Oral and dental health of users of psychoactive substances at the Andranomena centre in Toliara

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Abstract

The use of psychoactive substances can have a negative impact on general health, social life and oral health. The consequences from an oral health point of view are manifold and will depend on the products consumed, the mode of consumption, the duration of the addiction and the quantity ingested.

The aim of this study was to evaluate the oral and dental condition of drug addicts at the Foyer d'amitié Andranomena Toliara support centre for the mentally ill.

Our sample consisted of 40 male patients, with an average age of 26.8 years. Cannabis use alone was reported by 37.5% of patients, and co-addiction with alcohol was recorded in 27.5% of cases and 22.5% for tobacco.

The DCAO index was 17.4 for 11.2 decayed teeth, 5.4 missing teeth and 0.8 filled teeth.

For periodontal status, we used the Community Periodontal Index in Treatment Needs (CPITN). According to the CPITN scale, 85% of patients were in code 2, requiring scaling and oral hygiene education.

Patients who use psychoactive substances are at high risk of dental caries and periodontal disease. Oral and dental care is necessary to improve patients' quality of life.

Key words: users of psychoactive substances, oral condition, CAO index, periodontal condition

Introduction

According to Saint-Pierre, a doctor of dental surgery and psychotherapist, the mouth is a place of pleasure, but it can also become a place of danger, where drugs and psychotropic substances pass through [1]. The word "drug" is defined as "any substance that alters the functioning of the mind and/or body". A drug or psychoactive substance refers to a medicine that affects the central nervous system and alters consciousness and/or perceptions [2].

Psychoactive substances are classified as licit, for example alcohol, tobacco or illicit products such as cannabis, amphetamine, cocaine and opiates [3].

The oral area partly reflects our state of health. However, the use of psychoactive substances can have a negative impact on general health, social life and oral health. The consequences from an oral and dental point of view are manifold and depend on the products consumed, the mode of consumption, the duration of the addiction and the quantity ingested.

According to a study carried out in Norway in 2019, 78% of illicit drug users suffer from dental caries and periodontal disease [4].

In Australia in 2019, multiple substance users have more decayed and missing teeth than non-users [5].

In Madagascar, few studies have been carried out on the prevalence of oral health and the use of psychoactive substances.

The general objective of this study is to assess the oral and dental condition of drug addicts at the Andranomena Toliara Support Centre.

Methodology

The study took place at the Centre d'accompagnement des malades mentaux at the Foyer d'amitié Andranomena Toliara. A cross-sectional prospective descriptive study was carried out. The study period ran from January 2020 to March 2020.

All patients who had taken psychoactive substances and stayed at the centre during the study period were included in the study. Patients who refused to take part in the survey or who had difficulty answering the questionnaire were excluded.

We opted for an exhaustive sampling method given the numbers of patients accommodated at the centre. The sample consisted of 40 participants

Two assessment criteria were used to evaluate the oral condition of patients: firstly, the DMF (Decayed, Missing, Filled) index, which is used to measure the incidence of caries disease in the population. This index is calculated by totalling the number of decayed, missing and filled teeth in permanent dentition over the number of subjects examined [6], then The Community Periodontal Index in Treatment Needs (CPITN) was used to assess the periodontal care needs of our population. This index used clinical criteria recognised in the prevention and treatment of periodontal disease, such as the quantification of periodontal pockets, gingival inflammation and the presence of dental plaque. The principle is to assign a score according to the periodontal

condition of the teeth examined. The results were presented using a scoring system to define the need for periodontal care [7].

Table I: CPITN scale

Code 0	No bleeding, no tartar, no pockets	No need for care
Code 1	No bleeding, no tartar, no pockets	Teaching oral hygiene (EHO)
Code 2	Max. 3 mm pocket with tartar or overflowing filling (black area of probe completely visible)	Scaling, EHO, removal of overflowing fillings
Code 3	4 to 5 mm pocket (black area of probe partially masked)	Complex periodontal therapy including surfacing
Code 4	Minimum 6 mm pocket (black area of probe completely hidden)	Complex periodontal therapy, including surgical or non-surgical planing as required
Code 5	Edentulous area or 1 tooth	Complex periodontal therapy and prosthetic rehabilitation

Pre-prepared, tested survey forms were used to collect data, and an interview was carried out as well as a thorough oral examination to gather information.

Data were processed and analysed using SPSS for Windows, version 20. The results were considered significant for a value of $p < 0.05$.

The confidentiality of information, professional secrecy, medical ethics and the privacy of participants

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are respected.

The reliability of the results of this study depends on the sincerity of the participants' answers and their recall.

Results

TABLE II: Breakdown of users of psychoactive substances by social profile

Patient profile	N	%
Type		
Male	40	100
Female	0	0
Age range		
[15 to 25 years[	17	42,5
[25 to 35 years old[	16	40
[35 to 45[	4	10
≥ 45 years	3	7,5
Total	**40**	**100,0**

The entire sample was male. The most common age bracket was [25 to 35[, with 40% of the sample being male.

Table III: Breakdown of the sample by consumption of psychoactive substances

Psychoactive substances	N	%
Cannabis	15	37,5
Alcohol + Cannabis	11	27,5
Tobacco + Cannabis	9	22,5
Alcohol + tobacco + cannabis	4	10
Other drugs	1	2,5
Total	**40**	**100,0**

Cannabis is the substance most used by our sample (37.5%). However, co-addiction with other legal substances was observed, including alcohol in 27.5% of cases and tobacco in 22.5%.

Table IV: Breakdown of sample by cao index

Tooth decay	Filled tooth	Missing tooth	DFMT index	Standard deviation
11,2	0,8	5,4	17,4	9,1

The DFMT index was 17.4 for 11.2 decayed teeth, 5.4 missing teeth and 0.8 filled teeth.

Table V: Breakdown of the sample by start of consumption and cao index

Age at start of consumption (in years)	DFMT							
	DFMT < 3		3≤ DFMT< 8		DFMT ≥ 8		Total	
	N	%	N	%	N	%	N	%
[15 to 24 years[	0	0	2	5	21	52,5	23	57,5
[25 to 34 years[	0	0	3	7,5	7	17,5	10	25
[35 to 45 years[	2	5	4	10	1	2,5	7	17,5
Total	**2**	**5**	**9**	**22,5**	**29**	**72,5**	**40**	**100**

Fifty-two point five percent (52.5%) of patients who started taking psychoactive substances between the ages of 15 and 25 have an DFMT ≥ 8

Table VI: Breakdown of the sample by cpitn indicator

CPITN index	N	%
Code 0	0	0
Code 1	0	0
Code 2	34	85
Code 3	3	7,5

Code 4	2	5
Code 5	1	2,5
Total	**40**	**100,0**

According to the CPITN index, code 2 is the most common with 85%, although no people were registered in codes 0 and 1.

Table VII: Breakdown of sample by consumption start and cpitn index

CPITN	Age of onset							
	[15 to 25 years[		[25to35 years[		[35 to45 years[		Total	
	N	%	N	%	N	%	N	%
Code 0	0	0	0	0	0	0	0	0
Code 1	0	0	0	0	0	0	0	0
Code 2	16	40	12	30	6	15	34	85
Code 3	2	5	1	2,5	0	0	3	7,5
Code 4	2	5	0	0	0	0	2	5
Code 5	1	2,5	0	0	0	0	1	2,5
Total	**20**	**52,5**	**13**	**32,5**	**6**	**15**	**40**	**100**

An age of onset of consumption of [15 to 25 years] had codes 2, 3, 4 and 5 with 40%, 5%, 5% and 2.5% respectively.

Discussion

Social profile of patients

What can we say? This study ismade up of 40 male patients, according to the study carried out by Alson in 2018 on sociodemographic and clinical factors linked to cannabis use in the psychiatric department of the Joseph Raseta Befelatanana University Hospital, 94% of the study population was male [8]. Moreover, the friendship centre is a residential site run by brothers, hence the totality of the male population in our study;

The mean age of the study population was 26.8 years. The extremes of age ranged from 15 to 48 years;

On the other hand, a case control study carried out by Arora in 2019 showed that the average age of drug addicts was 30.8 years [9].

Consumption of psychoactive substances

Thirty-seven point five per cent (37.5%) of patients used cannabis alone, and co-addiction with alcohol was recorded in 27.5% of cases and 22.5% for tobacco.

According to Joshi in 2016, substance use is systematically associated with smoking and alcohol consumption, both of which have harmful effects on the oral cavity [10].

Caries and users of psychoactive substances

Our population suffers from polycaries with a DMFT index of 17.4 for 11.2 decayed teeth, 5.4 missing teeth and 0.8 filled teeth (standard deviation 9.1, minimum 0, maximum 20).

Baghaie et al in 2017 showed that opiate users had more decayed teeth + 5.6 and fewer missing teeth than controls (-0.4) [11]. A case-control study was carried out in Brazil in 2018 confirming that there were more decayed and missing teeth and fewer filled teeth than controls [12].

In fact, dental caries is the result of tooth demineralisation due to the acids produced by the fermentation of sugars by bacteria [13]. However, among consumers, hyposalivation and even xerostomia are common [14], and the buffering effect of saliva is reduced, leading to an increased risk of dental caries [15].

Fifty-two point five (52.5%) of the patients who started taking psychoactive substances between the ages of 15 and 25 had a DMFT > 8. This result is highly significant.

According to a meta-analysis carried out in 2015, the longer the duration of drug use, the greater the risk to oral health. A significantly higher DMFT was recorded in patients reporting use of 4 years or more [16].

In addition, poor oral hygiene, frequent sugar intake, no dental visits, an irregular lifestyle and long-term drug use increase the vulnerability of psychoactive substance users to caries [17].

Periodontal status and psychoactive substance users

According to the CPITN scale, 85% of patients are in code 2, requiring scaling and oral hygiene education. However, 12.5% of the sample require more complex periodontal therapy (codes 3 and 4).

A 2017 meta-analysis of oral health and drug use found that drug users are more likely to have periodontal disease than non-users [11].

A highly significant association was recorded between the CPITN index and the onset of drinking age.

This could be explained by the fact that poor oral hygiene leads to the proliferation of bacteria in plaque and gingival pockets, as well as initiating the development of inflammation leading to periodontitis, and by the effect of psychoactive substances on the periodontium itself [18]. In addition, smoking is a major risk factor for periodontal disease, which is widespread among illicit drug users [19].

Conclusion

In conclusion, this study provided an overview of the oral health of patients addicted to psychoactive substances. They are at high risk of dental caries and periodontal disease. Oral health care is necessary to ensure that mastication and digestion function properly, and to improve patients' aesthetics and quality of life. A KAP (Knowledge, Attitude, Practice) study of users of psychoactive substances on oral and dental health is planned.

Conflicts of Interest

We declare that no conflicts of interest arose during this study.

References

[1] Saint-Pierre F. The mouth between pleasure and suffering. Paris: Eska.2000

[2] Hanson GR, Venturelli, PJ, Fleckenstein AE. Drugs and Society. 2005. Jones & Bartlett: 9th edn. Sudbury.

[3] United Nations Office on Drugs and Crime: World Drug Report 2008.

[4] Djou R, Dewi TS. Oral Manifestation Related to Drug Abuse: A Systematic Review: Manifetasi oral terkait penggunaan obat-obatan terlarang: Sebuah tinjauan sistematis. Dentika Dental Journal. 2019;22(2):44-51

[5] Teoh L, Moses G, McCullough M. Oral manifestations of illicit drug use. Australian Dental Journal. 2019;64(3):213-22.

[6] World Health Organization, editor. Oral health surveys: basic methods. 5th edition. Geneva: World Health Organization; 2013. 125 p.

[7] Marques TCN, Sarracini KLM, Cortellazzi KL, Mialhe FL, de Castro Meneghim M, Pereira AC, et al. The impact of oral health conditions, socioeconomic status and use of specific substances on quality of life of addicted persons. BMC Oral Health. 2015;15(1):38.

[8] ALSON RE. Sociodemographic and clinical factors related to cannabis use. Thesis med . 2018.

[9] Arora PC, Ragi KG, Arora A, Gupta A. Oral health behavior and treatment needs among drug addicts and controls in Amritsar district: A case-controlled study. J Neurosci Rural Pract 2019;10:201-6.

[10] Joshi S, Ashley M. Cannabis: a joint problem for patients and the dental profession. Br Dent J 2016; 220: 597-601.

[11] Baghaie H, Kisely S, Forbes M, Sawyer E, Siskind DJ. A systematic review and meta-analysis of the association between poor oral health and substance abuse. Society for the Study of Addiction. 2017. doi:10.1111/add.13754

[12] Antoniazzi R, Zanatta F, Ardenghi T, Feldens C. The use of crack and other illicit drugs impacts oral health-related quality of life in Brazilians. Oral Dis. 2018;24(3):482-8.

[13] Kumar S, Tadakamadla J, Johnson N. Effect of toothbrushing frequency on incidence and increment of dental caries: a systematic review and meta-analysis. Journal of Dental Research. 2016;95(11):1230-6

[14] Yazdanian M, Armoon B , Noroozi A, Mohammadi R, BayatAH, AhounbarE, Higgs P, Nasab HS, Bayani A, Hemmat AM. Dental caries and periodontal disease among people who use drugs: a systematic review and meta-analysis. BMC OralHealth. 2020 ; 20 (1) :44

[15] Stookey GK. The effect of saliva on dental caries. The Journal of the American Dental Association. 2008;139:11S-7S.

[16] Truong A, Higgs P, Cogger S, Jamieson L, Burns L, Dietze P. Oral healthrelated quality of life among an australian sample of people who inject drugs. J Public Health Dent. 2015;75(3):218-24.

[17] Teng P-R, Lin M-J, Yeh L-L. Utilization of dental care among patients with severe mental illness: a study of a National Health Insurance database. BMC Oral Health. 2016;16(1):87

[18] Dania B, Muath A, Abeer A, Jevae L N, Fahad H, Riddhi B, Hesham A, Tejasvita C, Satomi O, Constantine I V, Israel T A. Cocaine, polysubstance abuse, and oral health outcomes, NHANES 2009 to 2014. J Periodontol . 2020 ;91(8):1039-48

[19] Weinberger AH, Funk AP, Goodwin RD. A review of epidemiologic research on smoking behavior among persons with alcohol and illicit substance use disorders. Preventive Medicine. 2016;92:148-59.