

ORIGINAL ARTICLE

SUBSTANCE ABUSE AMONG STUDENTS OF A PUBLIC SECTOR
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Background: Substance use affects all aspects of life of an individual. Males typically have higher tendency. Youth is particularly at risk. Curiosity, peer pressure, lack of knowledge and easy availability are major risk factors. Increasing trends of substance use are seen in medical students despite the fact that they are well aware of adverse effects of addiction. Study of consequences faced by medical students due to substance use is the main aim of research so these effects can be identified early and help can be provided in time. **Methods:** This was a descriptive cross-sectional study conducted among the students of a public sector Medical University situated in one of the main cities of Pakistan from 15th January to 15th April 2023. A total of 1038 students were recruited to the study using non-probability convenient sampling method. Data were entered & analyzed using SPSS version 26. **Results:** Only 1.4% (n=15) admitted substance use when direct question was asked and 2.02% (n=21) admitted when asked indirectly. 3.6% (n=38) experienced withdrawal symptoms. Feelings of guilt were observed in 18.5% (n=191), majority of which were first year students (n=51). Families of 3.3% (n=34) were worried due to substance use disorder. 0.3% (n=3) admitted being involved in criminal activity to obtain drugs of abuse. **Conclusions:** A considerable fraction of medical students were involved in substance use and majority of them faced consequences like medical effects, family issues and being involved in illegal activities.

Keywords: Substance use disorder; Addiction; withdrawal symptoms; Youth; Professional education

Citation: Imtiaz K, Ahmad A, Rashid MA, Haider N, Khan AA. Substance abuse among students of a public sector medical university. J Ayub Med Coll Abbottabad 2024;36(4 Suppl 1):849–54.

DOI: 10.55519/JAMC-S4-12728

INTRODUCTION

Substance use refers to the pattern of using drugs in amounts that are harmful and can alter an individual's mood and perception. It affects a person's behavior in all aspects of life and is increasing worldwide. A significant number of individuals in both the United States and Pakistan are suffering from substance use disorders. According to studies, 36 million people were affected by drug abuse in 2021. In Pakistan, around 7.6 million people struggle with drug addiction. In recent years, the incidence of drug addiction has risen due to the COVID-19 pandemic, with an increase in the sale of illicit drugs reported since the pandemic began. Substance use disorder developed in 13 percent of those who had used drugs at least once.¹

The incidence of drug addiction is higher among males than females.² One study found that 43.5 percent of participants believed that a single instance of substance use for a joyful experience could lead to a lifetime of addiction. Better education can help prevent drug abuse, which remains highly prevalent in society.³ Statistics show that personality changes occur in 67 percent of participants in a

study⁴, while personality disorders—especially antisocial personality disorder—and a lack of family support are significant risk factors for the development of drug addiction^{5,6}.

A few studies have been conducted in Pakistan to determine the prevalence of drug addiction and its risk factors, particularly focusing on the youth. However, there remains a significant gap in the literature on this topic. This research focuses on the issues and challenges faced by youth in relation to drug addiction and the extent to which substance abuse has penetrated universities. Students, as an important part of society, face substantial stress due to academic pressures and difficult learning conditions in professional colleges, making them more vulnerable to addiction. This study specifically examines the major contributing factors that lead to drug addiction among medical university students, despite their awareness of the harmful effects of dangerous drugs.

As there are no documented studies in this indigenous setting, this research can help professionals and stakeholders identify and address the issue early on by assessing the situation and

recognizing the early effects of substance use disorders. This study will also raise awareness of the issue at the national level and may influence policy formation and implementation by the government. The objectives of this research were to determine the rate of illicit drug use among medical university students and to explore the consequences related to the practice of illicit drug use.

MATERIAL AND METHODS

This was a descriptive cross-sectional study conducted among the students of a public sector Medical University situated in one of the main cities of Pakistan from 15th January to 15th April 2023. A total of 1038 students were recruited to the study through non-probability convenient sampling technique. All those students studying in MBBS, BDS and BS programs in different medical fields were eligible to be included in the study. Those students who were chronically absent from the programs and those who were unwilling to give consent were excluded from the study.

The study began with ethical approval from the Institutional Ethical Review Committee. Students were asked to complete a structured questionnaire via a Google survey form. The form included an initial section on informed consent. Subsequent sections contained 15 questions related to areas such as the use of illicit drugs in the past, the biopsychosocial effects of drug use, and the incidence of observing drug-related activities on campus, aside from personal use. Students could respond with either "yes" or "no" to each question; however, during the analysis, a third response category—"not responded"—emerged.

Data were entered and analyzed using the Statistical Package for Social Sciences (SPSS) version 26. Percentages were calculated for all categorical variables, which were answered with "yes," "no," or "not responded" for each of the 15 items on the study questionnaire.

RESULTS

The study was conducted in a government medical university currently teaching MBBS, BDS and BS programs in medicine related fields. A total of 1038 students responded to the survey form.

Table 1 shows the responses related to the use of illicit drugs in the past. A majority of students denied using drugs for non-medical reasons when asked directly. Only 1.4% (n=15) admitted to having used illicit drugs in the past. Considering that this is a medical university in one of the most populous cities in Pakistan, this figure raises concerns. When asked about the use of multiple drugs, a larger number of

students reported abusing more than one drug. Thus, when asked indirectly, 2.02% (n=21) admitted to this behavior. The third question in the survey, which inquired about the compulsion to consume drugs, revealed that the drugs being consumed among students have a high addictive potential. This is evident as 12.3% (n=128) of the total participants stated that they are unable to stop using drugs when they want to. However, 77% (n=801) confirmed that they can control and limit their drug intake based on need and desire, suggesting that the drugs they use may not be highly addictive in nature and might have a medical justification (Table 1).

When documenting the side effects of drug abuse on health experienced by medical students, 2.5% (n=26) reported experiencing flashbacks or blackouts due to drug abuse, while 3.6% (n=38) suffered withdrawal symptoms, which are commonly experienced by drug addicts when refraining from drug use. Additionally, 1.7% (n=18) acknowledged experiencing medical problems as a result of their drug addiction, and 18.5% (n=191) reported feelings of guilt associated with their drug misuse. Among these, 51 students from the first year of MBBS, the highest number from any year or course, admitted feeling guilty, indicating that drug abuse is increasing among fresh college students and is strongly linked to guilt. Furthermore, 3.3% (n=34) said that their family is worried and often complains about their drug abuse habit, while 1.05% (n=11) admitted to neglecting their family because of their drug addiction. Overall, this data suggests that many students are confused by direct questions, and thus, they were more likely to confess their issues when asked in a different way (Table 2).

For assessment of impact of fellow medical students on developing the habits of drug use a few questions were asked from participants of survey. 3.2% (n=33) students admitted that they have been offered drug by their university fellows, 10.5% (n=109) said that they have met their fellow that uses drugs, 2.6% (n=27) have been offered for use by friends (see table 3 for details).

To have an idea about knowledge of students regarding supply of drugs, they were asked if they have ever met a person on campus supplying drugs to which 1.5% (n=16) responded in yes, 1.9% (n=20) acknowledged that they have observed person(s) supplying drugs in the premises of the university, and 0.3% (n=3) admitted to be engaged in criminal activities to obtain drugs (see table 4 for details). Table 4. Responses about the incidence of observing a drug related activity at the campus

Table-1: Responses of students about use of an illicit drug in past.

Have you used drugs other than those required for medical reasons?				
Class	Yes	No	Not responded	Total
1 st year MBBS	0	214	1	215
2 nd year MBBS	1	221	2	224
3 rd year MBBS	6	169	0	175
4 th year MBBS	5	197	2	204
5 th year MBBS	2	115	4	121
AHS	1	65	1	67
BDS	0	32	0	32
Total	15	1013	10	1038
Do you abuse more than one drug?				
Class	Yes	No	Not responded	Total
1 st year MBBS	6	198	11	215
2 nd year MBBS	6	210	8	224
3 rd year MBBS	3	167	5	175
4 th year MBBS	1	199	4	204
5 th year MBBS	0	115	6	121
AHS	4	61	2	67
BDS	1	29	2	32
Total	21	979	38	1038
Are you always able to stop using drugs when you want to?				
Class	Yes	No	Not responded	Total
1 st year MBBS	156	29	30	215
2 nd year MBBS	187	18	19	224
3 rd year MBBS	130	29	16	175
4 th year MBBS	156	28	20	204
5 th year MBBS	94	12	15	121
AHS	54	9	4	67
BDS	24	3	5	32
Total	801	128	109	1038

Table-2: Responses of students on biopsychosocial effects of drug used

Have you had blackouts or flashbacks a result of drug use?				
Class	Yes	No	Not responded	Total
1 st year MBBS	4	185	30	215
2 nd year MBBS	8	206	18	224
3 rd year MBBS	2	162	13	175
4 th year MBBS	6	191	13	204
5 th year MBBS	2	107	13	121
AHS	4	57	10	67
BDS	0	27	5	32
Total	26	935	102	1038
Have you ever experienced withdrawal symptoms (felt sick) when you stopped taking drugs?				
Class	Yes	No	Not responded	Total
1 st year MBBS	9	172	34	215
2 nd year MBBS	9	194	21	221
3 rd year MBBS	5	152	18	175
4 th year MBBS	8	183	13	204
5 th year MBBS	2	108	11	121
AHS	4	60	3	67
BDS	1	27	4	32
Total	38	896	104	1038
Have you had medical problems as a result of your drug use? (e.g. memory loss, hepatitis, convulsions, bleeding etc.)				
Class	Yes	No	Not responded	Total
1 st year MBBS	3	184	28	215
2 nd year MBBS	2	205	17	224
3 rd year MBBS	3	154	18	175
4 th year MBBS	6	187	11	204
5 th year MBBS	2	106	13	121
AHS	2	62	3	67
BDS	0	28	4	32
Total	18	926	94	1038

Do you ever feel bad or guilty about your drug use?				
Class	Yes	No	Not responded	Total
1 st year MBBS	51	181	46	215
2 nd year MBBS	48	150	26	224
3 rd year MBBS	29	124	22	175
4 th year MBBS	30	157	17	204
5 th year MBBS	9	97	15	121
AHS	19	44	4	67
BDS	5	20	7	32
Total	191	710	137	1038
Does your spouse (or parents) ever complain about your involvement with drugs?				
Class	Yes	No	Not responded	Total
1 st year MBBS	5	181	34	215
2 nd year MBBS	12	195	28	224
3 rd year MBBS	8	154	21	175
4 th year MBBS	4	191	13	204
5 th year MBBS	1	109	12	121
AHS	2	62	5	67
BDS	2	25	7	32
Total	34	917	120	1038
Have you neglected your family because of your use of drugs?				
Class	Yes	No	Not responded	Total
1 st year MBBS	1	186	28	215
2 nd year MBBS	4	204	16	224
3 rd year MBBS	2	157	16	175
4 th year MBBS	3	190	11	204
5 th year MBBS	0	110	11	121
AHS	0	63	4	67
BDS	1	27	5	32
Total	11	937	90	1038

Table-3: Responses of students about a drug being offered at the campus

Have you ever been offered drug use by university or hostel fellow?				
Class	Yes	No	Not responded	Total
1 st year MBBS	5	204	6	215
2 nd year MBBS	5	211	8	224
3 rd year MBBS	8	159	8	175
4 th year MBBS	9	191	4	204
5 th year MBBS	5	109	7	121
AHS	1	65	1	67
BDS	0	32	0	32
Total	33	971	34	1038
Have you ever been seen or met with student of FMU who is using drug?				
Class	Yes	No	Not responded	Total
1 st year MBBS	15	194	6	215
2 nd year MBBS	26	191	7	224
3 rd year MBBS	22	148	5	175
4 th year MBBS	25	175	4	204
5 th year MBBS	15	102	4	121
AHS	4	62	1	67
BDS	2	30	0	32
Total	109	902	27	1038
Have you ever been offered to use drug by your friend?				
Class	Yes	No	Not responded	Total
1 st year MBBS	2	207	6	215
2 nd year MBBS	5	213	6	224
3 rd year MBBS	10	158	7	175
4 th year MBBS	5	195	4	204
5 th year MBBS	5	112	4	121
AHS	0	65	2	67
BDS	0	32	0	32
Total	27	982	29	1038

Have you ever met with person who supplies any kind of drug in the university?				
Class	Yes	No	Not responded	Total
1 st year MBBS	0	209	6	215
2 nd year MBBS	3	215	6	224
3 rd year MBBS	4	166	5	175
4 th year MBBS	5	196	3	204
5 th year MBBS	4	113	4	121
AHS	0	66	1	67
BDS	0	32	0	32
Total	16	997	25	1038
Have you ever observed any person who is supplying drug in the premises of the university?				
Class	Yes	No	Not responded	Total
1 st year MBBS	1	207	7	215
2 nd year MBBS	4	213	7	224
3 rd year MBBS	3	165	7	175
4 th year MBBS	7	193	4	204
5 th year MBBS	5	112	4	121
AHS	0	66	1	67
BDS	0	32	0	32
Total	20	998	30	1038
Have you engaged in illegal activities in order to obtain drugs?				
Class	Yes	No	Not responded	Total
1 st year MBBS	0	199	16	215
2 nd year MBBS	0	211	13	224
3 rd year MBBS	1	162	12	175
4 th year MBBS	1	195	9	204
5 th year MBBS	1	112	9	121
AHS	0	65	2	67
BDS	0	30	2	32
Total	3	974	63	1038

DISCUSSIONS

The study was conducted at a public medical university offering medical, dental, and allied health sciences programs to a large number of students. The research found that 1.4% (n=15) of students admitted to using drugs. Although this rate is relatively low, it is still significant considering the large medical university located in one of the most populous cities in Pakistan. Additionally, 2.02% (n=21) of students acknowledged using more than one drug, suggesting that a more indirect question led some students to reveal the truth. A similar study conducted in medical colleges in Lahore, the second most populous city in Pakistan, reported that 17% of medical students were actively using drugs. Another study conducted in Ethiopia found an increasing trend of drug abuse among medical students.⁸

Consequences of drug abuse, including withdrawal symptoms, were experienced by 3.6% (n=38) of students, while medical problems such as convulsions, bleeding, and memory loss were reported by 1.7% (n=18). Similar studies suggest that serious side effects can jeopardize the lives of addicted students and lead to severe lapses in professionalism, which could endanger the lives of patients they may care for in the future.⁹ Additionally, 18.5% (n=191) of students admitted to experiencing feelings of guilt due to substance use disorder, with these feelings being predominantly reported by first- and second-year students. This finding aligns with research conducted in

Turkey, where the CAGE score was used to assess feelings of guilt related to alcohol consumption. These findings suggest that senior medical students may become accustomed to drug use, leading to a gradual resolution of feelings of wrongdoing.¹⁰

The effects of drug abuse on social life were assessed by evaluating students' relationships with their families. 3.3% (n=34) admitted that their family complains about their drug abuse, while 1.05% (n=11) acknowledged neglecting their family due to their addiction. Comparing the results of these two questions suggests that some addicted students are aware of how their drug dependence is affecting their social life and interactions, while the majority fail to recognize that they are causing problems for their families. Several studies have suggested that drug addicts often have strained relationships with their families, as they pose a threat to the family unit. Additionally, they consume a significant portion of the family income to buy drugs, leading to social isolation and severe economic crises for the family due to one person's bad habit.¹¹

When students were asked two questions about drugs being offered by university peers, 3.2% (n=33) said "yes." When inquired if they had ever been asked to use drugs by any of their friends, 2.6% (n=27) agreed to the statement. Additionally, when asked if they had seen anyone using drugs on campus, 10.5% (n=109) confirmed that they had observed such activities in the hostel and on campus premises. These results suggest that friends, acquaintances, and

surroundings play a significant role in the development of drug addiction, a finding consistent with several previously conducted studies. A recent study in Connecticut on high school students concluded that a student's behavior can be predicted by observing their interactions with drug-using friends and drug-approving peers, as there is a strong association between the two.¹²

When asked if students had seen drug suppliers on campus or in the hostel premises, 1.9% (n=20) answered "yes." Additionally, 1.5% (n=16) admitted to meeting suppliers, indicating that suppliers of addictive drugs have access to university students and the premises. A survey conducted across seven universities in Wales concluded that students primarily obtain drugs from their friends and peers, although one fifth of the total participants had access to external markets for purchasing drugs. Furthermore, one third of the study subjects confessed to selling drugs.¹³

The survey relied on self-reported responses, so recall bias and social desirability factors may have affected the findings. Participants were asked to provide their names and class in the questionnaire, which may have introduced non-response bias, as students engaged in drug abuse might have chosen not to participate. Additionally, students may have underreported their substance abuse, suggesting that self-selection bias could have influenced the results.

CONCLUSIONS AND RECOMMENDATIONS

Our survey indicated that a considerable number of students at the surveyed medical university were involved in drug abuse, with the majority of these students suffering from negative effects on their health and social lives. Students also admitted that drugs were offered to them at the university and confirmed seeing drugs being supplied on campus and in the hostel premises. Effective measures are needed to stop the sale and supply of drugs on the university campus and hostel premises. Proper rehabilitation of already addicted students is essential to help them become beneficial members of society and good future doctors. Measures should be implemented to identify and support students in need. In addition, timely screening and proper counseling by professionals can prevent many students from falling prey to drug addiction.

Conflict of interest

None

Acknowledgements

The authors are thankful to the head of Psychiatry, Professor Dr. Imtiaz Ahmad Dogar for his patronizing contribution in this study and continued support in ethical approval, data collection and submission process.

AUTHORS' CONTRIBUTION

KI, MAR: Concept, literature search, write-up, proof reading. AA, NH: Data collection, data analysis, data interpretation. AAK: Proof reading.

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Submitted: December 13, 2023

Revised: November 9, 2024

Accepted: November 13, 2024

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