Original Research Article

A Study of Addictive Behavior Among University Students

Abstract:

Drug abuse is a public health issue, particularly among adolescents and young adults. Therefore, the purpose of our study is to determine drug addiction in a student population, the prevalence rate of drugs and to identify certain factors that can serve as predictors of drug. A total of 431 students from Mohammed V University in Rabat participated in this descriptive cross-sectional survey. The prevalence of drug use (regular users and experimenters) was 32.9%. Cannabis has a frequency of 13%, whereas psychotropics and other substances have a prevalence of 3.8%. The most common average age of onset of substance use was 15. Males had the greatest likelihood of becoming drug addicts. We discovered a high consumption of drugs among university students at the end of this work, implying the need to establish a programme to combat drug addiction, the starting point of which will undoubtedly be prevention at the primary and secondary school levels, requiring the participation of all those involved in the field of education.

Keywords: Drug abuse, addiction, student population, cannabis, Psychotropic drugs.

Introduction

Drug abuse is a public health issue, particularly among adolescents and young adults. From a medical point of view, drug addiction is a state of intoxication, resulting from the repeated intake of toxic substances (medical or chemical), creating a state of psychological and/or physical dependence with regard to the effects induced by these substances [1]. The state of dependence is defined when an individual uses large quantities of a substance for a longer period than expected. According to the WHO, drug abuse is a psychic state, sometimes also physical, resulting from the interaction between the living organism and a substance. It is characterised by changes in behaviour and other reactions, which always include a drive to take the product continuously or periodically in order to regain psychic effects, and

sometimes to avoid the discomfort of withdrawal [1, 2]. Addiction is often accompanied by a tolerance to certain effects of the abused drug and above all by a dependency, whose existence is manifested by a withdrawal syndrome after unaccompanied withdrawal [3].
Cannabis, heroin, cocaine, opium, LSD, ecstasy, alcohol, or psychotropic drugs are examples of natural or synthetic drugs capable of altering states of consciousness [4]. By altering brain functions, they can induce changes in perception, sensations, mood, consciousness, or other psychological and behavioural functions [5].
The consumption of these psychoactive substances among university students remains little studied and particularly misunderstood. Given that developmental elements are at the heart of this clinical equation, research has demonstrated that brain maturation occurs between the ages of 20 and 25 years, with inter-individual variability [6]. They correspond to the development of the individual, to their sex, and to their cerebral maturity [7].

Dopaminergic, glutamatergic, opioid, cannabinoid, GABAergic, noradrenergic, and serotonergic system disruptions are neurobiological risk factors for addiction susceptibility.

Therefore, the purpose of our study is to determine drug addiction in a student population, the prevalence rate of cannabis, psychotropic drugs, and other drugs, and to identify certain factors (contexts of use as well as risk factors) that can serve as predictors of drug use (lifestyle, socioeconomic status, environment, activities, etc.) and that can serve as a foundation for a mental health policy in a university setting.

Population and Methods

A total of 431 students from Mohammed V University in Rabat participated in this descriptive cross-sectional survey. A student-designed questionnaire was used to collect the data. Because the data was kept private throughout the data collection phase, the responses were anonymous. All of the pupils' decisions and consents were honoured. The questionnaire included data on participants' demographics as well as their use of cannabis and other psychoactive substances (cocaine, LSD, ecstasy, and heroin), SPSS V19 was used for the statistical analysis. Statistical significance was defined by the chi-square test, which indicated that a value of p 0.005 indicated a significant difference.

Results

Sociodemographic data

The participation rate in the survey was 86.1% (N 371). We noted a predominance of the female sex with a sex ratio (male/female) of 0.4. The average age was 21 ±1 years, with extreme ages ranging from 19 to 30 years. The 20–22 age group was the most represented in our sample. We note a repeater rate of over 11%. Extracurricular activities are only practised by 27% of students, and 40% of students live far from their homes.

Status of addictive behaviours

The prevalence of drug use (regular users and experimenters) was 32.9% (N 122), of which regular use was 20% (N 74).

According to the medications ingested, the prevalences were as follows: Cannabis has a frequency of 13%, whereas psychotropics and other substances have a prevalence of 3.8%. The most common average age of onset of substance use was 15, with two extremes ranging from 10 to 23 years. Regarding the initial consumption, it was determined that 41.2% of student drug users were inspired by their surroundings ("friends, relatives, coworkers"), whereas 32.2% were affected by explorative experimentation. With a proportion of 14.7%, the festivities were another factor in drug discovery. There are also constraints among these students, such as stress, anxiety, and depression, which led to 11.8% of them using drugs.

Profile of drug users:

The M/F sex ratio is higher in the case of drug addicts: men consume drugs more than women ($p<0.0001$). The prevalence of repeaters among drug addicts is three times higher than that of the population studied ($p<0.0001$). 94% of users' relatives are drug users themselves (Table N°1).

Table N°1: Characteristics of Drug Users and Non-Users

	Consumers	Non- Consumers	p
Sex-ratio (men/women)	0,8	0,4	<0,0001
Repeaters Ratio	32%	11%	<0,0001

Consumers surroundings	94%	72%	<0,0001

Characteristics of drug users:

Among illegal substances and psychoactive compounds, cannabis has by far the highest use rate. We found that 62% of typical college students used cannabis or other psychotropic substances and that 21% used other drugs. Approximately 75% of current addicts have made at least one failed attempt to quit the habit. Drug addicts who are thinking about the long-term effects of their activity are 87% more likely to consider them than non-addicts.

a- Cannabis

There were 13% of people who used cannabis regularly among the whole population. We found that males were more likely than females to have used cannabis (28% vs. 3%), and that individuals around them had tried the substances (SR = 0.87). Furthermore, 42% of cannabis users had tried the drug one or more times before. More than half of the students smoked between three and six joints every single day (Table 2).

Table N°2: Rate of the number of joints consumed per day among student cannabis consumers

Number of joints/day	Percentage (%)
From 1 to 3	34,6%
From 3 to 6	57,7%
More than 6	7.7%

Cannabis users are polydrug users (Figure N ° 1), with 62% consuming alcohol and 20% consuming psychotropic drugs.

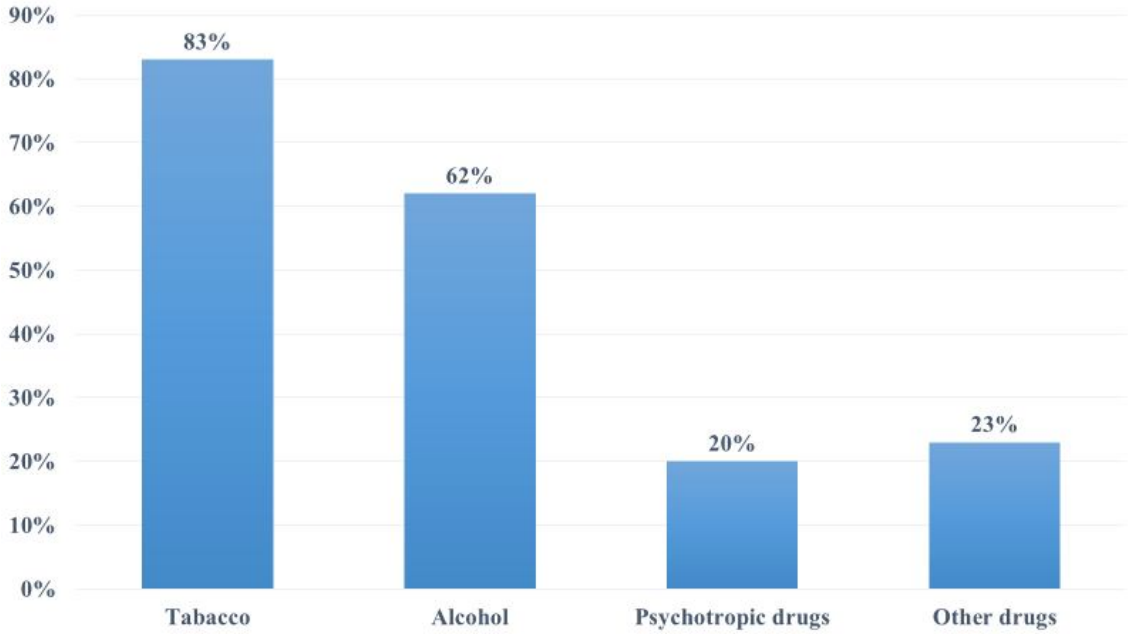

Figure N°1: Prevalence of other drug use among cannabis users

b- Psychotropic drugs :

The prevalence of psychotropic drug use was 3.8% (N = 11) of the population. Benzodiazepines are the most commonly reported products taken during life. They are all male tobacco and cannabis smokers (Figure 2). 90% of them use alcohol, and 80% use other drugs; 45% of them have repeated at least once. In our research, we found that some individuals used cannabis alone, but no students reported using psychotropic substances alone.

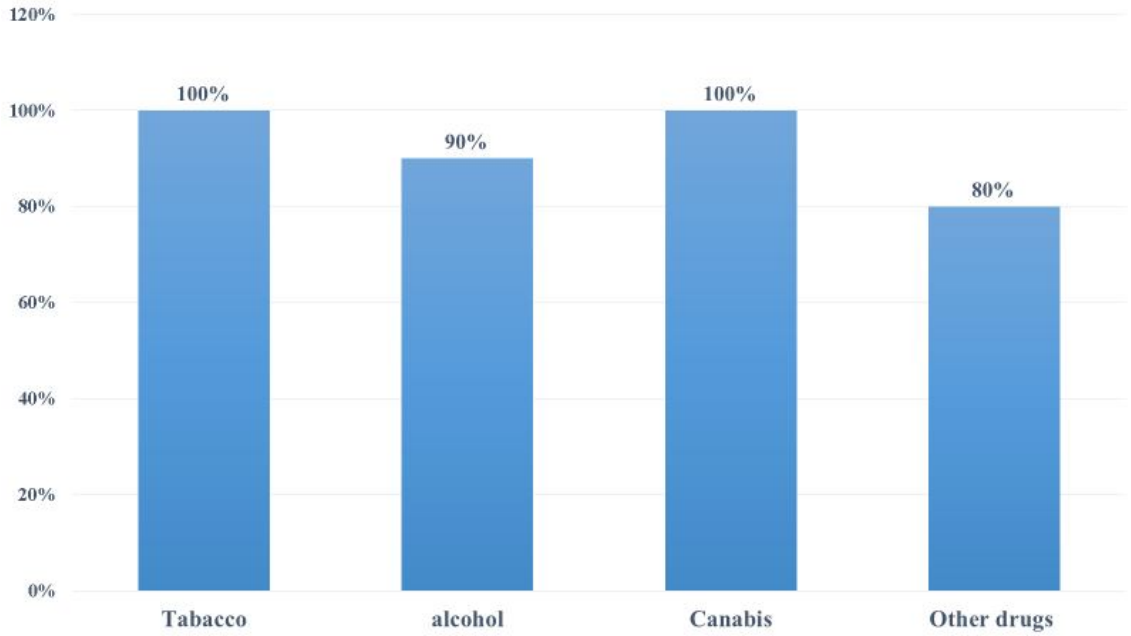

Figure N°2: Prevalence of consumption of other drugs among users of psychotropic drugs

c- Other drugs :

For other drugs, 3.8% said they are users of cocaine, LSD, ecstasy, and heroin.

Analytical studies of addictive behaviors:

The survey made it possible to detect a large difference in addictive behaviour between the two sexes. The male study population was predominant (Figure 3).

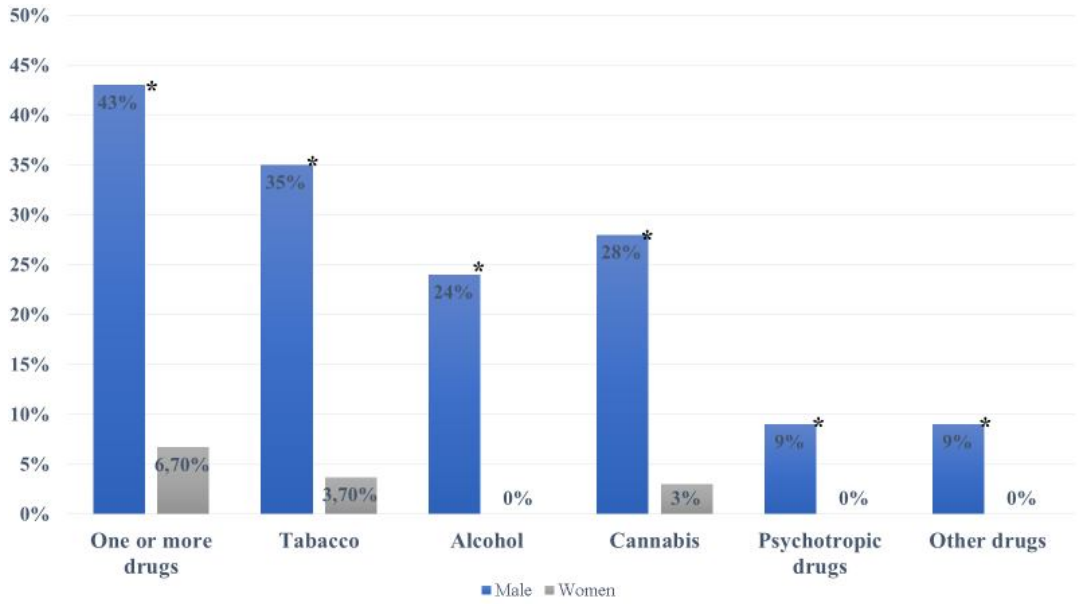

Figure N°3: Prevalence of the consumption of different drugs according to gender (*P of Chi-square test <0.0001 significant)

The use of drugs was different according to sex, men use drugs more than women.

Main indicators of substance abuse among students:

We were interested in determining the factors that make it possible to detect a risk of consuming or experimenting with drugs (Table N°3), it should be noted that the confidence interval was 95%.

Table N°3: Possible risk factors for drug addiction and their P and OR values in students

Settings	**P**	**OR**
Sex	<0,0001	If Men : OR=43,6
Study Year	<0,0001	
Age	<0,0001	
Repetitions	<0,0001	OR=7,8
Extracurricular Activities	0,368	OR=1,1
Residence (away from home)	0,62	1,7
Already tested once	<0,0001	12,23
Surroundings that use Drugs	<0,0001	8,19

Males had the greatest likelihood of becoming drug addicts (OR = 43.6). It was statistically significant among students with drug-using peers (OR = 11.7) and repeaters (OR = 7.4). The danger was similarly elevated (OR = 8.19) among students whose peers consumed it. Experimentation ultimately results in the risky anchoring of these behaviours (OR = 12).

Discussion:

The total response rate was 86.1% (N 371). Participation in this epidemiology research may be regarded as very satisfying. This university's students use drugs (cannabis, psychotropic medications, and other substances such as LSD, heroin, and cocaine), with varying prevalences and predominances of prevalence rates among males. According to the study findings, young individuals between the ages of 19 and 20 are substantially more prone than others to take drugs in a risky and harmful manner. Our findings support those of a nationwide study on the incidence of mental problems and drug addiction, which found that young people are increasingly using harmful drugs.

The prevalence of drug usage (regular users and experimenters) was 32.9% (N 122), with regular use accounting for 20% of the total (N 74). Some users, around 25%, do not anticipate abstinence or a complete cessation of addiction. The danger of progressing from regulated and infrequent intake to addiction varies from person to person. Some individuals get addicted to drugs even after their first exposure. Genetic risk factors may explain the addictogenic character of legal and illegal drugs in certain people [8].

Cannabis is the most consumed and experienced substance, followed by psychotropic drugs that must be prescribed and dispensed according to rigorous rules. Cannabis use can lead to the use of other drugs, such as heroin or hallucinogens, and the development of polydrug use.

The low frequency of female drug addiction is largely explained by socio-cultural or religious factors that make these behaviours socially disapproved of or inappropriate, therefore shielding women from this plague. Cannabis consumption is mostly related to gender and age. According to the majority of studies, males are more likely than females to report having ever used cannabis (28% vs. 3%) [9]. The most common age at the beginning of consumption in our sample is 15 years old, which is consistent with Medspad 2013 [10].

This may be explained by the child's inherent curiosity and desire for greater independence and autonomy. As a result, the school offers them a chance to get away from their parents and

presents itself as a gathering place where the student will attempt to identify with and belong to a group. To be accepted, the adolescent is encouraged to mimic the behaviours, among other things, and the usage then becomes a way of socialisation and integration for the teenager. The same result was found in a national survey on mental health and drug addiction, demonstrating that the use of harmful drugs is becoming more common among young people. According to a nationwide survey on the prevalence of mental illnesses and drug addiction in Morocco [11], the rate of psychoactive drug use was 4.8%. In our sample, the use of psychoactive drugs was 3.8%, which was lower than the national survey. This may be explained by university students' understanding of these chemicals. According to a study done at the CADDI AYYAD University of Marrakech [12], the incidence of cannabis usage among students is 9.8%. In France, a nationwide study was conducted to assess the level of psychoactive drug intake among anesthesiologists and resuscitators [13]. The use of psychoactive chemicals includes a broad variety of products, including: Alcohol (59.0%), tranquillizers and hypnotics (41.0%), cannabis (6.3%), opiates (5.3%), or stimulants (1.9%) were all used by 10.9% of those who were not smokers. In contrast to the views of these health experts, our research revealed low prevalences for all behaviours, with the exception of cannabis use, which is legal in our nation.

The Different Types of Use:

These days, we prefer to categorise consumption into four categories: use, risky use, abuse, and dependency.

- Simple usage: Consumption or behaviour does not result in problems or harm to the somatic, mental, or social systems.
- Risky usage: This use creates the impression of harm to the user's or others' health, reputation, or legal standing. It is possible to actively discontinue this behaviour.
- Abuse and dependency are subject to specific definitions in the two major classifications, the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the International Classification of Diseases (ICD) [14].

The risk of passing from controlled and occasional consumption to addiction varies from one individual to another. Some people become addicted to drugs even after their first use. In some subjects, genetic risk factors may explain the addictogenic nature of legal and illegal

substances. However, there is still little data on how these vulnerability factors interact with each other and/or with environmental factors [8].

Factors that may change how a drug works:

The risk of harmful usage is a mix of a person's vulnerability, the dangers of their surroundings, and the hazards associated with utilising a product.

Harmful usage (U.N.) is the outcome of the interplay of three sets of factors:

- the risk factors linked to the products (P);
- individual vulnerability factors (I);
- environmental risk factors (E).

P: represents the risk factors linked to the products [15]. To fully understand the health, psycho-affective, and social damage associated with the consumption of a product, it will be useful to clearly differentiate between three types of risk: First of all, the addictive risk specific to a product, can be assessed based on the speed of establishment of the induced dependency in the subject. Then there is the risk of the appearance of health, psychological, or social complications. Finally, the risks related to the social status of the product.

I represents an individual's vulnerability (and resistance) factors [15]. They include genetic factors, biological factors, psychological factors, and psychiatric factors.

E: factors related to the environment are social factors and family factors [15].

When drugs are taken regularly, the reward circuitry in the brain, which is responsible for the normal feeling of well-being, is disrupted. The person then acts, not to feel better but to return to his normal state. As a result, a persistent malaise develops. A recent study also suggests that other parts of the brain involved in decision-making are impacted. Controlling consumption gets harder as time progresses [16]. There is also the phenomenon of healthy individuals developing automated behaviours at the expense of planned decision-making; transfers from a planned decision mode to an automatic choice mode are nearly permanent. A progressive switch in favour of the automatic mode might possibly be at the beginning of the development of compulsive behaviours [17].

Toxicity of the different drugs used:

a- Cannabis:

Cannabis is the world's most extensively used illegal drug. Worldwide, there are between 119 and 224 million cannabis users [18]. During acute intoxication, cannabis may create "cannabis intoxication" (a sense of well-being, disinhibition, depersonalization-derealization, and a delirious puff). Chronic use of this drug produces psychological (the "amotivational" syndrome) and somatic (headaches, vomiting, tachycardia, orthostatic arterial hypotension) repercussions but does not result in physical dependency. The relative risk of getting schizophrenia is 6 [without making any assumptions about a causal link] [19]. The plant contains around sixty naturally occurring cannabinoids. They are nitrogen-free phenolic benzopyran derivatives. Cannabidiol, cannabinol, 9-trans-tetrahydrocannabinol (THC), 8-trans-tetrahydrocannabinol, and 8- and 9-tetrahydrocannabinolic acids are the most common.

At high levels of consumption, the danger of psychological dependency develops first and foremost, and relational, educational, and professional issues may occur afterward. Cannabis usage on a regular basis may potentially accompany or worsen the emergence of mental problems [20].

The "amotivational syndrome" or "chronic cannabis syndrome" is a condition that occurs in people who use cannabis on a regular and long-term basis. It is characterised by a generalised lack of interest and indifference, as well as substantial fatigability and energy loss. The patient can no longer focus on a task and is oblivious to his surroundings. Longer term, it seems that there is a diminished capacity to construct a life project and to concretize studies or a professional goal [21].

Cannabis is likely to disclose or worsen the indications of a severe mental disorder, schizophrenia, in susceptible individuals. Furthermore, the risk of schizophrenia seems to be higher if cannabis is used throughout adolescence and in large quantities. Contrary to acute delirious puff (or cannabis psychosis), which includes hallucinations and delusions and has a better prognosis, the differential diagnosis during early episodes is challenging and associated with cannabis consumption [22].

b- Psychotropic drugs:

The benzodiazepine family is the most commonly used psychotropic family. They act as anxiolytics, hypnotics, anticonvulsants, and muscle relaxants by stimulating the GABA

system. They have the potential to cause neuropsychiatric diseases, vigilance difficulties, decreased physical and intellectual performance, memory disorders, aggression, and sleeplessness. There is physical and psychological reliance, and there is a danger of withdrawal syndrome; thus, cessation must be forced and gradual [23].

c- Opiates:

Opiates (heroin, morphine, codeine, and so on) may be taken as a "sniff" or a "shot" (IV), resulting in a "flash" or a strong sense of well-being. The effects of heroin are similar to those of morphine, with the distinction being in the length and intensity of action [24]. The potency of heroin's euphoric impact, which has a particularly strong addictive potential, distinguishes it from other opiate agonists. It has a pharmacological effect on the central nervous system (analgesia, anxiolysis, euphoria), the respiratory system (respiratory depression), the cardiovascular system (hypotension, arrhythmias, syncope, cardiac arrest), and the digestive system.

d- Cocaine:

Cocaine is a tropane alkaloid derived from coca leaves. It is a powerful central nervous system stimulant and psychotropic. It is also a vasoconstrictor in the peripheral circulation [25]. After "snorting" the cocaine powder, the plasma peak is attained in 30 to 60 minutes. The bioavailability of the mucosal route is about five times that of the venous route, which is used less often. Subcutaneous, mucous membrane, rectal, or vaginal routes are all used by drug abusers... Cocaine's excellent absorption by the digestive system may be the source of its toxicity during intracorporeal narcotic transportation [26, 27].

e- Hallucinogens:

A hallucinogen is a mind-altering chemical agent that causes hallucinations, modifications in perception, coherence of cognition, and regularity of mood, but not lasting mental disorientation or memory difficulties [4]. Their leader is LSD d-lysergic acid diethylamide, a semi-synthetic derivative of ergometrine (an ergot alkaloid).

f- Amphetamines:

The structure is derived from phenylethylamines. They may have anorectic, hallucinogenic, stimulant, or all of these effects at the same time. It could be a powder or a paste, pure (white) or cut [28]. Amphetamines promote physical hyperactivity and psychological elevation when taken in large doses as pills or injectable solutions. The intended result when administered intravenously is a "flash," "orgasm," and "explosion" of the whole body. The "descent" is marked by extreme exhaustion and unhappiness, even to the point of depression. The "paranoid effect" is usually seen after long-term intake; it dissipates rapidly when the impregnation is discontinued, but it might serve as a doorway to a major persistent psychosis [29]. Many people get hooked on amphetamines the first time they take them. It is also usual to have progressive tolerance. Indeed, the euphoric effects of amphetamines encourage their abuse [30].

Recommendations:

Monitoring student drug usage over time is a critical component of building evidence-based policies and programmes to make communities healthier and safer. Survey data is crucial in the creation of different treatments in response to student drug use and misuse. Indeed, we have found predictors of addictive behaviour in students, which lead to activities that are both practical and profitable:

- o Increasing understanding and knowledge
- o Organize drug-awareness caravans to expand national efforts against drug abuse.
- o Create specialised infrastructure to offer students specialised weaning support.
- o Staff members should get weaning aid training.
- o Create posters warning against drug use in various campus locations.
- o Men must be the primary focus of efforts to combat drug addiction.

The establishment of an acceptable infrastructure for a national programme, backed by suitable and effectively implemented legislative measures, is important to improve national capabilities in order to attain these goals of reducing drug addiction.

Conclusion

This poll is part of the larger picture of the battle against drug addiction, which has to be intensified on a nationwide basis. Especially when conducting surveys in a university context, this is a quick and inexpensive way to collect data about addictive behaviour.

We discovered a high consumption of drugs among university students at the end of this work, implying the need to establish a programme to combat drug addiction, the starting point of which will undoubtedly be prevention at the primary and secondary school levels, requiring the participation of all those involved in the field of education.

Despite the fact that drug addiction is a worldwide social and health problem, we still do not understand the true nature of this scourge in our country. The completion of this study provided us with the opportunity to reflect on drug addiction.

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