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An Analysis of Factors Associated with Drug Use in Schools in The City of Ouagadougou in 2019

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AN ANALYSIS OF FACTORS ASSOCIATED WITH DRUG USE IN SCHOOLS IN THE CITY OF OUAGADOUGOU IN 2019

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ABSTRACT

Faced with this situation, a general awareness has led to the creation of an international day against drug abuse and trafficking on June 26. Several international and regional conventions are working together to develop strategies and policies to fight this scourge. The aim of this study is to look for the prevalence and associated factors of drug use in schools in the city of Ouagadougou in 2019. This study used a descriptive and analytical cross-sectional study using a self-administered questionnaire administered to students in schools in the city of Ouagadougou who were present during the survey in March 2019. The collection tool was a self-administered questionnaire inspired by the WHO guide on school health surveillance in the Burkinabe context, which had been previously tested. Kobocollect software was used to collect the data. Data processing and analysis were carried out using STATA version 15.1 software. The variable of interest was drug use. The data collected were analyzed with STATA version 15.1 software. The students in this study ranged in age from 12 to 25, with a mean age of 14.78 ± 2.26 years. The prevalence of drug use was 6.11%. It varied significantly according to gender, pocket money, and history of drug use. Strategies to combat drug use must be strengthened and adapted to our context in order to bring about a change in behavior, especially in schools.

Keywords: *Drugs, Students, Associated Factors, Drug Usage, Schools*

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INTRODUCTION

Drugs are natural or synthetic psychoactive products used by a person in order to modify his or her state of consciousness or to improve performance (Chaoui et al., 2011). On a global scale, drug use is now a real scourge. The World Health Organization (WHO) estimates that 13.8 million young people aged between 15 and 16 have already used cannabis, which corresponds to a rate of 5.6% (World Drug Report 2018, n.d.). In Brazil, nearly 80% of schools had ever taken in students who used or possessed drugs, licit or illicit, in their schools (Pereira et al., 2016); similarly, in Argentina, out of 3826 students, 8% had used at least one illicit drug in their lifetime (Morello et al., 2017b).

Africa is not spared from the scourge. According to the International Narcotics Control Board (INCB), the prevalence of cannabis use in Africa was estimated in 2015 to be 7.5% for people over the age of 14 (Mvolye, n.d.). This is because local partners and drug cartels have managed to make the region an

important transit area in the movement of illicit drugs produced in South America and Asia to Europe. The United Nations Drug and Crime Organization (UNODC) has identified drug trafficking itself as a potential vehicle for illicit drug use, which could exacerbate the problem (Donnenfeld et al., n.d.). The war on drugs is thus proving to be a failure (Polet, 2014; WACD_En_Report_WEB_051114.pdf, n.d.). In Burkina Faso, drug trafficking is growing and mainly concerns psychotropic substances. A prevalence of 1.73% had been recorded in 2011 in schools in the city of Ouagadougou (Nikièma et al., 2011). Poor attendance, a lack of awareness, easy access, and the belief that drugs have qualities that can develop cognitive functions are some of the reasons for this scourge.

Faced with this situation, a general awareness has led to the creation of an international day against drug abuse and trafficking on June 26. Several international and regional conventions are working together to develop strategies and policies to fight this scourge. In Burkina Faso, Law N°017/99/AN on the drug code has been passed by the National Assembly and contains 99 articles. This law prohibits the consumption, cultivation, possession, export, and import of drugs on the national territory. On July 26, 1993, a National Committee for the Fight Against Drugs was established, and it works tirelessly in collaboration with several associations and non-governmental organizations (NGOs) to eradicate this scourge (SIG: Service d'Information du Gouvernement - Burkina Faso, "Lutte Contre la drogue au Burkina Faso: Des Mesures pour reinforcer le dispositif, n.d.). Since students are a vulnerable segment of the population and are subject to a number of behaviors that endanger their health, we proposed to conduct this study to assess the extent of drug use and associated factors in the school environment in the city of Ouagadougou.

RESEARCH METHODOLOGY

Research Design

The study took place in the commune of Ouagadougou. From March to December 2019, a cross-sectional study with an analytical focus on schools was conducted. The study focused on students in the city of Ouagadougou attending public or private schools. It was a two-stage cluster sampling procedure. The first stage consisted of using schools as primary sampling units. The secondary sampling units were the classes. All students in the selected classes were included. A total of 2079 students from public and private general and technical schools were included. Students in grades 6 to 12 at the time of the study were included in the study. Informed consent was obtained for students who were of legal age, and for minors, we had the authorization of their parents. The collection tool was a self-administered questionnaire inspired by the WHO guide on school health surveillance in the Burkinabe context, which had been previously tested. Kobocollect software was used to collect the data. Data processing and analysis were carried out using STATA version 15.1 software. The variable of interest was drug use.

Simple frequencies and relative frequencies (percentages) were calculated for categorical variables. Means and standard deviations were calculated for continuous quantitative variables. The following statistical tests were used: Pearson's Chi-square for the comparison of proportions and frequencies and Fisher's test for the comparison of proportions and frequencies when the theoretical number of participants in a cell is less than 5. The association between the dependent variable and the independent variables was considered significant when the p-value < 0.20. The strength of the associations was determined by calculating the odd ratios. In multivariate analysis, variables that were significantly associated with the variable of interest when the p-value < 0.20 were entered into a binary logistic regression model. Variables were considered statistically significant when associated with the dependent variable if the p-value < 0.05.

RESEARCH FINDINGS AND DISCUSSION

A total of 2079 students aged 12 and older were included. Female students represented 56.6% with a sex ratio = of 0.77. The students' average age was 14.78 ± 2.26 years, with extremes ranging from 12 to 25 years. The age range of 12 to 15 years excluded was the most represented at 53.5% of the sample. Undergraduate students represented 78.7% of the sample. Most students did not know the educational

level of their fathers or guardians (34.2%), and 24.8% had a university degree. **Fifteen-point**-nine percent of the mothers had no formal education, followed by 21.9% who had secondary education. Most students lived with both parents, 73.5%. Most students (82.2%) had regular pocket money (Table 1). At the conclusion of the bivariate analysis, we selected the independent explanatory variables with a significance level (p-value) of less than 20% (gender, class, type of education, spending money, parents' and friends' drug use status, history of drug use) for inclusion in the final multiple logistic regression model. Table 2 represents the explanatory factors for drug use among students in the city of Ouagadougou in 2019. The prevalence of drug use was higher among students who had parents who smoked (67.3%). The observed difference was statistically significant (p = 0.000). The prevalence of drug use was higher among students who had friends who used drugs, at 70.3%. Having friends who use drugs was significantly associated with drug use (p = 0.000). The prevalence of drug use was also higher among students who had used drugs once in their lives (68.9%). The observed difference was statistically significant (p = 0.000) (Table 3). On multivariate analysis, the variables (male gender, spending money, and history of drug use) were significant for drug use. Table 4 presents the explanatory variables independently associated with drug use among public and private general and technical education students in the logistic regression model (multivariate analysis).

Table 1: Distribution of students by socio-demographic characteristics

Socio-demographic variables	Effective (N)	Percentage (%)
Age		
[12-15[years	1113	53,56
[15-20[years	944	45,43
≥20 years	21	1,01
Sex		
Girls	1177	56,6
Boys	902	43,4
Class		
Premier cycle	1636	78,7
Second cycle	443	21,3
Type of education		
General	2003	96,3
Technical	76	3,7
Type of establishment		
Private	1105	53,2
Public	933	44,9
Don't know	41	2,0
Education level father		
No level	254	12,2
Primary	254	12,2
Secondary	344	16,5
University	515	24,8
Don't know	712	34,2
Level of education mother		
No level	330	15,9
Primary	320	15,4
Secondary	455	21,9
University	305	14,7
Don't know	669	32,2
Who do you live with		
Alone	6	0,3
Two parents	1529	73,5
Brothers and sisters	63	3,0
Parents-in-law	25	1,2
Grandparents	120	5,8

Socio-demographic variables	Odd Ratio Bruts IC 95%	P value
Age range		
[12-15[	1	
[15-20[	**1,23[0,86-1,77]**	**0,114**
≥20	**0,809[0,56-1,16]**	**0,110**
Gender		
Female	1	
Boy	**2,80 [1,92-4,11]**	**0,000**
Class		0,469
First cycle	0,94 [0,86-1,44]	0,310
Second cycle	**1,30 [0,87-1,94]**	**0,106**
Type of education		
General	0,96[0,95-0,98]	0,441
Technical	4,94 [1,13-5,28]	0,557
Type of establishment		
Private	0,94 [0,78-1,14]	0,406
Public	1,04 [0,88-1,24]	0,319
Don't know	1	
Education level father		
Primary	0,73 [0,40-1,35]	0,201
Secondary	**1,32 [0,84-2,06]**	**0,136**
University	0,69 [0,43-1,09]	0,670
Don't know	1	
Education level mother		
Primary	1,09 [0,67-1,77]	0,393
Secondary	1,05 [0,69-1,62]	0,431
University	0,957 [0,57-1,60]	0,492
Don't know	1	
You live with		
Alone	0,99 [0,94-0,99]	0,685
Two parents	0,86 [0,57-1,30]	0,273
Single parent	1,27 [0,618-2,35]	0,337
Other	1	
Pocket money		
No	1	
Yes	**180 [1,02-3,17]**	**0,146**

Single parent	139	6,7
Other family members	197	9,5
Pocket money		
No	370	17,8
Yes	1709	82,2

Table 2: Prevalence of drug use by socio-demographic characteristics

Environmental variables	Odd Ratio Bruts IC 95%	P value
Parents who use drugs	**6,75 [5,69-8,01]**	**0,000**
Friends who use drugs	**1,69 [1,43-1,98]**	**0,000**
History of drug use	**52,73 [33,92-81,99]**	**0,000**

Table 3: Drug use according to environmental variables and drug use history

Data on drug use
Type of drug

Solvents or inhalants were the most used at 25.81%, followed by tramadol at 24.19%.

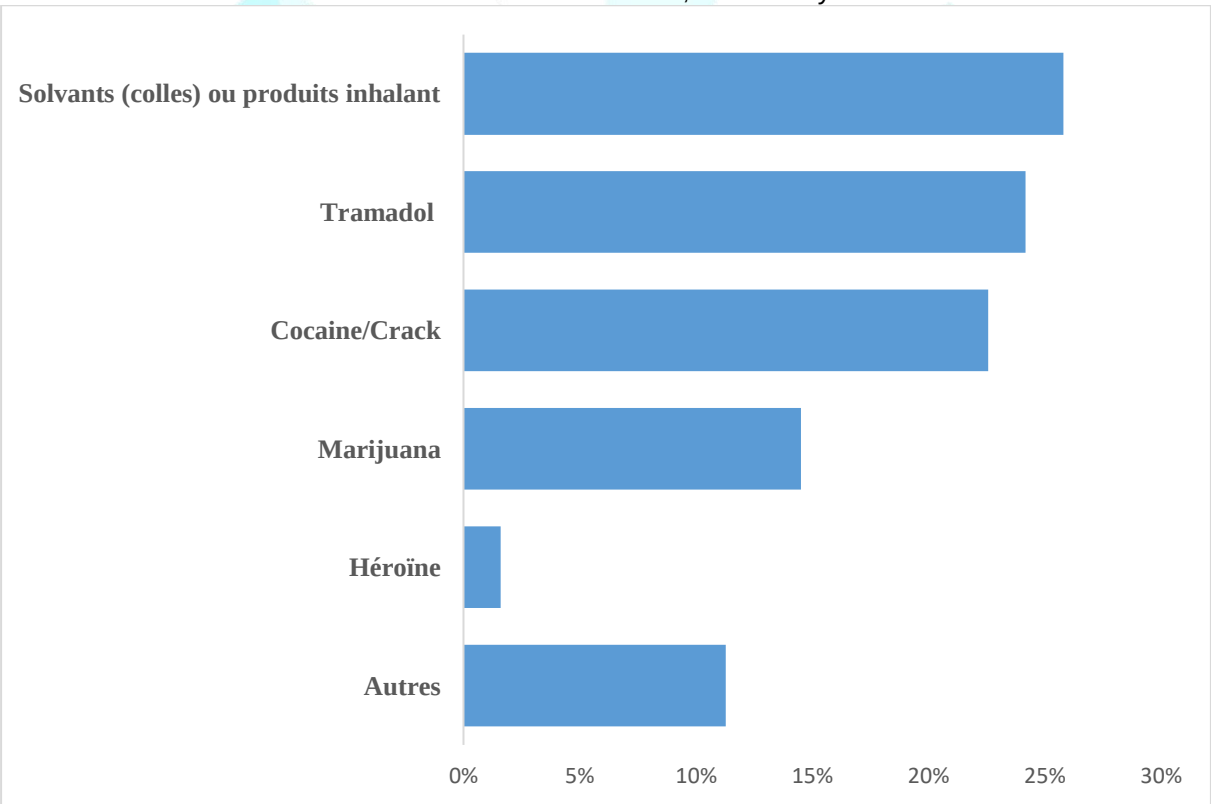

Figure 1: The prevalence of various types of drug use.

Table 4: Explanatory variables are independently associated with drug use among students

Variables	Odd Ratio ajustés IC 95%	P value
Age		
[12-15[years	1	
[15-20[years	0,70[0,40-1,23]	0,224
≥ 20 years	1,29[0,11-14,12]	0,830
Gender		

Female	1	
Male	**2,52[1,54-4,12]**	**0,001**
Class	1,08[0,51-2,27]	0,829
Father high school level	1,73[0,93-3,21]	0,080
Pocket money	**2,15[1,07-4,61]**	**0,047**
Environmental		
Parents drug status	0,57[0,76-1,07]	0,998
Friends drug status	0,12[0,19-2,72]	0,998
History of use	**64,11[38,51-106,73]**	**0,000**

In our study, the prevalence of drug use was 6.11% in public and private schools in the city of Ouagadougou. A similar study conducted in 2011 by Nikièma et al. revealed a prevalence of 1.73% among first-cycle students in the city of Ouagadougou (Nikièma et al., 2011). This shows that drug use in schools is a growing phenomenon. Several factors could explain this situation.

First, curiosity would be the first reason that justifies the use of psychoactive substances in adolescents (Michel et al., 2001). Indeed, adolescence is a stage of life that is marked by violence, brutality, and the desire to discover new things (Huerre, 2001). Young people, like adolescents, are constantly looking for strategies to experience pleasure or avoid suffering. In our environment, certain drugs such as cannabis or cocaine are substances that cause intense sensory changes such as euphoria, calming, laughter, or ecstasy (Goramzo, 2002). In their quest for pleasure or well-being, young people and adolescents will naturally be tempted to discover or try these substances, which may constitute a risk factor (Kuendig et al., 2002; Mohand & Terrani, n.d.; Varescon et al., 1997).

Then, still under the factors that can explain the resurgence of the drug phenomenon, we can note the case of bad company (Horta et al., 2018; Nikièma et al., 2011). Adolescents are exposed to the influence of those around them. As they become increasingly independent, they develop personal relationships with their peers, whose behavior can have a negative impact on their habits. In this way, he may adopt bad habits by using drugs in contact with someone who does (Nikièma et al., 2011). It must be recognized that the school environment, once perceived as a setting conducive to guidance and growth, has become a risk factor. This is justified by the fact that in addition to poor attendance, drugs are sold there and especially in public schools (Pereira et al., 2016). In addition, it is worth noting that more and more young people are integrating small clans into their environment, commonly called headquarters (HQ). These environments can constitute environments of the depravity of morals and drug consumption (TASSOU, 2011).

On the other hand, easy access could be a factor justifying the rise of the drug use phenomenon (Fawzi, 2011). Accessibility is the main way in which adolescents encounter drugs and then experiment with them through consumption. This easy access could be explained by the high availability of certain drugs, such as cannabis (El Omari & Toufiq, 2008). This high availability of cannabis is not only the result of fraudulent imports but also of the fact that cannabis is clandestinely cultivated in all regions of Burkina Faso for local consumption (La situation des drogues au Burkina Faso, n.d.). This reality favors its availability and easy access to any individual. Tramadol could also be cited as a drug that is easily accessible. This accessibility is facilitated by the possibility of obtaining it illegally without a prescription from individuals on the street (Fawzi, 2011).

It should also be noted that the parent-child relationship is not a negligible aspect in determining the factors that explain the growing nature of the phenomenon. Indeed, it can also play an important role in children's risk behavior (Bernard et al., n.d.; Guédeney & Dugravier, 2006). Generally absent or very busy with their daily activities, parents do not spend enough time with their children, resulting in a lack of communication (Kabore et al., 2019). The child, who often needs to confide in someone for his or her personal problems, will turn to other sources of information and advice in the absence of parental attention, which can be potential risk factors when they are not reliable.

Finally, we also have the media (Morello et al., 2017a). Today, with new information and communication technologies, access to information of all kinds is facilitated. While television and, especially, the internet have their uses, they are also sources of abuse for young people. Young people can exploit them for purposes that deviate from the values advocated at school and in the family. As a result, they may lack discernment in selecting and analyzing information and messages conveyed to them, leading them to engage in risky behaviors (Ministry of Economy, Finance, and Development, 2016 National State of the Population Report, June 2017. p. 1-84:30; Google search, n.d.). It is in this context that it is argued that with the development of the internet, the child has access to other channels of information such as social networks, movies, and video games, which may convey or indirectly advertise narcotics (Morello et al., 2017a). This can contribute to an increased prevalence of drug use.

Drug use among students could lead to abuse and addiction, with considerable social consequences ranging from failure to dropping out of school, as well as serious criminality (Mohand & Terranti, n.d.; Nikièma et al., 2011). There is also risky sexual behavior (Essomba et al., 2013). It would therefore be desirable for psychiatric programs to enable students to become aware of the extent of the phenomenon, to know the risks, to adopt preventive behaviors, and to be able to seek support when the circumstances lend themselves to it**.**

According to the International Narcotics Control Board, the prevalence of cannabis use was estimated in 2015 to be 7.5% in Africa for people over the age of 14 (Mvolye, n.d.). Another study by Madu and Matla in South Africa reported 12% (Madu & Matla, 2003). There are several reasons for this difference. First, it can be explained by the difference in the study setting. Second, the sampling was done in a stratified cluster design. Finally, the small sample size of only 435 students may be a possible explanation for this difference.

Types of drugs

Solvents or inhalants

Our study showed that solvents or inhalants (dissolutions, essences, glues) had a prevalence of 25.81% of students using the drug, which is equivalent to 1.57% of all students included in the study. It is the most used drug by students.

This reality could be explained not only by the affordable cost of these substances but also by their wide availability. As an illustration, these substances are available from street children, carpenters, or even shoe manufacturers at affordable costs (Obot, 2016). This situation implicitly contributes to easy access for youth. Secondly, the ease of their consumption could explain this fact. These are substances that are easily sniffed from their container, snorted through a soaked piece of cloth, or inhaled from a plastic bag (Obot, 2016). These modes of consumption are convenient and easy, which could be a risk factor for solvent abuse. Solvent abuse, just like most drugs, generally has repercussions both academically in particular and in society in general. These include absenteeism, poor performance, criminal behavior, encouragement to use other drugs, difficulty integrating into society, loss of self-confidence, and suicidal tendencies (Aldworth, 2009; Baydala et al., 2010; Kozel et al., 1995). For girls, the repercussions can include menstrual disorders, preeclampsia, and spontaneous abortions (Baydala et al., 2010; Jones & Balster, 1998).

A study conducted in Canada in 2004 by the Institut de la Statistique de Québec on drug use among high school students indicated a prevalence of 1.9% for solvent use (Brochu & Orsi, 2008). These results are like those of our study. In the United States, a study conducted by the National Institute on Drug Abuse and Annual Monitoring at the University of Michigan showed a prevalence of inhalant use among 12th graders (first grade) at 11.1% (Williams et al., 2007). This high prevalence compared to our study

could be explained by the fact that in the United States the study focused only on one class, unlike ours, which looked at both the undergraduate and graduate levels.

Tramadol

In our study, the prevalence of tramadol use was 24.19% among the students who use the drug, or 1.48% of all students included in the study. It is the second most abused drug after solvents or inhalants.

This prevalence could be related to the easy access due to fraudulent imports within the country, but also to the abusive and illegal transactions that make its cost affordable (Fawzi, 2011). Indeed, each drug must obtain a Marketing Authorization (MA) issued by a health authority that guarantees its safety, quality, and effectiveness. Unfortunately, it has been observed that street vendors of pharmaceutical products commonly called "pharmacies on the ground" hold tramadol that is poorly preserved and whose origin and effectiveness are unknown (Moussa, 2010). This could pose a danger to youth.

It is also worth noting that some youth have prejudices about tramadol. Most of them stipulate that tramadol would have properties that would allow them to achieve certain feats, such as staying awake longer to study or achieving certain performances in sports disciplines (Lord et al., 2011). All this may contribute to increasing its consumption among youth and adolescents.

Tramadol acquired illegally without a medical prescription through street vendors or kiosks presents several dangers that can lead to public health problems. Young people abuse it to the point of becoming physiologically and psychologically dependent on it (Mohand & Terranti, n.d.). Tramadol abuse can lead to the occurrence of recurrent epileptogenic seizures (Jovanović-Čupić et al., 2006). Furthermore, cognitive functions may be harmed as a result of tramadol use. This may include language and concentration disorders or temporospatial disorientation (Bassiony et al., 2017). In the school setting, tramadol abuse, like all other drugs, can lead to academic failure, poor performance, absenteeism, or dropping out of school (Aldworth, 2009; Baydala et al., 2010; Kozel et al., 1995).

Several similar studies have been conducted on tramadol. In 2017, in Nigeria's Oyo State, a study on substance abuse was conducted by Idowu et al. In this study, it was found that the prevalence of tramadol use was 4.8% (Idowu et al., 2018). This higher prevalence than ours could be explained by the fact that the study involved only public facilities with a sample size of 249 participants. According to Bassiony et al. (2015), the prevalence was 8.8% in 2013 in a study conducted in the city of Zagazig, Egypt (Bassiony et al., 2015). This difference could be due to the fact that the sampling was done in a random but systematic way so that the male gender was more representative (72.5%). In addition, only public institutions were involved in their study. Also, it is important to note that in this study, a urine test was included, which allowed for more reliable results compared to the self-administered questionnaire.

Socio-demographic variables

Gender

Our study showed that male students had a higher risk of drug use than their female peers (OR = 2.52; CI [1.54-4.12]; p = 0.001). This difference in drug use between the two sexes could be explained by the fact that, from a very young age, children will have gender-specific roles and behaviors that are influenced by the family. Thus, the girl will quickly be associated with housework, while the boy has much more freedom and is allowed to play with his friends (Nikièma et al., 2011). This freedom he enjoys is not without consequences because it will necessarily expose him to all sorts of risks, including the bad company that could lead him to use drugs (Horta et al., 2018). Drug use among male students in the city of Ouagadougou can be a source of academic failure and instability in relationships (Aldworth, 2009; Baydala et al., 2010; Kozel et al., 1995). The boy also risks psychosis, suicide, and violent acts (United Nations Office on Drugs and Crime, "World Drug Report 2012," Vienna: United Nations Office on Drugs and Crime; 2012 - Google search, n.d.). Drug addiction may also lead to infertility, albeit temporarily (Bouteiller & Biver, n.d.).

Many studies agree that drug use is higher among boys than among girls, both in society in general and in schools in particular. For example, Nikièma et al. in Burkina Faso found a prevalence of cannabis use

of 2.40% among boys versus 1.16% among girls (Nikièma et al., 2011). In South Africa, in the city of Pietersburg, a study conducted by Madu and Matla among students aged 15 to 19 years also showed that boys used twice as much illicit drugs, i.e., a prevalence of 25%, compared to 12.5% for girls (Madu & Matla, 2003). These studies, like ours, show the extent of the phenomenon and call for awareness in order to seek preventive measures.

Pocket Money

In our study, spending money was associated with drug use. Spending money doubled the risk of drug use (OR = 2.15; CI [1.07-4.61]; p = 0.047). This is an issue that deserves our attention. One reason for this could be a lack of financial education. Pocket money is given to the child for a specific purpose. They may often need to make small gifts to their family, especially their parents, but above all, this money allows them to better manage their expenses in order to gradually lead them to financial autonomy (Barnet-Verzat & Wolff, 2001). Many children do not have enough knowledge about financial management to avoid misuse (King'ori et al., 2014). Therefore, considering the availability, accessibility, and cheaper nature of some drugs, having pocket money for a child could be a risk factor for them (Obot, 2016).

In our context, the reality of the facts could lead to this situation. Indeed, during the school year, parents give their children pocket money for catering purposes during their recess time. This money could be used for other purposes, such as obtaining drugs (McCrystal et al., 2006). To alleviate this situation, the child should be allowed to eat breakfast before leaving for school. Then, adapted canteens should be instituted in schools so that the child can subscribe for breaks and lunch throughout the year (Krouélé, n.d.). This system should be favored over the unhygienic sale of food in schoolyards. It is also important to note that lack of time leads parents to give money to children instead of breakfast, which could be misused (Chevalier et al., 2005). The public health consequences are not negligible. Apart from the risk of drug use, pocket money can expose children to risky behaviors such as delinquency, violence, and gambling addiction (Chevalier et al., 2005).

For example, McCrystal et al. (2006) in Ireland reported in a study of adolescents in the Belfast area that receiving pocket money was a factor associated with higher levels of drug use. In 2018, in Ethiopia, a similar school-based study by Mekuria et al. found that respondents who had a lot of pocket money were more likely to use drugs than those who had little or no pocket money (Mekuria et al., 2019). In Saudi Arabia, al-Musa and Al-Mutashri also claimed that students from families with higher monthly incomes generally received higher daily allowances that allowed them to purchase cigarettes or illicit drugs, a privilege that was lacking for students whose families had low incomes (Al-Musa & Al-Montashri, 2016). All these studies are unanimous that spending money is a risk factor for drug use. Unless the problems associated with the use of pocket money are fully identified and isolated, the scourge will always remain, despite the availability of many prevention programs.

History of drug use

In our study, students who had used drugs in the past were highly likely to use drugs again. Thus, history was a factor statistically associated with drug use among students (OR = 64.11; CI [38.51–106.73]; p=0.000). This would be explained by the fact that drugs lead to dependence or addiction (Luyet et al., 2014). In fact, according to the WHO, drugs lead to two types of dependence, namely, psychic, and physiological. Psychological dependence is a mental state manifested by an impulse that requires the periodic or continuous use of a drug in order to create pleasure, while physiological dependence corresponds to a requirement of the body (Mohand & Terranti, n.d.). Any person who uses drugs for the first time will be tempted to do so again.

First contact with drugs can have several consequences, especially in terms of public health. Apart from the risk of dependence or addiction, drugs can disrupt a teenager's life and hinder his or her entire future. In doing so, drug use can lead to total academic failure (Mohand & Terrantı, n.d.; Nikièma et al., 2011), a lack of both mental and physical well-being, not to mention the financial burden on the family, which is often called upon to bear the costs of care in the event of addiction (Kabore et al., 2019).

Speaking of psychotropic drug use in schools in Burkina Faso in 2011, Nikièma et al. stated that 26.73% of students who used cannabis had a history of use (Nikièma et al., 2011). This analysis corroborates our study.

CONCLUSION

Drug use is a concern in both developing and developed countries. Young people are more likely to use drugs than the general population, often with serious implications such as school failure or dropout and risky behavior. Many studies have been done to address this situation, but very few in our country. It is from this perspective that this study was conducted to determine the prevalence and factors associated with drug use in schools in the city of Ouagadougou. Male gender, pocket money, and previous drug use were the variables statistically associated with drug use among students. Taking these different elements into account in preventive strategies at both the individual and collective levels could significantly reduce drug use among students.

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