

Views of schizophrenia patients on the effects of cannabis on their mental health

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Background. Cannabis use may trigger or perpetuate clinical features of schizophrenia in vulnerable individuals, thereby contributing to the morbidity of schizophrenia and its burden of disease. These findings have mostly not considered the views of schizophrenia patients on cannabis use and its effect on their mental health.

Methods. A semi-structured 16-point opinion-type questionnaire was formulated from the results of a previous qualitative study on schizophrenia patients' opinions about cannabis use. The questionnaire was applied to 60 participants from an inpatient schizophrenia population at Weskoppies Hospital, Pretoria, South Africa, who had a *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (text revision) (DSM-IV-TR) diagnosis of schizophrenia and a documented history of cannabis use.

Results. According to participants' responses, 61.7% admitted to suffering from a mental illness, 95.0% admitted to using cannabis in the past, and 20.0% of participants admitted to the current use of cannabis. Over half (51.7%) of the participants responded that cannabis had adverse effects on their mental health, 26.7% that their mental illness was caused by using an illicit drug other than cannabis, 26.7% that only impure cannabis had adverse effects on their mental health, and 48.3% that only using too much cannabis had bad effects on their mind. A high percentage (58.3%) of participants responded that cannabis use helped reduce tension, 56.7% that it helped reduce anxiety, 66.7% that it helped to lift their mood, 63.3% that it helped them to relax, 60.0% that it helped to relieve their boredom, 43.3% that it helped them feel more energetic, 58.3% that it helped them sleep better, 13.3% that it helped reduce auditory hallucinations, and 31.7% that the beneficial effects of cannabis outweighed its negative effects.

Conclusion. Most of the participants who responded that they were not using cannabis currently had positive views about its effects on their mental health, despite responding that cannabis may have adverse effects on their mental health. This is a worrisome outcome, since those participants who feel that cannabis has more beneficial than detrimental effects might not remain abstinent.

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Schizophrenia is a severe, chronic disorder with a high level of disability, increased mortality from natural and unnatural causes, and a low rate of remission over the long term.^[1] Cannabis is second only to tobacco as the most widely used addictive substance,^[2] and is more often used in schizophrenia patients than in the general population.^[3] Much has been written about cannabis and its association with psychotic disorders, but only a few papers relevant to this research will be cited. The literature indicates that drug abuse, to which cannabis abuse contributes significantly, adds to the morbidity of schizophrenia.^[4-10] At present it is held that a combination of genetic factors (see for example Genetic Risk and Outcome in Psychosis (GROUP),^[11] van Winkel *et al.*,^[12,13] and Bhattacharyya *et al.*^[14]) and environmental factors (see Henquet *et al.*^[15] and van Os *et al.*^[16]) contribute to the risk of someone developing psychosis (including schizophrenia) subsequent to cannabis use. It has also been noted that more research is needed to clarify the relationship between cannabis use and psychosis.^[17] What is known is that cannabis use may not only trigger a psychotic illness in a predisposed individual, but that it is also likely to perpetuate existing symptoms.^[18-21] Furthermore, there is a high incidence of cannabis use in a first-episode psychotic disorder,^[22,23] which begs the question about the role of cannabis in precipitating it. It also

seems that cannabis use is associated with an earlier onset of a psychotic disorder, including schizophrenia. Thus, concerns have been raised regarding teenage use of cannabis.^[15,24-29] Despite these concerns not all research has confirmed them.^[30] While a number of studies have indicated an increased risk for psychotic episodes (without specifying them as schizophrenia), some studies have specified that cannabis use increases the risk for schizophrenia.^[26,27]

The deleterious effects of cannabis use on schizophrenia have also been described in a South African (SA) study.^[31] Botha *et al.*^[31] reported that cannabis-using schizophrenia patients use mental health services more frequently, thereby indicating a higher morbidity in that population. However, in contrast to the findings indicating deleterious effects of cannabis in schizophrenia, beneficial effects on cognitive functioning (that need further study) have also been reported.^[32-34] Some studies indicate that schizophrenia patients think that cannabis is beneficial for them. Accordingly, Addington and Duchak^[35] reported that subjects with a diagnosis of schizophrenia use cannabis to relax and reduce depression, Schofield *et al.*^[36] found that the most important motivators for cannabis use in schizophrenia subjects were boredom, social motives, sleep disturbances, anxiety, agitation, negative psychotic symptoms and depression, while Thornton *et al.*^[37] reported that subjects with schizophrenia used cannabis for pleasurable effects.

The reason for cannabis predisposing vulnerable individuals to psychotic episodes needs further study. At this stage the evidence points towards activation of the endocannabinoid system,^[33] other neurotransmitter systems,^[8] and structural brain changes in predisposed individuals after long-term cannabis use.^[8,38]

Despite cannabis use being frequent among schizophrenia patients,^[5,7] and despite cannabis being considered detrimental to schizophrenia patients,^[4,6,8-9] there is a dearth of studies addressing schizophrenia patients' opinions about cannabis use, although there are studies that have investigated the reasons for cannabis use among psychotic patients. Such reasons are to relieve boredom, insomnia, anxiety, agitation, control of negative and positive psychotic symptoms, increased energy levels and to improve cognitive function.^[39]

The authors could find only one study – a qualitative study by Baudze *et al.*^[40] – that investigated what patients suffering from schizophrenia believed about cannabis use. According to that study, schizophrenia patients did not link cannabis use with their mental illness. Moreover, patients did not think that the advantages of cannabis use outweighed the disadvantages.^[40] The authors hope that the current study will make a further contribution to research on schizophrenia patients' opinions about cannabis use.

Aim and methods

The aim of the study was to explore the opinions of patients who suffer from schizophrenia regarding the effects of cannabis on their mental health. The study was conducted at Weskoppies Hospital (WKH), a tertiary-level psychiatric hospital in Pretoria, SA, where diagnoses are made according to *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (text revision) (DSM-IV-TR)^[41] criteria. At WKH patients are allocated to a treatment unit, depending on their mental disorder and age. The participants of this study were recruited from the units treating schizophrenia. The recruitment was done by convenient sampling, meaning that patients with a diagnosis of schizophrenia and with a documented history of cannabis use were approached for participation. Eligible patients had been identified from clinical records and invited to participate in the study. Study requirements were: having a diagnosis of schizophrenia; having any history of past or present cannabis use; being between the ages of 18 and 59 years (because of the units in which they were being treated); having the capacity to provide informed consent; and being willing to participate. The severity of cannabis use was not assessed. Patients were not excluded on the basis of psychotic illness at the time of the study. However, they had to be able to understand the questions and give appropriate answers. The capacity to give informed consent and participate in the study was based on an assessment by the first author. The answers of participants were taken at face value without questioning whether such answers were influenced by a current illness or not.

Patients with a substance-induced psychotic disorder, schizophreniform disorder, brief psychotic disorder, schizoaffective disorder and a psychotic disorder due to a general medical condition were excluded. Participant recruitment took place between 1 December 2012 and 30 July 2013.

The following data were recorded: a diagnosis of schizophrenia as recorded in the clinical file, use of cannabis as recorded in the clinical file, age, race, gender, marital status, occupation, source

of income, religion and home language. Data pertinent to the aims of the study were collected by the first author by conducting face-to-face structured interviews with 60 participants. The interview was structured by using an opinion-type questionnaire formulated specifically for this study. The questions were informed by the findings of a qualitative study that investigated the beliefs about cannabis use in schizophrenia patients.^[40] Baudze *et al.*^[40] investigated whether subjects suffering from schizophrenia think that cannabis causes schizophrenia, as well as their beliefs about the effects cannabis has on mental health. The themes that emerged from that study were that patients believed that: no causal link existed between cannabis use and schizophrenia; adverse reactions to cannabis were either dose-related or related to the quality of the cannabis preparation; amphetamines and hallucinogens were harmful to mental health (but not cannabis); cannabis reduced anxiety and tension; and cannabis had an energising and mood-lifting effect. The questions informed by the findings of Baudze *et al.*^[40] are listed in Table 1.

The questionnaire was constructed so that participants could choose one response from four options: yes, no, unsure or not applicable. The option 'not applicable' was included because participants who denied ever having used cannabis and/or denied having a mental illness might have wished to indicate that some (if not most) questions were not applicable to them. The questionnaire was compiled so that the questions could be easily understood and, if needed, translated by an interpreter. A qualified mental healthcare nurse in the ward of the participant assisted with interpretation if the participant did not understand English. The researchers were of the opinion that, despite the chance of faulty interpretations when making use of an interpreter, the risks of this happening with the specific interpreter and the specific questionnaire were low, and that it was more important not to exclude potential participants simply because they could not speak English.

The researchers respectively obtained ethics approval and permission for the study from the Research Ethics Committee of the Faculty of Health Sciences of the University of Pretoria and permission from the chief executive officer of WKH.

Results

Seventy-one patients were identified as possible participants. Eleven patients were excluded from the study, 6 because they were too ill to give informed consent and 5 because they refused to participate. Thus 60 patients were recruited as participants. An interpreter was required for 6 (10.0%) participants.

The mean age (standard deviation) of the participants was 27.4 (5.1) years. Participants were 95.0% male, 95.0% single, 1.7% married and 3.3% divorced. Participants' level of education was as follows: 1.7% had no formal education; 8.3% had attained an educational level of between grades 1 and 7; 58.3% had attained an educational level of between grades 8 and 11; 21.7% had an educational level equivalent to grade 12; and 10.0% had completed some form of tertiary education. Seventy per cent of participants responded that they were unemployed, 24.9% that they were employed, 3.3% that they were students and 1.7% that they were on a disability grant. The results of participants' responses to the questionnaire are displayed in Table 1.

Table 1. Participant responses to questionnaire (N=60)

Question	Yes n (%)	No n (%)	Uncertain n (%)	Not applicable n (%)
1. Do you have a mental illness?	37 (61.7)	19 (31.7)	4 (6.7)	0 (0.0)
2. Have you ever used cannabis in the past?	57 (95.0)	3 (5.0)	0 (0.0)	0 (0.0)
3. If you have used cannabis in the past, are you still using cannabis?	12 (20.0)	45 (75.0)	1 (1.7)	2 (3.3)
4. Do you think that cannabis makes your mental illness worse?	31 (51.7)	12 (20.0)	2 (3.3)	15 (25.0)
5. Was your mental illness caused by using any other drugs besides cannabis, for example: alcohol, crystal meth, LSD or ecstasy?	16 (26.7)	34 (56.7)	1 (1.7)	9 (15.0)
6. Do you believe that only impure cannabis can have bad effects on your mind?	16 (26.7)	41 (68.3)	3 (5.0)	0 (0.0)
7. Do you believe that only using too much cannabis can have bad effects on your mind?	29 (48.3)	28 (46.7)	3 (5.0)	0 (0.0)
8. Does using cannabis help to reduce your tension?	35 (58.3)	22 (36.7)	0 (0.0)	3 (5.0)
9. Does using cannabis help to reduce your anxiety?	34 (56.7)	23 (38.3)	0 (0.0)	3 (5.0)
10. Does using cannabis help to lift your mood?	40 (66.7)	17 (28.3)	0 (0.0)	3 (5.0)
11. Does using cannabis help you to relax?	38 (63.3)	18 (30.0)	1 (1.7)	3 (5.0)
12. Does using cannabis help with boredom?	36 (60.0)	19 (31.7)	2 (3.3)	3 (5.0)
13. Does using cannabis help make you feel more energetic?	26 (43.3)	28 (46.7)	2 (3.3)	4 (6.7)
14. Does using cannabis help you to sleep better?	35 (58.3)	21 (35.0)	1 (1.7)	3 (5.0)
15. Does using cannabis help with the voices?	8 (13.3)	29 (48.3)	0 (0.0)	23 (38.3)
16. Do you believe that the good effects of cannabis are more than the bad effects?	19 (31.7)	40 (67.7)	1 (1.7)	0 (0.0)

Discussion

In this study most participants denied current cannabis use, but acknowledged previous periods of cannabis use. Participants might have denied current cannabis use because: (i) they were not using cannabis at present; (ii) they feared negative consequences if they admitted to using cannabis at present; (iii) they had frank denial as a defence mechanism; or (iv) some other reason. Taking into consideration that cannabis use is discouraged by mental healthcare practitioners, and that cannabis may be difficult to obtain on the hospital premises, a true decrease in cannabis use is possible (if not probable).

Just more than half of the participants (51.7%) responded that cannabis worsens their mental illness. This participant response is consistent with the literature, which, although somewhat ambiguous as to whether cannabis can cause schizophrenia, is not ambiguous about whether cannabis can precipitate schizophrenia in vulnerable individuals and worsen the course of schizophrenia.^[42] The current study found that some participants (26.7%) were of the opinion that drugs other than cannabis caused their mental illness. This finding is consistent with the findings of Baudze *et al.*^[40] Furthermore, the opinion may reflect a fact since it is known that drugs like amphetamines and hallucinogens may cause psychosis in vulnerable individuals.^[43,44] Nonetheless, some researchers are of the opinion that the risk regarding schizophrenia is specific to cannabis use, and not to other drugs.^[26]

The present study found that some participants responded that only too much (48.3%) or impure (26.7%) cannabis might worsen their mental illness, which is consistent with the findings of Baudze *et al.*^[40] This finding is a cause for concern, because such participants may be more likely to use 'a little' or 'pure' cannabis in future, thereby possibly compromising their mental health. Just more than half of this study's

participants (51.7%) responded that cannabis use is detrimental to their mental health. This means, of course, that as many as 48.3% did not hold that opinion, which is also a reason for concern.

The majority of participants responded that cannabis has positive effects: (i) 58.3% responded that cannabis reduces tension; (ii) 56.7% that it reduces anxiety; (iii) 66.7% that it lifts mood; (iv) 63.3% that it relaxes them; (v) 60.0% that it relieves boredom; and (vi) 58.3% that it improves sleep. Furthermore, a significant minority (43.3%) responded that cannabis gives them energy. In contrast to the previously mentioned beneficial effects, only a small number of participants (13.3%) responded that cannabis improves hallucinations. Having such positive opinions about the effects of cannabis is consistent with previous findings.^[35-37]

Since participants in the present study (and in other studies) are so often of the opinion that cannabis has beneficial effects, it is necessary to establish what the facts about cannabis use in schizophrenia are. Although a minority of studies hint at possible beneficial effects,^[45,46] the bulk of the research evidence indicates that the majority of schizophrenia patients at best do not benefit from cannabis and at worst suffer negative consequences from cannabis use.^[9,10,18-20,31,42,47]

Despite there being so many participants that have something good to say about cannabis, only a minority of participants were of the opinion that the beneficial effects of cannabis outweigh the deleterious effects. The study did not explore the reasons for participants' opinions and therefore one can only speculate about the reasons for this discrepancy. One possible reason is that most participants are of the opinion that cannabis worsens their mental illness (and thus that the deleterious effects outweigh the beneficial effects). Another possible reason is that the answer to question 16 is the result of psychoeducation, or even simply to give an answer the researcher might approve of. The latter is, however, not likely, because

the answers to questions 8 - 14 are unlikely to be considered answers that the researcher might approve of.

The study depended on the truthfulness of participants. No laboratory tests were done to confirm or disconfirm how participants responded. However, at this stage it is not possible to do a laboratory test for previous cannabis use, only for recent cannabis use. The study did not attempt to quantify previous or present cannabis use, which may influence participants' opinions. Also, the vast majority of participants were male; the response might have been different if the participants had been mainly female. A further limitation is that interpreters were needed for some of the participants. It is possible that translation from English into an African language was not always accurate. However, the researchers tried to ask the questions in the simplest English possible and, thus, hopefully the spirit of the question was not lost in translation.

Conclusion

Despite participants' having used cannabis much less often at the time of the study than previously, two overall responses by the participants of this study are of concern, because they may negatively influence continued abstinence from cannabis. The first is that a significant minority of participants responded that cannabis use was not detrimental to their mental health. The second is that most participants responded that cannabis use was in some way beneficial. More studies concerning schizophrenia patients' opinions about cannabis use are needed. Also, more work needs to be done regarding possible positive effects of cannabis on schizophrenia. For now, however, with present research mostly indicating that cannabis use is detrimental for schizophrenia, schizophrenia patients need to be informed about the detrimental effects of cannabis and unfounded positive opinions about cannabis need to be addressed.

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