Research Article

Cannabis Abuse among Patients with Schizophrenia

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Abstract:

Background: Cannabis is the most frequently used substance among patients of schizophrenia. Past deliberate surveys have reported a strong association between cannabis abuse and schizophrenia. However; the whole frequency of cannabis abuse among schizophrenia patients remains ambiguous, as do the variables influencing this rate. Because cannabis abuse in schizophrenia is presently an active area of research, so there is a requirement for a fresh review particularly in our culture where studies are lacking on this topic.

Objective: The current study explores the frequency of cannabis abuse among patients suffering from schizophrenia presenting in a tertiary care hospital of Lahore.

Methods: Cross-sectional prospective research design was used. Sample of 381 diagnosed patients of schizophrenia using cannabis for at least one year was selected from Sir Ganga Ram Hospital, by convenient sampling technique. Drug Abuse Screening Test was applied for the frequency of cannabis abuse. The data were stored and analysed in SPSS version 20.

Results: The results revealed that cannabis abuse was present among 42.3% of the patients with schizophrenia. Chi-square analysis showed that there were significant differences among the frequencies of cannabis abuse regarding various age groups, where young age group had significantly higher ratio of cannabis abuse (p=.04). On using independent sample t-test for marital status and duration of the schizophrenia, it was found that cannabis abuse was significantly higher among unmarried patients (t=-4.24, p=.001), however, no significant differences were found for duration of schizophrenia (t=-1.50, p=0.43).

Conclusion: The study highlights cannabis abuse is more prevalent in the males as compared to the females. Young age group of patients is more prone to cannabis. These findings can help to decrease the comorbidity of schizophrenia associated with cannabis abuse.

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Introduction:

Cannabis is the most frequently used substance among patients of schizophrenia. Past deliberate surveys have reported a strong association between cannabis abuse and schizophrenia[1,2]. Schizophrenia is one of the major psychiatric syndromes characterized by delusions, hallucinations, disturbance in the flow of thought, disorganized speech and behaviour, also social and functional decline[3]. It usually runs a chronic course and has been associated with substance abuse especially cannabis[4].

Cannabis is also famous as marijuana among numerous different names, being prepared from the cannabis plant for use as a psychoactive medication[5].

Schizophrenia has been strongly linked to the consumption of cannabis, but it is still under debate that substance abuse plays a moderator or causal function in the illness[6]. However there have been studies that favour this idea as proved by one in which patients who took cannabis were more likely to develop the illness[7]. Cannabis is one of the most commonly used substances

and is widely used in patients with schizophrenia than in the general population[8]. Epidemiological evidence also advocates that cannabis use among adolescents is a risk factor for psychosis, while cannabis use in individuals with a predisposition for schizophrenia results in an exacerbation of symptoms and worsening the prognosis of schizophrenia[9]. Cannabis abuse may not only initiate symptoms of psychosis but may also perpetuate the existing symptoms. Cannabis abuse was found more frequent among young patients with the first episode of schizophrenia[10]. The expanded use can be credited to elements, for example, to kill boredom, excessive worry, hopelessness, agitation, sleep disorder, certain social thought processes, and negative psychotic symptoms[11].

There is also a connection between cannabis abuse and brain morphology in patients with schizophrenia[12,6]. An investigation demonstrated that patients with cannabis abuse had little Fronto-Temporal white matter volumes than ones without serious abuse[12]. Critical genotype-by-cannabis use interaction impacts on White Matter volumes[13]. A study concentrating on white matter and cerebellar grey matter in patients of the first episode having and not having a record of cannabis use and non-psychiatric users of cannabis exposed a lifetime dose-dependent regional decrease in grey matter in the Right Cerebellar lobules and a propensity for more reflective grey matter decrease in Lobule III with young age at the start of cannabis use[14,8,6].

The consequences of cannabis abuse on the illness can be accessed from the fact that when schizophrenia patients with cannabis abuse were compared to the patients without cannabis abuse, the former category of patients was significantly younger[10] at that time when the first psychotic symptom occurred and had more relapses and in most cases, cannabis abuse had started one year before the appearance of symptom[7]. It was found that cannabis abuse causes poorer psychosocial functioning, increase in psychopathological syndromes like psychotic symptoms, mania, and depression however continued use of cannabis following the first episode of psychosis was significantly correlated with the poorer outcome at 1 year[15].

Literature gives us evidence that how cannabis worsens the prognosis of the disease thus it is very important to carefully address this issue during the treatment of patients with schizophrenia. The current study aims to highlight the frequency of cannabis abuse among patients with schizophrenia. This will help to ensure better outcomes of the treatment.

Methods:

This cross-sectional prospective study was conducted at the outdoor and indoor Psychiatry Department, Sir Ganga Ram Hospital Lahore, after the approval of the Ethical Review Committee. The study duration was January 2018 to December 2018. Total 381 diagnosed patients of schizophrenia (both male and female) using cannabis for at least one year, with the age range of 16-45 years were included through a convenient sampling technique. Written informed consent was taken from the participants. For assessment DAST-10 (Drug Abuse Screening Test) was used. The study labelled 'Cannabis Abuse' when patients have used cannabis for one year or more and have a minimum score of 6 on the assessment tool DAST. All the collected information was stored and analysed in SPSS version 20.

Results:

A total of 381 patients with Schizophrenia (both male and female) using cannabis for at least one year were included in this Cross-sectional prospective research. The mean age of the patients was 31.24 with a standard deviation of 8.26. The mean DAST score was 6.11 with a standard deviation of 5.104. Among 381 patients, 67.7% were male while 32.3% female, and 76.1% patients were unmarried whereas 23.9% were married. There were 41.7% patients with acute duration of schizophrenia while 58.3% had chronic duration. Study findings revealed that cannabis abuse was present among 42.3% of the patients with schizophrenia. The percentage of females with cannabis abuse was 6.6% which was far less than the males, which was 35.7%.

Chi-square test was performed to see the age group differences in the cannabis abuse among the patients. Results showed that there were significant differences among the young age group had significantly higher ratio of cannabis abuse (Table 1).

On using independent sample t-test for marital status differences, it was found that cannabis abuse was significantly higher among unmarried patients with schizophrenia than married patients (Table 2).

Table 1: *Chi-square test for age group differences in the cannabis abuse among patients with schizophrenia (N=381)*

Age Groups	Cannabis Abuse		Total	p
	Yes	No		
Young Age (18-25 years)	117 (30.7%)	21 (5.5%)	138 (36.2%)	
Early Middle Age (26-35 years)	21 (5.5%)	79 (20.7%)	100 (26.2%)	.04
Late Middle Age (36-45 years)	23 (6.1%)	120 (31.5%)	143 (37.6%)	
Total	161 (42.3%)	220 (57.7%)	381 100.0%	

Table 2: *Independent Sample t-test for marital status differences in the cannabis abuse among patients with schizophrenia (N=381)*

Variable	Unmarried (n=292)		Married (n=89)				
	M	SD	M	SD	t	p	Cohen's d
Cannabis Abuse	29.84	6.05	13.47	5.61	-4.24	.001	1.29

Table 3: *Independent Sample t-test for duration of schizophrenia differences in the cannabis abuse among patients (N=381)*

Variable	Acute (n=159)		Chronic (n=222)				
	M	SD	M	SD	t	p	Cohen's d
Cannabis Abuse	10.28	3.98	12.00	4.03	-1.50	.14	0.43

Independent sample t-test was further performed to evaluate the cannabis abuse difference regarding duration of the schizophrenia. Results demonstrated that there were no significant differences in cannabis abuse between acute and chronic duration of schizophrenia. (Table 3)

Discussion:

Several researches have been carried out all over the world to assess the frequency of cannabis abuse in schizophrenia and how it influences its onset, severity, and course. In the present study, the frequency of cannabis abuse among patients with schizophrenia was found 42.3%. General psychosocial factors for example poverty, joblessness, lack of education, and peer impact can expand its comorbidity[16]. A greater exposure to stressors is related to both disorders, which on one hand worsen psychotic symptoms and on the other increase drug consumption. However, the degree of individuals with schizophrenia who use cannabis, differs but over-all, the perceived prevalence rate is about 40%[17]. Almost the same frequency of cannabis abuse was observed in the current study.

According to a study published in the British Journal of Psychiatry[15], expansions in psychotic symptoms and its longer duration are associated to cannabis abuse. Following another study conducted in Peshawar by Rehman and Farooq[18], where poor drug compliance led to increased relapse rate; the patients showed adverse effects of comorbid cannabis abuse on almost all the domains of the disorder including medication compliance, course, and treatment effectiveness. Similarly, the objective of this study was to assess the frequency of cannabis abuse in patients with schizophrenia so that management of such patients can be improved and compliance to treatment can be better ensured.

The outcomes of the present study indicate that among 67.7% of the male patients, 35.7% were cannabis abuser, also it was more prevalent in unmarried patients.

The majority of patients with schizophrenia, who have comorbid drug abuse disorders, are found unmarried males with the percentage of 79.8%, as reported by Thomsen and colleagues[19]. Likewise a study carried out by Koskinen and group[10] found the percentage to be about two-third of the total sample size. However, in the current study, the percentage of women with cannabis abuse was 6.6% which is far less than the percentage in the international studies. The difference in frequency could be because of methodological procedures and due to various tools used for the assessment of drug abuse. It may also because of cultural factors, as women in our culture do not have free exposure to drugs; therefore the frequency of cannabis abuse is lesser in them.

The findings of the current study revealed higher abuse of cannabis among the young age group with 30.7%. In the sample of meta-examination, almost every fourth patient with schizophrenia was identified with cannabis use disorders; particularly frequent in the first episode and young age group with a high ratio of males[10]. This confirms the results of our study.

Duration of schizophrenia did not seem to have any major difference on cannabis abuse in this study. However, in the study conducted in Peshawar, there was an increased frequency of cannabis abuse in a shorter duration of illness[20]. This difference is not considered a major difference as both studies were cross-sectional, longitudinal research can be conducted with greater sample size to clarify this phenomenon.

Volkow[16], found in his study on substance use disorders, as compared to the general population, patients with schizophrenia are twice likely to consume drugs, especially cannabis. The comorbidity of schizophrenia and cannabis abuse can be a direct impact on the fundamental neuropathology of schizophrenia, which may contribute to enhance dependence and vulnerability by disturbing the neural substrates that conciliate positive reinforcement.

The limitation of the current study was that it could not compare the frequency of cannabis abuse with the general population, however, it is highly suggested that num-erous interventions should be drawn at the national level, for the prediction of Cannabis abuse in various population, to prevent the symptoms of psy-chosis.

Conclusion:

The study highlights that a significant ratio of schizophrenic patients is cannabis abuser. However, cannabis abuse is more prevalent in the male gender as compared to the female gender. Furthermore, unmarried and the young age group of patients with schizophrenia is more prone to cannabis. These findings can help to decrease the comorbidity of schizophrenia (frequent relapses, younger age of onset, increased social and functional decline) associated with cannabis abuse, and ensure a better outcome of treatment of schizophrenia.

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