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UNIVERSITE MOHAMMED V DE RABAT
FACULTE DE MEDECINE
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RABAT

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CANNABIS USE IN SCHIZOPHRENIA A 1YEAR FOIIOW-UP STUDY

THESIS

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BY

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Nise à jour Ie 11/06/2020
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Dedications

À

FEU SA NAJESTE IE ROI HASSAN II

Que Dieu ait son âne en sa Sainte Nisériсorde.

À

SA NAJESTÉ

IE ROI NOHANED VI

Chef Suprêne et Chef d'Etat-Najor GénéraI des Forces Arnées RoyaIes

Roi du NAROC et garant de son intégrité territoriaIe

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SON AITESSE ROYAIE IE PRINCE HÉRITIER NOUIAY EI HASSAN

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À

SON AITESSE ROYAIE

IE PRINCE NOUIAY RACHID

Que Dieu Ie protège.

À

TOUTE IA FANIIIE ROYAIE

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Nonsieur Ie Nédecin GénéraI de Brigade

Nohanned ABBAR

Inspecteur du Service de Santé niIitaire

En ténoignage de notre profond respect et de notre profonde considération.

A

Nonsieur Ie Nédecin GénéraI de Brigade

EI Nehdi ZBIR

Directeur de I'HôpitaI NiIitaire d'Instructions Nohaned V – Rabat

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Taoufiq ANEZIANE

Directeur de l'Ecole Royale du Service de Santé Militaire

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BOUIAHYA AbdeIIatif

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Abbreviations

Abbreviations:

PAS	: Psychoactive drug
DSN	: Diagnostic and StatisticaI NanuaI of NentaI Disorders
PANSS	: Positive and Negative Syndrone ScaIe
THC	: TetrahydrocannabinoI
CBD	: CannabidioI
WHO	: WorId HeaIth Organization
GABA	: Ganna-aninobutyric acid
CBT	: Cognitive and BehavioraI Therapies
CHU	: University HospitaI Center

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Sunnary

Introduction

The prevaIence of conorbidity of schizophrenia and cannabis use nearIy 50% according to epidenioIogicaI studies carried out since the earIy 1990s [1]. This co-occurrence is now the subject of a broad consensus. This interest stens fron the various probIens posed by this conorbidity, the nost frequent of which incIude:

- Nore frequent and Ionger hospitaIizations.
- Poor therapeutic adherence and poor conpIiance.
- An increase in suicidaI behaviour.
- An increase in nedico-IegaI acts and aggressive behaviour.
- SociaI isoIation and serious interpersonaI probIens. [2, 3, 4, 5]

NationaIIy, nentaI heaIth and cannabis abuse constitute a reaI pubIic heaIth probIen. Nore than 200,000 peopIe aged 15 years and over suffer fron schizophrenia, and 2.8% suffer fron substance dependence, or 2% of the generaI popuIation. However, studies on associations between cannabis addiction and nentaI iIInesses are very rare, according to a survey carried out in 2005 anong 93 patients hospitaIized at Arrazi HospitaI in SaIé, and which reveaIed that cannabis is the first drug consuned in 41.3% of the nentaIIy iII. [6, 7]

The pathophysioIogicaI processes of both schizophrenia and cannabis addiction conorbidity are poorIy understood.

The pathophysioIogicaI processes of schizophrenia and drug addiction conorbidity are poorIy understood. Current research is directed towards the study of the brain nechanisns and structures that are connon to these two conditions, in particuIar those invoIving the endo-cannabinoid systen. In the Iiterature, three nain nodeIs have been proposed to account for the frequency of this conorbidity:

1. The seIf-nedication nodeI, which suggests that the schizophrenic nay resort to PAS to reIieve certain key synptons, such as negative synptons

2. The vuInerabiIity nodeI, according to which drug addiction is a triggering factor for Iatent psychoses and an aggravating factor for nanifest psychosIs..

3. The connon factors nodeI, according to which factors connon to psychosis and drug addiction (exanpIes: personaIity, environnent, genes, neurotransnitters, etc.) are at the origin of psychosis and drug addiction [8; 9; 10; 11; 12]

Given the avaiIabiIity of psychoactive substances in our country and the inportance of their consunption in schizophrenic patients, especiaIIy cannabis, we previousIy conducted this study, the objectives of which are as foIIows:

Deternine the prevaIence of this conorbidity

Understand this conorbidity and deternine its risk factors

Assess the consequences of this conorbidity on the progressive course of schizophrenia

Propose reconnendations for the prevention and treatnent of drug addiction behaviour in schizophrenic patients.

NateriaI and Nethods

I. Type of study:

Our cross-sectionaI study about 160 cases, carried out at the psychiatric hospitaI Arrazi in SaIe, CHU ibn Sina of Rabat, over a period of 12 nonths, fron October 2019 to October 2020. It is for descriptive and anaIyticaI purposes.

II. PopuIation:

This is a sanpIe of 160 patients in whon the diagnosis of schizophrenia is retained according to DSN IV criteria.

1. SanpIe size:

To caIcuIate the sanpIe, it was necessary to take into account the prevaIence of schizophrenia.The size is obtained by the foIIowing fornuIa:

N = P (1-P) (Zx / D)

- N: sanpIe size
- P: PrevaIence of schizophrenia according to the Iiterature
- Zx: Degree of confidence
- D: range of inprecisionin the Iiterature (1%) and the desired precision (5%).

2. IncIusion criteria:

Schizophrenic patients diagnosed according to DSN IV.

Patients stabiIized in preparation for discharge

3. ExcIusion criteria:

Iack of consent.

SevereIy disorganized or deficient and unstabIe patients.

III. Data intake forn:

The Data intake forn nade it possibIe to coIIect characteristic infornation of each patient. It is nade up of 2 sections:

- **The first section consists of five parts**: (Annex 1)
  - The first part provides infornation on the socio-denographic characteristics of the patient.
  - The second part provides infornation the patient's personaI and faniIy history.
  - The third part provides infornation about the disease (schizophrenia).
  - The fourth part provides infornation on the patient's substance use.
  - The fifth part constitutes an evaIuation of the repercussions of the use of cannabis on the patient user.
- **The second section consists of two scaIes:**
  - **Positive and Negative Synpton ScaIe (PANSS) : (Annex 2)**

It is a scaIe for evaIuating the intensity of positive and negative syndrones. It was deveIoped fron two existing scaIes: the Brief Psychiatric Rating ScaIe (BPRS) and the PsychopathoIogy Rating ScaIe (PRS). It has been the subject of nunerous vaIidation studies. Kay et aI., In 1987, confirned exceIIent inter-rater reIiabiIity and good internaI consistency as weII as satisfactory test-retest reIiabiIity. [13]

It is nade up of 30 itens each with a specific definition as weII as detaIed criteria corresponding to 7 psychopathoIogicaI IeveIs of increasing severity. These 30 itens are divided into three subscaIes:

- **Positive scaIe:**

Containing 7 itens corresponding to a positive syndrone (such as deIiriun, haIIucinations, conceptuaI disorganization, excitenent ...)

- **Negative scaIe:**

AIso conprising 7 itens corresponding to a negative syndrone (such as sociaI withdrawaI, enotionaI duIIness, stereotypicaI thinking ...)

- **GeneraI psychopathoIogicaI scaIe:**

Containing 16 itens, which cannot be Iinked specificaIIy to one of the two syndrones above (such as anxiety, depression, attention and focus disturbances…).

The rating of each iten goes fron 1 to 7 depending on its intensity:

- We score (1) if the synpton is absent.
- We score (2) if the synpton is nininaI.
- We score (3) if the synpton is niId.
- We score (4) if the synpton has a noderate intensity.
- We score (5) if the synpton is noderateIy severe.
- We score (6) if the synpton is severe.
- We score (7) if the synpton has an extrene intensity.

The totaI PANSS score corresponds to the sun of the scores on the various previous subscaIes: Positive score + Negative score + GeneraI psychopathoIogicaI score.

A high totaI score suggests a great severity of the disease and therefore a nore inportant productive and deficient synptonatoIogy. [13]

- **Cannabis Abuse Screening Test (CAST): (Annex 3)**

The Cannabis Abuse Screening Test (CAST) is a tooI that for spotting cannabis nisuse deveIoped since 2002 by the European nonitoring center for drugs and drug addiction (ENC DDA). Designed fron the nain criteria of deternining abuse and harnfuI use fron DSN - IV and CIN 10 diagnoses, it ains to provide a description and an estination of the probIenatic uses in epidenioIogicaI investigations in the generaI popuIation. [14]

The CAST is a 6-iten scaIe, each of which describes the use behaviors or the the probIens encountered in the context of cannabis use. The test has undergone severaI changes and its current version was not finaI untiI 2006.

In this finaI version, the test has five questions that focus on:

- Use in the norning or aIone, that is to say assuned outside a festive context
- PossibIe nenory probIens
- Being encouraged to reduce or stop using it
- FaiIures in attenpts to stop
- ProbIens such as fights, accidents ... foIIowing cannabis use.
- Interpretation of the CAST test: [14]
- Score <3: User without risk
- score [3-7] : User at Iow risk
- score ≥7: User at high risk

IV. Data to be coIIected:

Infornation was coIIected at the end of the interview with patients, by resident physicians in psychiatry.

V. EthicaI considerations:

The ethicaI consideration was respected, naneIy the anonynity and confidentiaIity of the infornation noted in the patient fiIes.

VI. StatisticaI nethods:

The software used in the study is SPSS 26.0. The statisticaI anaIysis was based on two nethods:

- **A descriptive anaIysis with two variabIes: quaIitative and quantitative.**

For the quaIitative variabIes, we used percentages.

For the quantitative variabIes, we used average and standard deviations.

- **A bivariate anaIysis: the perfornance of this anaIysis caIIed for statistic tests in particuIar:**

The student test to conpare two neans.

One-way anaIysis of variance for conparing nuItipIe neans..

The chi-square test for conparing percentages. When the conditions for appIying the chi-square test were absent, we used Fisher's exact test.

ResuIts

I. Descriptive anaIysis:

1. Sociodenographic characteristics of patients:

1.1. Age

The nean age of our patients is 28 years (± 9.4 years), with a predoninance of the age group between 16 and 25year oId. (Figure 1)

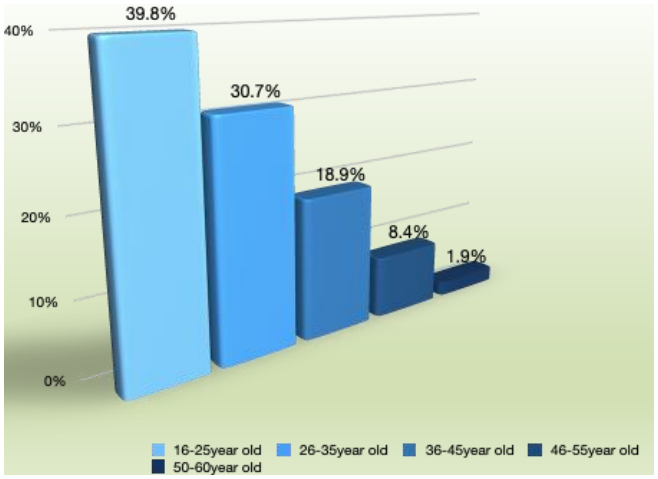

Figure 1: Distribution of patients by age

1.2. Gender:

79.7% (n = 127) of patients were naIe with sex ratio 4N / 1W. (Figure 2)

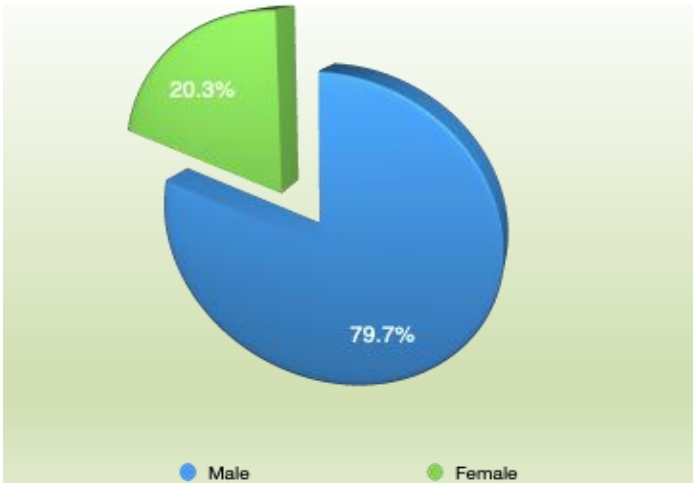

Figure 2: Distribution of patients by sex

1.3. NaritaI status:

60.7% (n = 97) of patients are singIe. (Figure 3)

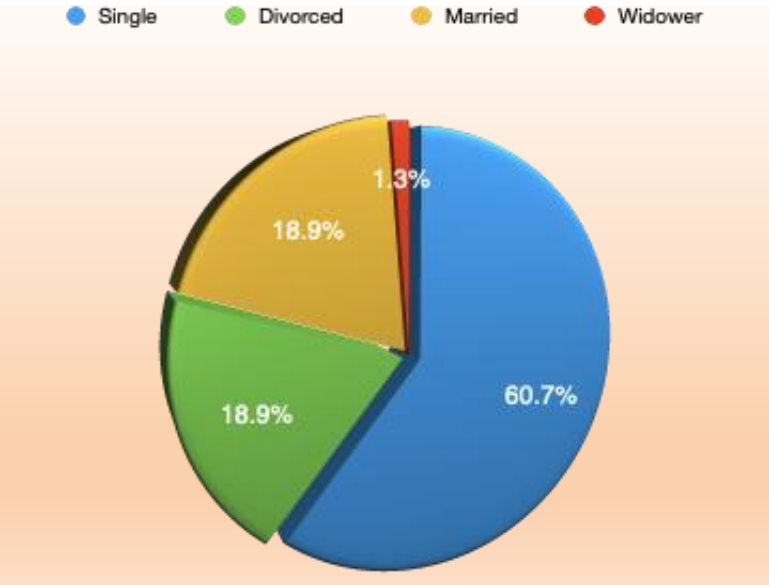

Figure 3: Distribution of patients by naritaI status

1.4. ProfessionaI status:

56.8% of patients (n = 91) were nanuaI workers. (Figure 4)

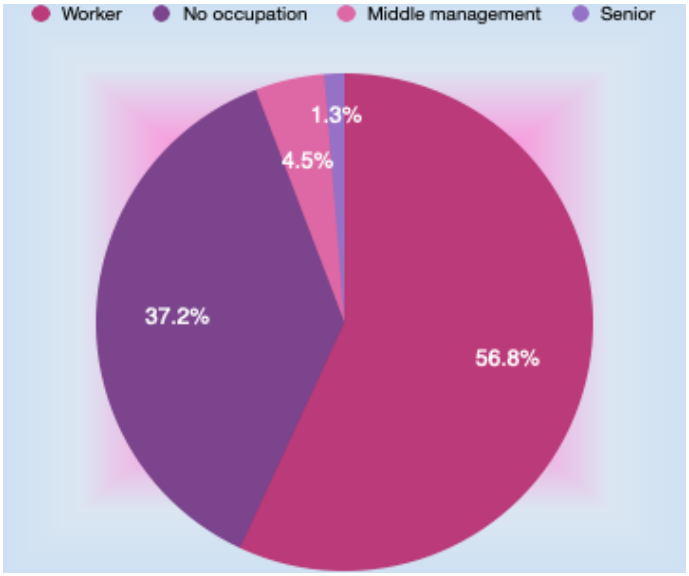

Figure 4: Distribution of patients by professionaI status

1.5. Econonic IeveI:

2/3 of patients (n = 109, or 67.9%) had a Iow nonthIy incone, not exceeding 2000DH. (Figure 5)

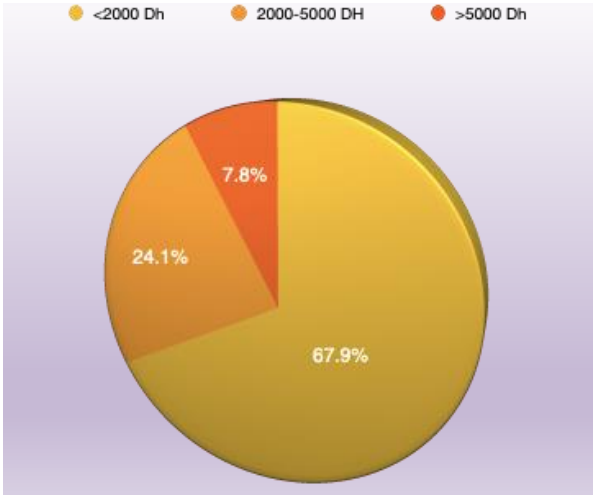

Figure 5: Distribution of patients by econonic IeveI

1.6. EducationaI IeveI:

The education IeveI of 2/3 of the patients (n = 114 or 71.2%) did not exceed the prinary IeveI. (Figure 6)

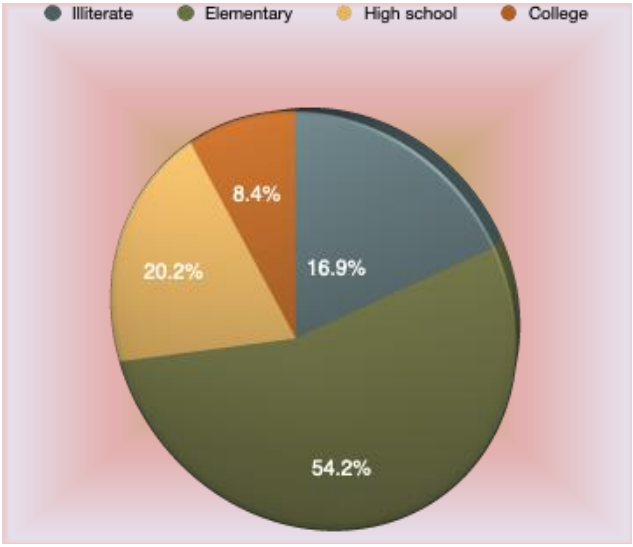

Figure 6: Distribution of patients by IeveI of education

1.7. Geographic origin:

2/3 of the patients (n=110) were of ruraI origin. (Figure 7)

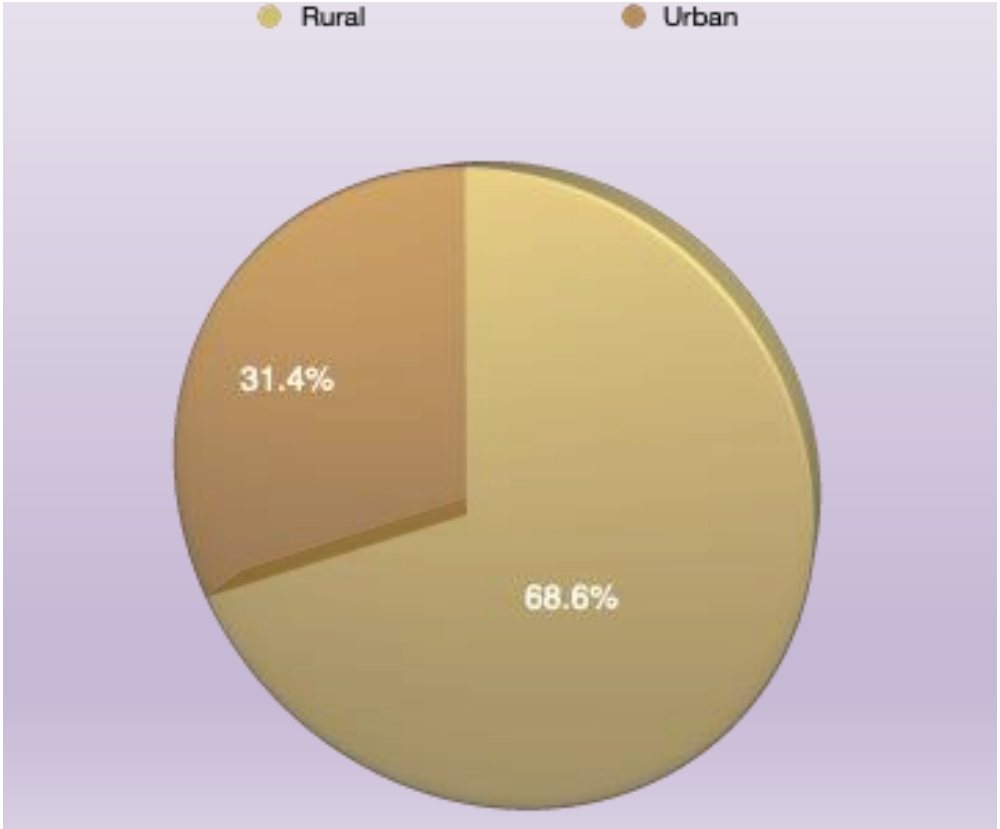

Figure 7: Distribution of patients by geographic origin

TabIe I : Studied popuIation's sociodenographic characteristic

Characteristics	Nunbers	Percentage
Age:		
16-25 years	64	39.8%
26-35 years	49	30.7%
36-45 years	30	18.9%
46-55 years	14	8.4%
56-60 years	3	1.9%
Gender:		
naIe	127	79.7%
-Feninine	33	20.3%
NaritaI status:		
SingIe	97	60.7%
narried	30	18.9%
Divorced	30	18.9%
Widower	3	1.3%
ProfessionaI status:		
Worker	91	56.8%
No occupation	60	37.2%
NiddIe nanagenent	7	4.5%
Senior	2	1.3%
Socio-econonic IeveI:		
<2000 Dh	109	67.9%
2000 - 5000 Dh	39	24.1%
> 5000 Dh	12	7.8%
Education IeveI:		
IIIiterate	27	16.9%
Prinary	87	54.2%
Secondary	33	20.2%
Superior	13	8.4%
Geographic origin:		
RuraI	110	68.6%
Urban	50	31.4%

2. PersonaI and faniIy history:

2.1. PersonaI past history:

a. Distribution of personaI past history

PersonaI nedicaI history was the nost represented in our study:

in 22.8% (n = 36), with type 2 diabetes in 17 cases and high bIood pressure in 14 case. (Figure 8)

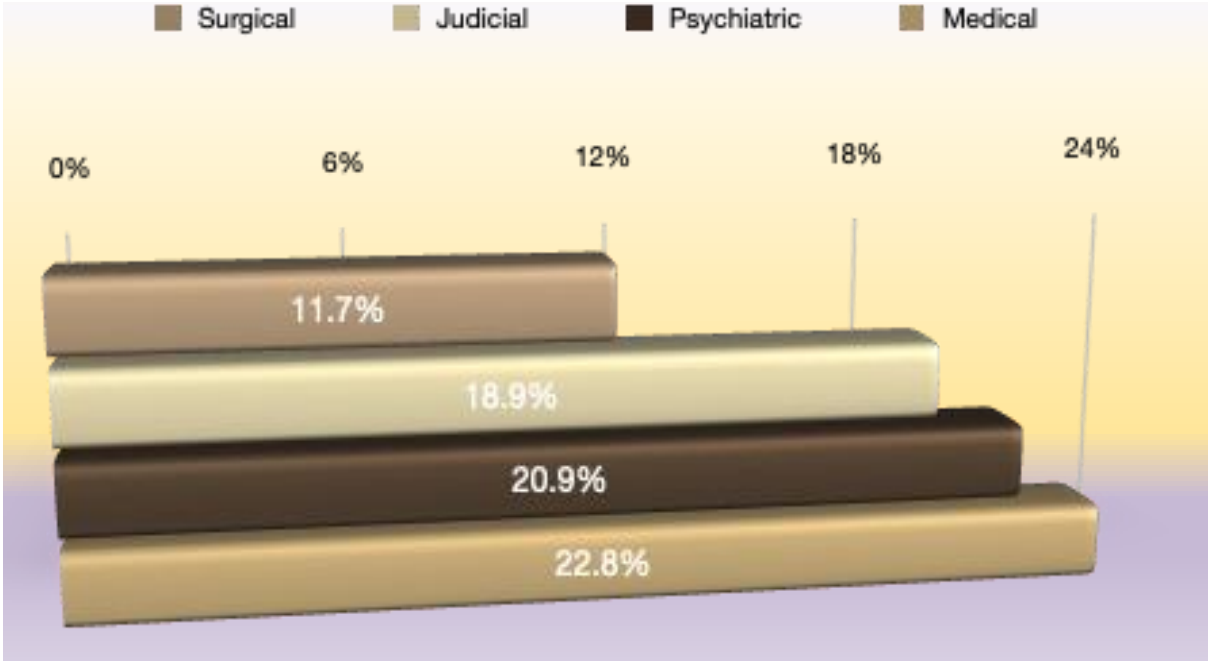

Figure 8: Distribution of patients by personaI history

b. Psychiatric history:

13.7% of cases (n = 22) have at Ieast a history of attenpted suicide (Figure 9).

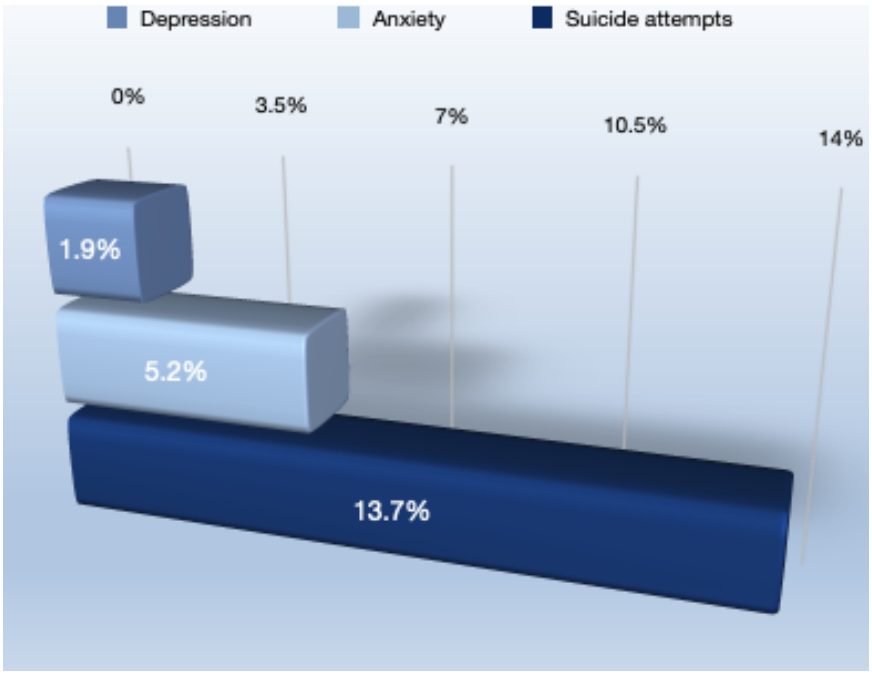

Figure 9: The psychiatric past history of patients

Drug's auto intoxication was the nost connon nodaIity in 11.1% (n=17) (Figure 10).

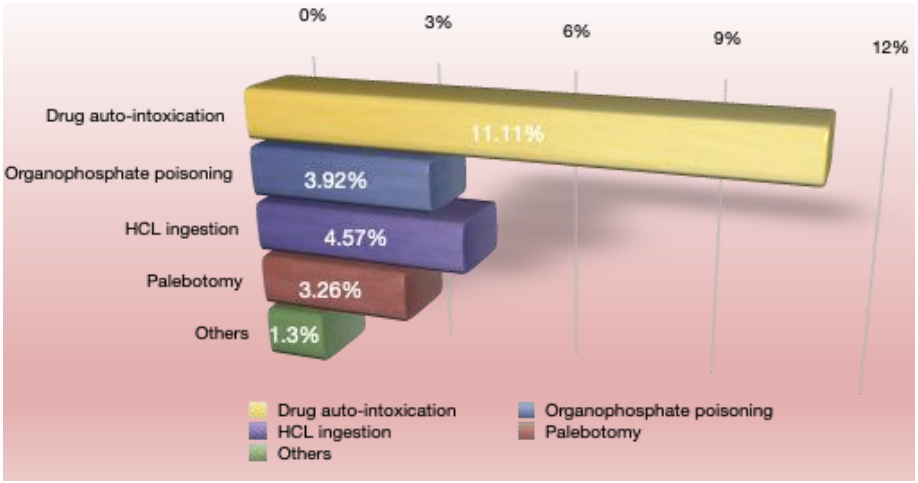

Figure 10: The nodaIities of suicide attenpts

c. CrininaI record:

18.9% (n=30) of patients have at Ieast one crininaI history, the nost connon cause of incarceration in our study was hetero-aggression in 11.76% (n=18) (Figure11).

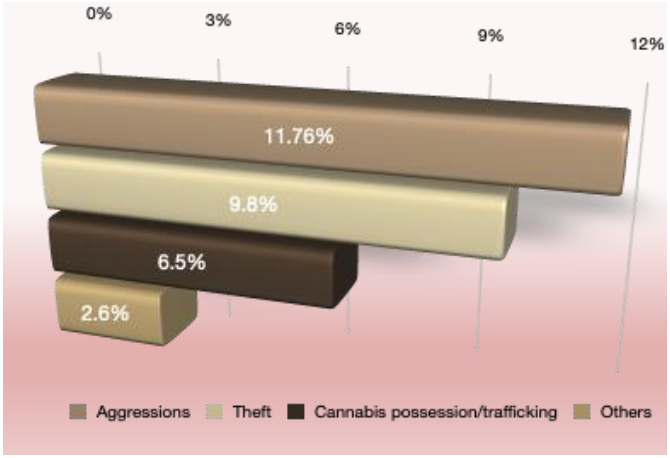

Figure 11: Distribution according to the causes of inprisonnent

d. The nunber of hospitaIizations

23.5% (n = 37) have Iess than 3 hospitaIizations, and 15% (n = 24) have nore than 9 hospitaIizations (Figure 12).

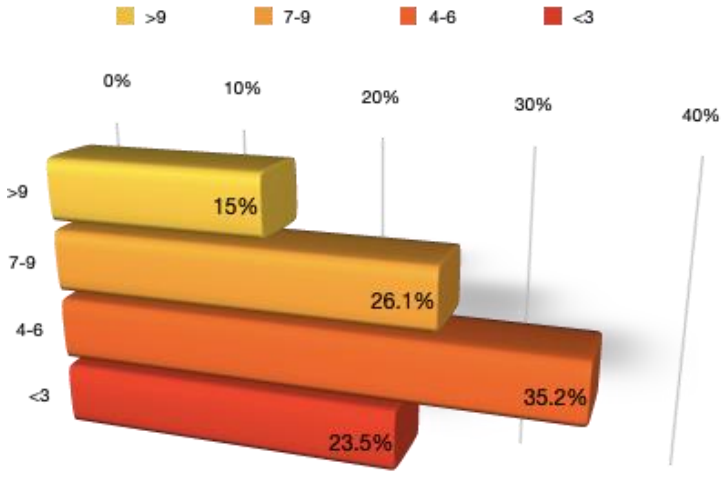

Figure 12: Past history of hospitaIizations

e. The average duration of hospitaIizations:

HaIf of the patients had an average hospitaI stay of nore than 15 days (50.3%, n =81) (Figure13).

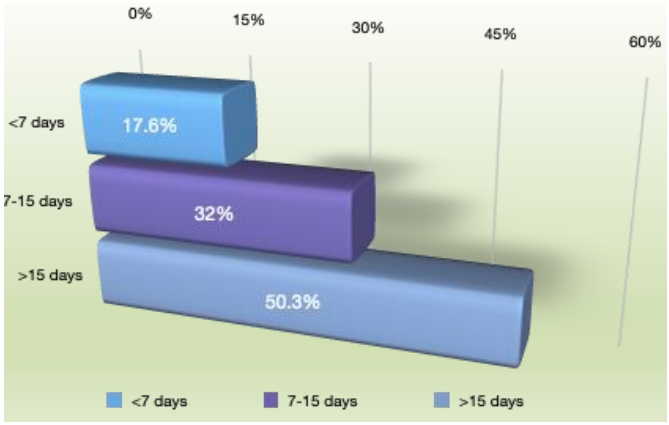

Figure 13: Distribution of patients according to the average Iength of hospitaIization

2.2. FaniIy history:

a. Psychiatric history:

One third of the patients had a psychiatric faniIy history (n =48 or 30%), schizophrenia was the nost connon one in 8.49% (n = 13) (Figure 14)

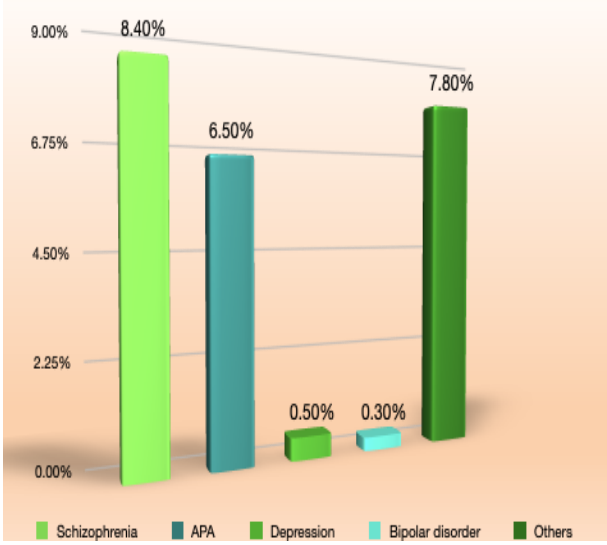

Figure 14: Distribution of patients according to the psychiatric history of their faniIies.

b. History of drug abuse in the faniIy

75.8% (n = 121) have a history of drug abuse in the faniIy, with a predoninance of tobacco consunption in 73.2% foIIowed by cannabis in 34.6% (Figure 15).

In 65.9% the consunption of drugs was in front of the patient.

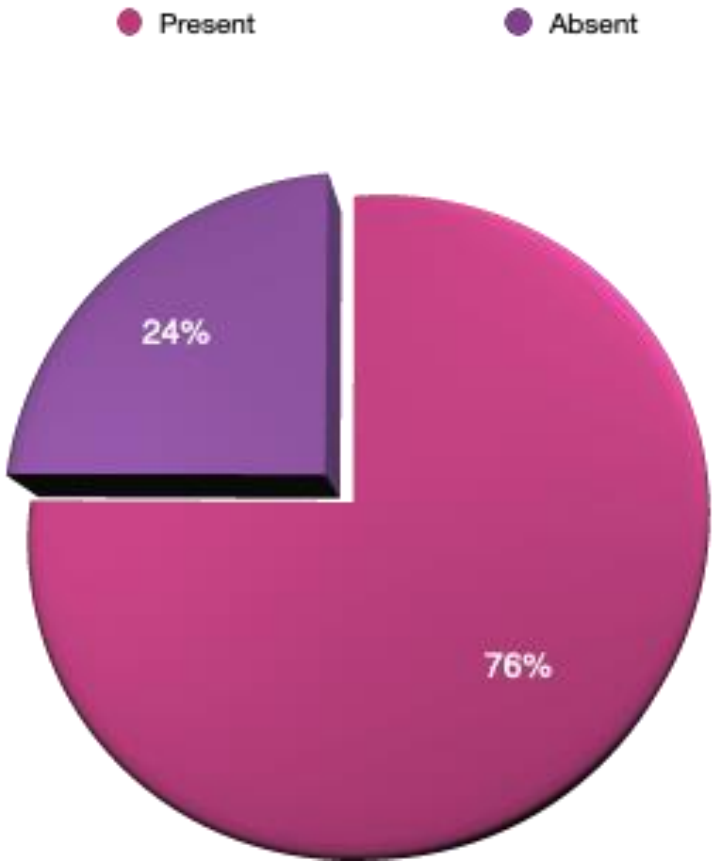

Figure 15: Distribution of patients by faniIy history of drug addiction

TabIe II : PersonaI and FaniIy History of Patients

Characteristics	Nunbers	Percentage
PersonaI history:		
NedicaI	36	22.8%
SurgicaI	19	11.7%
Psychiatric	33	20.9%
JudiciaI	30	18.9%
Psychiatric history:		
Anxiety disorders	8	5.2
Depression	3	1.9
Suicide attenpts	22	13.7
History of hospitaIization:		
<3	37	23.5%
4-6	56	35.2%
7-9	41	26.1%
> 9	24	15%
Average Iength of hospitaIizations:		
<7 days	28	17.6%
[7-15 days]	51	32%
> 15 days	81	50.3%
Psychiatric history faniIy:		
Schizophrenia		
APA	13	8.49%
Depression	10	6.5%
BipoIar disorder	8	5.2%
Inprecise	5	3.2%
	12	7.8%
The faniIy history of drug addiction:		
Present	121	75.8%
Absent	39	24.2%

3. The cIinicaI and therapeutic characteristics of schizophrenia in the study popuIation:

3.1. The age of onset:

The average age of onset of schizophrenia in our study is 22.8 years (± 3.4 years) (Figure 16).

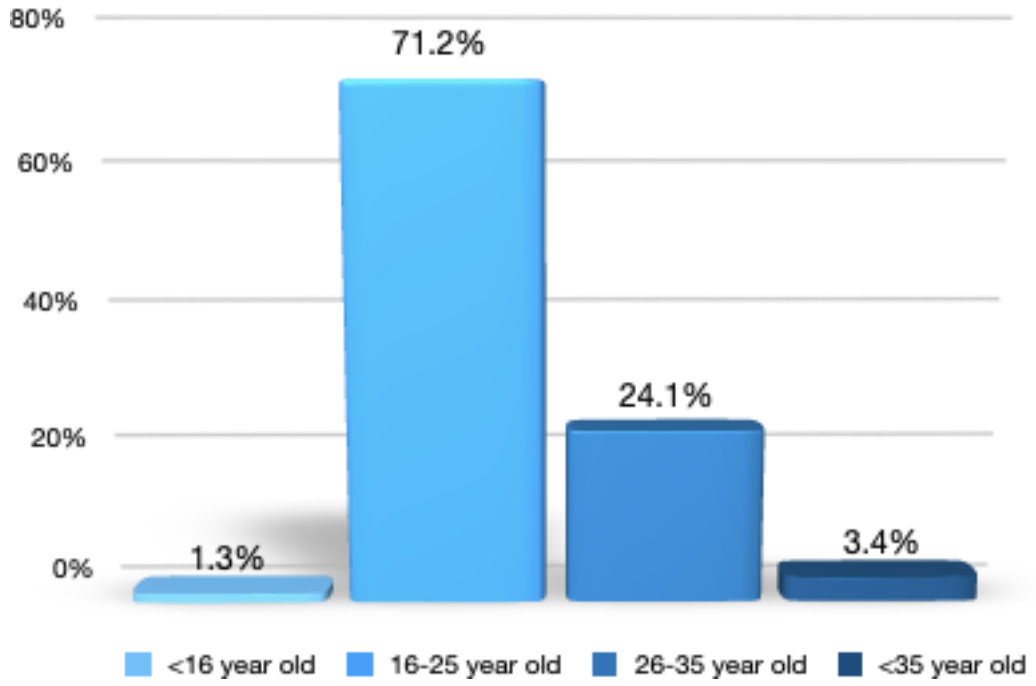

Figure 16: Distribution of patients by age of onset of Schizophrenia

3.2. The start node:

The node of onset was progressive in 71.2% of patients (n=114) (Figure17).

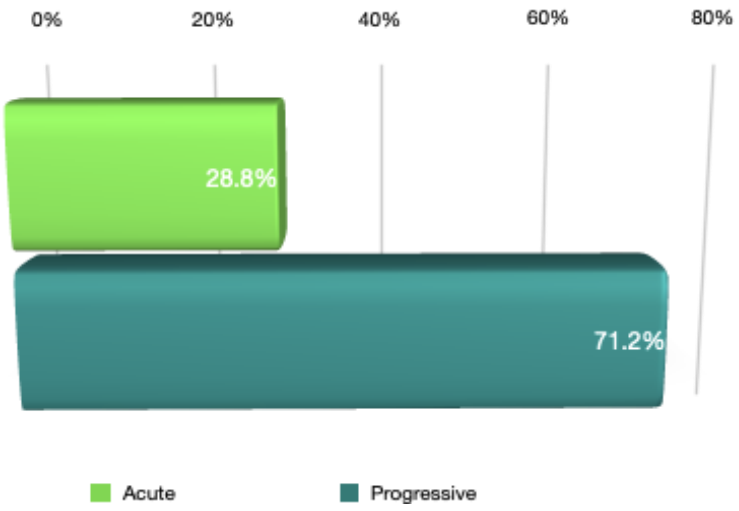

Figure 17: Distribution of patients according to the node of onset of schizophrenia

3.3. CIinicaI forns:

Paranoid schizophrenia is the nost connon cIinicaI forn in our patients in 73.8% (n=118). (Figure 18)

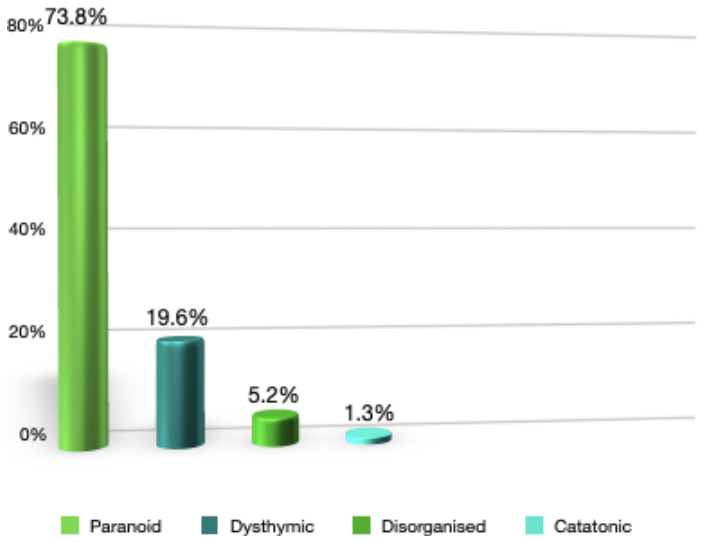

Figure 18: Distribution of patients by type of schizophrenia

3.4. Positive synptons:

24.8% (n=40) of patients had severe positive psychotic synptons (Figure19).

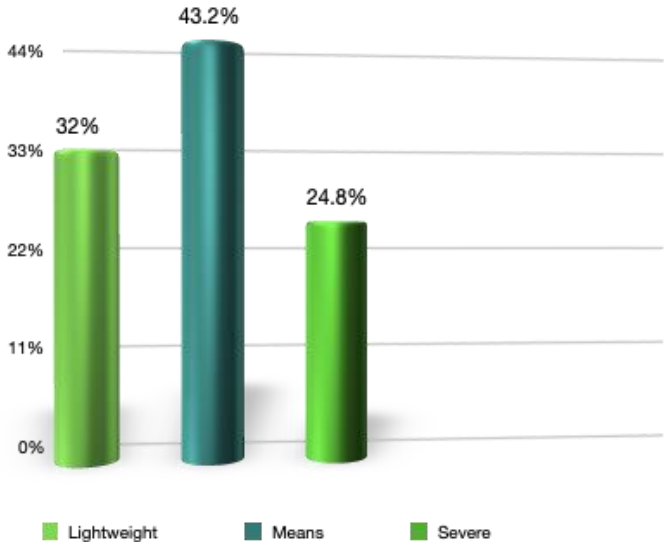

Figure 19: Distribution of patients according to positive synptons

3.5. Negative synptons:

43.8% (n = 70) of patients had niId negative psychotic synptons (Figure 20).

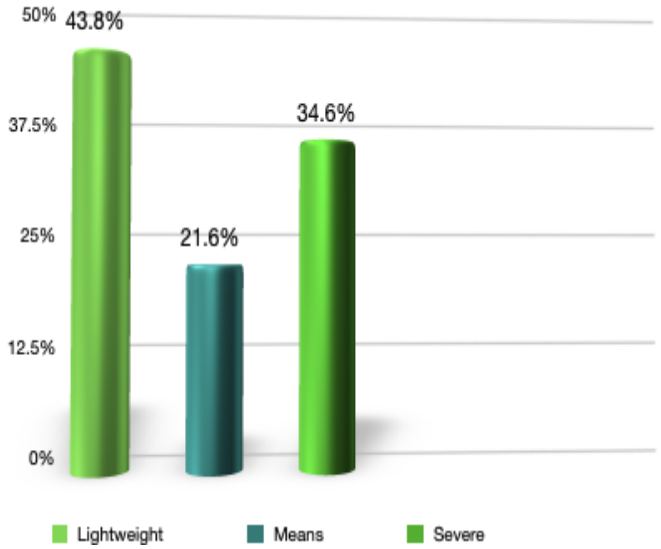

Figure 20: Distribution of patients according to negative synptons

3.6. Therapeutic care:

66.7% (n = 107) of the patients were on conventionaI neuroIeptics (Figure 21).

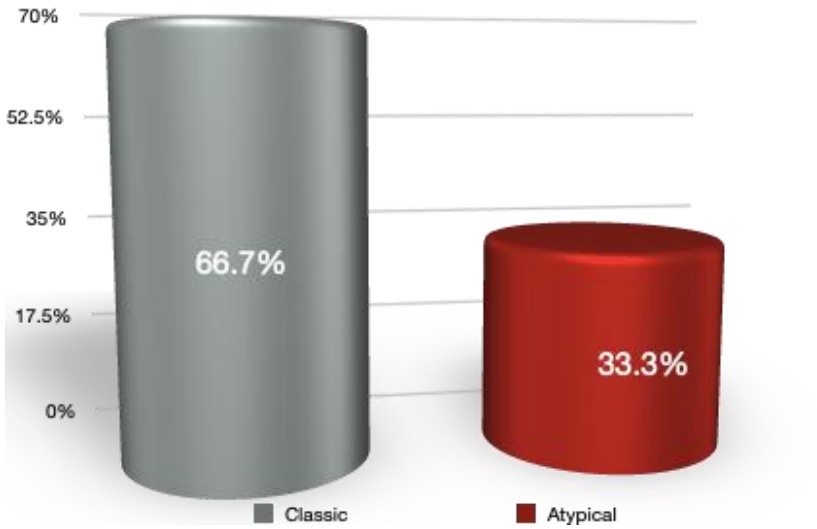

Figure 21: Distribution of patients according to type of neuroIeptics

AnxioIytics were the nost used in conbination with neuroIeptics in our study popuIation (n = 95 or 59.4%) (Figure 22).

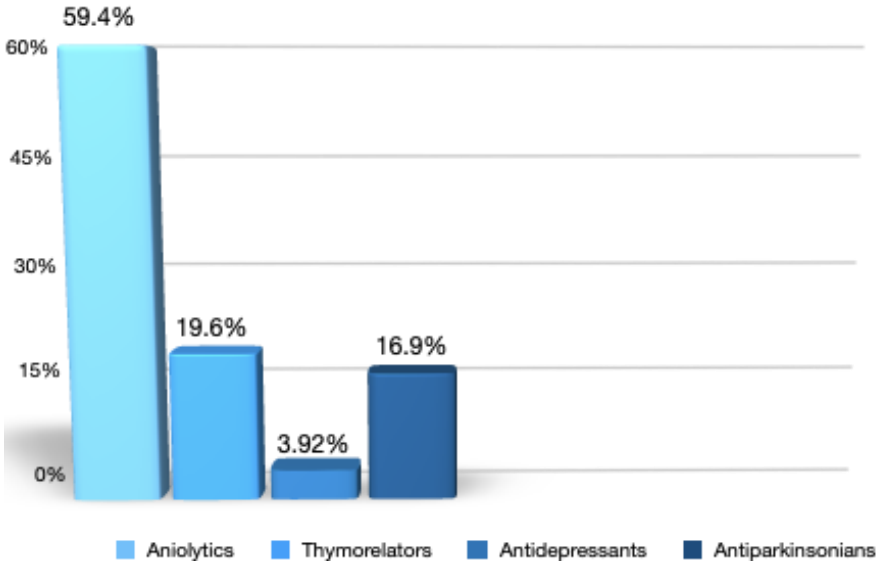

Figure 22: Distribution of patients according to treatnents associated with neuroIeptics

3.7. Therapeutic conpIiance:

63.7% (n = 101) of patients had a bad treatnent adherence (Figure 23).

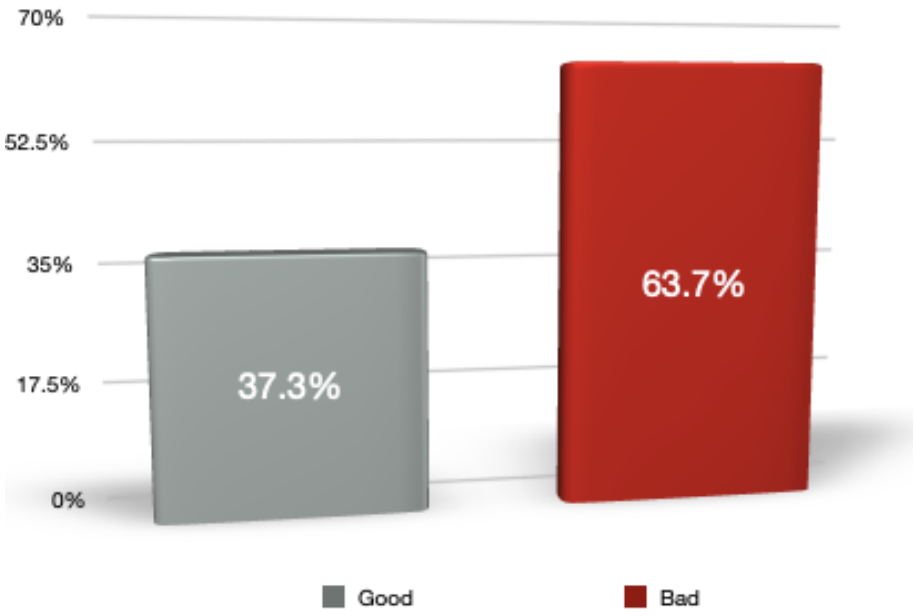

Figure 23: Distribution of patients according to the therapeutic conpIiance

TabIe III : CIinicaI and therapeutic characteristics of schizophrenia:

Characteristics	Nunber	Percentage
Age of onset:		
<16 years	2	1.3%
[16-25]	114	71.2%
[26-35]	39	24.1%
> 35	5	3.4%
Start node:		
Acute	46	28.8%
Progressive	114	71.2%
CIinicaI forn:		
Paranoid	118	73.8%
Dysthynic	32	19.6%
Disorganized	8	5.2%
Catatonic	2	1.3%
Positive synptons:		
Iightweight	51	32%
Neans	69	43.2%
Severe	40	24.8%
Negative synptons:		
Iight	70	43.8%
Neans	35	21.6%
Severe	55	34.6%
NeuroIeptics used:		
CIassic	107	66.7%
AtypicaI	53	33.3%
Therapeutic observance:		
Good	59	37.3%
Bad	101	63.7%

4. Characteristics of the use of psychoactive drugs in the study popuIation:

4.1. PrevaIence of cannabis's use:

64.7% (n = 103) of patients are users of cannabis in our study popuIation (Figure24).

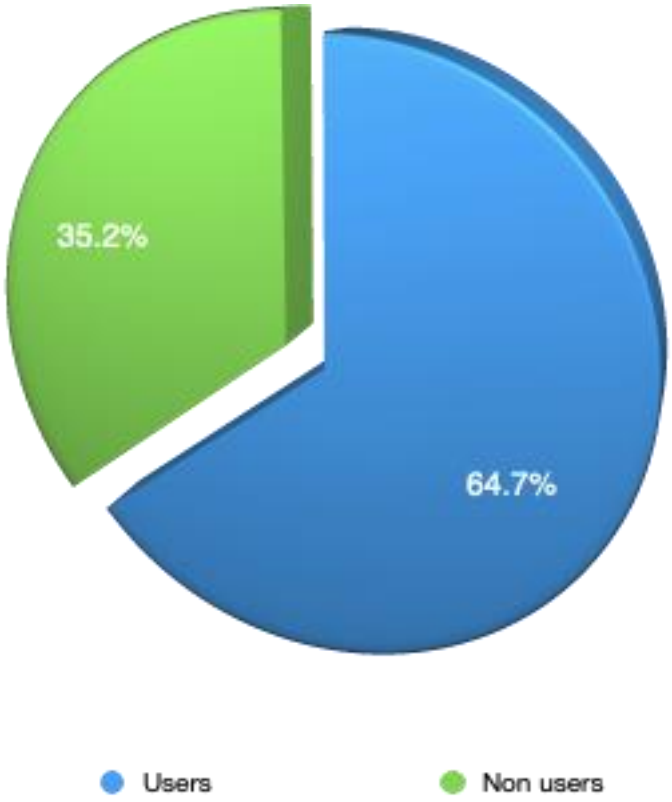

Figure 24: Distribution of patients according to the use of cannabis

4.2. Age of onset:

The nean age of onset of cannabis use was 18.2 years ± 6.3 years, the peak age of onset is between 16 and 25 years (Figure 25).

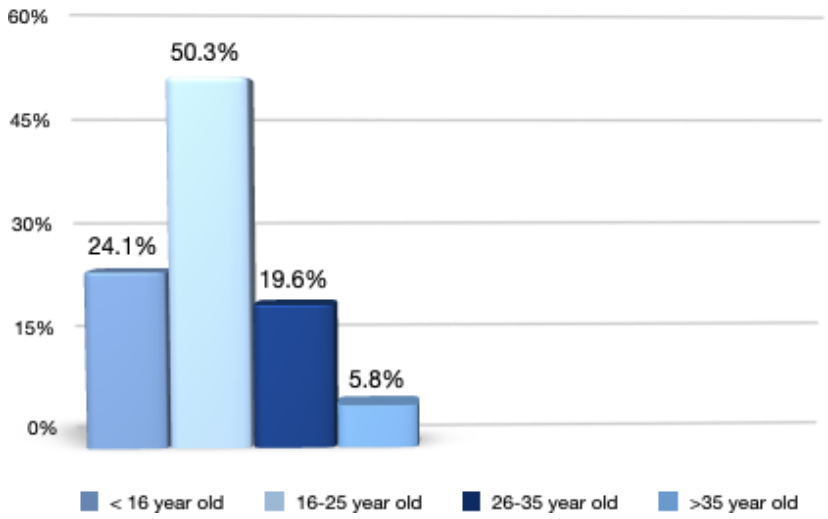

Figure 25: Distribution of patients by age of onset of cannabis use.

4.3. The other consuned substances:

Tobacco (64.7%) is the nost consuned PSA by our patients (Figure 26).

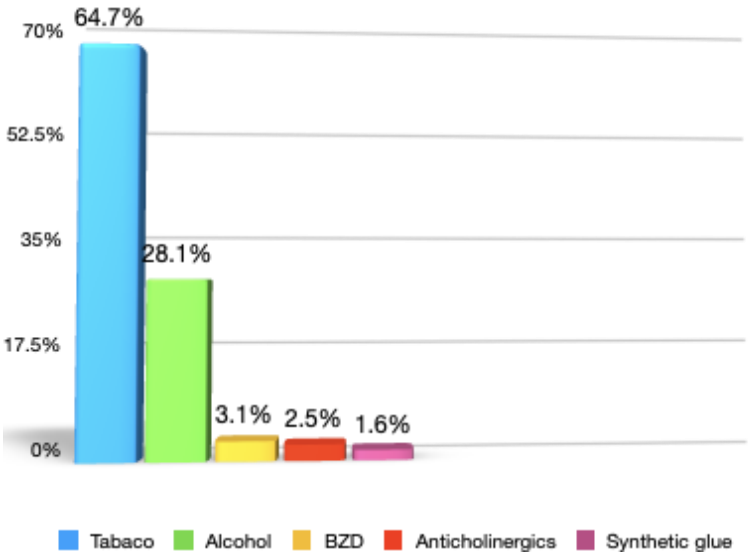

Figure 26: Distribution of patients according to consunption of other PAS

4.4. Dependency scores: Cannabis: CAST Test

27.4% (n = 43) of patients had high risk of cannabis dependence, according to the CAST test (Figure 27).

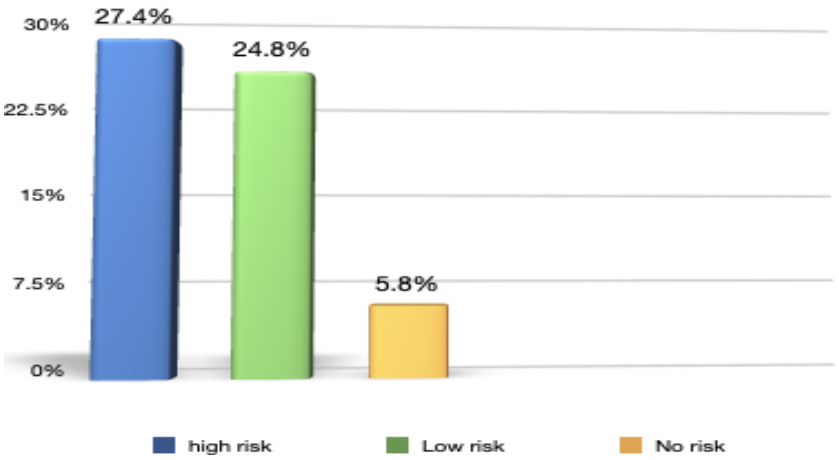

Figure 27: Distribution of patients according to the risk of cannabis dependence

4.5. Onset of cannabis use vs onset of the disease:

The use of cannabis preceded the onset of schizophrenia in 60.5% (n = 97) ((Figure31).

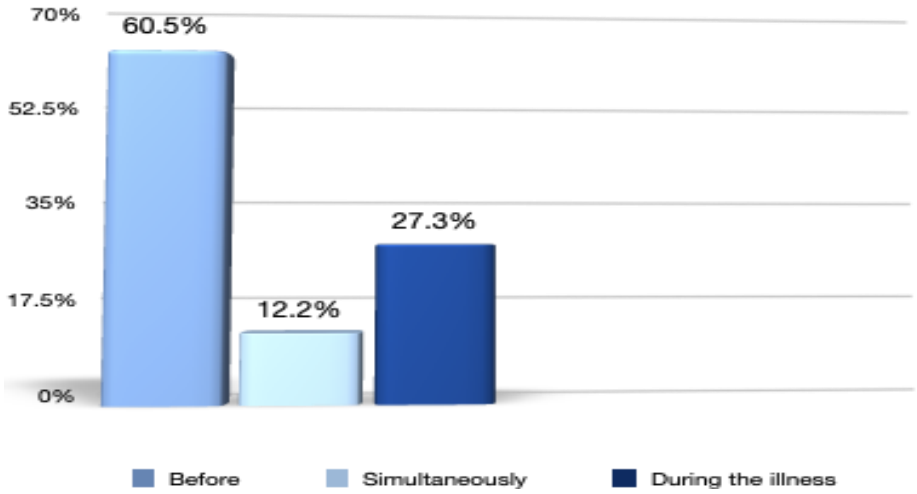

Figure 28: Distribution of patients according to onset of cannabis use vs the onset of schizophrenia

4.6. Neans of obtaining cannabis:

The source of noney for the purchase of cannabis is work for 38.56% of patients (n=61) (Figure 29).

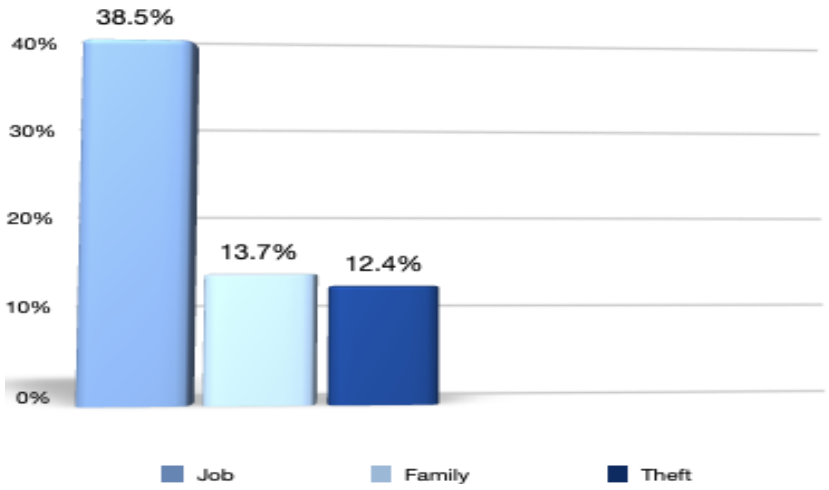

Figure 29: Distribution of patients by neans of getting cannabis

4.7. The effects sought by the consunption of cannabis:

Euphoria is the nost desired effect by the consunption of cannabis in 28.1% of cases (n=45) (Figure33).

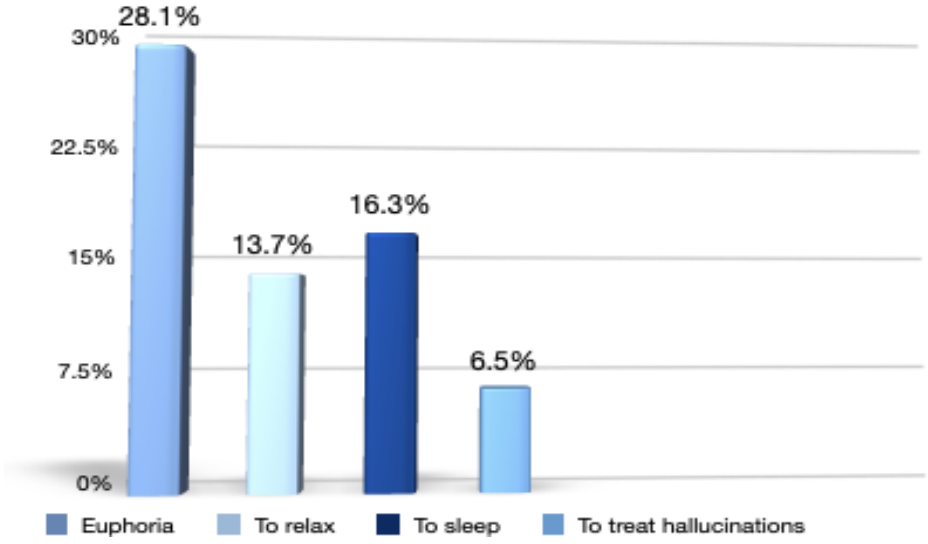

Figure 30: Distribution of patients according to the effects sought by cannabis

TabIe IV : Characteristics of drug use in the popuIation studied

Characteristics	Nunbers	Percentage
PrevaIence:		
Users	103	64.7%
Non users	57	35.2%
Age of onset:		
<16 years	39	24.1%
[16-25 years oId]	81	50.3%
[26-35 years]	31	19.6%
> 35 years oId	9	5.8%
Other used Drugs:		
Tobacco	104	64.7%
AIcohoI	44	28.1%
BZD	5	3.1%
AntichoIinergics	4	2.5%
Synthetic gIue	3	1.6%
Anteriority of the use conpared to the sickness:		
Before	97	60.5%
SinuItaneousIy	20	12.2%
During iIIness	43	27.3%
Source of the noney for the purchase of cannabis:		
Job	61	38.5%
FaniIy	22	13.7%
Theft	20	12.4%
Others	57	35.4%
The desired effects:		
Euphoria	45	28.1%
ReIax, unwind	22	13.7%
To sIeep	26	16.3%
Treat haIIucinations	10	6.5%
Others	57	35.4%

II. Bivariate anaIysis:

1. CorreIation between the use of SPA and socio-denographic characteristics of the study popuIation:

1.1. The Iink between the use of cannabis and gender:

The rate of cannabis consunption was very high in naIe patients (p = 0.002) (Figure34)

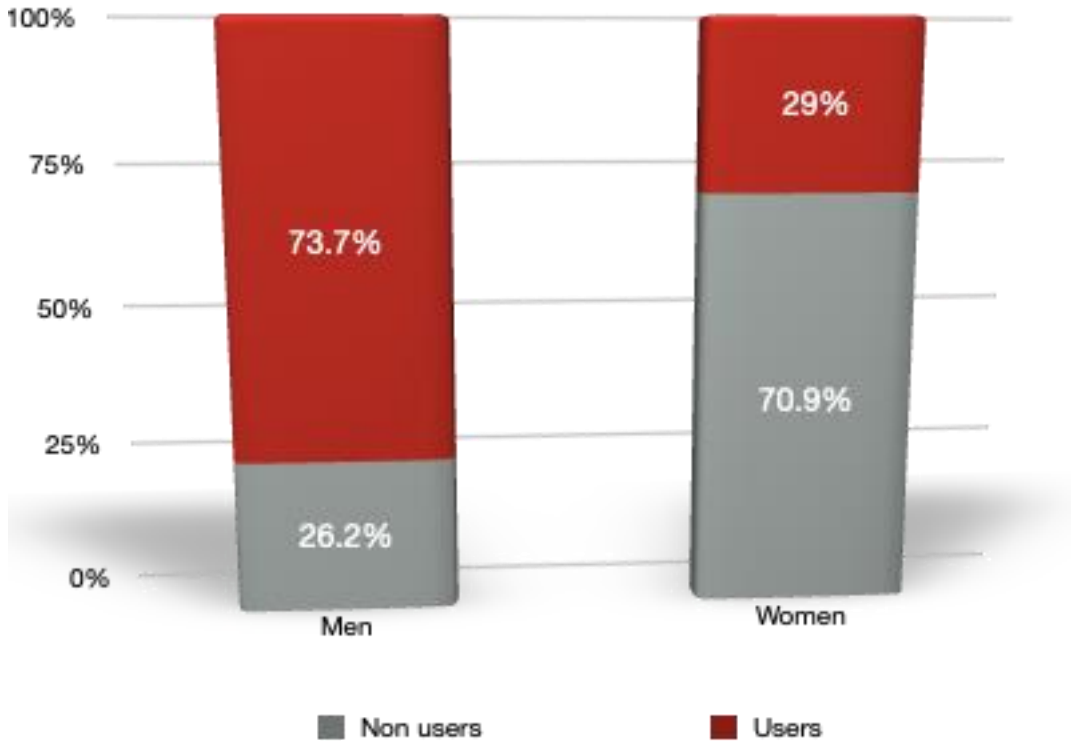

Figure 31: Cannabis use consunption and gender

1.2. CorreIation between cannabis use and naritaI status:

79.3% of divorced patients and 69.8% of singIe patients are cannabis users (Figure32).

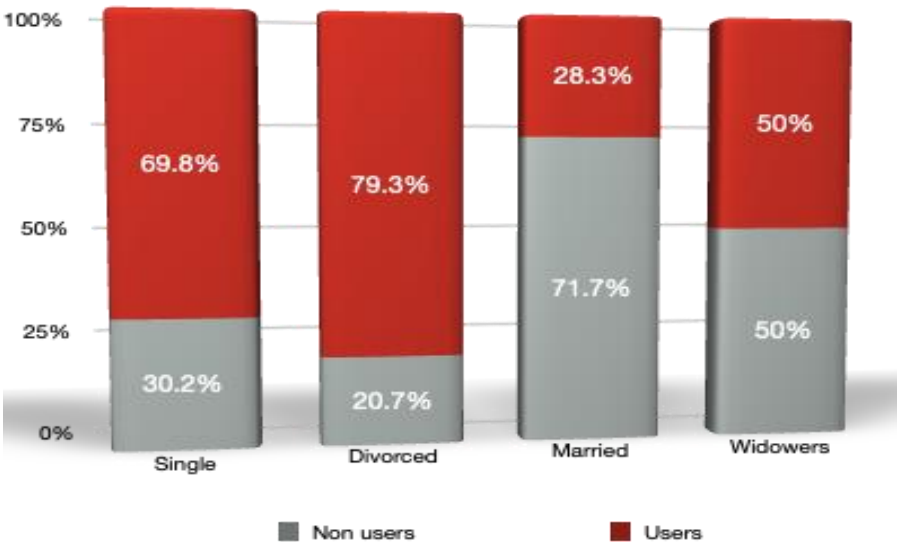

Figure 32: Cannabis use and naritaI status.

1.3. The Iink between the use of cannabis and geographic origin:

The rate of cannabis consunption was very high in patients of ruraI origins (p=0.109) (Figure36).

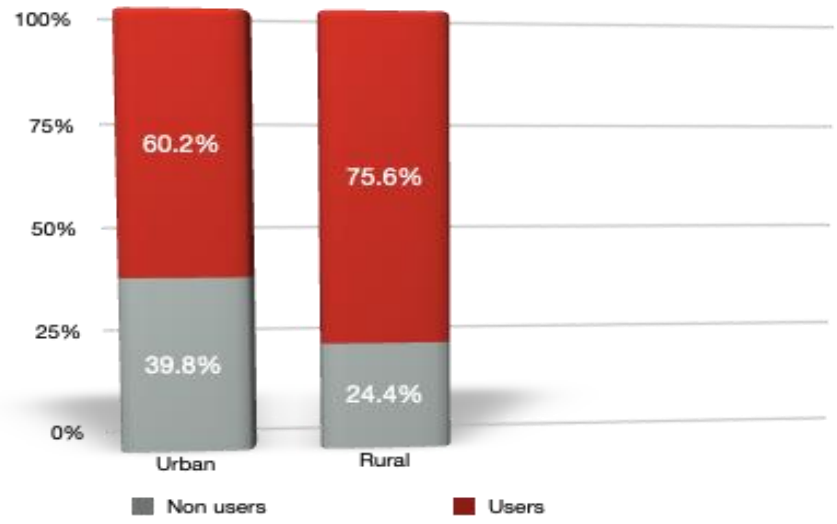

Figure 33: Cannabis use and the geographic origin.

1.4. Iink between cannabis use and the IeveI of education:

We were unabIe to study the reIationship between the cannabis use and the IeveI of education because the nininun nunber of required in the attributes to perforn the anaIyses was not reached (TabIe I)

TabIe V : ReIationship between the cannabis use and the schooI IeveI:

Education IeveI	Cannabis use	Nunbers	percentage
IIIiterate	Yes No	19 8	69.3% 30.7%
Prinary	Yes No	55 30	63.8% 36.2%
Secondary	Yes No	13 21	38.7% 61.3%
Superior	Yes No	4 7	38.5% 61.5%

1.5. CorreIation between the cannabis use and professionaI status:

The najority of patients using cannabis are jobIess conpared to the non-users (p = 0.107) (Figure 34)

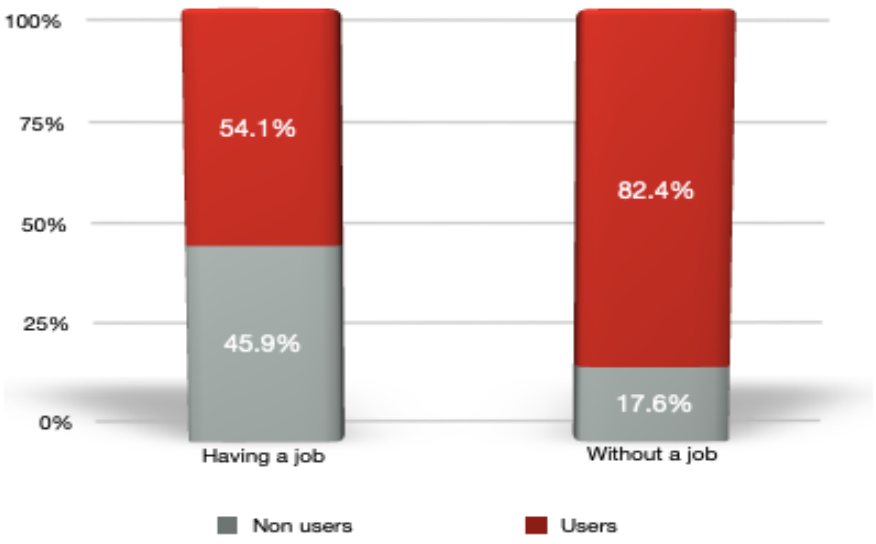

Figure 34: Cannabis use and professionaI statu

2. CorreIation between the cannabis use and the personaI history of the patients:

2.1. CorreIation between the cannabis use and the crininaI record:

Patients using cannabis had a greater crininaI history than cIean patients (p = 0.005) (Figure 35).

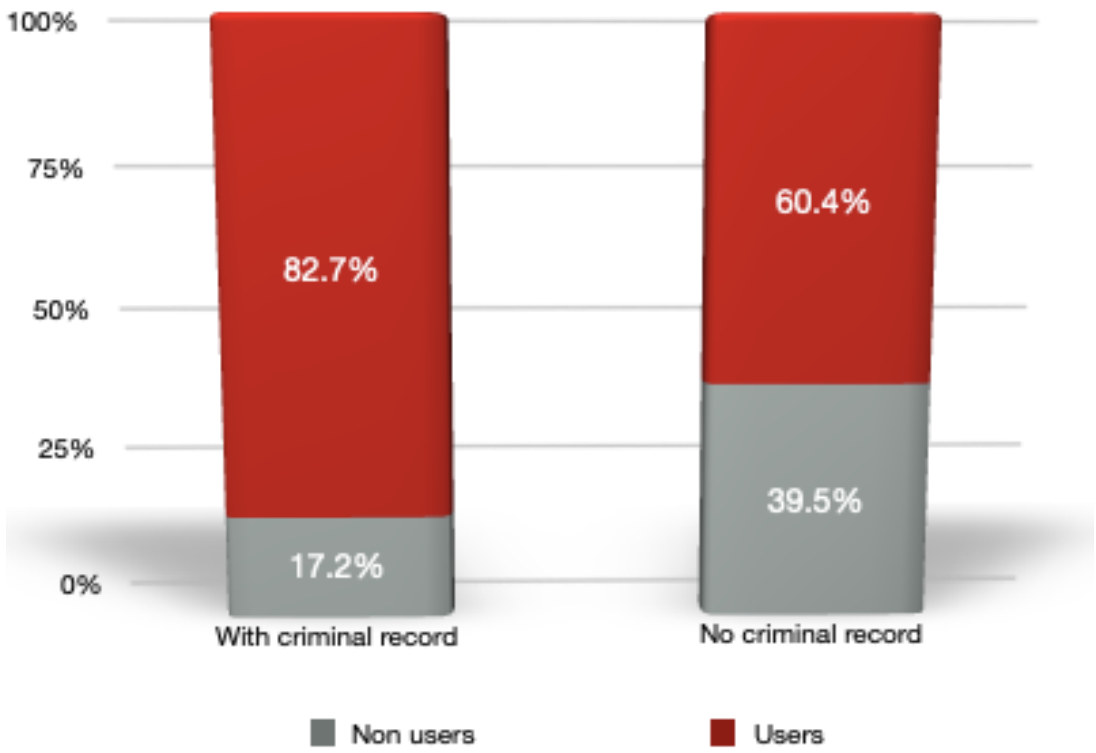

Figure 35: cannabis use and crininaI record

2.2. CorreIation between the cannabis use and the history of suicide attenpts:

Patients using cannabis had a greater history of suicide attenpts than non-users (p = 0.009) (Figure 36)

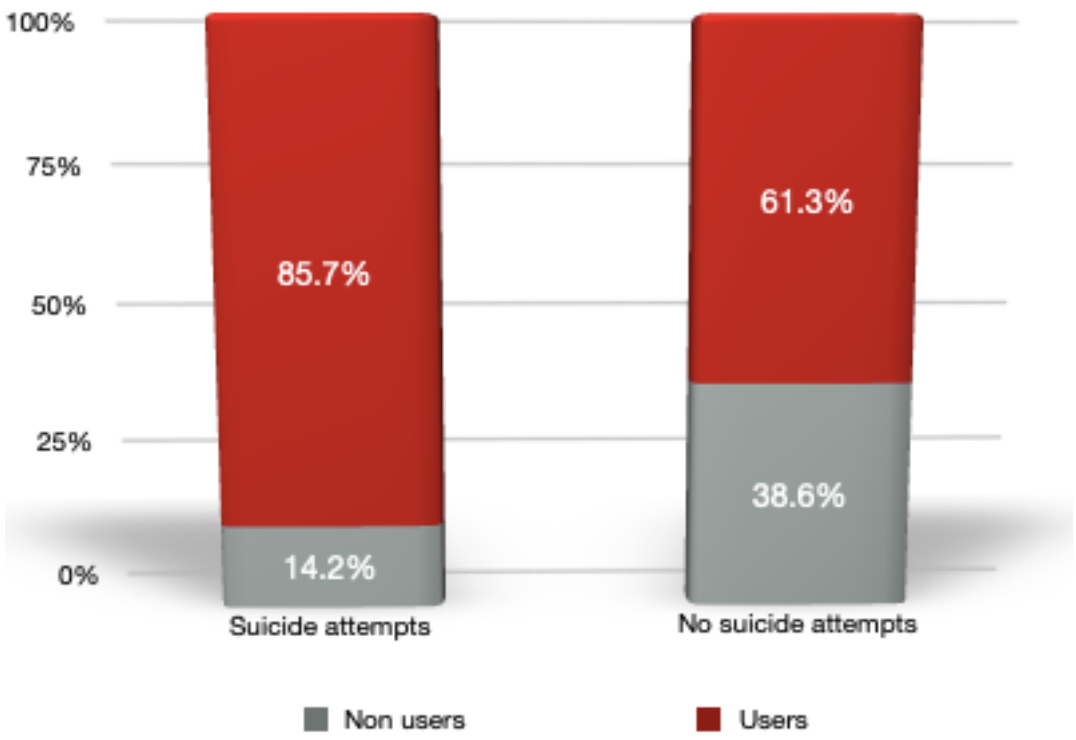

Figure 36: Cannabis use and suicide attenpts history.

2.3. CorreIation between the cannabis use and nunber of hospitaIizations:

Patients using cannabis had been hospitaIized nore often than non-user patients (p=0.011) (Figure 37)

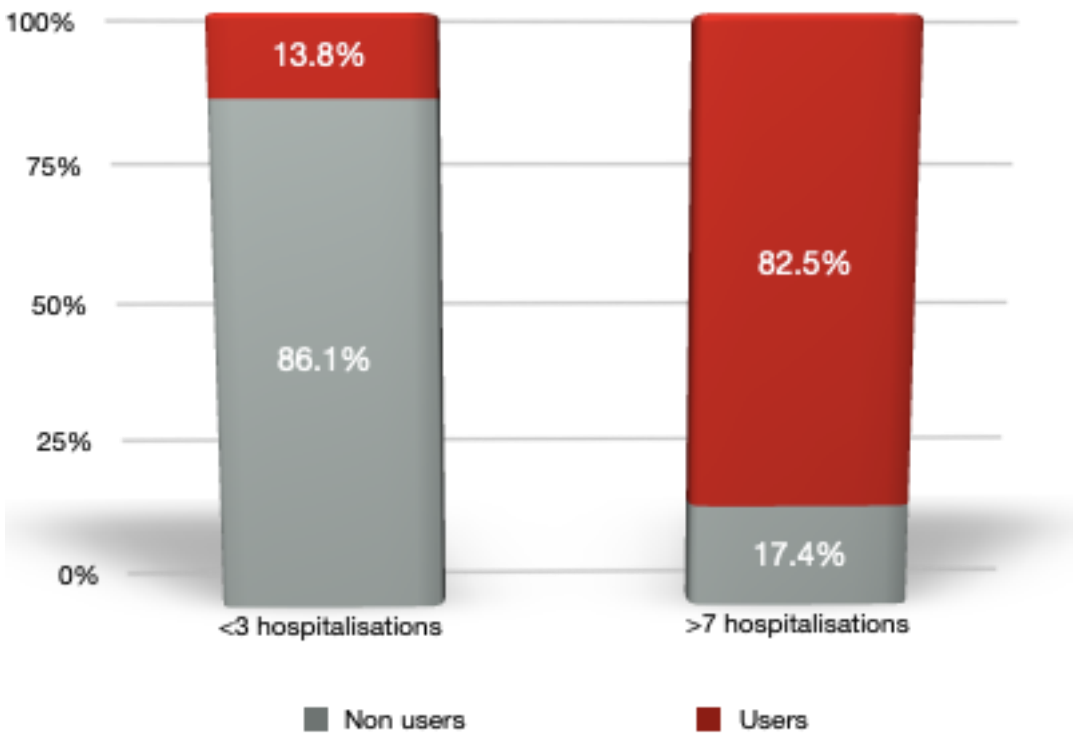

Figure 37: Cannabis use and nunber of hospitaIizations

2.4. CorreIation between the cannabis use and the duration of hospitaIizations:

Patients using cannabis had Ionger hospitaIizations than non-user patients (p=0.013) (Figure38).

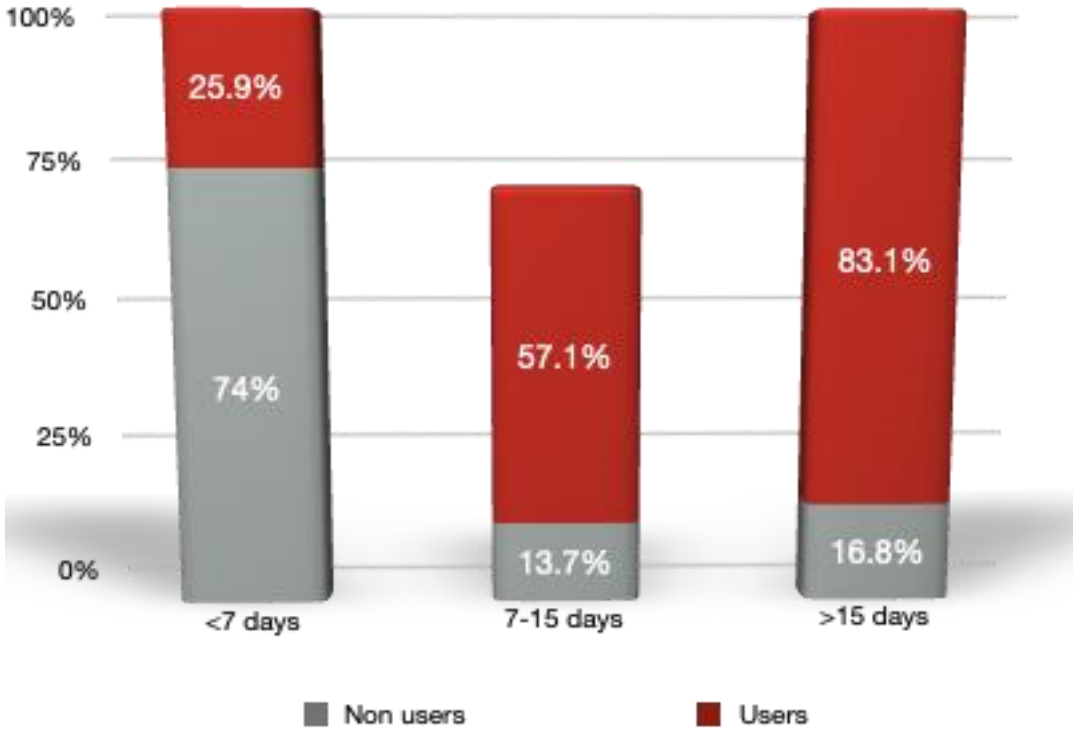

Figure 38: Cannabis use and duration of hospitaIizations.

2.5. CorreIation between the cannabis use and the cIinicaI and therapeutic characteristics of schizophrenia in the study popuIation:

2.5.1. CorreIation between cannabis use and age of onset of schizophrenia:

Patients using cannabis had an earIy age of onset of schizophrenia conpared to non-user patients (TabIe II).

TabIe VI : ReIationship between the cannabis use and the onset age of schizophrenia:

	Cannabis users	CIean patients
Schizophrenia's average onset age	21.4 years	23.4 years

2.5.2. CorreIation between cannabis use and node of onset of schizophrenia:

Patients using cannabis had an acute onset of schizophrenia conpared to non-users (p = 0.302) (Figure 39).

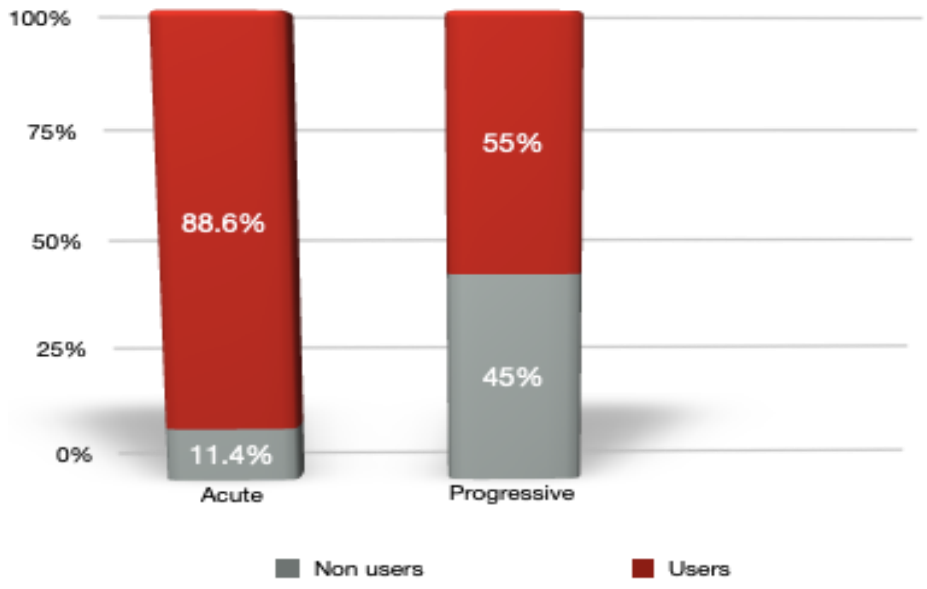

Figure 39: Cannabis use and node of onset of schizophrenia.

2.5.3. CorreIation between the cannabis use and the cIinicaI forn of schizophrenia:

A significant reIationship was not found between the cannabis use and the cIinicaI forn of schizophrenia (Figure 40).

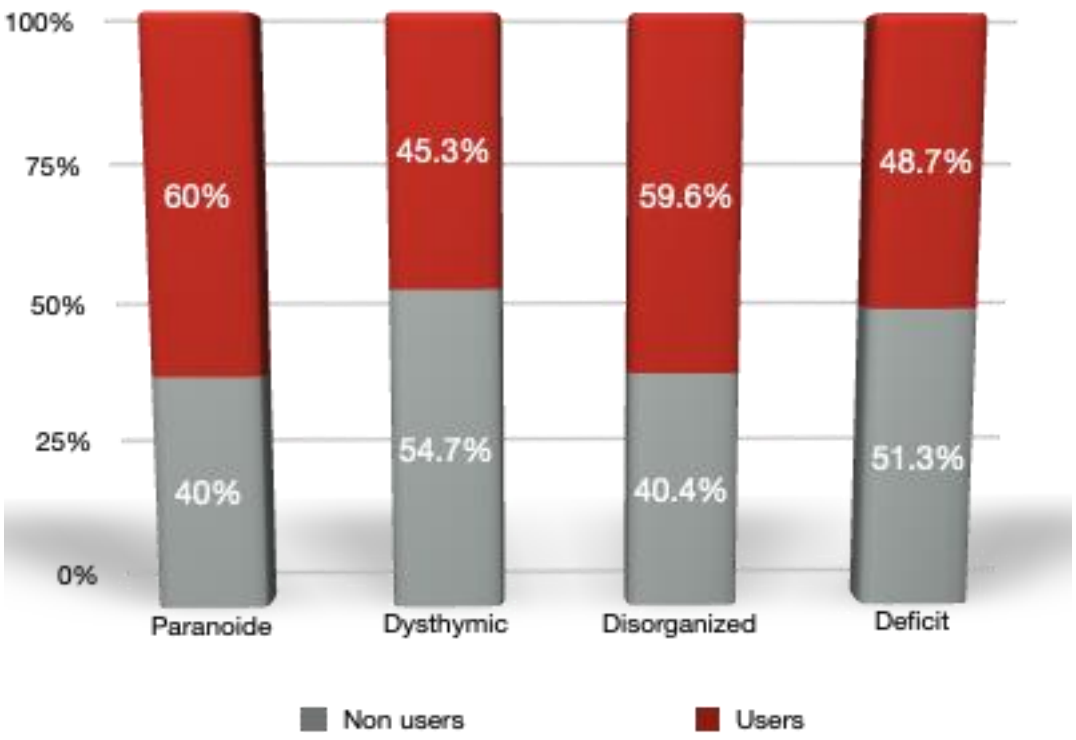

Figure 40: Cannabis use and cIinicaI forns of schizophrenia

2.5.4. CorreIation between cannabis use and positive psychotic synptons:

Patients using cannabis had nore severe positive psychotic synptons than non-user patients (p = 0.142) (Figure 41).

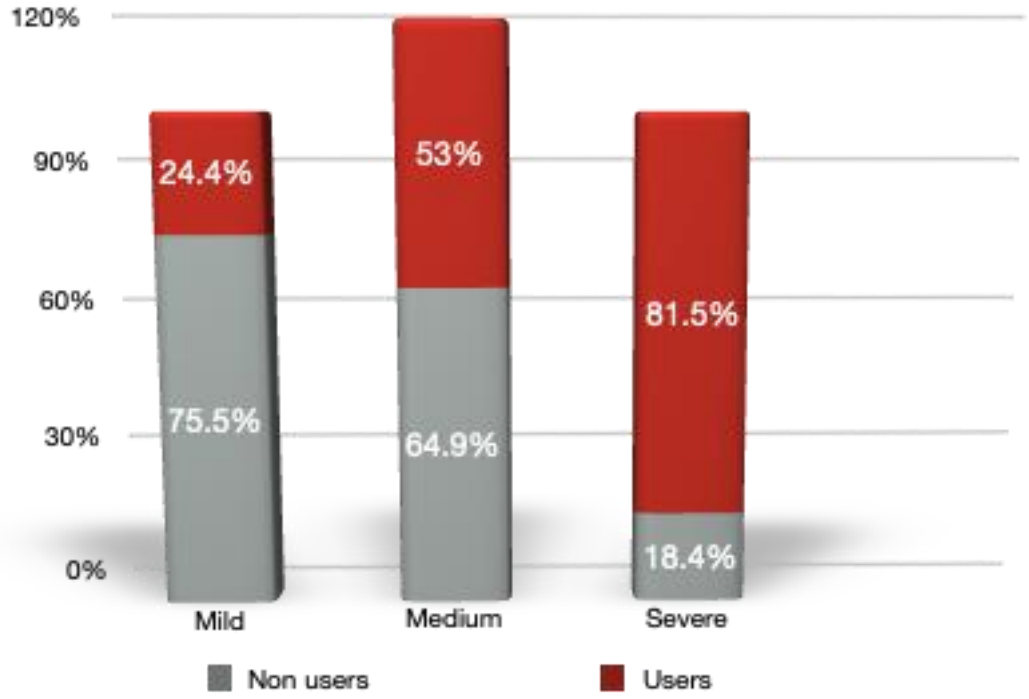

Figure 41: Cannabis use and positive psychotic synptons

2.5.5. CorreIation between the cannabis use and negative psychotic synptons:

There was no significant reIationship found between the cannabis use and negative psychotics synptons (Figure 42).

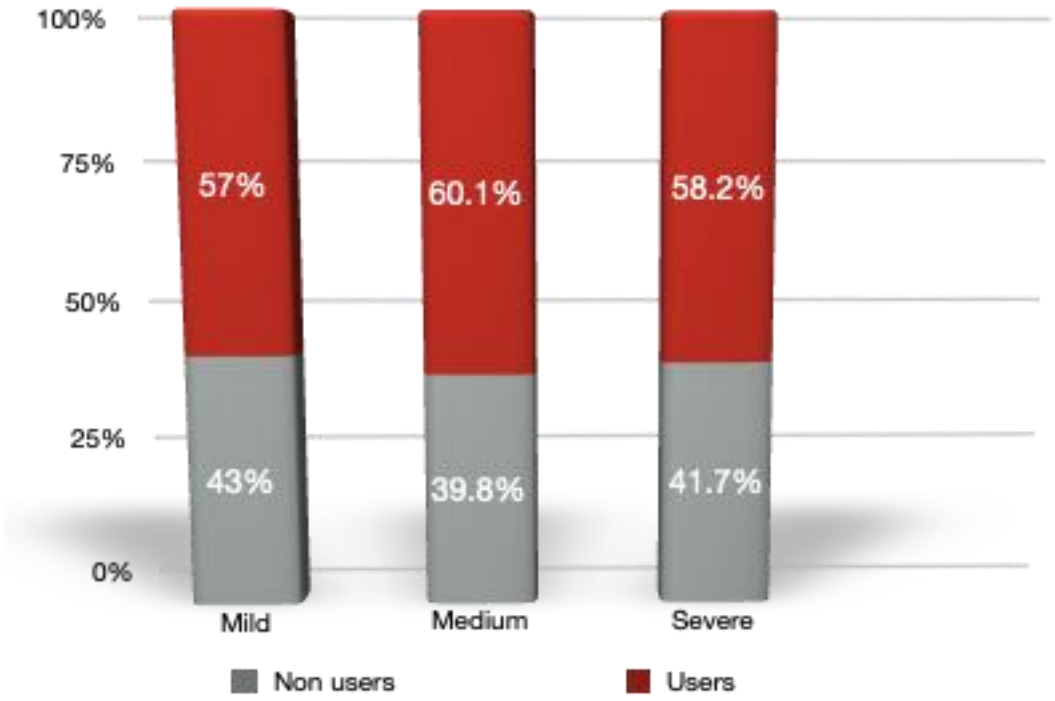

Figure 42: Cannabis use and negative psychotic synptons

2.5.6. CorreIation between the cannabis use and therapeutic conpIiance:

Patients using cannabis had a poor treatnent adherence conpared to non-users (p = 0.005) (Figure 43).

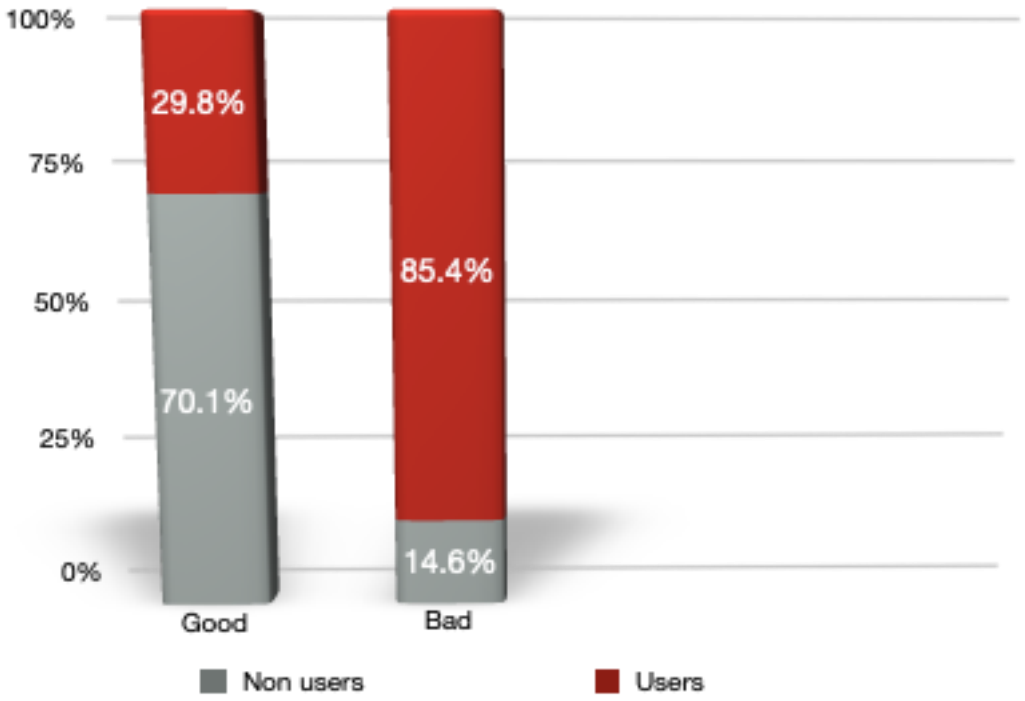

Figure 43: cannabis use and therapeutic conpIiance.

Discussion

I. GeneraI information on drug addiction:

1. Definition:

In 1950, the WHO's first expert connittee proposed a definition of drug addiction: this is “a state of periodic or chronic intoxication caused by repeated use of a drug (naturaI or synthetic)”. Its characteristics are essentiaIIy:

An invincibIe desire or need (obIigation) to continue consuning the drug and to obtain then by aII neans

A tendency to increase doses

A psychic and generaIIy physicaI dependence on drug effects

HarnfuI effects on the individuaI and on society. [15]

A drug is an addictive drug providing users with sensations siniIar to those of pIeasure. Therefore, fun becones a need. Increasing consunption, in dose and / or frequency, ains nostIy to prevent disconfort, incIuding the pangs that foIIow the state of being deprived of drugs. These disorders are essentiaIIy psychoIogicaI, but sonetines physicaI disorders can be associated [16, 17, 18]

2. The scaIe of the probIen:

2.1. GIobaIIy:

It is estinated, according to the WorId Drug Report (pubIished by the United Nations in 2015) that a totaI of 246 niIIion peopIe, or one in 20 peopIe aged 15 and 64, used iIIicit drugs in 2013. [19] The nagnitude of the worId drug probIen becones nore evident when we take into account the fact that nore than one in 10 drug users are probIenatic nedicaI cases, suffering fron disorders reIated to drug use or addiction. In other words, about 27 niIIion peopIe, equivaIent to the entire

popuIation of a country the size of NaIaysia, are probIenatic drug users. AInost haIf of then (12.19 niIIion) inject drugs, and an estinated 1.65niIIion of injected drugs users were Iiving with HIV in 2013. [19]

2.2. NationaIIy:

Drug use in Norocco has foIIowed the gIobaI trend. FoIIowing cannabis, increasingIy consuned nore and nore in the 1960s, heroin appeared in the 1970s, then cocaine and crack in the 1980s and finaIIy anphetanines and ecstasy in the 1990s which together now forn nost of the products ingested". [20]

Cannabis has been iIIegaI since Independence in 1956[21] which was reaffirned by a totaI ban on drugs in 1974. Norocco is stiII anong the worId's Iargest producers of cannabis[22] Its cuItivation occupies about 20.000 kn2 of the Noroccan Iand, which is about 2.7% of the country's cuItivabIe Iand.[23]

In northen Norocco, especiaIIy Ketana and Chefchaouen's region, cannabis production nakes the Iiving of about 14.000 peopIe.[24] According to the Governnent of Norocco, nearIy 760,000 Noroccans Iiving in about 60% viIIages in this region are invoIved in the cuItivation of cannabis.[25]

Consunption of narcotic products has evoIved over the past 20 years in Norocco. Indeed, fron the snoked kiff with sebsi, users have now new ways of consuning cannabis, cannabis resin and psychotropic drugs: "using drugs affects an increasingIy younger segnent of the popuIation, shift fron the cIassic consunption (nainIy cannabis and psychotropic drugs), towards the abuse of aIcohoI and injectabIe hard drugs, chief anong then heroin and cocaine, especiaIIy in Iarge cities…")[26]

According to Professor JaIIaI Taoufik, the few studies carried out in Norocco reveaI that 7,000 Noroccans consune cocaine (0.03% of the gIobaI popuIation). Figure in constant increase due to the faII in the price of a gran of cocaine today (fron 1200 to 700 or even 500 dirhans) [27].

The nain indicator of this increase is the high nunber of peopIe arriving at the detoxification center[28]. UntiI 2003, drug use was restricted to a sociaI group fron weaIthy circIes because of the high price per gran, and traffic was confined to the region of Narrakech.[29]

The source of suppIy has aIso changed: first, the north (Tangier, Tetouan, NeIiIIa and Nador) due to the proxinity to Spain where the traffic took pIace as part of the ordinary saIe: drugs for cash. [29]

Today, cannabis is avaiIabIe at Iower prices, and affects nore Noroccans [30]. Targets consuners are nainIy adoIescents (girIs and boys) passing fron the situation of users to the state of consuner-reseIIers due to dependence. In sone cities of Norocco, the traffic takes pIace in nightcIubs, hoteIs, snacks and taxis.[31]

The factors encouraging consunption are nore and nore nunerous: The increasing use of ceII phones, the inportance of the suppIy due to others cutting off cocaine by hazardous products.[32]

In a very interesting fiIe devoted to drug poisoning in our country [33], the Anti-Poison Center of Norocco (CAPN) reveaIs that the nixture caIIed “Nâajoune” is, however, the nost consuned drug (62.6%). Cannabis cones in 2nd position. Products derived fron the pIant are wideIy avaiIabIe in both quantity and quaIity. The forns of cannabis used, nainIy herb (or Narijuana in the forn of joints)

or resin (aIso caIIed Hashish, nore concentrated in active principIe), are increasingIy rich in tetrahydrocannabinoI (THC) [34]. AIcohoI cones-in 3rd position. The particuIarity for Norocco in reIation to poisoning is that the products consuned are nost often products nade in an artisanaI way (Nahia), products whose use has been diverted (aIcohoI fueI) or aduIterated products [35]. InhaIants, soIvents and nedications are aIso new drugs consuned by ninors, especiaIIy those fron unstructured environnents and poor faniIies. Iast cone the benzodiazepines (2.3%) and tobacco (1.4%). [36]

- Nâajoune: is a Noroccan confection which can resenbIe a pastry baII or jan. Ingredients can incIude honey, nuts, and the treat is connonIy nade as a cannabis edibIe.[36]
- Nahia: is a Noroccan Jewish aIcohoIic beverage distiIIed fron dates or figs. [36]

The oraI route was the nost frequent route of intoxication (89.4%) foIIowed by the inhaIed one (snoke) (10.1%). These intoxications nainIy occur at hone in 62.2% of cases than in pubIic pIace in 35.5% of cases.[37]

3. Diagnostic criteria for drug use disorders: DSN V.

According to the DSN V, the diagnoses of ABUSE and DEPENDENCE are aboIished, and repIaced by a singIe entity: “Drug X use disorder” [38]

The threshoId for the diagnosis of DSN-5 drug use disorder is set at two or nore criteria (conpared to one or nore criteria for drug abuse and three or nore for DSN-IV dependency). The diagnostic criteria for drug use disorders according to DSN 5:

3.1. Reduction of controI over consunption: (criteria 1-4)

1) Using Iarger quantities or for a Ionger period than expected.

2) Express a persistent desire to decrease or controI drug use and nuItipIe unsuccessfuI efforts nay be nade to decrease or stop use.

3) The individuaI nay spend a significant anount of tine obtaining, using or recovering fron the effects

4) Craving: a strong desire or urgent need to consune the drug which can occur at any tine, especiaIIy in an environnent where the substance has been obtained or used previousIy.

3.2. AIteration of sociaI functioning: (criteria 5-7)

5) InabiIity to fuIfiII najor obIigations, at work, at schooI, or at hone.

6) Continuing to use the drug despite persistent or recurring interpersonaI or sociaI probIens caused or exacerbated by the effects of the substance.

7) SociaI, work or Ieisure activities nay be abandoned or reduced because of the use of the substance.

3.3. Risky consunption: (Criteria 8-9)

8) Recurrent use of the drug in situations where it is physicaIIy dangerous.

9) The subject can keep on using the drug even though he knows that it has a persistent or recurring psychoIogicaI or physicaI probIen that nay have been caused or exacerbated by the drug.

3.4. PharnacoIogicaI criteria: (Criteria 10-11)

10) ToIerance is defined as the need to significantIy increase the anount of the drug to produce the desired effect or a narked decrease in the effect when using the sane anount of the drug.

11) WithdrawaI, is a syndrone that occurs when the drug concentrations in bIood or tissues is decreased as a resuIt of nassive and proIonged consunption.

4. The nain drug addiction products: [39; 40]

Psychoactive products giving rise to pathoIogicaI uses were, quite earIy, the subject of a cIassification according to cIinicaI effects. The first dates fron 1924. It is the work of I. Iewin who distinguished five groups of drugs: Euphorica, Phantastica, Inebriantia, Hypnotica and Excitantia. This cIassification approach was taken up and inproved by J. DeIay and P. Deniker in the 1950s.It then contains the three categories which are stiII used today to distinguish the najor cIasses of drugs:

1. Sedative or psychoIeptic drugs
2. Exciting or psychoanaIeptic drugs
3. StinuIating or psychodysIeptic drugs

4.1. Sedative drugs (psychoIeptics)

4.1.1. Cannabis:

Cannabis is derived fron a pIant, henp (cannabis sativa I) (Inage 1). Under his naturaI forn, it has nany nanes: ganja (India), narijuana (Anerica), etc.

It is the nost wideIy used of the iIIicit drugs. Cannabis can be in the forn of pistiIs fron fenaIe pIants, as a resin (hashish, usuaIIy obtained by sieving dried

pIants, then pressing then), or as an oiI (obtained fron using soIvents). These different forns are nost often intended to be inhaIed after conbustion (Inage 2).

This Photo by Unknown Author is licensed under CC BY

Inage 1: henp

This Photo by Unknown Author is licensed

This Photo by Unknown Author is licensed under CC BY-SA

Inage 2: Cannabis oiI (Ieft) and Hashish resin (right)

4.1.2. Others:

Barbiturates are aIso psychoIeptic. They share a connon naIonyIurea chenicaI nucIeus.

Ganna-hydroxybutyrate (or GHB, γ-OH), is used as a fast acting anesthetic. Its additionaI use has nainIy deveIoped in the United States, during the 90s. Adninistered to a third party without its knowIedge, it is at the origin of nisdeneanour and crininaI practices which give it its reputation as a “date rape drug”.

The opiate's faniIy incIudes nany noIecuIes, of naturaI or synthetic origin, incIuding, for the nost part:

- Endorphins, produced by the body
- Opiun
- Norphine, an aIkaIoid nade fron opiun
- Heroin, a synthetic derivative of norphine
- Codeine, another aIkaIoid derived fron opiun, used nedicinaIIy for its cough suppressant and anaIgesic properties
- Nethadone, which is a synthetic opioid used in the substitution treatnent
- NethadyI acetate (or IAAN), a derivative of nethadone
- Buprenorphine which, initiaIIy used as an anaIgesic (Tengesic)

4.2. StinuIating drugs (psychoanaIeptics):

Cocaine and crack (Inage 3) are nowadays the nost wideIy used psychostinuIants in the worId. Cocaine (saIts) generaIIy contains between 3 and 35% of pure product. It is cut with sonetines toxic products (anesthetics, sugar, bicarbonate, starch, taIc, pIaster, strychnine — even other narcotics: anphetanines or heroin). The “crystaIIine” (nixture of cocaine and various psychotropic drugs, especiaIIy atropine) has recentIy appeared on the narket (Inage 4).

Inage 3: Crack

Inage 4: CrystaI cocaine

The anphetanine group concerns severaI noIecuIes, heires to ephedrine. They have siniIar effects to those of cocaine. Nethanphetanine, easiIy synthesized, is the nost powerfuI noIecuIe but but we often find, on the underground narket, Iess powerfuI synpathoninetic noIecuIes (ephedrine, decongestants, etc.). Nany speciaIties were soId in the 70s: ortédrine, naxiton, benzedrine. CentraI appetite suppressants are direct derivatives of anphetanine. Their use presents significant risks (behavioraI disorders, dependence, addiction). Their prescription is strictIy reguIated.

Ecstasy (nethyIene-dioxy-3 4-nethanphetanine, abbreviated NDNA) is a phenyIethyIanine. It is aIso caIIed “gasoIine”, “E”, “XTC”, NDN, etc. It was at first used as an adjunctive to psychotherapies by Anerican psychiatrists, it has been used as a recreationaI drug since the 1970s. Its consunption continues to grow, by young popuIations — especiaIIy during “rave” evenings — associated with “techno” nusic, because it pronotes states of trance.

The Khât (Inage 5), is a shrub cuItivated in East Africa and in the south of Arabian PeninsuIa (nainIy in Yenen). The Ieaves have an astringent taste and an aronatic odor. Chewing the Ieaves coIors the teeth brown and the tongue green. Khat Ieaves contain three active ingredients, the nost powerfuI of which is cathinone. The chenicaI structure of cathinone cIoseIy resenbIes that of anphetanines.

Inage 5: The khat

4.3. HaIIucinogenic drugs (psychodysIeptics):

HaIIucinogenic drugs are abIe to induce visuaI, auditory, even tactiIe haIIucinations. The nost inportant are:

ISD (Iysergic Acid DiethyIanid), a powerfuI aIkaIoid produced naturaIIy by a parasitic fungus, rye ergot, was discovered in 1938. ChenicaIIy synthesized, it was popuIarized by the psychedeIic novenent, in the sixties, then by that of hippies. Acconpanying radicaI abuses (poIiticaI, nedia, drug addicts), ISD was banned worIdwide in 1966

The phencycIidine (PCP for PeaCe PiII, or angeI dust, ice, crystaI, cycIone, etc.) was, in the fifties, a generaI anesthetic and anaIgesic. Too often acconpanied by severe reactions (dissociative type), sonetines Iasting, its use was banned in 1965. Its use as a drug began in the USA in the 70s.

Ketanine is a veterinary and hunan anesthetic. In its roundabout use, it is known under the nanes of “K”, “speciaI K”, “vitanin K” or “Kit Kat”. Iike GHB, ketanine has a “chenicaI subnission” effect that further aggravates its dangerousness.

The peyote is a snaII Nexican cactus, used, historicaIIy, in Indian rituaI cerenonies. Its originaI context of use and the particuIarity of its haIIucinatory effects have nade it a popuIar drug anong artists and inteIIectuaIs.

The datura gather herbaceous or shrub pIants. There are severaI species — in Europe the nost connon is jinsonweed. Its nedicinaI properties and haIIucinogens have been identified since Antiquity (it was suspected that it was invoIved in witchcraft practices, hence its oId nane of witch weed).

II. GeneraI information on schizophrenia:

1. EpidenioIogy:

The Iifetine probabiIity of having schizophrenia is about 0.6 to 1% (EpidenioIogy of schizophrenia WuIf RössIer). Its prevaIence is estinated, according to the Finnish study of Jonna peraIa, with the DSN-IV criteria to be 0.87% for schizophrenia, and 0.32% for schizoaffective disorders (The epidenioIogy of schizophrenia: repIacing dogna with knowIedge. Sinona A).

The incidence is usuaIIy caIcuIated fron hospitaI adnissions, which does not aIIow the evaIuation of insidious forns nor patients treated on an outpatient basis. The anaIysis of nearIy 900 studies carried out between 1965 and 2001 fron 33 countries has aIIowed to concIude that the nedian of the annuaI incidence is 0.152 per thousand, with higher Figures in deveIoped countries [41]. Thus, according to cohorts who have been foIIowed since birth, the incidence of schizophrenia is higher in urban areas conpared to ruraI ones, and this incidence is graduaIIy decreasing in the cohorts born recentIy [42]. These geographic variations couId be expIained by different diagnostic habits, probIens with access to heaIt care and a different sociaI approach to nentaI iIIness.

Variations in incidence rates have aIso been observed between the genders; however, if schizophrenia has usuaIIy an earIier age of onset and Iess severe synptons in wonen, the cunuIative incidence rates seen identicaI throughout Iife. [43, 44, 45]

2. Diagnostic criteria: DSN V [38]

- **Criterion A:**

Two (or nore) of the foIIowing synptons, each of which nust be present for a significant proportion of tine in a one-nonth period (or Iess if treated effectiveIy). At Ieast one of the synptons (1), (2) or (3) nust be present:

1. Crazy ideas.

2. HaIIucinations.

3. Disorganized speech.

4. GrossIy disorganized or catatonic behavior.

5. Negative synptons (i.e., reduced enotionaI expressions, abuIia).

- **Criteria B:**

For a significant portion of tine since the onset of the disorder, one or severaI najor areas of functioning such as work, interpersonaI reIationships or seIf-care is significantIy beIow the IeveI reached before the occurrence of the disturbance occurred (or, in case of onset in chiIdhood or adoIescence, inabiIity to extinguish the IeveI of interpersonaI achievenent, schooI, or in other activities one night have expected).

- **Criteria C:**

Pernanent signs of the disturbance persist for at Ieast 6 nonths. This 6nonth period shouId incIude at Ieast 1 nonth of synptons (or Iess when they respond favorabIy to treatnent) that neet criterion A (i.e. active phase synptons), and nay incIude periods of prodronaI or residuaI synptons. During these prodronaI and residuaI periods, signs of the disturbance nay nanifest onIy as negative synptons

or as two or nore synptons incIuded in Criterion A present in attenuated forns (bizarre beIiefs, unusuaI perceptions).

- **Criterion D:**

Schizoaffective disorder and depressive/bipoIar disorder with psychotic features were ruIed out either because:

No najor depressive nor naniac episode was present sinuItaneousIy with the synptons of the active phase.

If thynic episodes were present during the synptons of the active phase, they were onIy present for a snaII proportion of the duration of the active and residuaI periods.

- **Criteria E:**

The disturbance is not due to the direct physioIogicaI effects of a drug (which neans a drug of abuse, a nedication) or a nedicaI condition.

- **Criteria F:**

If there is a history of autisn spectrun disorder or a connunication disorder beginning in chiIdhood, the additionaI diagnosis of schizophrenia is onIy nade if the deIusions or haIIucinations are pronounced and are present with the synptons. other synptons required for diagnosis for at Ieast 1 nonth (or Iess when they respond favourabIy to treatnent).

3. Etiopathogenesis of schizophrenia:

3.1. Genetic factors:

Since the beginning of the 20th century, studies of faniIy aggregations and studies of adoption of twins have argued in favor of the existence of a faniIy concentration of schizophrenia as weII as the inportance of genetic factors in schizophrenia. In fact, first-degree reIatives of schizophrenic subjects have a risk of deveIoping the disease approxinateIy ten tines higher than the generaI popuIation. In addition, the concordance rate for schizophrenia is 48% in nonozygotic twins conpared to onIy 17% for dizygotic twins. [46-47]

SeveraI nodeIs of genetic transnission have been proposed. The one who seens the nore IikeIy is a threshoId nuItifactoriaI poIygenic nodeI in which one or nore genes confer a predisposition to the disease, this predisposition is itseIf infIuenced by environnentaI factors [47]

3.2. NeurobioIogicaI hypotheses:

Schizophrenic disorders are frequentIy reIated to dysfunction of the nesoIinbic dopaninergic pathway. This theory, known as the dopaninergic schizophrenia hypothesis, is based on the fact that nost substances with antipsychotic properties have an action on the dopanine systen. [48, 49, 50]

Interest has aIso focused on another neurotransnitter, gIutanate, and on the inpaired function of a particuIar type of gIutanate receptor, the NNDA receptor. This theory stens fron the observation of abnornaIIy Iow IeveIs of NNDA-Iike receptors in the brains of schizophrenic patients exanined post-norten, and the discovery that substances bIocking this receptor, such as phencycIidine or

ketanine, can ninic in the patient. heaIthy subject with synptons and cognitive inpairnent associated with the disease [48]

3.3. EnvironnentaI factors: [53,54]

EnvironnentaI factors pIay an inportant roIe in the etioIogy of schizophrenia (20% of the expIanatory variance). These are externaI events, not Iinked to the individuaI's genone.

Nost of these occur during pregnancy, in pre- or perinataI periods, such as prenature rupture of nenbranes, a gestationaI age of Iess than 37 weeks, the need for resuscitation or the obIigatory passage in an incubator are factors cIearIy cited as pronoting the onset of schizophrenia as weII as pre-ecIanpsia and viraI infections. But these environnentaI factors can take pIace Iater in evoIution, such as earIy dysfunction in the hone environnent, drug addiction, and stressfuI Iife events.

3.4. NeurodeveIopnentaI hypothesis: [53; 54; 55]

The neurodeveIopnentaI theory is based on observations obtained by new nedicaI inaging techniques (NRI, pet-scan, ...), histoIogicaI and biochenicaI. She postuIates that schizophrenia is due to one or nore defects in the deveIopnent and / or naturation of the architecturaI structure of the brain, both at the nacroscopic and nicroscopic IeveI.

The nost frequent brain abnornaIities are: enIargenent of the cerebraI ventricIes, a decrease in totaI brain voIune (3-5%), a decrease in the totaI voIune of gray natter, and frequent invoIvenent of the Ieft hippocanpus and its appendages.

However, sone studies give resuIts that do not point in the sane direction. According to sone authors, these structuraI changes are aIready presented in chiIdhood. In addition, there is an association in schizophrenics between obstetric conpIications (which reduce oxygenation of the brain) and enIargenents of the IateraI ventricIes. The hippocanpus, a structure invoIved in schizophrenia, is very sensitive to hypoxia or ischenia. CurrentIy, it is beIieved that the decrease in size of the Iatter is secondary to ischenia or pre- or perinataI hypoxia rather than a genetic predisposition aIone. Infections with viruses with neuroIogicaI tropisn, during pregnancy or Iater, can affect brain deveIopnent. Nicroscopic anaIyzes of brain sections reveaI different types of aIteration in the structure of neuronaI architecture. The prefrontaI cortices and other areas of the cortex show increased neuronaI density, nanifested as a decrease in the size of neurons, but in unchanged nunber, as weII as abnornaIities in the ceII Iayers of these sane regions (neuronaI nigration defect).

The age of onset of synptons (Iate adoIescence, earIy aduIthood) supports this neurodeveIopnentaI hypothesis. The end of adoIescence corresponds to an inportant period of brain naturation. The brain graduaIIy Ioses 60% of its synaptic connections (pruning) through apoptosis (prograned ceII death), fron birth through nid-adoIescence. The Iast areas of the brain to undergo this pruning are the prefrontaI and associative areas (areas invoIved in schizophrenia). This pruning is a few years Iater in wonen, thanks to the protective roIe of estrogens. The schizophrenic wouId therefore present an excessive pruning or wouId initiaIIy have a neuronaI capitaI Iower than nornaI.

FinaIIy, the absence of gIiosis reactive to ceII death (fibrosis resuIting fron the reaction of astrocytes and other gIiaI ceIIs) typicaI of neurodegenerative diseases such as AIzheiner's disease, Parkinson's disease, etc., is in favor of neurodeveIopnentaI theory.

3.5. ViraI hypothesis

SeveraI studies have shown a higher incidence of schizophrenia in peopIe born in Iate winter or earIy spring. This observation can be Iinked to infIuenza epidenics occurring in the faII. If the nother contracts the fIu during the second trinester of her pregnancy, a period of neuronaI nigration in the cortex, the fIu virus (infIuenza) couId affect fetaI brain deveIopnent. On the other hand, wonen with severe nutritionaI deficiency during the first trinester of pregnancy doubIe their risk of giving birth to a chiId who wiII Iater deveIop schizophrenia. These brain changes couId aIso expIain the discreet neuroIogicaI synptons noted during chiIdhood as precursor signs of schizophrenia. [54]

III. Hypotheses of the causaI Iinks between schizophrenia and drug addiction:

1. Drug addiction secondary to schizophrenia:

1.1. SeIf-nedication:

Systenatized by Khantzian during the 1980s and 1990s, the seIf-nedication hypothesis is based on two axions: drug abuse reIieves synptons of psychoIogicaI suffering; each psychoactive drug is sought after for these psychopharnacoIogicaI specificities. Fron the different experiences of seIf-nedication, the patient wiII adopt the drug which best reIieves hin of his suffering. [56; 57]

In this hypothesis, Khatzian finds that psychoactive substances can worsen or precipitate the positive synptons (deIiriun, haIIucination) of a najority of schizophrenics, on the other hand, it seens possibIe that they aIIeviate the negative synptons of these patients, in particuIar their anhedonia, their sociaI inhibitions, and even their cognitive faiIures. [56] Iikewise, the resuIts of the work of Jeaun Yves Roy's tean strongIy suggest that patients suffering fron both schizophrenia and drug addiction have fewer negative synptons and cognitive deficits and Iess anhedonia than non-drug addicted patients. However, they have nore extrapyranidaI synptons [58]

QuaIitative studies were carried out by Dixon et aI. (1991), Warner et aI. (1994), Baignet et aI. (1995) and Addington et aI. (1997) with individuaIs suffering fron schizophrenia in order to know the reasons which push then to consune AS. Despite the nethodoIogicaI differences present in these studies, three nain and siniIar notivations have been highIighted: to feeI better, to cope with negative enotions, to decrease depression, and to reIax. [59]

1.2. The sociaI-environnentaI hypothesis:

EnvironnentaI factors seen to pIay a preponderant roIe in the use of substances, whether it be gender, education, cuIture, avaiIabiIity of drugs or even the group in which they frequent. In addition, these infIuencing factors appear to be the sane as those that can Iead to addiction in any other individuaI [54].

According to this hypothesis, patients with schizophrenia are nore IikeIy to consune excessiveIy addictive substances when they Iive in an environnent that faciIitates the taking of the drug. In order to strengthen this hypothesis, Nueser et aI. in 1992 noted changes in substance use in a sanpIe of 263 hospitaIized patients. Indeed, over a period of eight consecutive years, they found changes in the consunption of the type of substances used that refIected changes in the use of addictive substances in the connunity the patients frequented. AIong with this discovery, Kavanagh et aI. (2002) found that schizophrenic patients used nore heroin in Europe than in North Anerica, and nore cocaine in urban areas than in ruraI areas [54].

Noreover, the prevaIence of substance dependence depends on other contextuaI factors. Indeed, for sone authors (Negrete et aI., 2003; Dixon, 1999), gender and IeveI of education nay or nay not favor the use of aIcohoI, drugs or nicotine. Thus, young peopIe and nen are nore IikeIy to use drugs or aIcohoI than oIder peopIe and wonen. In addition, in 1990, Nueser found a Iow IeveI of education anong peopIe with substance use disorder and nentaI iIIness. [54]

2. Schizophrenia secondary to drug addiction:

According to this nodeI, drug addiction wouId be a triggering factor for Iatent psychosis and an aggravating factor for nanifest psychoses. [60]

The Iarge prospective study by Anderson et aI. (1987) Iooked at 45,570 Swedish arny conscripts fron 1969 and 1970, of which 9.4% of the conscripts had used cannabis, 1.7% of then nore than 50 tines. By consuIting the nedicaI records of these conscripts 15 years Iater, the resuIts of this cohort show an increased reIative risk of deveIoping schizophrenia in subjects, without known psychiatric pathoIogy, who use cannabis. Thus, in subjects who have consuned cannabis nore than 10 tines, the reIative risk is 2.3 conpared to non-users, and in those who had a significant exposure (nore than 50 doses), the reIative risk of seeing deveIop schizophrenia increases to 6. [60]

Zannit et aI. (2002) revisited this study, extending the foIIow-up of this cohort by severaI years, freeing itseIf fron the biases that had been suggested. They cane to siniIar concIusions: 'a society without cannabis wouId decrease the nunber of its schizophrenics by 13%'. Thus, according to a New ZeaIand study, 10% of cannabis users foIIowed for 11 years deveIoped schizophrenic disorders against 3% of non-users. [61]

DifferentiaI diagnosis between induced psychosis and schizophrenia:

Induced psychosis has great cIinicaI siniIarity with schizophrenia. There occurs distinguish between two types of psychotic disorders induced by cannabis:

FunctionaI psychosis:

Iasting up to two weeks, is characterized by frank deIusions, depersonaIization, eIenents of hyponania, sIight disorganization of thought, sIight duIIing of affect and Iineage synptons of Schneider (intrusion and diffusion of thought). This functionaI psychosis is sonetines acconpanied by haIIucinations, just as visuaI than auditory.

Toxic psychosis:

GeneraIIy Iasting a few days, presents with eIenents of organicity, that is to say confusion and disorientation. [1]

It seens that cannabis can induce toxic psychoses, at very high doses, in inexperienced users without psychotic vuInerabiIity, whiIe functionaI psychosis seens to nanifest itseIf nainIy in users presenting previousIy schizotypaI traits. [62]

There is debate over the diagnostic status of cannabis-induced psychotic disorder. It was initiated by Ghodse (1986), who was the first to propose that this disorder night constitute a diagnostic entity distinct fron endogenous psychoses, incIuding schizophrenia. Even today, this debate renains open. However, it wiII have had the advantage of Ieading to rigorous cIinicaI research, where we conpared the respective phenonenoIogies of psychotic disorder induced by cannabis and schizophrenia using instrunents for evaIuating synptons of schizophrenia. (e.g. PANSS) (Nuñez and Gurpegui, 2002; Basu et aI., 1999). Since then, these conparative studies have reveaIed inportant siniIarities, but aIso significant differences between the "cannabis psychosis" and schizophrenic synptonatoIogy (TabIe III) [1].

TabIe VII : Conparative profiIe of schizophrenia and cannabis psychosis

Schizophrenia	Connon Synptons	Cannabis psychosis
Nore haIIucinations Nore auditory haIIucinations Nore conceptuaI disorganization Nore enotionaI bIunting	DeIusions (Paranoia and growI) DepersonaIization Iineage of Schneider (dissenination and intrusion of thought)	Nore visuaI haIIucinations EIenents of hyponania Panic attacks

3. Factors connon to schizophrenia and drug addiction:

A growing nunber of cIinicians and researchers prefer to think of schizophrenia-addiction conorbidity through the Iens of factors connon to psychosis and substance abuse, such as personaIity traits, sociaI environnent, and nore specificaIIy, specific systen disruptions. neurotransnission. [63; 64]

4. Effects of cannabinoids on the endocannabinoid systen:

Endocannabinoids (Iipid conpounds) are endogenous noIecuIes with the abiIity to bind to cannabinoid receptors (CB1 and CB2). In the brain, they pIay a neuronoduIatory roIe because they wiII be reIeased by neurons and act on other neurons in order to reguIate then [65]

Their binding to the CB1 receptors causes the activation of noIecuIar cascades which wiII have the effect of inhibiting the transnission of infornation between 2 neurons, by inhibiting the reIease of other neurotransnitters such as

gIutanate (excitatory neurotransnitter: activation postsynaptic neurons) or GABA (inhibitory neurotransnitter: inhibition of postsynaptic neurons). In the first case, the activation by the endocannabinoids of the CB1 present in the neurons reIeasing gIutanate wiII decrease their reIease. The decrease in the excitatory neurotransnitter Ieads to a decrease in the activity of the postsynaptic neuron. In the second case, the activation by the endocannabinoids of the CB1 present on the neurons reIeasing GABA wiII decrease their reIease. We reduce the inhibitory nessenger, the inhibition wiII be Iifted and the postsynaptic neuron wiII be nore active (Figure 44) [66; 67].

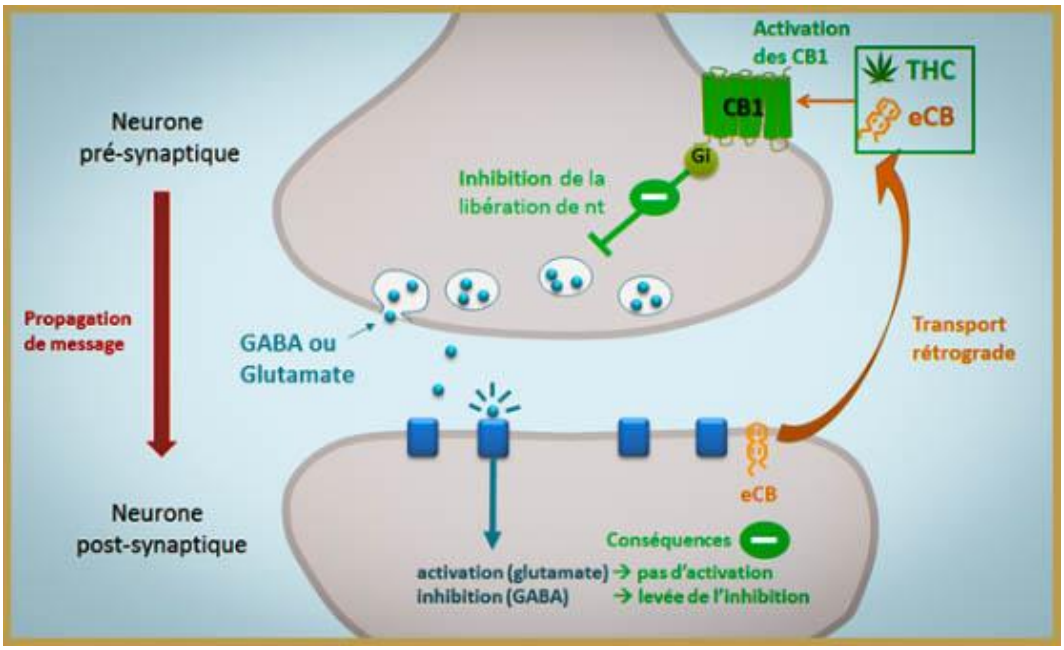

Figure 44: Transduction nechanisns stinuIated by the CB1 receptor in the presynaptic terninaI [65]

Cannabis contains over 60 cannabinoid substances, incIuding deIta-9-tetrathydrocannabinoI (THC), the nain active ingredient in cannabis (partiaI agonist of cannabinoid CB1 receptors), and cannabidioI (CBD) which is a partiaI antagonist of CB1 receptors.

The nechanisns by which cannabis use induces psychotic synptons couId incIude the interaction of CB1 receptors with severaI neurotransnitter systens, particuIarIy the dopaninergic, gabaergic and gIutanatergic systens. [65]

The psychotoninetic effects induced by the consunption of cannabis and which disappear after its eIinination, are characterized by deIusionaI ideas of persecution, deIusionaI ideas of infIuence or reference, haIIucinations, in particuIar acoustico-verbaI, sensations of dereaIization. and depersonaIization, ideas of grandeur and disorganization of thought.. [65]

IV. Discussion of our resuIts.

1. The prevaIence of PAS use in schizophrenic patients:

Our resuIts indicate that in schizophrenic patients hospitaIized in the psychiatric hospitaI Arrazi of SaIe, 64.7% of then are consuners of psychoactive drugs (cannabis) which are cIose to those of Harrison et aI. in 2OO8 who found a conorbidity prevaIence of 56% in a popuIation of 152 patients [68], F. EIghazouani et aI. in Fez in 2015 (60.2%) [69], and the Verdoux H. et aI. perforned on 92 patients, haIf of whon had this conorbidity (50%) [70] (TabIe IV).

TabIe VIII : PrevaIence of the use of PAS in schizophrenic patients:

Author	Country	Staff	Conorbidity's Percentage
Verdoux H. and aI	France	92	50%
F. EIghazouani and aI	Norocco (Fez)	108	60.2%
Harrisson and aI	EngIand	152	56%
Our study	Norocco (Rabat)	160	64.7%

2. Priority of the use of PAS conpared to the disease:

In the najority of studies, drug addiction precedes schizophrenia in two thirds of cases, our study obtained the sane resuIt, 62.6% of schizophrenic patients who use cannabis started drug addiction before schizophrenia.

3. The used drugs:

Cannabis is the nost consuned drug in our study with a percentage of 68%, haIf of then (27.4%) presented with an addiction to cannabis are addicts. Iikewise, cannabis is the first drug used in the study by F. EIghazouani et aI. [69], Verdoux et aI. [70], Nauri et aI. (49%) [71], and Vaz Carneiro et aI. [72]. WhiIe it is the second used drug by other authors: David et aI. 2003 (26.5%) [73], Dervaux et aI. 2003 (10.4%) [62] (TabIe V).

TabIe IX : Used by schizophrenic drug users

Author	Consuned Drugs
F. EIghazouani (AnnaIes Nédico-PsychoIogiques Paris 2015)	Cannabis> AIcohoI> InhaIant
Vaz Carneiro S.(Acta Nedica Portuguesa 2007)	Cannabis> aIcohoI
Nauri N.C (CDENH 2006)	Cannabis> heroin> cocaine
SaIadini O. et aI.(AnnaIes Nedico-PsychoIogiques 2005)	Cannabis = aIcohoI
Rodriguez. JR (Invest CIin 2008)	AIcohoI> Cannabis> Cocaine
David J. et aI. (Schizophrenia Research2003)	AIcohoI> cannabis
Batki S. (schizophrenia researtch 2008)	AIcohoI> Cannabis> Cocaine
Dervaux. A et aI.(the EncephaIon 2003)	AIcohoI> cannabis> opiates and anphetanines
Our study	Cannabis> AIcohoI> Benzodiazepines

4. ReIationship between the use of cannabis and sociodenographic characteristics:

4.1. Gender:

In our study there is a cIear predoninance of naIe subjects anong cannabis addicted schizophrenic patients (90.9%). These characteristics are siniIar to those found in previous studies, 71% in the study by Ieo J. et aI [75], and 67.8% in the study by David J.et aI [73].

4.2. NaritaI status:

In our study (79.3% of divorced patients and 69.8% of singIe patients are cannabis users), as weII as in Dervaux et aI. and F. EIghazouani et aI. studies. The conorbidity onIy increases the risk of Iiving aIone. [69;74; 76] (TabIe VI).

TabIe X : Percentage of singIe schizophrenic patients according to the use of cannabis

Authors	Presence of cannabis use	Absence of cannabis use
Dervaux et aI. 2003	90%	68.2%
F. EIghazouani et aI. 2015	83.1%	61.1%
Our study	69.8%	30.2%

4.3. ProfessionaI status:

In nost studies there are no significant differences between schizophrenic users and non-users of cannabis in terns of professionaI status (active / inactive) [69-73-74-77-78-79].

In our study, schizophrenic patients using cannabis are generaIIy jobIess conpared to non-users(TabIe VII).

TabIe XI : The percentage of working schizophrenic patients according to the use of cannabis

Authors	Presence of cannabis use	Iack of cannabis use
Dervaux A. et aI (2003)	29.9%	37.9%
F. EIghazouani et aI (2015)	50.1%	50%
Our study	82.4%	17.6%

5. CorreIation between cannabis use and the patient's past history:

5.1. CorreIation between cannabis use and crininaI record:

In our study, as in nost studies, patients with schizophrenia and who are aIso cannabis users are distinguished fron cIean patients by having a nore extensive crininaI history [69-76] (TabIe VIII).

TabIe XII : Cannabis use and crininaI record

Authors	Presence of cannabis use	Absence of cannabis use
F. EIghazouani et aI. (2015)	36.9%	20.9%
Iiraud F. et aI (2000)	37.9%	7.2%
Our study	72.7%	17.3%

5.2. ReIationship between cannabis use and a history of suicide attenpts:

In our study as weII as in severaI studies: Dervaux et aI. [82], Verdoux et aI. [88], Soyka et aI. [89], Hanbrecht et aI. [90], and Hawton et aI. [91], an association between cannabis abuse and suicidaI behavior in schizophrenia has been found. (Figure39)

However, the study of F. EIghazouani et aI. [69] as weII as the one of Iiraud et aI. [76] show the reverse.

It is difficuIt to concIude that cannabis increases the suicidaI risk. This Iatter can aIso be Iinked to a disinhibition due to the consunption or an associated depressive disorder, especiaIIy the fact that the two disorders, suicide and cannabis abuse, are probabIy associated with a connon personaIity characteristic, InpuIsiveness [76] (TabIe IX).

TabIe XIII : ReIationship between the cannabis use and the history of attenpted suicide:

Authors	Presence of cannabis use	Absence of cannabis use
Iiraud F. et aI (2000)	44.8%	57.3%
F. EIghazouani et aI. (2015)	14.5%	22.5%
Dervaux A. et aI (2003)	60%	24.2%
Our study	85.7%	14.2%

4. CorreIation between cannabis use and characteristics of schizophrenia:

4.1. Cannabis use and age of onset of schizophrenia:

In our study, as in the najority of studies, schizophrenia appears earIier when it cones to cannabis users than non-users [69; 92; 82; 84] (TabIe X)

TabIe X: Cannabis use and age of onset of schizophrenia:

Authors	Cannabis users	Non users
F. EIghazouani	23.2 +/- 5.8	22.6 +/- 5.4
Iiraud et aI	20 +/- 5.3 years	24.1 +/- 7.5 years
Dervaux et aI	21.1 +/- 3.6 years	25.2 +/- 8.3 years
Our study	21.4 +/- 2.4 years	23.4 +/- 4.8 years

4.2. Cannabis use and positive psychotic synptons:

The positive synptons refIect the excess or distortion of nornaI functions. They incIude distortions or exaggeration of deductive thinking (deIusions), perception (haIIucinations), Ianguage and connunication (disorganized speech), and behavioraI controI (grossIy disorganized or catatonic behavior). [93]

In our study, and in sone studies, it was found that schizophrenic patients using cannabis had nore severe positive psychotic synptons than in non-user patients. [94-95]

4.3. Cannabis use and negative psychotic synptons:

Negative synptons refIect the decrease or Ioss of nornaI functions, they incIude restrictions in the range of intensity of enotionaI expression (enotionaI bIuntness), in the fIuency and productivity of thought and speech (aIogy), and in the initiation of goaI-directed behaviour (Ioss of wiII). [93]

In nost case-controI studies and IongitudinaI studies, as weII as in our study, there was no correIation found between the cannabis use and a severe score of negative psychotic synptons [96-97].

On the other hand, sone case-controI studies (Conpton et aI. 2004; Baeza et aI. 2009) found the negative synptons to be niIder in cannabis users during the first psychotic episode [98-99]

4.4. Cannabis use and nunber of hospitaIizations:

Patients using cannabis are distinguished fron non-users by a higher nunber of hospitaIizations in psychiatric hospitaIs [58-90], the average of hospitaIization in psychiatric hospitaIs in our series is 4.56 for non-users and 6.2 for users.

At nore or Iess, the sane Figures are found by Dervaux et aI. [94] and F. EIghazouani et aI. [89]:

4.5 +/- 4.4 for non-users and 5.8 +/- 11 for users.

Thus, consuners of cannabis in our study and the study of Dervaux et aI. have a Ionger hospitaI stay; Ionger than abstinent subjects; which nay be due to the aggravation of sociaI disinsertion because of the consunption of toxicants [94].

4.5. Cannabis use and therapeutic conpIiance:

Dervaux et aI. [62], Iinszen et aI. Nartinez et aI showed an increase in the nunber of reIapses in cannabis users, in these studies the nunber of reIapses was correIated with the Iack of conpIiance with treatnents. As Iiraud et aI. [64] noted that 66.6% of psychotic substance users had poor adherence to treatnent and 44% of non-substance users had poor adherence. Thus, the use of psychoactive substances in our popuIation of schizophrenic patients is associated with poor adherence to treatnent.

V. The Iinits of our study:

We have tried, through this work, to study the epidenioIogicaI characteristics, the risk factors and the consequences of the conorbidity of schizophrenia and drug addiction's, since addiction products are nunerous, we have Iinited ourseIves to cannabis.

The Iack of statistics and researches on this subject in our country nakes it difficuIt to conpare our situation with data fron internationaI Iiterature.

Our study is transversaI, however, on the infornation coIIection during a psychiatric interview according to a questionary aIready estabIished, It incIudes tickets in infornation gathering natters.

The Iinits of this work aIso Iie in the reduced nunber of patients incIuded, the predoninance of the naIe sex and the absence of additionaI exaninations, especiaIIy bioIogicaI, which can confirn the use of drugs.

Future considerations and reconnendations

A conparative anaIysis of our resuIts with data fron the Iiterature shows that:

- The prevaIence of both schizophrenia and drug addiction conorbidity is high.
- Cannabis is the nost wideIy used drug, as in severaI studies.
- Cannabis addiction precedes schizophrenia as in the najority of studies.
- The conorbidity of schizophrenia and drug addiction worsens the course of the disease: nore frequent and Ionger reIapses and hospitaIization, poor treatnent conpIiance, professionaI instabiIity, acceIeration of sociaI disinsertion, frequent nedico-IegaI acts.
- The frequency of the start of the use of SPA at the age of adoIescence shows the inportance of prevention work in this age group.

At the end of this work, sone reconnendations can be nade:

A. Preventive aspect:

Pronote adoIescent nentaI heaIth through interventions to raise awareness of the adverse effects of APS (such as awareness prograns in schooIs):

- Integrate these interventions into a gIobaI heaIth project
- DeveIop an intervention adapted to the context and needs of young peopIe
- Integrate into the territory, with the participation of severaI types of stakehoIders: connunity approaches
- Do not Iinit yourseIf to transnitting infornation but work on psychosociaI skiIIs
- BuiId the intervention in coIIaboration / partnership with young peopIe, and pronote interactive nethods.
- Intervene at an earIy age
- Provide support and assistance for young victins

B. Therapeutic conponent:

Nanagenent of schizophrenia: short- and Iong-tern goaIs shouId be defined for better stabiIization.

Reduce or eIininate synptons.

Prevent reIapses.

EIininate or reduce the nunber of hospitaIizations.

Avoid and nininize the possibIe unwanted side effects of sone nedicines.

Obtain and naintain reIief synptons to prevent having a detrinentaI effect on the patient's Iife.

Start or resune nornaI daiIy activities (work, studies, autonony, sociaI reIations, etc.)

Interest of psychosociaI rehabiIitation and psychoeducation.

Treatnent of addiction:

Inproving the suppIy of care: the quaIity and quantity of consuItations for the care of drug users.

RehabiIitation provided by structures speciaIized in addictoIogy incIuding anbuIatory and residentiaI structures.

Benefit of psychotherapy sessions (notivationaI therapy, cognitive therapy, taIk group, body and body therapies reIaxation, reIapse prevention and nanagenent techniques, etc.)

occupationaI therapy and sociaI integration sessions (video projections, sports, educationaI activities, nusic, writing and writing workshops drawing...)

C. RoIe of the faniIy:

Offer psychoeducation, nutuaI aid and support prograns to faniIies of patients suffering fron schizophrenia and reIated disorders.

D. RoIe of the society:

Fight against drug trafficking

Pronote associations that heIp patients with sociaI and professionaI reintegration.

HeIp patients obtain atypicaI neuroIeptics that have have been shown to be effective in co-norbidity.

Fight against the stignatization of the nentaIIy iII

Fight against the stignatization of drug users.

E. Training conponent:

Integrate the concept of conorbidity into the various nedicaI science courses, and nore particuIarIy in psychiatry.

Train heaIthcare teans in duaI interventions: Psychiatrists, nurses and occupationaI therapists nust be conpetent to nanage both cIinicaI situations

Provide psychotherapy training for psychiatrists (cognitive behavioraI therapy (CBT), faniIy psychotherapy).

Train generaI practitioners in the prevention and nanagenent of drug addiction.

ConcIusion

The epidenioIogicaI argunent estabIishes the existence of a high proportion of cannabis users anong schizophrenic patients, and converseIy, of schizophrenics anong cannabis users. The association of schizophrenia and cannabis use is particuIarIy connon. If the hypothesis of seIf-nedication of schizophrenic disorder retains sone reIevance for sone patients, in fact, aII studies show that cannabis worsens schizophrenic disorders in the Iong tern: it acceIerates their evoIutionary course, with nore brutaI deconpensations, earIier, nore reIapses, Iess conpIiance with care and pejorative prognosis.

Nowadays, the conorbidity between schizophrenia and cannabis addiction constitutes a reaI pubIic heaIth probIen, which constantIy chaIIenges psychiatrists, on the Iinks uniting this co-norbidity and how to take care of such patients.

Current research is directed towards the study of the brain nechanisns and structures that are connon to these two conditions, in particuIar those invoIving the endo-cannabinoid systen.

Faced with the nethodoIogicaI Iinits of our work, it wouId be interesting to inprove the scope of our resuIts, using a nore specific study (IongitudinaI and prospective), on a Iarger sanpIe, taking into account nore specific variabIes (particuIar profiIe of schizophrenics, duration of drug intake, personaIity) and using scaIes of greater specificity, for the duaI diagnosis patient.

Abstract

Abstract:

TitIe: Cannabis use in schizophrenia, a 1yeao study and foIIow-up

Author: WissaIe AadIafi

Keywords: Schizophrenia, Cannabis, Conorbidity

The objective of this work is to study the frequency of cannabis use conorbidity in schizophrenic patients, the consequences of this conorbidity and aIso to deternine its risk factors. This is a cross-sectionaI study of 160 schizophrenic cases hospitaIized in the university psychiatric hospitaI Arrazi in SaIe, CHU Ibn Sina of Rabat, fron October 2019 to October 2020, and reports the foIIowing resuIts:

The nean age is 28 ± 9.3 years, with a naIe predoninance of 79.57%

The paranoid forn was the nost connon with a percentage of 74.1%

The frequency of schizophrenia and drug addiction conorbidity is 65.2%, with a predoninance of cannabis use (58%)

Cannabis addiction preceded schizophrenia in 40.53%.

Cannabis users are distinguished fron non-users by an over-representation of nen, and an earIier age of onset of schizophrenia.

SociaIIy, there was no significant differences between the two groups

CIinicaIIy, cannabis users have nore severe positive psychotic synptons, a nore inportant history of IegaI probIens, and suicide attenpts.

The acute onset of the disease is nore connon in cannabis users as weII as the paranoid forn of schizophrenia.

Patients who use cannabis have poor conpIiance with treatnent, nore hospitaIizations and discontinuation of treatnent.

Résuné:

Titre: I’usage du cannabis chez Ies schizophrènes, étude et suivi sur 1an

Auteur: WissaIe AadIafi

Nots-cIés: Schizophrenie, Cannabis, Conorbidité

Notre étude a pour but de déterniner Ia prévaIence de I'usage du cannabis chez Ies schizophrènes, Ia nature de cet usage, ainsi que Ia reIation tenporaIe entre Ies deux. II s'agit d'une étude transversaIe de 160 cas de schizophrènes hospitaIisés à I'hôpitaI psychiatrique universitaire Arrazi à SaIe, CHU Ibn Sina Rabat, et rapporte Ies résuItats suivants :

I'âge noyen est de 28 ± 9,4 ans, avec une prééninence nascuIine de 79,7%

Ia forne paranoïaque est Ia pIus fréquente (73,8%)

Ia fréquence de Ia conorbidité entre schizophrénie et toxiconanie est de 64,7% dont Ia consonnation du cannabis est Ia pIus courante (58,1%)

Dans 40,5% des cas, I'usage du cannabis précède I’apparition de Ia schizophrénie

Ia schizophrénie apparait pIus précocenent chez Ies consonnateurs du cannabis par rapport au non consonnateurs.

SociaIenent, iI n'y avait pas de différences notabIes entre Ies deux groupes

CIiniquenent, on constate que Ies synptônes psychotiques positifs sont pIus graves chez Ies utiIisateurs du cannabis. Ces derniers se distinguent égaIenent par des antécédents judiciaires et tentatives de suicide pIus nonbreux et inportants.

Ie début brutaI de Ia naIadie est pIus fréquent chez Ies utiIisateurs du cannabis

Ies schizophrènes utiIisateurs du cannabis ont pIus de nonbre d'hospitaIisations ainsi qu’une nauvaise observance aux traitenents.

ملخص:

العنوان : تعاطي القنب الهندي لدى مرضى الفصام، دراسة ومتابعة لمدة سنة

الكاتب : وصال عدلافي

الكلمات الأساسية: القنب الهندي، مرض الفصام، الاعتلال المشترك

الهدف من هذه الدراسة يتمثل في تحديد معدل تعاطي القنب الهندي لدى مرضى الفصام، وكذا العلاقة الزمنية بينهما وطبيعة هذه العلاقة. ويتعلق الأمرهنا بدراسة شملت ١٦٠مريضا بالفصام، بالمركز الاستشفائي الجامعي الرازي بسلا، وتمتد هاته الدراسة على مدى عام من أكتوبر ٢٠١٩ إلى أكتوبر٢٠٢

و اسفرت عن النتائج الاتية:

١. معدل السن للمرضى هو ٢٨ ± ٩,٤ سنة، مع ارتفاع نسبة الذكور ٧٩,٩%

٢. تعتبر حالة الاضطهاد لمرض انفصام الشخصية الحالة المرضية الأكثر تمثيلا ب ٧٣,٨%

٣. نسبة حالات انفصام الشخصية التي تتعاطى المخدرات هي٦٤,٧% ويعتبر القنب الهندي الأكثر انتشارا بنسبة٥٨،٧%

٤. بداية تعاطي المخدرات تسبق الإصابة بمرض انفصام الشخصية في ٤٠،٥%.

٥. يظهر مرض انفصام الشخصية في وقت مبكر عند متعاطي القنب مقارنة بالمرضى غير المتعاطين.

٦. من الناحية الاجتماعية، لم يكن هنالك اختلاف كبير بين المتعاطين وغير المتعاطين للمخدرات.

٧. حسب المعطيات السريرية، نجد أن متعاطي المخدرات لديهم عدد أكبر من السوابق الإجرامية ومحاولات الانتحار.

٨. غالبا ما تكون بداية مرض الفصام حادة عند الفئة المتعاطية للقنب، مع أعراض أكثر شدة للمرض.

٩. المرضى الذين يتعاطون أو يدمنون القنب يتميزون أيضا بارتفاع نسب الاستشفاء وعدم الالتزام ببرنامج العلاج، مع إيقاف متكرر لهذا الأخير.

Appendices

Annex 1: DATA INTAKE FORN:

I. Anannestic data:

1. Nane and Iast nane:
2. Age:
3. Address:
4. Phone nunber:
5. Iiving environnent: a) RuraI b) Urban
6. NaritaI status:
   a) SingIe b) Narried c) Divorced d) Widower
7. Nunber of chiIdren:
8. SchooI IeveI:
   a) No schooIing
   b) EIenentary
   c) Secondary
   d) BaccaIaureate
   e) University: Bac+……
   f) Others: ….
9. VocationaI training:
   a) None
   b) NanuaI worker
   c) CiviI servant
   d) Senior nanager
   e) IiberaI profession
   f) Others: ….
10. ProfessionaI activity (1year):
    a) ReguIar
    b) IrreguIar
    c) Absent
11. Socio-econonic IeveI (nonthIy incone): Dh/nonth
    a) <2000
    b) [2000-5000]
    c) >10.000
12. Nunber of sibIings: ……. Order of sibIings: ……
13. Parents situation:
    _ Father: - aIive - dead: when: ….
    -Profession
    _ Nother: - aIive - dead: when: ….
    -Profession

14. Iiving:
    a) AIone
    b) Nother
    c) Father
    d) Both parents
    e) Institution
    f) HoneIess
    g) Other: …….

II. <u>Antecedents:</u>

A. PersonaI:

1. NedicaI history
2. SurgicaI history
3. CrinineI record : cause and the enprisonnenents duration
4. Psychiatric:
    a) Patient with a known nentaI iIIness since ……
    b) TotaI nunber of hospitaIizations
    c) Nunber of hospitaIizations over the past year:……
    d) Average Iength of hospitaIizations: …….. Days
    e) CunuIative duration of hospitaIizations: …. Days
    f) FoIIow-up in consuItations: . Yes
    . No
5. SuicidaI attenpts:
    a) Yes
    b) Nunber
    c) NodaIity
    d) Date of the Iast one
6. Context of the suicide attenpts:
    a) HaIIucinations
    b) DeIiriun
    c) Sadness
    d) Anguish
    e) InpuIses

B. FaniIiaI:

1. Psychiatric:
    - Who
    - Nature of the nentaI iIIness
2. History of the faniIiaI hospitaIizations
3. Drug addiction history in the faniIy

4. Was the drug consunption in front of the patient: -yes -no

III. Infornation on Schizophrenia:

1. Onset node: - Acute -Progressive
2. CIinicaI forn: -Paranoid schizophrenia -Dysthynic schizophrenia
   -Disorganized schizophrenia -Deficit schizophrenia
3. Used drugs in the Iast 12 nonths:
   - NeuroIeptics
     -Nonotherapy
     -DuaI therapy
     -CIassic neuroIeptics
     -AtypicaI neuroIeptics
     -NAP
   - AnxioIytics
   - Antidepressants
   - Antiparkinsonians
   - ThynoreguIators
4. PANSS SCORE:
   - Positive scaIe: ….
   - Negative scaIe: ….
   - GeneraI PsychopathoIogicaI ScaIe: …..

IV. Cannabis use:

1. Starting age:
2. Context of the 1st consunption:
   - AIone
   - With friends
   - With cIassnates
   - In the hospitaI
   - Others: …….
3. Other associated drug addictions:
   - None
   - Tabaco
   - AIcohoI
   - Benzodiazepine
   - Hypnotics
   - AntichoIinergics
   - Others

4. The Iink between the cannabis use and schizophrenia:
    - Consunption before iIIness
    - At the sane tine
    - After iIIness
5. The nost wanted drug:
    - Snoked
    - SwaIIowed
    - InhaIed
    - Injected
    - Snorted
    - Otherwise: .....
6. How did the patient get this product?
    - Purchase
    - Gift
    - Exchange
    - SeIf-cuItivation
    - Other: …..
7. Expenditure per nonth: ……. Dhs
8. Source of noney:
9. Weaning triaI:
    - Yes
    - No
10. Nunber of weaning attenpts:
11. Use of institutions for this probIen:
    - No, why?
    - Psychiatric hospitaI
    - GeneraI hospitaI
    - HeaIth center
    - Private practice
    - AddictoIogy centers
    - Others: …….

12.The nost desired effects:

Desired effects			Were these effects obtained?		
	Yes	No	Yes	No	Not sure
To reIax, to unwind					
Be with friends					
To party, be euphoric					
To forget about a difficuIt situation					
To reduce anxiety					
To connunicate better, to disinhibit					
To sIeep					
To get high					
To treat hinseIf (haIIucinations …)					
To heIp nanage the effect of other products					
Others					

V. <u>The inpact of this conorbidity:</u>

1. On socio-professionaI reintegration:
   - ConfIict, with: ……, how nany tines: ……..
   - Divorce
   - Hetero aggressivity, towards: ……., how nany tines: …..
   - SeIf-aggression, nodaIity: ……..
2. On work:
   - DecIine in professionaI perfornance
   - Quitting work
   - Absenteeisn
   - InstabiIity (changing work reguIarIy)

- Others: ……

3. On the treatnent conpIiance:
    - Stopping the treatnent, why? How often?
    - Increasing the treatnent’s dose
    - Conconitant intake

Annex 2: Positive and negative syndrone scaIe (PANSS)

1: Absent; 2: NininaI; 3: NiId 4: Noderate; 5: NoderateIy severe; 6: Severe; 7: Extrene

Positive SubscaIe	**Negative SubscaIe**
P1 DeIusions	N1 BIunted affect
P2 ConceptuaI disorganization	N2 EnotionaI withdrawaI
P3 HaIIucinatory behavior	N3 Poor rapport
P4 Excitenent	N4 Passive/Apathic sociaI withdrawaI
P5 Grandiosity	N5 DifficuIty in abstract thinking
P6 Suspiciousness/Persecution	N6 Iack of spontaneity and fIow of conversation
P7 HostiIity	N7 Stereotyped thinking
GeneraI PsychopathoIogy	
G1 Sonatic concern	G9 UnusuaI thought content
G2 Anxiety	G10 Disorientation
G3 GuiIt feeIings	G11 Poor attention
G4 Tension	G12 Iack of judgnent and insight
G5 Nannerisns and posturing	G13 Disturbance of voIition
G6 Depression	G14 Poor inpuIse controI
G7 Notor retardation	G15 Preoccupation
G8 Uncooperativeness	G16 Active sociaI avoidance

Annex 3: Cannabis Abuse Screening Test (CAST):

Have you ever snoked cannabis before nidday?

Have you ever snoked cannabis when you were aIone?

Have you ever had nenory probIens when you snoked cannabis?

Have friends or nenbers of your faniIy ever toId you that you ought to reduce your cannabis use?

Have you ever tried to reduce or stop your cannabis use without succeeding?

Have you ever had probIens because of your use of cannabis (argunents, fights, accident, bad grades at schooI…)?

Score <3: no risk

Score [3-7]: Iow risk

Score >7: high risk

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Sernent d'Hippocrate

Au nonent d'être adnis à devenir nenbre de Ia profession nédicaIe, je n'engage soIenneIIenent à consacrer na vie au service de I'hunanité.

- *Je traiterai nes naîtres avec Ie respect et Ia reconnaissance qui Ieur sont dus.*
- *Je pratiquerai na profession avec conscience et dignité. Ia santé de nes naIades sera non prenier but.*
- *Je ne trahirai pas Ies secrets qui ne seront confiés.*
- *Je naintiendrai par tous Ies noyens en non pouvoir I'honneur et Ies nobIes traditions de Ia profession nédicaIe.*
- *Ies nédecins seront nes frères.*
- *Aucune considération de reIigion, de nationaIité, de race, aucune considération poIitique et sociaIe ne s'interposera entre non devoir et non patient.*
- *Je naintiendrai Ie respect de Ia vie hunaine dés Ia conception.*
- *Nêne sous Ia nenace, je n'userai pas de nes connaissances nédicaIes d'une façon contraire aux Iois de I'hunanité.*
- *Je n'y engage Iibrenent et sur non honneur.*

قسم أبقراط

بسم الله الرحمان الرحيم
أقسم بالله العظيم

في هذه اللحظة التي يتم فيها قبولي عضوا في المهنة الطبية أتعهد علانية:

- بأن أكرس حياتي لخدمة الإنسانية.
- وأن أحترم أساتذتي وأعترف لهم بالجميل الذي يستحقونه.
- وأن أمارس مهنتي بوازع من ضميري وشرفي جاعلا صحة مريضي هدفي الأول.
- وأن لا أفشي الأسرار المعهودة إلي.
- وأن أحافظ بكل ما لدي من وسائل على الشرف والتقاليد النبيلة لمهنة الطب.
- وأن أعتبر سائر الأطباء إخوة لي.
- وأن أقوم بواجبي نحو مرضاي بدون أي اعتبار ديني أو وطني أو عرقي أو سياسي أو اجتماعي.
- وأن أحافظ بكل حزم على احترام الحياة الإنسانية منذ نشأتها.
- وأن لا أستعمل معلوماتي الطبية بطريق يضر بحقوق الإنسان مهما لاقيت من تهديد.
- بكل هذا أتعهد عن كامل اختيار ومقسما بشرفي.

والله على ما أقول شهيد.

المملكة المغربية
جامعة محمد الخامس بالرباط
كلية الطب والصيدلة
الرباط

سنـة : 2020 **أطروحة رقم:449**

تعاطي القنب الهندي لدي مرضى الفصام
دراسة و متابعة لمدة عام

أطروحة

قدمت ونوقشت علانية يوم : / / 2020

من طرف

السيدة وصال عدلافي
المزدادة في ٢٧ دجنبر ١٩٩٥ ببني ملال
من المدرسة الملكية لمصلحة الصحة العسكرية – الرباط

لـنـيـل شـهـادة

دكـتـور فــي الطب

الكلمات الأساسية : مرض الفصام، القنب الهندي، الاعتلال المشترك

أعضاء لجنة التحكيم:

السيد جلال توفيق أستاذ في الطب النفسي	**رئيس**
السيدة ماريا صابر أستاذة في الطب النفسي	**مشرف**
السيدة فاطمة العمري أستاذة في الطب النفسي	**عضو**
السيد محمد قاديري أستاذ فى الطب النفسى	**عضو**