Section: Psychiatry

Original Research Article

SUICIDAL IDEATION AND SUICIDE ATTEMPTS IN FIRST-EPISODE PSYCHOSIS: PREVALENCE AND CLINICAL CORRELATES IN A TERTIARY CARE INDIAN COHORT

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Received *: 14/06/2026*
Received in revised form *: 25/07/2026*
Accepted *: 09/08/2026*

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DOI: 10.70034/ijmedph.2026.3.437

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2026; 16 (3); 2760-2766

ABSTRACT

Suicide represents a significant cause of mortality in schizophrenia, with risk being highest during the early illness course. This cross-sectional study assessed the prevalence and clinical correlates of suicidal ideation and suicide attempts in patients with first-episode psychosis (FEP) at a tertiary care centre in India. One hundred forty-four patients aged 18 years and above with FEP attending outpatient or inpatient psychiatric services at S.S.G Hospital, Vadodara were enrolled. Assessment was performed using a semi-structured proforma, Positive and Negative Syndrome Scale (PANSS), Columbia Suicide Severity Rating Scale (C-SSRS), Calgary Depression Scale for Schizophrenia (CDSS), and Birchwood Insight Scale (BIS). The prevalence of suicidal ideation was 69.4% (100/144), comprising mild (32.6%), moderate (21.5%), and severe (15.3%) ideation. Actual suicide attempts occurred in 27.1% (39/144) of patients. Family history of suicide ($p<0.01$) and substance use ($p=0.02$) were significantly associated with suicidal ideation. Depression (CDSS$\geq$6) was significantly associated with both suicidal ideation ($p<0.001$) and suicide attempts ($p=0.02$). High insight (BIS$\geq$9) was associated with severe suicidal ideation ($p<0.001$), while no significant association was found between insight and suicide attempts. Depression emerged as the strongest clinical correlate of suicidality. Early screening and targeted intervention for depression in FEP patients may help reduce suicidal behaviour.

Keywords: First-episode psychosis; Suicidal ideation; Suicide attempt; Depression; Insight; Schizophrenia

INTRODUCTION

Suicide constitutes a major public health concern, with approximately 170,000 deaths occurring annually in India.[1] The risk of suicide follows a multistage continuum, progressing from suicidal ideation through intent and plans to attempted and completed suicide.[2] Among individuals with mental disorders, the long-term suicide risk ranges from 3.4% for those with a single disorder to 6.2% for those with multiple diagnoses.[3]

Patients with schizophrenia spectrum disorders demonstrate significantly elevated suicide risk, with an estimated rate of 579 per 100,000 person-years and a lifetime risk of suicidal death of ~5%.[4,5] Suicidal ideation affects ~40 % of individuals with schizophrenia at some point during their illness course.[6] Importantly, suicide-related mortality is substantially higher during the early illness phase, with risk being twofold greater at illness onset compared with later stages.[5,7]

The early period of psychotic illness represents a critical window for suicide prevention. Studies indicate that approximately 23% of first-admission psychotic patients have already attempted suicide, with 15% doing so before hospitalisation.[8] Risk factors associated with early-phase suicide include previous suicide attempts, lack of social support,

social drift following the first episode, paranoid delusions, command hallucinations, depression, hopelessness, and substance abuse.[9]

Despite the clinical importance of suicidality in first-episode psychosis (FEP), Indian data remain sparse. Understanding the prevalence and correlates of suicidal behaviour in the Indian context is essential for identifying high-risk patients and implementing appropriate preventive strategies. This study aimed to assess the prevalence of suicidal ideation and suicide attempts in patients with FEP and to examine the relationships between clinical manifestations, depression, insight, and suicidality.

MATERIALS AND METHODS

Study Design and Setting

This cross-sectional study was conducted at the Department of Psychiatry, S.S.G Hospital, Vadodara, India. Patients were recruited from both the psychiatry outpatient department and inpatient ward.

Study Population

Patients aged 18 years and above diagnosed with first-episode psychosis and attending outpatient or inpatient services were eligible for enrolment. Participants and their caregivers were informed about the study purpose, procedures, confidentiality measures, and potential benefits. Written informed consent was obtained from all participants and their caregivers.

Sample Size

A sample of 144 patients was calculated to detect a 40% risk of suicidal attempt among FEP patients with 20% relative precision and 95% confidence.[6]

Inclusion Criteria

1. Age 18 years or above
2. First hospitalisation, first contact with mental health services with positive symptoms, onset of antipsychotic treatment, or first appearance of psychotic symptoms confirmed by an informant within 5 years prior to enrolment[19]
3. Written informed consent provided by patient and caregiver

Exclusion Criteria

1. Refusal to provide consent
2. Age below 18 years
3. DSM-5 diagnosis other than psychotic disorder (nicotine-related disorders permitted)
4. Clinical Global Impression score higher than 5 ("markedly ill")
5. Intellectual disability with impaired global functioning prior to disorder onset
6. Serious chronic medical illness requiring long-term medication

Operational Definition of First-Episode Psychosis

First-episode psychosis was operationally defined as duration of psychosis less than or equal to five years, as this definition possesses the most construct validity and limits inappropriate inclusion of chronic patients.[10]

Study Tools

Participants underwent assessment using the following instruments:

1. Semi-structured proforma: Collected sociodemographic details (age, gender, education, occupation, income, religion, family type, marital status, social support, socioeconomic status using the modified Kuppuswamy scale) and illness details (duration of illness, chief complaints, past and family history).
2. Positive and Negative Syndrome Scale (PANSS): A 30-item, 7-point rating scale evaluating positive symptoms (7 items), negative symptoms (7 items), and general psychopathology (16 items).[11]
3. Columbia Suicide Severity Rating Scale (C-SSRS): Assesses suicidal ideation severity, intensity, behaviour, and lethality. Internal consistency (Cronbach α) was 0.94–0.95.[12]
4. Calgary Depression Scale for Schizophrenia (CDSS): A 9-item observer-rated scale specifically developed for assessing depression in schizophrenia.[13]
5. Birchwood Insight Scale (BIS): An 8-item self-report instrument measuring three dimensions of insight: recognition of mental illness, relabelling of symptoms, and recognition of need for treatment.[14]

Statistical Analysis

Data were entered and analysed using Epi Info CDC 7. Continuous variables were expressed as mean ± standard deviation. Categorical data were expressed as frequencies and percentages. Associations between continuous variables were assessed using independent t-tests. Associations between categorical variables were assessed using chi-square tests. Bivariate logistic regression was performed for multivariate analysis. P-values less than 0.05 were considered statistically significant.

Ethical Considerations

The study was approved by the Institutional Ethics Committee for Human Research – PG Research (IECBHR/44-2020). Written informed consent was obtained from all participants.

RESULTS

Sociodemographic Profile

A total of 144 patients with first-episode psychosis were enrolled (Table 1). The majority (62.5%) were aged 18–28 years, with a mean age of 28.22 ± 7.67 years. Male patients comprised 52.1% of the sample. Most participants resided in urban areas (55.6%), had secondary education (43.1%), and belonged to lower (48.6%) or lower-middle (28.5%) socioeconomic classes. Regarding marital status, 54.2% were single and 31.9% were married. Nuclear family structure was predominant (75.7%).

Clinical Profile

The mean duration of illness was 14.90 ± 12.03 months (Table 2). Past history of psychiatric illness (including visits to faith healers) was present in 50.7%, while 22.2% had a past history of medical illness. Family history of suicide was reported by 9.0% of patients. Tobacco use was the most common substance (37.5%), followed by combined tobacco and alcohol use (6.9%). No significant gender differences were observed in clinical variables including PANSS scores, CDSS scores, or BIS scores ($p>0.05$ for all).

Prevalence of Suicidal Ideation

Of 144 patients, 100 (69.4%) had suicidal ideation of varying severity: mild (32.6%), moderate (21.5%), and severe (15.3%) (Table 3). Among patients with severe suicidal ideation, 31.82% experienced ideation "all the time."

Prevalence of Suicide Attempts

Actual suicide attempts were reported by 27.1% (39/144) of patients. Other suicidal behaviours included suicidal intent (20.8%), interrupted attempts (27.8%), aborted attempts (25.7%), and preparatory acts (4.9%).

Factors Associated with Suicidal Ideation

Hindu religion was significantly associated with mild or no suicidal ideation ($p<0.001$). Mild suicidal ideation was significantly more common among unskilled workers ($p=0.002$), while single individuals had significantly higher suicidal ideation ($p=0.027$). No significant associations were found with age group, sex, residential area, education, socioeconomic status, or family type.

Family history of suicide ($p<0.01$) and tobacco use ($p=0.02$) were significantly associated with suicidal ideation. Negative Symptom Subscale Score (NSSS) was significantly elevated in patients with mild suicidal ideation ($p<0.001$), while General Psychopathology Subscale Score (GPSS) was significantly higher in those with severe ideation ($p<0.001$). No association was found between positive symptoms and suicidal ideation ($p=0.07$).

Suicidal ideation was significantly associated with elevated CDSS scores ($p<0.001$). Among patients with moderate suicidal ideation, 100% had CDSS scores ≥6, while 85.1% of those with mild and 95.5% of those with severe ideation had scores ≥6 (Table 4).

Low insight (BIS<9) was significantly associated with no, mild, or moderate suicidal ideation (79.5%, 59.6%, and 51.6%, respectively), while high insight (BIS≥9) was significantly associated with severe suicidal ideation (63.6%) ($p<0.001$).

Bivariate Regression Analysis for Suicidal Ideation

In bivariate regression analysis (Table 5), significant predictors of suicidal ideation included age (OR=2.812, 95% CI: 1.077–7.346, $p=0.035$), NSSS (OR=4.859, 95% CI: 1.397–16.907, $p=0.013$), and CDSS score (OR=4.691, 95% CI: 1.995–11.030, $p<0.001$). The model demonstrated 94.5% fit (Nagelkerke $R^2 = 0.945$).

Factors Associated with Suicide Attempts

Significant sociodemographic factors associated with actual suicide attempts included urban residence ($p=0.002$), graduate education ($p=0.01$), skilled occupation ($p=0.03$), lower-middle socioeconomic status ($p=0.04$), separated marital status ($p<0.001$), and living alone ($p<0.001$).

Past history of medical illness ($p<0.001$) and family history of suicide ($p<0.001$) were significantly associated with suicide attempts. No significant associations were found with PANSS scores ($p>0.05$ for all subscales).

Depression (CDSS≥6) was present in 87.2% of patients who had attempted suicide, with significant association ($p=0.02$). No significant association was found between BIS scoring and suicide attempts ($p=0.55$).

Bivariate Regression Analysis for Suicide Attempts

In bivariate regression analysis (Table 6), significant predictors of suicide attempts included male gender (OR=0.169, 95% CI: 0.032–0.894, $p=0.036$), living alone versus nuclear family ($p<0.001$), past history of medical illness (OR=100.010, 95% CI: 11.183–894.400, $p<0.001$), combined substance abuse ($p=0.004$), PSSS (OR=1.224, 95% CI: 1.007–1.487, $p=0.042$), NSSS (OR=0.842, 95% CI: 0.740–0.959, $p=0.009$), and CDSS score (OR=1.649, 95% CI: 1.285–2.116, $p<0.001$). The model demonstrated 75% fit (Nagelkerke $R^2 = 0.75$).

Table 1: Sociodemographic Profile of FEP Patients (n=144)

Variable	n (%)
Age groups	
18–28 years	90 (62.5)
29–38 years	33 (22.9)
39–48 years	21 (14.6)
Sex	
Male	75 (52.1)
Female	69 (47.9)
Religion	
Hindu	118 (81.9)
Muslim	24 (16.7)
Christian	2 (1.4)
Area	
Rural	64 (43.4)
Urban	80 (55.6)
Education	

Variable	n (%)
Illiterate	11 (7.6)
Primary	54 (37.5)
Secondary	62 (43.1)
Graduate	17 (11.8)
Occupation	
Farmer	12 (8.3)
Housewife	18 (12.5)
Skilled	9 (6.3)
Student	21 (14.6)
Unemployed	40 (27.8)
Unskilled	44 (30.6)
Socioeconomic status	
Lower	70 (48.6)
Lower middle	41 (28.5)
Middle	21 (14.6)
Upper middle	12 (8.3)
Marital status	
Married	46 (31.9)
Separated	10 (6.9)
Single	78 (54.2)
Widow	10 (6.9)
Family type	
Extended	23 (16.0)
Living alone	12 (8.3)
Nuclear	109 (75.7)

Table 2: Clinical Profile of FEP Patients (n=144)

Variable	n (%)
Duration of illness (months), mean ± SD	14.90 ± 12.03
Past history of psychiatric illness	
Yes	73 (50.7)
No	71 (49.3)
Past history of medical illness	
Yes	32 (22.2)
No	112 (77.8)
Family history of suicide	
Yes	13 (9.0)
No	131 (91.0)
Substance use	
No	69 (47.9)
Tobacco	54 (37.5)
Alcohol	6 (4.2)
Tobacco + alcohol	10 (6.9)
Tobacco + alcohol + cannabis	5 (3.5)

Table 3: Prevalence of Suicidal Ideation and Behaviours in FEP Patients (n=144)

Variable	n (%)
Severity of suicidal ideation	
No	44 (30.6)
Mild	47 (32.6)
Moderate	31 (21.5)
Severe	22 (15.3)
Total with suicidal ideation	**100 (69.4)**
Suicidal behaviours	
Actual suicide attempt	39 (27.1)
Suicidal intent	30 (20.8)
Interrupted attempt	40 (27.8)
Aborted attempt	37 (25.7)
Preparatory act	7 (4.9)

Table 4: Relationship of Depression (CDSS) with Suicidal Ideation (n=144)

Suicidal Ideation	CDSS <6, n (%)	CDSS ≥6, n (%)	Total	χ^2	p-value
No	32 (72.7)	12 (27.3)	44	60.04	<0.001*
Mild	7 (14.9)	40 (85.1)	47		
Moderate	0 (0)	31 (100)	31		
Severe	1 (4.5)	21 (95.5)	22		

CDSS: Calgary Depression Scale for Schizophrenia *Statistically significant ($p<0.05$)

Table 5: Bivariate Regression Model for Factors Affecting Suicidal Ideation

Variable	B	S.E.	Wald	p-value	OR	95% CI
Age	1.034	0.490	4.454	0.035*	2.812	1.077–7.346
P/H medical illness (Yes)	-8.449	3.004	7.913	0.005*	0.000	0.000–0.077
NSSS	1.581	0.636	6.176	0.013*	4.859	1.397–16.907
CDSS Score	1.546	0.436	12.553	<0.001*	4.691	1.995–11.030

Cox & Snell R^2: 0.672; Nagelkerke R^2: 0.945 NSSS: Negative Symptom Subscale Score; CDSS: Calgary Depression Scale for Schizophrenia; P/H: Past history *Statistically significant ($p<0.05$).

Table 6: Bivariate Regression Model for Factors Affecting Actual Suicidal Attempt

Variable	B	S.E.	Wald	p-value	OR	95% CI
Male	-1.777	0.849	4.377	0.036*	0.169	0.032–0.894
Living alone (ref)			16.808	<0.001*		
Nuclear	-8.958	2.340	14.655	<0.001*	0.000	0.000–0.013
P/H medical illness (Yes)	4.605	1.118	16.973	<0.001*	100.010	11.183–894.400
Substance abuse (ref: T+A+C)			15.490	0.004*		
PSSS	0.202	0.099	4.141	0.042*	1.224	1.007–1.487
NSSS	-0.172	0.066	6.737	0.009*	0.842	0.740–0.959
CDSS Score	0.500	0.127	15.459	<0.001*	1.649	1.285–2.116

Cox & Snell R^2: 0.52; Nagelkerke R^2: 0.75 PSSS: Positive Symptom Subscale Score; NSSS: Negative Symptom Subscale Score; CDSS: Calgary Depression Scale for Schizophrenia; P/H: Past history; T+A+C: Tobacco + Alcohol + Cannabis *Statistically significant ($p<0.05$).

DISCUSSION

This study found that 69.4% of FEP patients experienced suicidal ideation, which aligns with previous reports indicating that 40–80% of individuals with schizophrenia experience suicidal ideation during their illness course.[6,9,15] Ventriglio et al. reported that approximately 90% of individuals meeting at-risk mental state criteria report suicidal ideation.[9] However, some studies have reported lower prevalence rates: Gill et al. reported 42.9%,[16] and Bornheimer et al. found 26%.[17] The higher prevalence in our study may reflect the tertiary care setting where more severe cases present, as well as cultural factors and help-seeking patterns in the Indian context.

Prevalence of Suicide Attempts

The prevalence of suicide attempts in this study was 27.1%, consistent with previous literature. Cohen et al. reported that 23% of first-admission psychotic patients had already attempted suicide.[8] In Indian studies, Verma et al. reported a prevalence of approximately 22%,[18] while Banwari et al. found suicide attempts in 34% of patients with schizophrenia.[19]

Sociodemographic Variables

Age and gender were not significantly associated with suicide attempts in this study, consistent with findings of systematic review and meta-analysis by Khoso et al.[20]

Clinical Profile and Family History

Family history of suicide was significantly associated with both suicidal ideation and attempts in this study. Hor and Taylor found that family history of suicide and coexisting alcohol use were factors most strongly connected with subsequent suicide in schizophrenia.[4] Tremeau et al. reported that patients with schizophrenia and family history of suicide had increased chance of attempting suicide.[21]

Tobacco use was significantly associated with suicidal ideation, while combined use of tobacco, alcohol, and cannabis was associated with suicide attempts. Harris and Barraclough's meta-analysis demonstrated that suicidality in schizophrenia was six times higher with alcohol abuse, fourteen times with opioid dependence, and four times with cannabis use. Krystal et al. described that nicotine increases emotionality and may contribute to suicidality.[22,23]

Symptom Severity

Negative symptoms were significantly associated with mild suicidal ideation, while high GPSS was associated with severe ideation. No association was found between positive symptoms and suicidal ideation or between any PANSS subscale and suicide attempts. These findings contrast with Hor and Taylor, who found that active hallucinations and delusions were significant predictors.[4] Patients with positive symptoms may seek treatment earlier, resulting in shorter duration of untreated psychosis.

Depression

Depression was significantly associated with both suicidal ideation and suicide attempts in this study. Harvey et al. similarly found depression to be an independent correlate of self-harm in FEP.[24] Bornheimer et al. reported that FEP patients with suicidal ideation had greater symptoms of depression.[17]

Insight

Severe suicidal ideation was significantly associated with high insight, while mild or moderate ideation

was associated with low insight. No significant association was found between insight and suicide attempts. These findings are consistent with Ayesa-Arriola et al., who found no associations between baseline insight dimensions and time to suicidal behaviour over 3-year follow-up in FEP.[25] However, Harvey et al. reported that increased insight was associated with risk of self-harm.[24] Weiser et al. proposed that good insight may result in hopelessness, self-depreciation, and depression, potentially driving patients toward suicide.[26]

Strengths and Limitations

This study represents one of the few Indian investigations systematically assessing suicidal ideation and attempts in FEP patients using validated instruments including the C-SSRS, CDSS, and BIS.

Several limitations warrant consideration. The cross-sectional design precluded assessment of longitudinal course; a follow-up study might have provided additional information. Single-session assessment may have minimised reporting of depression and suicidal ideation. The tertiary care government hospital setting limits generalisability. Recall bias may have influenced results as information was collected months to years after events. The study excluded patients under 18 years and did not include completed suicide cases. Duration of untreated psychosis was not assessed due to lack of validated durational criteria.

CONCLUSION

Among 144 patients with first-episode psychosis, the prevalence of suicidal ideation was 69.4% and the prevalence of suicide attempts was 27.1%. Significant associations were found between suicidal ideation and primary/secondary education, single marital status, family history of suicide, tobacco use, and elevated depression scores. Suicide attempts were significantly associated with separation/living alone, family history of suicide, combined substance abuse, and depression. Severe suicidal ideation was associated with high insight, while mild or moderate ideation was associated with low insight. No significant association was found between insight and suicide attempts. Depression emerged as the strongest clinical correlate of suicidality in this population. Early screening and targeted intervention for depression, along with careful assessment of insight levels, family history of suicide, and substance use patterns, may help identify high-risk FEP patients and facilitate implementation of suicide prevention strategies.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding

The authors received no financial support for the research, authorship and/or publication of this article.

Author Contributions

SA: Conceptualisation of research, designing the research, data acquisition, data analysis, data interpretation, writing the original draft, final approval of manuscript for publication, agree to be accountable for all aspects of work; CB: Conceptualisation of research, designing the research, writing the original draft, critical revision of the manuscript, final approval of manuscript for publication, agree to be accountable for all aspects of work; VO: Conceptualisation of research, designing the research, data acquisition, data analysis, data interpretation, writing the original draft, final approval of manuscript for publication, agree to be accountable for all aspects of work; CS: Conceptualisation of research, designing the research, data acquisition, data analysis, data interpretation, writing the original draft, final approval of manuscript for publication, agree to be accountable for all aspects of work.

Acknowledgements

We are grateful to Dr G K Vankar for his unlimited guidance and support.

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