Psychoactive Substance Use among Medical and Pharmacy Students, University of Kufa 2019

Karrar Mohammed Hasan Al-Gburi[1], Ali Mohammed Abd Alridha[1], Roaa Khalid Mohsin Al-Murshedi[2], Abulfadhel Jaber Neamah AL-Shaibani[3]

[1]Assist. Lecturer, Department of Clinical Pharmacy, Faculty of Pharmacy, University of Kufa, Najaf, Iraq, [2]Lecturer, Department of Clinical Pharmacy, Faculty of Pharmacy, University of Kufa, Najaf, Iraq, [3]Senior, Dr., Ministry of Health–Al-Asatetha Primary Healthcare Center, Babil, Iraq, [4]Assist. Lecturer, Department of Clinical Pharmaceutics, Faculty of Pharmacy, University of Kufa, Najaf, Iraq

Abstract

Background: Medical and pharmacy students are at greater risk of using psychoactive substances. Iraqi medical and health science students are at great danger of using these psychoactive substances and this may be attributed to different reasons, e.g. stressful life.

Objectives: Hence, this study was designed to identify the pattern and to investigate the triggering factors associated with psychoactive substance use among medical and pharmacy students, University of Kufa.

Subjects and Method: A descriptive cross-sectional institutional-based study was conducted from the period of March to June 2019 at the University of Kufa, in which students were recruited in multistage fashion. Randomly selected students were asked to fill in an online questionnaire prepared based on different standard questionnaires and previous studies. Pearson's chi-square test (X^2) and Fisher-Exact test were used to find the association between categorical variables. A p-value of ≤ 0.05 was considered significant.

Results: Overall, 129 students participated in this study. The mean age of the students was (21.89 ± 2.76). Overall, seven percent of the participants have confessed that they are tobacco smokers. In terms of waterpipe tobacco smoking, 10 out of 129 (7.8%) of the students were hookah smoker and *only 2 students (1.6 %) were e-cigarette smokers.* Most of the students stated that multiple reasons behind their tobacco smoking. Nearly one-third of participants had quarrels or arguments. While no one had trouble with the police or made something who regretted later. In general, most of the students acknowledged that the use of psychoactive substances carries a risk. In terms of the triggering factors, all factors studied in this study were associated insignificantly with tobacco smoking among the target population (p-value > 0.05), except gender, if they have a family member who smokes or friends who drink alcohol and the age at initiation (p-value < 0.05). No pattern of alcohol consumption and prescription drug among the participants have been identified.

Keywords: *Medical Students, Psychoactive substance use, e-cigarette, hookah, Pharmacy students.*

Introduction

Psychoactive substances are a group of drugs, which has the capability of changing both internal perceived mental states, e.g. mood, and external observable activities, such as behaviors. Using these psychoactive substances is of major public health issue as it can affect both the health and well-being of millions of people. It has been estimated that more than 275 million people in 2016 had used psychoactive drugs at least once in the previous year, which represents 5.6 percent of the whole people aged between 15-64 years in the world[1]. Psychoactive substance use is associated with an increase in the risk of morbidity and mortality, psychological and interpersonal issues, school performance difficulties, difficulties in establishing a satisfactory relationship, engaging in unwanted and unprotected sex, crime, accidents, and injuries[2,3].

Several consequences have been reported to be

attributed to sychoactive substance use. For instance, studies have linked poor academic performances with substance use or misuse. It has been found that substance use (current smoking, chewing khat at least weekly, drinking alcohol daily, and having an intimate friend who uses substance) was significantly and negatively associated with students' academic performance[4]. Furthermore, Olivier Marie and Ulf Zölitz have demonstrated that academic performance was increased among students who were restricted to buy cannabis[5]. Similar findings were reported in other studies[6-9]. More significantly, psychoactive substances use is one of the modifiable and important risk factors for suicide attempts[10]. It was reported that psychoactive substance use was responsible for one in five suicide attempts in 2012 (175000 out of 800 000)[11]. Furthermore, in one meta-analysis study, which identified a total of 12,413 references and included 43 studies with 870,967 participants, there was a significant association between substance use disorder and suicidal ideation: OR 2.04 (95% CI: 1.59, 2.50; $I2$ = 88.8%, 16 studies); suicide attempt OR 2.49 (95% CI: 2.00, 2.98; $I2$ = 94.3%, 24 studies) and suicide death OR 1.49 (95% CI: 0.97, 2.00; $I2$ = 82.7%, 7 studies)[12]. Iraqi medical and pharmacy students are undoubtedly at greater risk of using psychoactive substances. This may be attributed to different reasons, for example many conflicts Iraq has faced in recent years and availability of psychoactive substances in the shops, markets, and drug dealers. Despite that, only a few studies have been conducted to address this rising issue in the general population and more specifically among students[15,16]. Hence, this study was designed to identify the pattern of psychoactive substance use among medical and pharmacy students, University of Kufa and to investigate the triggering factors associated with psychoactive substance use among medical and pharmacy students.

Subjects and Method

Study design and settings: A descriptive cross-sectional institutional-based study was conducted from the period of March to June 2019 at the University of Kufa, in which students were recruited in multistage fashion. In the first steps, colleges were considered strata (stratified sampling). While in the second step, students were selected randomly and were fully surveyed. To make students trust the investigators before distributing the questionnaires, an illustration was given to the participants about the purpose of the current study, anonymity of the questionnaires, and the voluntary nature of participation in the survey. Furthermore, students were told not to disclose or fill in any personal information in the questionnaire.

Data collection tool: Randomly selected students were asked to fill in an online questionnaire, which was prepared and test before conducting this study. This questionnaire had been prepared based on a different standard questionnaire and previous studies, such as The Global Assessment Program on Drug Abuse Toolkit Module 3: Conducting School Surveys on Drug Abuse[9,13,14,17,18]. The questionnaire was started asking the students if they are given consent to participate in the current study. The following sections were the demographic data including, age, gender, marital status, residency, mother's educations, father's education, relationship to parents and family, and the department of study.

Data analysis: Statistical analysis was carried out using Statistical Package for Social Sciences version 24. Categorical variables were presented as frequencies and percentages. Continuous variables were presented as (Means ± SD). Pearson's chi-square test (X^2) and Fisher-Exact test were used to find the association between categorical variables. A p-value of ≤ 0.05 was considered significant.

Results

Table 1: Reasons for tobacco smoking (n =9)

Reasons	Number (%)	
Peer Pressure	Yes	5(55.6)
	No	4(44.4)
Skipping life problems	Yes	5(55.6)
	No	4(44.4)
Psychological stress	Yes	5(55.6)
	No	4(44.4)
Academic performance difficulties	Yes	5(55.6)
	No	4(44.4)
Entertainments	Yes	5(55.6)
	No	4(44.4)
Emotional reasons	Yes	5(55.6)
	No	4(44.4)
Family disputes	Yes	4(44.4)
	No	5(55.6)
Multiple reasons	No reason	2 (22.2 %)
	Multiple	7 (77.8 %)

Perception of participants about psychoactive substance use: In general, most of the students acknowledged that the use of psychoactive substances carries risks. For instance, students believe that smoking occasionally or regularly has an impact on their lives and they think this risk raise with regular smoking (table 3). Similarly, students consider have one or two drinks nearly every day or have four or five drinks in a row per weekend carry moderate to great risk (31.8 % and 37.2 % and 26.4 and 46.5 respectively), yet the majority (55.0 %) of them acknowledged that have four or five drinks in a row per every day carry a great risk. Regarding misusing marijuana or hashish, most of the students consider using these substances once or twice or using it regularly carry a moderate to great risk.

Table 2. Perception of participants about psychoactive substance use (n=129).

Variables	No risk	Slight Risk	Moderate risk	Great risk	Don't know
Smoke cigarettes occasionally	15(11.6)	39(30.2)	39(30.2)	28(21.7)	8(6.2)
Smoke one or more packs of cigarettes per day	5(3.9)	16(12.4)	43(33.3)	57(44.2)	8(6.4)
Have one or two drinks nearly every day	9(7.0)	16(12.4)	41(31.8)	48(37.2)	15(11.6)
Have four or five drinks in a row nearly every day	7(5.4)	7(5.4)	29(22.5)	71(55.0)	15(11.6)
Have five or more drinks in a row each weekend	5(3.9)	11(8.4)	34(26.4)	60(46.5)	19(14.7)
Try marijuana or hashish (cannabis, pot, grass) once or twice	9(7.0)	15(11.6)	28(21.7)	50(38.8)	27(20.9)
Smoke marijuana or hashish regularly	7(5.4)	12(9.3)	27(20.9)	59(45.7)	24(18.6)
Try an amphetamine once or twice	11(8.5)	32(24.8)	35(27.1)	27(20.9)	24(18.6)
Take amphetamines regularly	9(7.0)	11(8.5)	38(29.5)	46(35.7)	25(19.4)

Consequences of tobacco smoking: In terms of the consequences, which may have happened because of tobacco smoking, nearly one-third of participants had quarrels or arguments. While no one had trouble with the police or made something who regretted later. The main consequences of tobacco smoking are illustrated in table 3.

Table 3: The main consequences of tobacco smoking among the participants (n = 9)

Consequences	Yes, because of my smoking N(%)
Quarrel or argument	3(33.3)
Scuffle or fight	1(11.1)
Accident or injury	1(11.1)
Loss of money or other valuable items	2(22.2)
Problems in your relationship with your parents	2(22.2)
Problems in your relationship with your teachers	1(11.1)
Performed poorly at school or work	0(0.0)
Trouble with police	1(11.1)
Done something that you regretted later	0(0)

Triggering factors associated with exposure to smoking: In terms of the triggering factors, all of these factors are associated insignificantly with tobacco smoking among the target population (p-value > 0.05), except gender, if they have a family member who smokes or a friend who drinks alcohol and the age at initiation of this tobacco smoking (p-value < 0.05). Association between triggering factors and illicit drug use are illustrated in table 4.

Table 4: Association between triggering factors and tobacco smoking (n =129)

Triggering Factors	N (%)	Smoking		χ^2	P-value
		Yes N (%)	No N (%)		
Gender					
Female	59(100.0)	9(3.34)	50(96.66)		0.001*f
Male	70(100.0)	0(4.00)	70(96.00)		
Marital Status					
Single	113(100.0)	7(5.77)	106(94.23)		0.309f
Married	16(100.0)	2(3.23)	14(96.77)		
Residency					
Urban	114(100.0)	8(3.40)	106(94.60)		0.719f
Rural	15(100.0)	1(2.87)	14(97.13)		
Relationship to parent and family					
Satisfactory	119(100.0)	110(10.69)	9(89.31)		0.472f
Not satisfactory	10(100.0)	0(2.11)	1(97.89)		
Department					
Medicine	44(100.0)	4(6.64)	40(93.36)		0489f
Pharmacy	633(100.0)	5(2.10)	80(97.9)		
Family member smokes					
Yes	57(100.0)	7(7.19)	50(92.81)		0.043*f
No	72(100.0)	2(2.67)	70(97.33)		
Family member drinks					
Yes	2(100.0)	1(6.52)	1(93.48)		0.135f
No	127(100.0)	8(3.20)	119(96.8)		
Family member misuses drugs					
Yes	14(100)	0(6.85)	14(93.15)		0.343f
No	115(100)	9(2.70)	106(97.30)		
Friend smokes					
Yes	55(100.0)	7(10.81)	67(89.19)		0.176f
No	74(100.0)	2(2.31)	53(97.69)		
Friend drinks alcohol					
Yes	12(100.0)	3(6.13)	9(93.87)		0.038*f
No	117(100.0)	6(2.23)	111(97.77)		
Friends misuse drugs					
Yes	19(100.0)	1(63.16)	18(36.84)		0.606f
No	110(100.0)	8(2.10)	102(97.90)		
Age at initiation of smoking					
Not smoker	113	0	113		<0.001*f
15-18	1	1	0		
> 18	15	8	7		

*p-value ≤ 0.05 was significant. f: Fisher-exact test.

Discussion

The objectives of this study were to identify the pattern and the triggering factors of psychoactive substance use among medicine and pharmacy students at the University of Kufa. The prevalence of current tobacco cigarette smoking was 7.0%, where all of the smokers were female. This prevalence of cigarette smoking is lower than found in Hawler University, Kurdistan region, which was 12.3% and lower among the University of Karbala students in 2005, which was

10.5% (19,20). Furthermore, this current smoking prevalence among medical and pharmacy students when compared to Arabic and adjacent countries is lower than that found in Sudan (The National Ribat University, 10%), Lebanon (7 different universities, 25.8%), Egypt (Tanta University, 12%) and Saudi Arabia (King Fahad Medical City in Riyadh, 17.6%) (21–24) The difference in the prevalence may be attributed to different universities, hence different regulations and policies, and different ways of data collection (online versus handwritten questionnaire).

Moreover, the current study has investigated the ongoing rise issue among the Iraqi community, which is the water pipe (hookah) and e-cigarette tobacco smoking. The prevalence of hookah smoking was 7.8 %, while e-cigarette prevalence was 1.6 %. This hookah smoking is lower than found among medical students in Saudi Arabia (12.6 %), Syria (23.5 %), London (11 %), and Turkey (28.6 %) (23,25,26). This finding highlights the rise of hookah smoking among medical students, and this may be attributed to the wrong belief that hookah is less harming than tobacco cigarette smoking and the cheap cost of this sort of tobacco smoking. Another rising issue among Iraqi medical and medical students is the use of the e-cigarette. The prevalence of e-cigarette tobacco smoking was 1.6 %, which is quite low percent and this could be attributed to the newer introduction of this type of smoking to the Iraqi markets and the high cost of these cigarettes. The use of e-cigarette is believed to be a route to cease cigarette smoking, yet studies have identified that using this form of tobacco smoking is a strong risk factor for current tobacco cigarette smoking among young adults.

Conclusion

Some pattern of tobacco smoking was identified and several factors play an essential role in this pattern. A larger study is warranted to address this highly risky issue.

Financial Disclosure: There is no financial disclosure.

Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Faculty of Pharmacy, Iraq and all experiments were carried out in accordance with approved guidelines.

References

1. World Drug Report. 2018.
2. Jordan CJ, Andersen SL. Sensitive periods of substance abuse: Early risk for the transition to dependence [Internet]. Vol. 25, Developmental Cognitive Neuroscience. Elsevier; 2017; 29–44.
3. Odgers CL, Caspi A, Nagin DS, Piquero AR, Slutske WS, Milne BJ, et al. Is it important to prevent early exposure to drugs and alcohol among adolescents? Psychol Sci [Internet]. 2008;19(10):1037–44.
4. Mekonen T, Fekadu W, Mekonnen TC, Workie SB. Substance Use as a Strong Predictor of Poor Academic Achievement among University Students. Psychiatry J. 2017;2017:1–9.
5. Marie O, Zölitz U. "High" achievers? Cannabis access and academic performance. Rev Econ Stud. 2017;84(3):1210–37.
6. Osain MW, Alekseevic VP. The effect of alcohol use on academic performance of university students. Ann Gen Psychiatry. 2010;9(S1):2010.
7. Cox RG, Zhang L, Johnson WD, Bender DR. Academic performance and substance use: Findings from a state survey of public high school students. J Sch Health. 2007;
8. Birhanu AM, Bisetegn TA, Woldeyohannes SM. High prevalence of substance use and associated factors among high school adolescents in Woreta Town, Northwest Ethiopia: Multi-domain factor analysis. BMC Public Health. 2014;14(1).
9. Bakar C, Gũndogar D, Karaman HIO, Maral I. Prevalence and related risk factors of tobacco, alcohol and illicit substance use among university students. Eur J Psychiatry. 2013;
10. Ayala EE, Roseman D, Winseman JS, Mason HRC. Prevalence, perceptions, and consequences of substance use in medical students. Med Educ Online. 2017;22(1).
11. WHO | Addressing substance use and suicidal behaviours. WHO [Internet]. 2016 [cited 2019 Jun 28];
12. Poorolajal J, Haghtalab T, Farhadi M, Darvishi N. Substance use disorder and risk of suicidal ideation, suicide attempt and suicide death: A meta-analysis. J Public Heal (United Kingdom). 2016;38(3):e282–91.
13. Abbasi Ghahramanloo A, Fotouhi A, Zeraati H, Rahimi Movaghar A. Prescription Drugs, Alcohol,

and Illicit Substance Use and Their Correlations Among Medical Sciences Students in Iran. Int J High Risk Behav Addict. 2015;

14. Imran N, Haider II, Bhatti MR, Sohail A, Zafar M. Prevalence of Psychoactive Drug Use Among Medical Students in Lahore. Ann King Edward Med Univ. 2011;
15. Al-Murshedi R, Baiee H. Smoking and its correlates among secondary school students in Al-Hilla City 2018. Med J Babylon [Internet]. 2018;15(4):326–33.
16. Al-Gburi K, Al-Murshedi R, Abd Alridha AM, Baiee H. A cross-sectional study of epidemiological factors associated with drug use among secondary school students. J Subst Use. 2020;
17. Module T. Conducting School Surveys on Drug Abuse Global Assessment Programme on Drug Abuse (GAP) Conducting School Surveys on Drug Abuse
18. Chidozie Donald C. Psychoactive Substance Use Among Nigerian Students; Patterns and Sociodemographic Correlates. Am J Psychiatry Neurosci. 2017;5(2):22.
19. Mahmood S, Salih A bakir, Bilal K. Prevalence of Cigarette Smoking among Hawler Medical University Students. Zanco J Med Sci (Zanco J Med Sci) [Internet]. 2009;13(6):1–6.
20. Mousawi A Al. The Prevalence of Smoking among Karbala/Iraq University Students in Iraq in 2005. Tob Use Insights [Internet]. 2014;7:TUI.S12238.
21. Abdalla A, Hassan H, Mustafa A, Al-Kaabba A, Saeed A. Prevalence and associated factors of cigarette smoking among medical students at King Fahad Medical City in Riyadh of Saudi Arabia. J Fam Community Med. 2011;
22. Elamin OEO, Elamin SEO, Dafalla BAA, El-Amin ME, Elsiddig AA. Cigarette smoking among medical students in The National Ribat University, Sudan. Sudan J Paediatr [Internet]. 2013;13(2):45–51.
23. Chidiac A, Tamim H, Kanso M, Tfayli A. Smoking among Lebanese medical students: Prevalence and attitudes. Ann Thorac Med. 2016;
24. Abu-elenin MM, Omar Atalla AA, El-Salamy R. Cigarette smoking among medical students and some associated risk factors. Tanta Med J [Internet]. 2018;45(4):206.