

PREVALENCE OF CANNABIS USE AMONG PATIENTS WITH PSYCHOSIS REPORTING TO THE PSYCHIATRY WARD, SAIDU GROUP OF TEACHING HOSPITAL

Hussain Ali¹, Ashfaq Hussain², Abrar Khan³, Haidar Ali⁴, Sumera Attaullah⁵, Afroz Ahmad⁶, Liaqat Ali Khan⁷

How to cite this article

Ali H, Hussain A, Khan A, Ali H, Attaullah S, Ahmad A, et al. Prevalence of Cannabis Use among Patients with Psychosis Reporting to the Psychiatry Ward, Saidu Group of Teaching Hospital. J Gandhara Med Dent Sci. 2025;12(4):64-68. <https://doi.org/10.37762/jgm.12-4.704>

Date of Submission: 16-03-2025

Date Revised: 08-09-2025

Date Acceptance: 17-09-2025

²Assistant Professor, Department of Psychiatry, Saidu Group of Teaching Hospital, Swat

³Senior Registrar, Department of Psychiatry, Saidu Group of Teaching Hospital, Swat

⁴Medical Officer, Psychiatry Ward, Saidu Group of Teaching Hospital, Swat

⁵Clinical Psychologist, Saidu Group of Teaching Hospital, Swat

⁶Clinical Psychologist, Saidu Group of Teaching Hospital, Swat

⁷Medical Officer, Psychiatry Ward, Saidu Group of Teaching Hospital, Swat

Correspondence

¹Hussain Ali, Senior Registrar, Department of Psychiatry, Saidu Group of Teaching Hospital, Swat

☎: +92-344-8306070

✉: drhusainjan@gmail.com

ABSTRACT

OBJECTIVES

To assess the prevalence and pattern of cannabis use among psychosis patients and its association with age group, gender, and socioeconomic status.

METHODOLOGY

This cross-sectional study was conducted at the Psychiatry Ward of Saidu Group of Teaching Hospital, Swat, using a consecutive sampling method on 183 patients. Pakistani male and female psychotic patients aged 18 and above with a history of cannabis use were included, while those with other psychiatric disorders, intellectual disabilities, neurodevelopmental disorders, incomplete records, or unwillingness to participate were excluded. Data on age, gender, and socioeconomic status were collected. Cannabis use frequency and duration were self-reported.

RESULTS

The mean age was 35.49 ± 9.14 years. There were 46 (25.14%) females and 137 (74.86%) males. Cannabis use was reported in 56 (30.6%) patients, with daily use by 48 (26.23%) and twice-daily use by 8 (4.37%) patients. Cannabis use was significantly associated with age group ($p < 0.001$) and gender ($p < 0.001$), but not with socioeconomic status ($p = 0.7$). Daily or twice-daily use was more common among adolescents (50%) than adults (22%), with no females reporting daily or twice-daily use.

CONCLUSION

Cannabis use was prevalent among psychosis patients, with higher frequency observed in adolescents and males. Adolescents were more likely to report daily or twice-daily use of the substance. Frequent use was more common among individuals from low- and medium-socioeconomic backgrounds.

KEYWORDS: Cannabis Use, Psychosis, Adolescents, Socioeconomic Status

INTRODUCTION

In Pakistan, the prevalence of psychosis, particularly schizophrenia, is estimated to affect approximately 1–2% of the population. Regional variations exist, with urban areas in Punjab reporting rates around 2.5% and rural areas about 2%. In Sindh, the prevalence is estimated at 2% among urban populations and 1.5% in rural areas. Khyber Pakhtunkhwa shows a prevalence of 2% in urban areas and 2.5% in rural regions. Baluchistan has the lowest estimates, with 1% for both rural and urban populations.¹ The causes of psychosis in Pakistan are multifaceted, encompassing genetic, biological, and environmental factors. Genetic predisposition plays a significant role, especially in individuals with a family history of psychiatric disorders. Environmental stressors such as traumatic events, substance abuse, and socioeconomic challenges also contribute to the onset of psychosis. Cultural beliefs and stigma surrounding mental health often lead

individuals to attribute psychotic symptoms to supernatural causes, delaying appropriate medical intervention.² Cannabis is one of the most commonly used psychoactive substances worldwide, with increasing prevalence due to its perceived medicinal and recreational benefits.³ However, accumulating evidence suggests a strong association between cannabis use and various psychiatric disorders, particularly psychosis.⁴ Psychotic disorders, characterized by hallucinations, delusions, and impaired cognitive function has been widely studied in relation to cannabis consumption.⁵ Numerous studies indicate that frequent use of cannabis can increase the risk of psychosis, especially in young populations.^{6,7} A meta-analysis encompassing 66,816 individuals found that heavy cannabis users had an approximately 3.9 times greater risk of developing schizophrenia and other psychosis-related outcomes compared to non-users. This analysis confirmed a dose-response relationship, indicating that higher levels of cannabis use correlate

many other developing countries, there has been an increase in cannabis use among young adults.⁹ Despite its illegal status, cannabis is accessible, often without awareness of its potential psychiatric consequences. The impact of cannabis on mental health is of particular concern in clinical settings, where psychiatric wards frequently admit patients presenting with psychotic symptoms linked to substance use.¹⁰ Cannabis use is a modifiable risk factor, and its cessation could potentially prevent or alleviate psychotic symptoms in specific individuals. Assessing the prevalence of cannabis use among psychosis patients admitted to the Psychiatry Ward at Saidu Group of Teaching Hospitals will provide valuable information on its role as a contributing factor. Identifying this association may aid in implementing targeted preventive interventions and psycho-educational programs, ultimately reducing the burden of psychotic disorders in the community.

METHODOLOGY

This cross-sectional study was conducted at the Psychiatry Ward of Saidu Group of Teaching Hospital, Swat, from March 20, 2024, to February 10, 2025, using a consecutive sampling method. Written informed consent was taken, and they were assured of confidentiality. Psychosis was defined according to the DSM-5 as a condition a person experiences when he or she is experiencing severe disconnection from reality. It included people with symptoms such as delusions, hallucinations, disorganized speech, grossly disorganized behavior, and negative symptoms. In order to include the cases of people diagnosed with schizophrenia, schizoaffective disorder, or acute psychotic disorder. The sample was 183, calculated through OpenEPI with a 95% confidence level and a 5% margin of error using 37% cannabis use among psychosis patients from a previous study.¹¹ Both male and female psychotic patients aged 18 and above at Saidu Group of Teaching Hospital with a history of cannabis use were included. Those with other psychiatric disorders, intellectual disability, neurodevelopmental disorders, incomplete records, or unwillingness to participate were excluded. Age, gender, and socioeconomic status were recorded for all participants. Socioeconomic status (SES) was operationally defined based on monthly household income in Pakistani Rupees (PKR), with low SES classified as less than PKR 30,000 per month, medium SES as PKR 30,000 to 100,000 per month, and high SES as greater than PKR 100,000 per month. To understand their background and substance use habits,

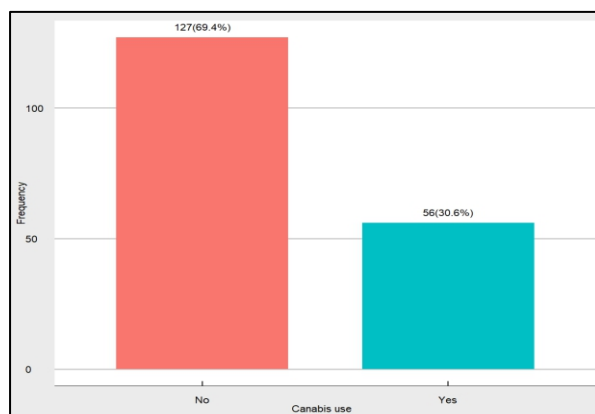
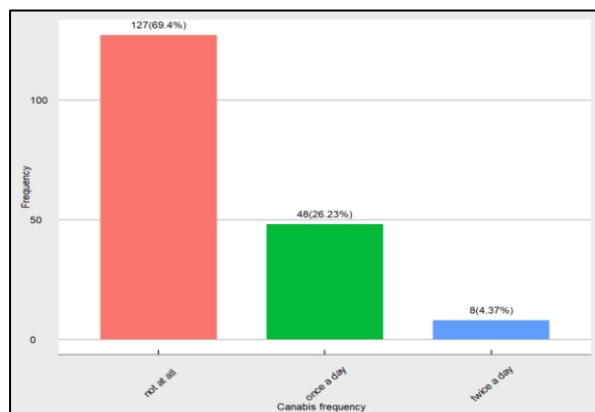
we spoke with patients and their attendants in a respectful and socially acceptable manner. Cannabis use was assessed through self-reported history, where patients shared details about their usage, frequency, and duration. We also reviewed clinical records and psychiatric evaluations, seeking input from caregivers when needed. Our approach ensured accurate reporting while prioritizing the patients' comfort and confidentiality. Data were analyzed using R software version 4.3.2. Descriptive statistics were applied to present continuous variables as mean $\pm$ standard deviation (SD) and categorical variables as frequency and percentage (n, %). The association between cannabis use and categorical variables (age group, gender, and socioeconomic status) was assessed using the Pearson's chi-squared test or Fisher's exact test, as appropriate. A p-value < 0.05 was considered statistically significant. Figures were generated using the ggplot2 package.

RESULTS

The mean age of participants was 35.49 ± 9.14 years. Among the patients, 37 (20.22%) were adolescents, and 146 (79.78%) were adults. There were 46 (25.14%) females and 137 (74.86%) males. Based on socioeconomic status, 11 (6.01%) patients belonged to the high socioeconomic group, 84 (45.90%) to the medium socioeconomic group, and 88 (48.09%) to the low socioeconomic group. (Table 1) The frequency of Cannabis use among psychosis patients was 56 (30.6%). (Fig 1) Cannabis use was reported once a day by 48 (26.23%) patients and twice a day by 8 (4.37%) patients. (Fig 2) Table 2 shows the association of cannabis use with age group, gender, and socioeconomic status among psychosis patients. Cannabis use was significantly higher among adolescents (41.07%) compared to adults (58.93%) ($p < 0.001$). All cannabis users were male (100%) ($p < 0.001$). No significant association was found between cannabis use and socioeconomic status ($p = 0.7$). Cannabis use frequency was significantly associated with age group ($p < 0.001$), gender ($p < 0.001$), and socioeconomic status ($p = 0.02$). Daily or twice-daily cannabis use was more common among adolescents ($n=23$, 50%) than adults ($n=33$, 22%). Males exhibited higher cannabis use at all frequencies, with no females reporting daily or twice-daily use. Individuals from medium socioeconomic backgrounds were more likely to use cannabis twice daily ($n=7$, 88%), whereas daily use was more prevalent in those from low socioeconomic backgrounds ($n=27$, 56%). (Table 3)

Table 1: Distribution of Age, Gender, and Socioeconomic Status of the Psychosis Patients

Characteristic	N = 183
Age(years)	35.49 ± 9.14
Age group	
Adolescent	37 (20.22%)
Adult	146 (79.78%)
Gender	
Female	46 (25.14%)
Male	137 (74.86%)
Socioeconomic Status	
High	11 (6.01%)
Low	88 (48.09%)
Medium	84 (45.90%)

**Figure 1: Frequency of Cannabis Use among Psychosis Patients****Figure 2: Frequency of Cannabis Use among Psychosis Patients****Table 2: Frequency of Cannabis Use by Age Group, Gender, and Socioeconomic Status**

Characteristic	Cannabis use		P-value
	No, N = 127	Yes, N = 56	
Age Group			
Adolescent	14 (11.02%)	23 (41.07%)	<0.001
Adult	113 (88.98%)	33 (58.93%)	
Gender			
Female	46 (36.22%)	00 (0.00%)	<0.001
Male	81 (63.78%)	56 (100.00%)	
Socioeconomic Status			
High	09 (7.09%)	02 (3.57%)	0.7
Low	61 (48.03%)	27 (48.21%)	
Medium	57 (44.88%)	27 (48.21%)	

Pearson's Chi-squared test; Fisher's exact test

Table 3: Pattern of Cannabis Use by Age Group, Gender, and Socioeconomic Status

Characteristic	Not at all, N = 127	Once a day, N = 48	Twice a day, N = 8	P-Value
Age group				
Adolescent	14(11.02%)	21 (43.75%)	02(25.00%)	<0.001
Adult	113 (88.98%)	27(56.25%)	06(75.00%)	
Gender				
Female	46(36.22%)	00(0.00%)	00(0.00%)	<0.001
Male	81(63.78%)	48(100.00%)	08(100.00%)	
Socioeconomic Status				
High	09(7.09%)	01(2.08%)	01(12.50%)	0.02
Low	61(48.03%)	27(56.25%)	00(0.00%)	
Medium	57(44.88%)	20(41.67%)	07(87.50%)	

Pearson's Chi-squared test; Fisher's exact test

DISCUSSION

The present study investigated the prevalence and association of cannabis use among individuals with psychosis, stratified by age group, gender, and socioeconomic status. The findings demonstrated that cannabis use was observed in 30.6% of the study population, aligning with previous reports showing a higher prevalence of substance use in psychosis patients compared to the general population. These results are consistent with the findings of Gage et al.¹², who found that cannabis use is a significant risk factor for the onset and exacerbation of psychotic disorders, particularly among susceptible individuals. Other studies have found a positive association between cannabis use and psychosis.¹³ Patel et al. reported that socioeconomic disadvantage and male gender were additional predictors of cannabis use in psychosis patients, supporting the multifactorial nature of this association. The significant association between cannabis use and age group observed in this study aligns with existing evidence suggesting that younger individuals are more prone to substance use. The higher frequency of cannabis use among adolescents (41.07%) compared to adults (58.93%) could be attributed to several factors, including peer influence, impulsivity, and experimentation during adolescence. Adolescence is a critical period of brain development, marked by neuronal maturation processes, including myelination and synaptic pruning.¹⁴ The endocannabinoid system plays a pivotal role in these developmental processes; thus, exogenous cannabinoids like tetrahydrocannabinol (THC) may disrupt typical neurodevelopment, potentially leading to cognitive impairments and increased susceptibility to psychosis.¹⁵ Recent studies have reinforced these concerns, indicating that heavy cannabis use can have lasting effects on working memory.¹⁶ Additionally, the influence of peers remains a significant factor in adolescent cannabis use, with literature suggesting that adolescents are more likely to use cannabis if their parents do.¹⁷ The exclusive

cannabis use among males in this study shows a significant association between male gender and cannabis consumption. This finding is consistent with global patterns, where males are more likely to engage in substance use than females.¹⁸ Biological factors, such as higher testosterone levels, may contribute to this difference, as testosterone is linked to risk-taking behaviors.¹⁹ Sociocultural norms that normalize substance use among males may further explain this trend. Moreover, males with psychotic disorders may demonstrate greater impulsivity and risk-taking tendencies, making them more prone to substance use.²⁰

LIMITATIONS

This study has certain limitations that need to be considered when interpreting the findings. Information on cannabis use and other variables was obtained through self-report, which is prone to recall bias and potential underreporting, especially among females due to social stigma. Because the study was hospital-based, the results may not be fully representative of the general population, and the cross-sectional design prevents any conclusions about causal relationships. Cannabis use was not confirmed with biochemical tests such as urine drug screening, which limits diagnostic accuracy. The classification of socioeconomic status may also not fully reflect the complexity of social and economic determinants. Lastly, regression analysis was not carried out, so odds ratios and stronger measures of association could not be provided.

CONCLUSIONS

Approximately one-third of patients with psychosis reported cannabis use, with adolescents and males showing a higher frequency of use. Adolescents were more likely to consume cannabis daily or twice daily, increasing their susceptibility to its psychiatric and health consequences. Although all reported users were male, this should be interpreted cautiously, as underreporting among females may occur due to sociocultural stigma. Socioeconomic status was not significantly associated with overall use; however, more frequent consumption was observed among low- and middle-income groups. Further community-based studies with biochemical validation are needed to clarify these associations.

CONFLICT OF INTEREST: None

FUNDING SOURCES: None

REFERENCES

1. Nawaz R, Gul S, Amin R, Huma T, Al Mughairbi F. Overview of schizophrenia research and treatment in Pakistan. *Heliyon*. 2020;6(11):e05443. <https://doi.org/10.1016/j.heliyon.2020.e05443>. PMID: 33294593.
2. Rathod S, Javed A, Iqbal R, Al-Sudani A, Vaswani-Bye A, Haider I, et al. Results of a qualitative study of patient, carer and clinician views on the experience of caring for individuals with psychosis in Pakistan. *Cogn Behav Ther*. 2023;16:e17. <https://doi.org/10.1017/S1754470X23000077>. PMID: 36795550.
3. Groening JM, Denton E, Parvaiz R, Brunet DL, von Daniken A, Shi Y, et al. A systematic evidence map of the association between cannabis use and psychosis-related outcomes across the psychosis continuum: An umbrella review of systematic reviews and meta-analyses. *Psychiatry Res*. 2024;331:115626. <https://doi.org/10.1016/j.psychres.2023.115626>. PMID: 37845182.
4. Athanassiou M, Dumais A, Gnanhoue G, Abdel-Baki A, Jutras-Aswad D, Potvin S. A systematic review of longitudinal studies investigating the impact of cannabis use in patients with psychotic disorders. *Expert Rev Neurother*. 2021;21(7):779-91. <https://doi.org/10.1080/14737175.2021.1942845>. PMID: 34139976.
5. Fiorentini A, Cantù F, Crisanti C, Cereda G, Oldani L, Brambilla P. Substance-induced psychoses: an updated literature review. *Front Psychiatry*. 2021;12:694863. <https://doi.org/10.3389/fpsy.2021.694863>. PMID: 34335392.
6. Robinson T, Ali MU, Easterbrook B, Hall W, Jutras-Aswad D, Fischer B. Risk thresholds for the association between frequency of cannabis use and the development of psychosis: a systematic review and meta-analysis. *Psychol Med*. 2023;53(9):3858-68. <https://doi.org/10.1017/S0033291722000502>. PMID: 35153225.
7. Matheson SL, Laurie M, Laurens KR. Substance use and psychotic-like experiences in young people: a systematic review and meta-analysis. *Psychol Med*. 2023;53(2):305-19. <https://doi.org/10.1017/s0033291722003440>. PMID: 36218202.
8. Marconi A, Di Forti M, Lewis CM, Murray RM, Vassos E. Meta-analysis of the association between the level of cannabis use and risk of psychosis. *Schizophr Bull*. 2016;42(5):1262-9. <https://doi.org/10.1093/schbul/sbw003>. PMID: 26884547.
9. Hasan SS, Shaikh A, Ochani RK, Ashrafi MM, Ansari ZN, Abbas SH, et al. Perception and practices regarding cannabis consumption in Karachi, Pakistan: a cross-sectional study. *J Ethn Subst Abuse*. 2021;20(3):471-89. <https://doi.org/10.1080/15332640.2019.1667287>. PMID: 31686536.
10. Crocker CE, Carter AJ, Emsley JG, Magee K, Atkinson P, Tibbo PG. When cannabis use goes wrong: mental health side effects of cannabis use that present to emergency services. *Front Psychiatry*. 2021;12:640222. <https://doi.org/10.3389/fpsy.2021.640222>. PMID: 33746933.
11. Schoeler T, Baldwin JR, Martin E, Barkhuizen W, Pingault JB. Assessing rates and predictors of cannabis-associated psychotic symptoms across observational, experimental and medical research. *Nat Ment Health*. 2024;2(7):865-76. <https://doi.org/10.1038/s44220-024-00261-x>.
12. Gage SH, Hickman M, Zammit S. Association between cannabis and psychosis: epidemiologic evidence. *Biol Psychiatry*. 2016;79(7):549-56. <https://doi.org/10.1016/j.biopsych.2015.08.001>. PMID: 26386405.

13. Cantor N, Silverman M, Gaudreault A, Hutton B, Brown C, Elton-Marshall T, et al. The association between physical availability of cannabis retail outlets and frequent cannabis use and related health harms: a systematic review. *Lancet Reg Health Am.* 2024;32:143-9. <https://doi.org/10.1016/j.lana.2024.100708>. PMID: 39251210.
14. McDonald AJ, Kurdyak P, Rehm J, Roerecke M, Bondy SJ. Age-dependent association of cannabis use with risk of psychotic disorder. *Psychol Med.* 2024;54(11):2926-36. <https://doi.org/10.1017/s0033291724000990>. PMID: 38835676.
15. Rodrigues RJ, Marques JM, Köfalvi A. Cannabis, endocannabinoids and brain development: from embryogenesis to adolescence. *Cells.* 2024;13(22):1875. <https://doi.org/10.20944/preprints202410.1488.v1>.
16. Niloy N, Hediya TA, Vichitra C, Sonali S, Chidambaram SB, Gorantla VR, et al. Effect of cannabis on memory consolidation, learning and retrieval and its current legal status in India: a review. *Biomolecules.* 2023;13(1):162. <https://doi.org/10.3390/biom13010162>. PMID: 36614393.
17. Henneberger AK, Mushonga DR, Preston AM. Peer influence and adolescent substance use: a systematic review of dynamic social network research. *Adolesc Res Rev.* 2021;6(1):57-73. <https://doi.org/10.1007/s40894-019-00130-0>.
18. Prieto-Arenas L, Díaz I, Arenas MC. Gender differences in dual diagnoses associated with cannabis use: a review. *Brain Sci.* 2022;12(3):388. <https://doi.org/10.3390/brainsci12030388>. PMID: 35336279.
19. Maccarrone M, Rapino C, Francavilla F, Barbonetti A. Cannabinoid signalling and effects of cannabis on the male reproductive system. *Nat Rev Urol.* 2021;18(1):19-32. <https://doi.org/10.1038/s41585-020-00391-8>. PMID: 33149112.
20. Oh H, Jang SK, Lee HS, Lee EB, Choi KH. Personality traits in individuals with the dual diagnosis of psychosis and substance use disorders: a comprehensive review and meta-analysis. *J Dual Diagn.* 2021;17(1):34-51. <https://doi.org/10.1080/15504263.2020.1839827>. PMID: 33089784.

AUTHORS CONTRIBUTION

Hussain Ali - Concept & Design; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Supervision; Final Approval

Ashfaq Hussain - Concept & Design; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Supervision; Final Approval

Abrar Khan - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Supervision; Final Approval

Haidar Ali - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Critical Revision; Final Approval

Sumera Attaullah - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Supervision; Final Approval

Afroz Ahmad - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Final Approval

Liaqat Ali Khan - Concept & Design; Data Acquisition; Data Analysis/Interpretation; Drafting Manuscript; Final Approval

The authors accept responsibility for all aspects of the work and will ensure that any concerns regarding the accuracy or integrity of any part are properly investigated and resolved.



LICENSE: JGMDS publishes its articles under a Creative Commons Attribution Non-Commercial Share-Alike license (CC-BY-NC-SA 4.0).

COPYRIGHTS: Authors retain the rights without any restrictions to freely download, print, share and disseminate the article for any lawful purpose.

It includes scholarly networks such as Research Gate, Google Scholar, LinkedIn, Academia.edu, Twitter, and other academic or professional networking sites.