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Elsa Melanie dos Santos Nhaguilunguane

Perception of the risk associated with drug use in patients with history of cannabis induced psychosis

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Elsa Melanie dos Santos Nhaguilunguane

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NOME

Elsa Melanie dos Santos Nhaguilunguane

NÚMERO DE ESTUDANTE	E-MAIL
201607353	Melymelanie99@gmail.com

DESIGNAÇÃO DA ÁREA DO PROJECTO

Psiquiatria e saúde mental

TÍTULO DISSERTAÇÃO/~~MONOGRAFIA~~ (riscar o que não interessa)

Perception of the risk associated with drug use in patients with history of cannabis induced psychosis

ORIENTADOR

Maria Augusta Vieira Coelho

COORIENTADOR (se aplicável)

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Assinatura conforme cartão de identificação:

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Title: Perception of the risk associated with drug use in patients with history of cannabis induced psychosis

Authors: Elsa Melanie[1], Maria Augusta Vieira-Coelho[1,2]

1. Department of Biomedicine-Pharmacology and Therapeutics Unit, Faculty of Medicine-University of Porto

2. Psychiatry and Mental Health Clinic, Hospital de São João, Porto, Portugal

Corresponding author:

Maria Augusta Vieira Coelho, MD, PHD

Department of Biomedicine-Pharmacology and Therapeutics Unit, Faculty of Medicine-University of Porto

Alameda Prof. Hernani Monteiro, 4200-319 Porto, PORTUGAL

Phone: (+351) 22 551 3600, Email: mavc@med.up.pt

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Abstract

Background: The discussion on the legalisation of consumption of cannabis have been a recurrent theme in multiple debates and have raised concern about the increasing numbers in consumption and related harms. This study aims to analyse the patient's perception of the risk associated with cannabis consumption in comparison with other drugs. Precisely, to analyse whether patients with cannabis induced psychosis consider cannabis a health risk drug.

Method: We conducted an exploratory qualitative study. Twenty-one patients diagnosed with cannabis induced psychosis, followed at the psychiatric service of Centro Hospital Universitário de São João, from September 2021 to March 2022 were included. Data was collected using a questionnaire designed by the authors.

Results: The mean age of the sample is 37.4 years with 92,3% of the participants being male. Within the sample, 53,8% have active consumption of cannabis. 42,9% consumed cannabis as weed, 42,9% consumed hashish and 14,3% weed plus hashish. Cannabis was classified by 76,2% of patients as a low-medium health risk drug, when compared to other drugs. Heroin was classified by 95,2% of the patients as a high-risk drug, 90,5% classified alcohol with medium-high risk and 95,2% classified ectasy as medium-high risk drug.

Conclusion: Our findings expose that patient with a previous cannabis induced psychosis, still consider cannabis a low to medium risk drug, when compared to other drugs. In fact, 47,6% maintain active consumption.
This evidence the need for early and continued intervention, after an episode of cannabis induced psychosis, to improve the patients' insight and perception of risk.

Keywords: illicit drug, cannabis**,** cannabis induced psychosis

Resumo

Contexto: A discussão sobre a legalização do consumo da cannabis tem sido um tema recorrente em múltiplos debates, e fez aumentar a preocupação com o aumento do consumo e dos efeitos adversos associados. O presente estudo tem por objetivo analisar a perceção dos consumidores de cannabis, sobre risco associado ao consumo desta droga, comparando com outras drogas. De um modo específico, pretende-se analisar se os doentes com psicose induzida por cannabis, consideram a cannabis uma droga de risco para a saúde.

Método: Foi realizado um estudo qualitativo de caráter exploratório. Vinte e um pacientes diagnosticados com psicose induzida por cannabis, seguidos no serviço de psiquiatria do Centro Hospital Universitário de São João, de setembro de 2021 a março de 2022 foram incluídos. Os dados foram obtidos com recurso a um questionário elaborado pelas autoras do estudo.

Resultados: A idade média da amostra é de 37.4 anos, com 92,3% de participantes do sexo masculino. Nesta amostra, 53,8% dos participantes têm consumo ativo de cannabis. Cerca de 42,9% consumiu cannabis como erva, 42,9% consumiu em forma de haxixe e 14,3% consumiu na forma de erva mais haxixe. Cannabis foi classificada por 76,2% da amostra como uma droga de baixo-médio risco para a saúde, comparando com outras drogas. Heroína foi classificada como uma droga de alto risco por 95,2% dos participantes, 90,5% classificaram o álcool como droga de risco médio-alto e 95,2% classificaram ectasy como uma droga de risco médio-alto.

Conclusão: O nosso estudo evidencia que pacientes com episódio prévio de psicose induzida por cannabis, ainda consideram a cannabis uma droga de baixo-médio risco, em comparação com outras drogas. De facto, 47,6% ainda mantém consumo ativo.
Este estudo evidencia a necessidade de intervenções precoces e contínuas, após um episódio de psicose induzida por cannabis, de modo a melhorar a perceção de risco nestes pacientes.

Palavras-chave: droga ilícita, cannabis, psicose induzida por cannabis

1. Introduction

Cannabis is a product of natural origin and the most widely used drug in the world (UNODC United Nations Office of Drug and Crime, 2021).
In many countries, cannabis is considered an illicit drug, however some social groups see this substance as a drug less associated with abuse and addiction, induced by social and cultural ideologies. The discussion on the legalisation of this drug is a common subject in multiple debates and have raised concerns about increasing numbers in consumption and related harms.

In Europe, cannabis consumption is five times higher than other drugs, with highest prevalence among young male adults aged 15 to 34 years (European Monitoring Centre for Drugs and Drug Addiciton, 2021). The popularity of this drug is rising, driven by domestic production (World Health Organization (WHO), 2016) and easier accessibility. During the covid-19 pandemic, the prevalence of consumption remained stable at high levels, as drug markets adapted to the restrictions and lockdowns, using online platforms, social media, with an increase in domestic cultivation and production of synthetic cannabinoids (European Monitoring Centre for Drugs and Drug Addiction, 2021).
Across social media, adolescents are exposed to misinformation about the risks associated with cannabis use, due to the emerging of pro-cannabis messaging (Mariani and Williams, 2021).

Cannabis contains many cannabinoids, with THC (tetrahydrocannabinol) and CBD (cannabidiol) being the most important. Both THC and CBD are present in cannabis mainly as acids that are decarboxylated when cannabis is heated (Pertwee, 2006). THC is the active ingredient of this drug and activates the cannabinoid receptors CB1 on the brain and CB2 widely distributed in the immune system and peripheral tissues. This ingredient can modulate areas that control motivation, memory, and attention, being responsible for most of the psychoactive effects of this drug.

There are several ways of cannabis consumption, and it can be available as weed (marijuana, herb) or resin (hashish). This drug is used for medical, recreational or leisure purposes. Cannabis is usually inhaled/smoked or taken orally. When smoked, the effects last less than two hours and can have a duration of 8 hours, if eaten. The acute use of this drug can cause vomiting, breathlessness, hypertension, and tachycardia. Cannabis is also associated with significant psychiatric adverse effects such as anxiety and panic attacks (Grotenhermen, 2003). There have been reports of chronic psychiatric effects such as cognitive deficits, addiction, withdrawal syndrome and amotivational syndrome.

The early exposure to cannabis may cause disruption of maturational events within the endocannabinoid system (Rubino and Parolaro, 2014). Several studies have demonstrated the association between cannabis and increased risk of psychotic symptoms including schizophrenia. Consumption of this drug can cause acute psychosis associated with cannabis intoxication, psychosis that last beyond the acute intoxication and persistent psychosis (Wilkinson et al., 2014). Although there is an intersubject variation to the psychotic effects of this drug, the association between the frequency of use and the risk of psychosis has been proven, with high-potency cannabis and synthetic cannabinoids carrying the greatest risk (Murray et al., 2016). In Europe, the use of synthetic cannabinoids is increasing, and the cannabis resin currently sold is more potent than before. The average THC level in the resin is between 20% and 28%, almost twice the herbal cannabis (European Monitoring Centre for Drugs and Drug Addiciton, 2021). Nevertheless, the use of products with low THC is becoming frequent.
The reduction of cannabis consume can delay or prevent some cases of psychosis (Large et al., 2011) but it appears that other factors such as family history, childhood trauma and genetic factors can increase the risk of psychosis.

In Portugal, the use of cannabis for recreational purposes is decriminalised but illegal. It is the most consumed illicit drug, following cocaine, ecstasy, heroin, and amphetamines. The most frequent forms of consumption are resin and

joints with tobacco. The high prevalence of consumption may be associated with easy accessibility (ESPAD Group et al., 2016).
The consumption of cannabis has become a public health concern. In 2019, 53% of the drug users who started outpatient treatment for drug-use related issues, used cannabis as their primary drug, and about 33% of patients in therapeutic communities used cannabis as the primary drug (Serviço de Intervenção nos Comportamentos e nas dependências, 2019). In all Portuguese public hospitals, the number of hospitalisation of patients with psychotic disorders associated with cannabis consumption rose 29.4 times between 2000 to 2015, from 20 to 588 hospitalisations yearly, with a total of 3,233 hospitalisations and an average episode cost of €3500 (Gonçalves-Pinho et al., 2020). Compulsory internment due to the abuse of cannabis is also frequent.

Although there is public health education, wide information and literacy about the risk and harms associated with the use of cannabis among adolescents and adults, it is important to explore how patients perceive those drug risks. Among adolescents, in the US, a survey evaluated the influence of parental, school, peer factors on perception of risk associated with cannabis use (Mariani and Williams, 2021), but fewer studies have explored the perception of risk associated with drug use among patients with cannabis induced psychosis. Cannabis consumption can lower the perception of risk (Salloum et al., 2018). For this reason, we find relevant to examine how patients with a severe event caused by cannabis consumption rate this drug in comparison to cocaine, heroin, alcohol and ectasy. In addition, it is crucial to examine if abstinent patients and those with active consumption have different perception of risks. This study aims to analyse the patient's perception of the risks associated with cannabis consumption compared to alcohol and illicit drugs. Precisely, we aim to analyse whether patients with history of cannabis toxic psychosis, with active consumption or abstinent, consider cannabis a drug associated to health risks.

2. Materials and Methods

The authors conducted an exploratory qualitative study. The study took place on the psychiatric service of Centro Hospitalar Universitário de São João, and we asked for permission and authorization of the ethics committee of the Hospital. To develop this study, a questionnaire was designed by the study authors. All participants were informed about the study and declared consent to answer the questionnaire. Only participants were allowed to participate. The questionnaire was applied by the study authors, during the consultations, individually and face-to face. The questions were not previously provided, and we did not repeat any interview. No relationship was established prior to study commencement. The duration of each interview was not monitored and no audio or visual were recorded. Data was analysed with excel software.

2.1 Participant selection

The participants were selected by non-probabilistic purposive sampling and the sample size was not calculated buy statistical methods. We selected 21 patients who attended the consultation and data saturation was not discussed.
We included male and female patients aged 18 years or over, with a history of cannabis induced psychosis, followed at the psychiatric service of Centro Hospital Universitário de São João. All patients were living in Portugal during this study.
We excluded patients with an acute psychotic break during the consultation, patients with organic neurological pathology that affects cognitive ability to consent and patients with cannabis use disorder without psychosis.
No patient refused to participate in the study.

2.2 Instruments

The questionnaire is divided into three segments: the first covers the survey of sociodemographic and economic data, the second assesses the pattern of cannabis consumption and the third contains the scale of severity of use.

The research of sociodemographic and economic data was carried out to characterize the sample. For this purpose, the following variables were evaluated: age, gender, nationality, residence, marital status, household, education, employment status and financial status.

Then we assessed the pattern of cannabis consumption. This assessment was carried out by asking questions about the age of onset of use, frequency of use, form of use, as well as the use of other illicit drugs. To assess patients' perceptions of the risk associated with drug use, a risk scale was created, and patients were asked to classify the following drugs: cannabis, heroin, cocaine, ectasy and alcohol. The scale ranges in score from 0 to 10, with 0 corresponding to a drug with low health risk and 10 to a drug with high health risk. We classified as low risk if the pontuation was between 1 to 3. Pontuation between 4 to 6 was defined as medium risk and high risk was defined if the pontuation varies from 7 to 10.

Finally, to assess the severity of cannabis addiction, the Severity of Dependence Scale developed by the National Centre for Prevention and Information on Cannabis (NCPIC) was applied. This scale is brief, valid, and reliable screen for cannabis dependence among people with psychosis(Hides et al., 2007). The SDS was applied to screen cannabis use disorder and measure of dependence severity.
This scale consists of five questions, whose answers range from 0 to 3. A score of 0 corresponds to "never/ almost never", 1 corresponds to "sometimes", 2 corresponds to "often" and 3 corresponds to "always/ nearly always". In the fifth

question, 0 corresponds to “not difficult”, 1 corresponds to “quite difficult”, 2 corresponds to “very difficult” and 3 to “impossible”.

The sum of the points for the five questions gives a maximum total score of 15 points. Patients with SDS score from 1-3 were classified as low degree of dependence and those whose total score was greater than 3 were classified as patients with a significant degree of dependence. Precisely, SDS score from 4 to 6 was classified as medium degree of dependence and SDS score from 7 to 15 was classified as high degree of dependence. In resume, the higher scores represent the greater dependence status.

We did not apply the scale to patients who had been abstinent for more than 1 month.

3. Results

3.1 Sample description

We have a total of twenty-one patients aged between 24 to 74 years old. The mean age of the sample is 38.5 years, and the male gender is prevalent.
All patients live in Portugal and the majority are Portuguese. Regarding the civil status and household, most of the sample is single, living with a family member and have a high school degree.
A larger number of the patients is not financially independent and live on relatively low incomes, with more than the half being unemployed and only a few having social welfare support system.

3.2 Sociodemographic and economic data

We divided the patients in age groups: 33,3% of the patients are between the age of 24 to 29 years and 23,8% are between 30 to 39 years. At the age group of 40 to 49, we have 28,6% patients and 14,3% have 50 or more years old. The mean age of the sample is 38,5years (Table 1).
Male gender is prevalent with 85,7% of the sample and 14,3% are female. Within the participants, 90,5% are Portuguese and 9,5% are Brazilians, all living in Portugal. Regarding the civil status, 90,5% of the participants are single, 4,8% are married and 4,8% are divorced. Around 76,2% reside with a family member and 28,3% live alone.
The school degree inquiry shows that 19% have completed elementary school, 66,7% have high school degree, 14,3% are graduated from university or studying at university.
The financial status evaluation shows that 23,8% of the sample is financially independent and around 76,2% is financially dependent, with 28,6% of them having social welfare support system and 71,4% without financial support.
More than a half (52,4%) is unemployed, 9,5% is retired for health reasons,

14,3% are employed in a full-time job, 14,3% are working in a part-time regime and 9,5% are students.

3.3 Pattern of cannabis consumption

The age of first use varies from 8 to 25 years. We divided the age of onset in four age groups: 8 years or bellow, between 10 to 14, 15 to 20 and 21 to 25. The results show that 4,8% used cannabis for the first time before 8 years, around 38,1% of the sample have initiated the use between 10 to 14 years, 38,1% had onset of use between 15 to 20 years and 19% of the sample initiated the consume between 21 to 25 years. The mean age of first cannabis use is 15,9 years (Table 2).

Throughout the sample, 47,6% of the patients have active consumption and 52,4% is abstinent. Within the group with active consumption, 60% have daily consumption of cannabis. The frequency of daily use varied, with 10% reporting once per day, 10% twice per day and 40% three times per day. About 10% of the sample have once per week consumption, 10% consume cannabis at least once per month and 20% consume the drug at least two times per year.

Regarding the form of consumption, 42,9% consumed cannabis as weed/marijuana, 42,9% as hashish and 14,3% of the sample consumed cannabis as weed plus hashish.

When asked about the consumption of other illicit drug, 23,8% declared that have tried other illicit drugs and 76,2% never have consumed or tried other illicit drugs.

3.4 Perception of risk associated with drug use

The evaluation of the patient´s perception of the risk associated with the consumption of cannabis, in comparison with other illicit drugs shows that 33,3% consider cannabis a drug with low health risk, 42,9% classifies cannabis as a medium risk drug. To summarize, cannabis was classified by 76,2% of patients as a low-medium health risk drug, when compared to other drugs and 23,8% see cannabis as a high-risk drug (Table 3).

Heroin is seen by 95,2% of the sample as a high-risk drug. Nobody considers this drug a low or medium health risk drug. One patient (4,8%) did not declare his opinion about this drug.
All the participants (100%) consider cocaine as a high health risk drug.
Alcohol is seen by 9,5% of the sample as a low-risk drug. About 23,8% of the sample consider alcohol a medium-risk drug and 66,7% classify it as a high-risk drug.
Ectasy is seen as a medium risk drug by 4,8% of the sample and 90,5% classify it as a high-risk drug. None of the participants classify ectasy as a low-risk drug and one participant (4,8%) did not declare is opinion on this drug.

3.5 Severity of Dependence Score

The analysis of dependence screen with SDS score show that 60% of the sample met criteria for medium-high dependence (20% with medium dependence score and 40% with high dependence score). 40% had SDS score equal or lower than 3, meeting criteria for low cannabis dependence (Table 4).

We then analyzed the association between the SDS score and cannabis risk pontuation given by the patients (Table 5). The results show that 20% of the patients with low degree of dependence consider cannabis a low-risk drug, 10% classify cannabis as a medium-risk and 10% as a high-risk drug. 20% met criteria for medium degree of dependence and classified cannabis as a medium-high risk drug. 40% of the patients have high degree of dependence and see cannabis as a low-medium risk drug.

The SDS score was not applied for abstinent patients, but we did analyze the pontuation given by the abstinent patients about the risk associated with cannabis consumption (Table 6). Around 18,2% of abstinent consider cannabis a low-risk drug. More than half (54,6%) classify cannabis as a medium risk drug and 27,3% consider cannabis a high-risk drug.

4. Discussion

According to previous studies, the male gender outnumbers females for cannabis consumption. In the European Union, men are more likely than women to use illicit drugs and the cannabis experimentation is highest among young male adults aged 15 to 34. In this age group, it is verified the highest percentage of experimentation of cannabis (15.1%) and other illicit drugs (16%) (Balsa et al., 2017).

We evidence that there is an association between psychosis and early age of consumption, as within the sample, the mean age of onset of consumption was 15,9 and all the patients had cannabis induced psychosis. Several studies have reported that the adolescent cannabis use is associated with an increased risk for psychosis later in life (Kiburi et al., 2021) and dependence. In addition, dose and frequency of use are reliable risk factors for psychosis. More than half of this sample have daily consumption of cannabis and studies have shown that cannabis use disorder affects 10% of cannabis users causing dependence. Symptoms of dependence include using cannabis in larger amounts or over a longer period than intended (Jafari and Tang, 2016). The screening for cannabis dependence by SDS score shows reliability as 60% of the sample met criteria for significant cannabis dependence. The SDS score appears to be more relevant when applied to patients with insight and aware of their pattern of consumption and harms associated with this drug use, as in this study, 40% met criteria for high dependence (SDS 8-12) and beside the psychotic event, classify cannabis as a low-medium health risk drug. This finding is expectable, as people with dependence tend to undervalue their dependence and drug abuse. Much of the sample underestimate their own pattern of consumption, describing it as within control but when asked about quitting, they described great difficulty in quitting consumption, which is compatible with cannabis dependence. In contrast, 20% met criteria for medium dependence and classified cannabis as a medium-high risk drug. These patients are probably aware of cannabis consumption risks. Patients with low dependence are more uncertain, as the classification varied from low, medium to high-risk. A larger

number of abstinent patients (81,9%) classify cannabis as medium-high risk drug. This may occur because they recognize cannabis induced psychosis as a major health event and then made effort to quit the consume and remain abstinent.

Regarding the perception of risk associated with cannabis consumption, comparing to other drugs, we evidence that patients with cannabis induced psychosis, abstinent or not, consider cannabis as low to medium risk drug, which is expected, as it reflects the popular perception of cannabis as a non-addictive and harmless drug. This result is in harmony with a previous study, that evidence that cannabis consumption is more probable to begin if there is a perception of low risk and high accessibility (González-Roz et al., 2022).
In contrast, alcohol is seen as more harmful than cannabis, as 90,5% classify it as a medium-high risk drug, which is consistent to studies who evidence the social perception of alcohol as a substance associated with high health risk. In the USA, about seven-in-ten (69%) Americans believe alcohol is more harmful to a person's health than marijuana and if marijuana became as widely available as alcohol, 63% would still believe alcohol to be more harmful to society (Motel Seth, 2015).
Heroin, ectasy and cocaine were classified by the majority of the sample as a medium to high-risk drug, and none of the participants associated this drug with low health outcomes. This result is congruent with a cross sectional online survey that investigated the people's perception of the harms associated with legal and illicit drug. The survey revealed that of the illegal drugs, heroin, cocaine and ectasy are considered the most harmful and cannabis the least harmful (Cheeta et al., 2018).
The use of cannabis for recreational and leisure purposes is expanding throughout the European union and world, so it is important to spread more awareness on the harms and health risks associated with drug use. The evaluation of patients´ perception of risks associated with drug use can be a good tool to assess the drug situation and the results can help and support the elaboration of public health laws.
We believe that the decriminalization and the easy access of this drug can influence the individuals into thinking that cannabis is natural and a harmless

substance. In addition, we believe that differently to other illicit drug, there is a social and cultural perception and acceptance of cannabis as a low-risk drug, less associated with abuse, dependence, and overdose, that negatively influence the public opinion.

As evidence demonstrates, cannabis is essential but not enough to cause a persistent psychotic disorder and as not everyone who has been exposed to cannabis, develop cannabis use disorder or a psychotic episode, patients tend to see this drug as inoffensive.

We believe preventive interventions are needed among children, adolescents and adults, in order to change this social perception and reduce negative public health consequences. Prevention of social medial and online network´s misinformation is also essential.

Moreover, legalization of cannabis use for recreational purposes should be a cautious process due to increase of adulterated cannabis and synthetic cannabinoid with a high risk of psychosis.

Robust studies are needed as the current study has several limitations. The data was self-reported, and the sample size was relatively small at 21 participants. We believe that a larger sample would allow a deeper analysis

5. Conclusion

In this study, patients with a previous episode of cannabis induced psychosis, still consider cannabis a low to medium harm risk drug, when compared to other drugs. In fact, 47,6% maintain active consumption.

These results evidence the need for early and continued intervention after an episode of cannabis induced psychosis, in order to improve the patients' insight and perception of the health risks associated with cannabis use.

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SUPLEMMENT 1: TABLES

VARIABLE		N (%)
AGE GROUP	24-29	7 (33,3%)
	30-39	5 (23,8%)
	40-49	6 (28,6%)
	≥50	3 (14,3%)
	Mean	38,5
GENDER	Male	18 (85,7%)
	Female	3 (14,3%)
NATIONALITY	PT	19 (90,5%)
	BR	2 (9,5%)
CIVIL STATE	Single	19 (90,5%)
	Married	1 (4,8%)
	Divorced	1 (4,8%)
HOUSEHOLD	Alone	5 (23,8%)
	Family	16 (76,2%)
SCHOOL DEGREE	Elementary	4 (19%)
	Highschool	14 (66,7%)
	University	3 (14,3%)
PROFESSIONAL STATUS	Student	2 (9,5%)
	Part-time	3 (14,3%)
	Full-time	3 (14,3%)
	Unemployed	11 (52,4%)
	Retired	2 (9,5%)
FINANCIAL STATUS	Independent	5 (23,8%)
	Dependent	16 (76,2%)
SOCIAL WELFARE SYSTEM	Yes	6 (28,6%)
	No	15 (71,4%)

TABLE 1- SOCIODEMOGRAPHIC AND ECONOMIC DATA

VARIABLE			N (%)
AGE OF ONSET OF USE	≤8		1 (4,8%)
	10-14		8 (38,1%)
	15-20		8 (38,1%)
	21-25		4 (19%)
	Mean		15,9
ACTIVE CONSUMPTION	Yes		10 (47,6%)
	Abstinent		11 (52,4%)
Frequency of use within the active group (10 patients)	Daily	1x/day	1 (10%)
		2x/day	1 (10%)
		3x/day	4 (40%)
		Total	6 (60%)
	Week	3x/ week	1 (10%)
	Month	1x/month	1 (10%)
	Year	2x/Year	2 (20%)
FORM OF USE	Weed		9 (42,9%)
	Hashish		9 (42,9%)
	Weed and hashish		3 (14,3%)
USE OF OTHER ILLICIT DRUG	Yes		5 (23,8%)
	no		16 (76,2%)

TABLE 2- PATTERN OF CANNABIS CONSUMPTION

DRUG	PONTUATION	N (%)
CANNABIS	Low (1-3)	7 (33,3%)
	Medium (4-6)	9 (42,9%)
	High (7-10)	5 (23,8%)
HEROIN	No opinion	1 (4,8%)
	Low (1-3)	0 (0%)
	Medium (4-6)	0 (0%)
	High (7-10)	20 (95,2%)
COCAIN	Low (1-3)	0 (0%)
	Medium (4-6)	0 (0%)
	High (7-10)	21 (100%)
ALCOHOL	Low (1-3)	2 (9,5%)
	Medium (4-6)	5 (23,8%)
	High (7-10)	14 (66,7%)
ECTASY	No opinion	1 (4,8%)
	Low (1-3)	0 (0%)
	Medium (4-6)	1 (4,8%)
	High (7-10)	19 (90,5%)

TABLE 3- PERCEPTION OF RISK ASSOCIATED WITH DRUG USE

SDS Score	N (%)
LOW (≤3)	4 (40%)
Med (4-6)	2 (20%)
High (8-12)	4 (40%)

TABLE 4- SDS SCORE

SDS Score	N (%)	Cannabis risk pontuation
LOW (<3)	2 (20%)	Low
	1 (10%)	Medium
	1 (10%	High
Med (4-6)	2 (20%)	Medium- High
High (8-12)	4 (40%)	Low - Medium

TABLE 5- ASSOCIATION BETWEEN THE SDS SCORE AND CANNABIS RISK

N (%)	Cannabis risk pontuation
2 (18,2%)	Low (3)
6 (54,6%)	Medium (4-6)
3 (27,3%)	High (7-10)

TABLE 6- ABSTINENT PATIENTS AND CANNABIS RISK PONTUATION

SUPPLEMENT 2: COREQ 32 ITEM CHECKLIST

Domain 1: Research team and reflexivity

1. Inter viewer/facilitator: Which author/s conducted the interview?

Reported on page 12: The questionnaire was applied by the study authors, during the consultations, individually and face-to face.

2. Credentials: What were the researcher's credentials?

Reported on the cover: Elsa Melanie, medical student; Maria Augusta, MD, PHD

3. Occupation: What was their occupation at the time of the study?

Reported on the cover: Elsa Melanie, medical student; Maria Augusta, MD, PHD

4. Gender: Was the researcher male or female? Female

5. Experience and training: What experience or training did the researcher have?

Reported on the cover: Maria Augusta, MD, PHD

6. Relationship with participants established: Was a relationship established prior to study commencement?

Reported on page 12: No relationship was established prior to study commencement.

7. Participant knowledge of the interviewer: What did the participants know about the researcher?

Reported on page 12: All participants were informed about the study and declared consent to answer the questionnaire.

8. Interviewer characteristics: What characteristics were reported about the inter viewer/facilitator? None

Domain 2: study design

9. Methodological orientation and Theory: What methodological orientation was stated to underpin the study?

Reported on Page 12: The authors conducted an exploratory qualitative study.

10. Sampling: How were participants selected?

Reported on Page 12: The participants were selected by non-probabilistic purposive sampling and the sample size was not calculated buy statistical methods.

11. Method of approach: How were participants approached?

Reported on Page 12: The questionnaire was applied by the study authors, during the consultations, individually and face-to face.

12. Sample size: How many participants were in the study?

Reported on Page 12: We selected 21 patients who attended the consultation.

13. Non-participation: How many people refused to participate or dropped out? Reasons?

Reported on Page 12: No patient refused to participate in the study

14. Setting of data collection: Where was the data collected?

Reported on Page 12: The study took place on the psychiatric service of Centro Hospitalar Universitário de São João.

15. Presence of non- participants: Was anyone else present besides the participants and researchers?

Reported on page 12: Only participants were allowed to participate.

16. Description of sample: What are the important characteristics of the sample?

Reported on Page 15: We have a total of twenty-one patients aged between 24 to 74 years old. The mean age of the sample is 38.5 years, and the male gender is prevalent.

17. Interview guide: Were questions, prompts, guides provided by the authors?

Reported on Page 12: The questions were not previously provided

18. Repeat interviews: Were repeat interviews carried out?

Reported on Page 12: We did not repeat any interview.

19. Audio/visual recording: Did the research use audio or visual recording to collect the data?

Reported on Page 12: No audio or visual were recorded

20. Field notes: Were field notes made during and/or after the inter view? No

21. Duration: What was the duration of the interviews?

Reported on page 12: The duration of each interview was not monitored.

22. Data saturation: Was data saturation discussed?

Reported on Page 12: data saturation was not discussed.

23. Transcripts returned: Were transcripts returned to participants for comment and/or correction? No

Domain 3: analysis and findings

24. Number of data coders: How many data coders coded the data? One

25. Description of the coding tree: Did authors provide a description of the coding tree? No

26. Derivation of themes: Were themes identified in advance or derived from the data? Yes

27. Software: What software, if applicable, was used to manage the data?

Reported on Page 12: Data was analysed with excel software.

28. Participant checking: Did participants provide feedback on the findings? No

29. Quotations presented: Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? No

30. Data and findings consistent: Was there consistency between the data presented and the findings?

Reported on page 19: Regarding the perception of risk associated with cannabis consumption, comparing to other drugs, we evidence that patients with cannabis induced psychosis, abstinent or not, consider cannabis as low to medium risk drug, which is expected, as it reflects the popular perception of cannabis as a non-addictive and harmless drug. This result is in harmony with a previous study, that evidence that cannabis consumption is more probable to begin if there is a perception of low risk and high accessibility(González-Roz et al., 2022).

31. Clarity of major themes: Were major themes clearly presented in the findings?

Reported on page 20: As illustrated in this study, patients with cannabis induced psychosis consider cannabis a low to medium risk drug, when compared to other drugs and even after the psychotic episode, 47,6% maintain active consumption. As expected, people who use cannabis have lower perception of the risk and harms.

32. Clarity of minor themes: Is there a description of diverse cases or discussion of minor themes?

Reported on page 18: We evidence that there is an association between psychosis and early age of consumption, as within the sample, the mean age of onset of consumption was 15,9 and all the patients had cannabis induced psychosis. Several studies have reported that the adolescent cannabis use is associated with an increased risk for psychosis later in life(Kiburi et al., 2021) and dependence.

SUPLEMENT 3: QUESTIONNAIRE

1. Dados sociodemográficos

Qual é a data de nascimento? __/__/____

Qual é o seu género?
- M___
- F___
- Outro___

Qual é a sua nacionalidade? _____

Qual é o seu local de residência? _____

Qual é o seu estado civil?
- Solteiro (a) ___
- Casado (a)___ ou união de facto ____
- Divorciado (a)___
- Viúvo (a)___

Qual é o seu agregado familiar?
- Sozinho (a) ___
- Família _____ quantos membros _____

Qual é o seu nível de escolaridade?
- Analfabeto (a)_____
- Ensino primário _____
- Ensino secundário _____
- Ensino superior _____

Qual é a sua situação profissional?
- Empregado a tempo inteiro _____
- Empregado a tempo parcial _____
- Desempregado (a)_____
- Reformado (a)_____ por doença? Sim___ Não ____

Aufere de ajudas sociais?
- Não ___
- Sim ___ quais? _____

É independente sob o ponto de vista financeiro?
- Sim ____
- Não ____. De quem é dependente? Família _____ estado____ outro _____

2. Consumo de cannabis

Com que idade iniciou o consumo de cannabis? ___anos

Consome regularmente cannabis?
- Sim ___
- Não ___

Com que frequência consome a cannabis?
- ___ vezes por dia
- ___ vezes por semana
- ___ vezes por mês
- ___ vezes por ano

De que forma é que consome a cannabis?
- Erva ___
- Resina (haxixe) ___
- Óleo ___
- Ingestão oral ___

Consome outras drogas ilícitas?
- Não___
- Sim____. Quais? _____

Dada a sua experiência, como é que classificaria, numa escala de 0-10, sendo 0 uma droga inofensiva e 10 uma droga pesada, as seguintes drogas?
Cannabis_____Heroína_____Cocaína_____Álcool_____Ectasy_____

3. Escala de gravidade de consumo

Nos últimos 3 meses:

Alguma vez pensou que o seu uso de canábis estava fora de controlo?

- Nunca ou quase nunca 0
- Algumas vezes 1
- Frequentemente 2
- Sempre ou quase sempre 3

Imaginar que não vai consumir um charro deixa-o muito ansioso ou preocupado?

- Nunca ou quase nunca 0
- Algumas vezes 1
- Frequentemente 2
- Sempre ou quase sempre 3

Preocupa-se com o seu uso de canábis?

- De forma alguma 0
- Um pouco 1
- Várias vezes 2
- Bastante 3

Alguma vez quis deixar de consumir canábis?

- Nunca ou quase nunca 0
- Algumas vezes 1
- Frequentemente 2
- Sempre ou quase sempre. 3

O quanto acha difícil parar de consumir canábis ou deixar de usar?

- Não é difícil 0
- É um pouco difícil 1
- É muito difícil 2
- É impossível 3

DRUG AND ALCOHOL DEPENDENCE
An International Journal on Biomedical and Psychosocial Approaches

AUTHOR INFORMATION PACK

1 TABLE OF CONTENTS

ISSN: 0376-8716

2 DESCRIPTION

Drug and Alcohol Dependence is an international journal devoted to publishing original research, scholarly reviews, commentaries, and policy analyses in the area of **drug**, **alcohol** and **tobacco use**and **dependence**. Articles range from studies of the chemistry of **substances** of **abuse**, their actionsat molecular and cellular sites, *in vitro* and *in vivo* investigations of their biochemical, pharmacologicaland behavioural actions, laboratory-based and clinical research in humans, substance abuse **treatment** and **prevention** research, and studies employing methods from epidemiology, sociology,and economics.

The rationale for this extensive coverage is the conviction that drug, alcohol and tobacco use/ dependence cannot be understood in their entirety from a single perspective and that without an understanding of other areas of research, studies by individual investigators may be limited. The goal of the journal is to provide researchers, clinicians, and policy makers access to material from allperspectives in a single journal in a format that is understandable and which has received rigorous editorial review. The hope of its editors is to promote mutual understanding of the many facets of drug abuse to the benefit of all investigators involved in drug and alcohol research, and to facilitatethe transfer of scientific findings to successful treatment and prevention practices.

The accepted abbreviation for *Drug and Alcohol Dependence* for bibliographic citation is *Drug AlcoholDepend.*

Drug and Alcohol Dependence is currently being distributed to all the members of the College on Problems of Drug Dependence (CPDD), the oldest scientific organization in the United States concerned with research on problems of drug dependence. Members of the CPDD are provided with both the print version as well as access to the full text of the current issue and back issues dating back to Vol. 46, Issue no. 1 of the online version as a benefit of membership.

The College on Problems of Drug Dependence (CPDD), formerly the Committee on Problems of Drug Dependence, has been in existence since 1929 and is the longest standing group in the United States addressing problems of drug dependence and abuse. From 1929 until 1976, the CPDD was associated with the National Academy of Sciences, National Research Council. Since 1976, the organization has functioned as an independent body affiliated with other scientific and professional societies representing various disciplines concerned with problems of drug dependence and abuse. In 1991, the CPDD evolved into a membership organization with the new name of College on Problems of Drug Dependence.

CPDD serves as an interface among governmental, industrial and academic communities maintainingliaisons with regulatory and research agencies as well as educational, treatment, and prevention facilities in the drug abuse field. It also functions as a collaborating center of the World Health Organization.

3 AUDIENCE

Workers in the fields of biomedical as well as clinical, epidemiological, psychosocial, socio-cultural,educational and medico-legal research.

4 IMPACT FACTOR

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5 ABSTRACTING AND INDEXING

Cumulative Index to Nursing and Allied Health
LiteratureResearch Alert
Clinical Medicine Citation
IndexETOH
BIOSIS Citation
IndexChemical
Abstracts Current
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6 EDITORIAL BOARD

7 GUIDE FOR AUTHORS

7.1 INTRODUCTION

Drug and Alcohol Dependence is an international journal devoted to publishing original research, scholarly reviews, letters to the Editor, and policy analyses in the area of drug, alcohol and tobacco use and dependence. It is sponsored by the College on Problems of Drug Dependence (CPDD), the oldest scientific organization in the United States concerned with research on addiction. The goal of its editors is to promote mutual understanding of the many facets of drug abuse to the benefit of all investigators involved in drug and alcohol research, and to facilitate the transfer of scientific findings to successful treatment and prevention practices. *Drug and Alcohol Dependence* is currently being distributed to all the members of CPDD.

7.1.1 Associate Editor Content Areas

Please click here to download details of the Associate Editor Content Areas.

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Please click here to access the Associate Editor Conflict of Interest Statements.

7.1.3 Types of paper

1) Full-length Reports reporting original results of research within the field of drug, alcohol and tobacco use and dependence. A Full-length Report typically should not exceed 4000 words (for the introduction, methods, results and discussion).

2) Review Articles of specialized topics within the scope of the journal. Typically, these are systematic reviews of a field of research. A Review Article typically should not exceed 6000 words for the main body of the paper (i.e., excluding references, tables and figures). Review Articles that will besubstantially longer than 6000 words should be discussed with the Editor-in-Chief prior to submission.

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5) Registered Reports (click here for more details). These submissions undergo a two-phase review process in which study rationale and methodology are considered prior to the research beingundertaken.

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7.1.4 Submission checklist

You can use this list to carry out a final check of your submission before you send it to the journal forreview. Please check the relevant section in this Guide for Authors for more details.

7.1.4.1 Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:

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Manuscript:

- Include keywords
- All figures (include relevant captions)
- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print*Graphical Abstracts / Highlights files* (where applicable) *Supplemental files* (where applicable)

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- Journal policies detailed in this guide have been reviewed
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Authors are expected to consider carefully the list and order of authors **before**

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Reporting guidelines have also been developed for a number of other study designs:

1 **Initiative Type of study Source** CONSORT randomized controlled trials http://www.consort-statement.org STARD studies of diagnostic accuracy Bossuyt, P.M., Reitsma, J.B., Bruns, D.E., Gatsonis, C.A., Glasziou, P.P., Irwig, L.M., Moher, D., Rennie, D., de Vet, H.C., Lijmer, J.G., Standards for Reporting of Diagnostic Accuracy, 2003. The STARD statement for reporting

studies of diagnostic accuracy: explanation and elaboration. Ann. Intern. Med. 138, W1-W12. PRISMA systematic reviews and meta-analyses http://www.prisma-statement.org STROBE observational studies in epidemiology http://www.strobe-statement.org MOOSE meta-analyses of observational studies in epidemiology Stroup, D.F., Berlin, J.A., Morton, S.C., Olkin, I., Williamson, G.D., Rennie, D., Moher, D., Becker, B.J., Sipe, T.A., Thacker, S.B., 2000. Meta-analysis of observational studies in epidemiology: a proposal for reporting. Meta-analysis of Observational Studies in Epidemiology (MOOSE) Group. JAMA 283, 2008-2012.

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State the objectives of the work and provide an adequate background, avoiding a detailed literaturesurvey or a summary of the results.

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Conclusions

The main conclusions of the study may be presented in a short Conclusions section, which may standalone or form a subsection of a Discussion or Results and Discussion section.

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