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Sociodemographic and Clinical Factors Associated with Cannabis use Among Schizophrenia Patients Treated at the Neuro-psycho-pathological Center of the University of Kinshasa, in Democratic Republic of Congo

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ABSTRACT

Background: *Cannabis use among individuals with schizophrenia in the Democratic Republic of Congo, although common, remains poorly documented. This study explores the main sociodemographic and clinical factors associated with cannabis use among patients with schizophrenia treated at the Neuro-Psycho-Pathological Center of the University of Kinshasa.*

Methods: *A cross-sectional analytical study was conducted. Sociodemographic and clinical data were collected using a structured questionnaire. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and the International Classification of Diseases (ICD-10) were used for the diagnosis of use disorders and the classification of schizophrenia subtypes. Statistical analysis included multivariate logistic regression to identify significant associations.*

Results: *Paranoid schizophrenia (OR = 2.013; CI [1.098–6.170]; p = 0.007) and schizoaffective disorder (OR = 2.305; CI [1.168–3.033]; p = 0.008) were the main clinical forms associated with cannabis use disorder. Male gender, younger age, lower education level, and single marital status were also significantly associated with cannabis use among patients with schizophrenia.*

Discussion: *Paranoid schizophrenia and schizoaffective disorder appear to play a decisive role in the development of cannabis use disorder among individuals with schizophrenia. Sociodemographic variables such as male gender and low education further increase vulnerability.*

Conclusion: *Paranoid schizophrenia and schizoaffective disorder are strongly associated with the development of cannabis use disorder in patients with schizophrenia in Kinshasa. These findings highlight the need for integrated therapeutic approaches combining schizophrenia and addiction management in low-resource settings.*

Keywords

Cannabis use, Clinical forms, Democratic Republic of Congo, Schizophrenia, Sociodemographic.

Introduction

Context

Schizophrenia, often associated with psychoactive substance use, presents a complex comorbidity that exacerbates clinical symptoms

and complicates patient management [1]. This association generates considerable challenges, both for diagnosis and for the implementation of appropriate treatment strategies.

Globally, it is reported that more than half of patients with schizophrenia abuse psychoactive substances, particularly cannabis [2], influenced by factors such as high perceived stress [3], cognitive deficits, and negative symptoms [4].

In the Democratic Republic of Congo, although this phenomenon is frequent, few studies have identified the specific factors that contribute to this comorbidity within the local context of Kinshasa, where resources and mental health care structures remain limited [5]. Clinicians at the Neuro-Psycho-Pathological Center (CNPP) of Kinshasa have observed an increase in psychiatric disorders aggravated by cannabis use, particularly among young adults.

Problem statement

Despite abundant international research on schizophrenia and addiction [6], the reasons why a large proportion of patients with schizophrenia in Kinshasa use psychoactive substances, particularly cannabis, remain underexplored. Why do patients with schizophrenia continue to use substances despite the known adverse effects? Are there specific clinical or sociodemographic factors that explain this behavior in the Congolese context?

Objective

This study aims to identify the main sociodemographic factors and clinical forms associated with cannabis use among schizophrenia patients treated at the Neuro-Psycho- Pathological Center of the University of Kinshasa.

Methods

Study design and setting

This was a cross-sectional analytical study conducted at the Neuro-Psycho-Pathological Center (CNPP) of the University of Kinshasa between May 2018 and April 2023. As the national reference center for the management of patients with schizophrenia and substance use disorders, the CNPP provided an appropriate framework for assessing the main factors associated with cannabis use in this specific population.

Study population

The study population consisted of all patients diagnosed with schizophrenia and hospitalized at the CNPP of the University of Kinshasa. This population was selected because it is accessible, regularly followed by mental health professionals, and representative of the patient base of the center.

Recruitment of participants

Patients were consecutively recruited according to their order of admission for hospitalization during the study period.

Sampling technique

A non-probabilistic convenience sampling method was used. Eligible participants were adults (aged 18 years or older) diagnosed with schizophrenia according to DSM-5 or ICD-10 criteria [7,8] and with a history of cannabis use, regularly managed at the CNPP. Patients with a primary diagnosis other than schizophrenia or those presenting with comorbid neurological disorders were excluded from the study. The sample size was 503 subjects evaluated, recruited by convenience.

Data collection tools

Data were collected through psychiatric interviews and direct clinical observation, using a standardized data collection form that included sociodemographic variables, psychiatric history, diagnosis, clinical subtype of schizophrenia, and cannabis use. The psychiatric evaluation was carried out by trained neuropsychiatrists.

Data collection procedure

The data collection was conducted in five major stages

1. **Stage 1:** Psychiatric interviews and observations to obtain sociodemographic and clinical data, including cannabis use history.
2. **Stage 2:** Diagnostic assessment based on DSM-5 and ICD-10 standardized instruments to identify schizophrenia subtypes.
3. **Stage 3:** Diagnostic consistency check using DSM-5 and ICD-10 criteria.
4. **Stage 4:** Classification of schizophrenia clinical forms according to DSM-IV subtypes: paranoid, schizoaffective, hebephrenic, catatonic, undifferentiated, residual, and simple schizophrenia [9].
5. **Stage 5:** Assessment of cannabis dependence using the Cannabis Use Disorder Identification Test-Revised (CUDIT-R), a validated screening tool. A score ≥10 indicated severe dependence.

To ensure anonymity, all questionnaires were coded numerically, and identifiers were stored separately from data files. Data were entered into Microsoft Excel.

Statistical analysis

Data were expressed as frequencies, percentages, means, and standard deviations. Descriptive analyses summarized sample characteristics, while multivariate logistic regression models were used to identify factors associated with cannabis use disorder among schizophrenia patients. Odds ratios (OR) with 95% confidence intervals (CI) were calculated, and a significance level of $p < 0.05$ was adopted. Statistical analyses were performed using SPSS version 27.0.

Ethical considerations

This study was approved by the Ethics Committee of the University of Kinshasa (Reference: ESP/CE/81B/2025). Written informed consent was obtained from all participants prior to inclusion, in accordance with the ethical principles of clinical research.

Results

This study examined sociodemographic and clinical factors associated with cannabis use among patients diagnosed with schizophrenia treated at the CNPP of Kinshasa. The results

are presented in the form of frequencies, means, and statistical associations.

Sociodemographic and clinical characteristics of patients with schizophrenia using cannabis

Table 1 summarizes the main sociodemographic and clinical characteristics of patients with schizophrenia who used cannabis.

Most cannabis-using schizophrenia patients were male, single, and had a low education level. The paranoid and schizoaffective subtypes were the predominant clinical forms among cannabis users, with statistically significant associations ($p < 0.05$).

Table 1: Sociodemographic and clinical characteristics of schizophrenia patients using cannabis (univariate analysis).

Variable	Mean	Standard deviation (%)	p-value
Male	225	78.4	0.04
Female	57	20.2	0.21
Low education level	11.58	2.61	0.01
High education level	10.08	1.61	0.51
Maried	71.05	19.88	0.59
Single	15.35	5.76	0.01
Disorganized form	35.22	10.55	0.52
Undifferentiated form	19	6.60	0.50
Catatonic form	0.262	0.378	0.43
Schizoaffective form	44	26.3	0.04
Paranoid form	53	10.5	0.03
Residual form	4	2.1	0.83
Simple form	39	20.1	0.63

The analysis revealed that male gender, single status, low education level, and paranoid or schizoaffective forms of schizophrenia were significantly associated with cannabis use.

Factors associated with cannabis use among schizophrenia patients

Table 2 shows the univariate and multivariate analyses of the factors associated with cannabis use disorder among schizophrenia patients.

Discussion

This study identified several factors associated with cannabis use among patients with schizophrenia treated at the Neuro-Psycho-Pathological Center (CNPP) in Kinshasa. Overall, the findings are consistent with those reported in international literature, while highlighting specific contextual features relevant to the Congolese setting.

Sociodemographic determinants

Sociodemographic factors such as male gender, younger age, single marital status, and low education level significantly influenced cannabis use among patients with schizophrenia. These findings align with the work of Blanco and al. [2], who reported a higher prevalence of substance use disorders in young, single men with schizophrenia.

Cultural norms and socioeconomic factors in Kinshasa, such as unemployment and social marginalization, may further increase vulnerability to substance use. The lack of structured prevention programs and mental health education likely contributes to the persistence of cannabis use in this population.

Clinical correlates

Clinically, the paranoid and schizoaffective subtypes of schizophrenia were strongly associated with cannabis use disorder. This finding represents one of the main contributions of this study within the Congolese context. The paranoid subtype, characterized by intense delusional activity and auditory hallucinations [10], may lead patients to use cannabis as a form of self-medication to reduce stress and anxiety [11].

Patients with this form often maintain relatively intact cognitive functioning, making them more aware of their distress and more inclined to seek temporary relief through psychoactive substances [12,13].

The schizoaffective subtype, which combines psychotic and affective symptoms, may also predispose patients to cannabis use as an attempt to regulate mood or achieve short-term emotional stabilization. These results echo those of Madigand et al. [10] and Blessing et al. [14], who highlighted the role of cannabinoids in

Table 2: Factors associated with cannabis use among schizophrenia patients (univariate and multivariate analyses).

Variable	Univariate			Multivariate		
	OR	**95% IC**	P	OR	**95% IC**	P
Gender(male)	4.218	(1.564-6.122)	**0.000**	3.211	(1.564-6.112)	**0.002**
Age(younger)	1.943	(1.485-3.998)	**0.002**	1.793	(1.897-3.998)	**0.004**
Low education Level	2.943	(1.495-3.998)	**0.000**	2.743	(1.895-4.998)	**0.041**
Single marital	4.218	(1.564-6.122)	**0.000**	3.211	(1.564-6.112)	**0.002**
status Disorganized	0.043	(1.027-2.112)	**0.249**	0.053	(1.027-2.012)	**0.280**
Undifferentiated	0.516	(1.135-4.427)	**0.516**	0.028	(1.135-3.427)	**0.978**
Paranoid form	3.138	(1.090-5.170)	**0.000**	2.013	(1.098-6.170)	**0.007**
Schizoaffective	2.605	(1.168-3.053)	**0.006**	2.305	(1.168-3.033)	**0.008**
Catatonic	0.053	(1.895-2.850)	**0.116**	0.009	(1.885-2.750)	**0.895**
Residual	1.956	(1.403-2.999)	**0.040**	0.920	(1.503-3.999)	**0.157**
Simple	0.012	(1.213-3.180)	**0.150**	0.009	(1.113-2.080)	**0.619**

modulating affective symptoms.

Public health implications

The findings underscore the importance of integrated therapeutic approaches that address both psychotic symptoms and substance use disorders. In resource-limited settings such as the DRC, interventions should combine psychosocial support, psychoeducation, and community- based prevention programs. Such initiatives could help reduce the burden of comorbidity and improve treatment adherence among patients with schizophrenia.

Strengths and limitations

This study is among the first in the Democratic Republic of Congo to explore the link between cannabis use and schizophrenia, providing valuable local data to guide mental health policies. However, some limitations should be acknowledged. The cross-sectional design precludes causal inference, and the sample size, limited to a single center, may restrict the generalizability of the results. Future research should adopt longitudinal and multicenter designs to confirm these associations and explore additional variables such as social stigma, trauma history, and treatment outcomes.

Conclusion

This study, conducted at the Neuro-Psycho-Pathological Center (CNPP) of Kinshasa, identified several sociodemographic and clinical factors associated with cannabis use among patients diagnosed with schizophrenia. The findings revealed that male gender, younger age, single marital status, low education level, and the paranoid and schizoaffective subtypes of schizophrenia were the main determinants of cannabis use disorder.

These results emphasize the need for targeted interventions aimed at increasing awareness of the risks associated with cannabis use and promoting an integrated therapeutic approach that simultaneously addresses schizophrenia and substance use disorders. Such programs should also include psychosocial rehabilitation and community support to enhance long-term recovery and social reintegration.

Further research should investigate the impact of social stigma and community-based prevention strategies to improve care for individuals with dual diagnoses in low-resource settings such as the Democratic Republic of Congo.

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Declaration of competing interest

The authors declare tha they have no known competing financial interests or personal relationship that could have appeared to influence the work reported in this paper.

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