationship with behaviour, mood and perceived quality of life, underlying causes and emerging treatments. *World Psychiatry* 2018; **17(1)**:12-23. doi: 10.1002/wps.20508.

25. Saeed K, Gater R, Hussain A, Mubbashar M. The prevalence, classification and treatment of mental disorders among attenders of native faith healers in rural Pakistan. *Soc Psychiatry Psychiatr Epidemiol* 2000; **35(10)**:480-5. doi: 10.1007/s001270050267.