

Prevalence of Psychotropic Drug Use among Medical, Dentistry, and Pharmacy Students at the University of Basrah, Basra, Iraq

Saifali J. Aljabran,^{1,*} Shaymaa F Abbas,² and Bainat Aqeel Kadhem³

¹Department of Pharmacology, College of Medicine, University of Basrah, Basra, Iraq.

²Department of Pharmacology, Alzahraa College of Medicine, University of Basrah, Basra, Iraq.

³Basra Teaching Hospital, Basra health directorate, Basra, Iraq.

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ABSTRACT

Background: The mental health of university students, particularly those in the medical field, is a topic of growing concern due to the demanding nature of their education.

Objectives: To examine the prevalence of psychotropic drug use among university students in the health sector and explore the factors influencing their consumption.

Materials and methods: A cross-sectional study was conducted from February to June 2024 at the University of Basrah across four colleges: the College of Medicine, Al-Zahraa College of Medicine, the College of Dentistry, and the College of Pharmacy. An online self-administered questionnaire was emailed to 2,811 students aged ≥ 18 years, with 715 responding. The survey covered demographics, psychotropic drug use, and psychological and social factors.

Results: The present prevalence of psychotropic drug usage was 8.7% among the 715 participants. Out of 715 participants, 504 were students of the College of Medicine, of whom 48 students were utilized psychotropic medications (9.5%). Additionally, a strong association was observed between a history of psychological illness and drug use, as 90.6% (56) of students with psychotropic drug use reported a diagnosed psychological illness, compared to only 41.2% (6) who claimed the use of psychotropic drugs without clear or diagnosed psychological illness (P -value < 0.001). Among the commonly used drug classes, selective serotonin reuptake inhibitors were the most frequently used, reported by 32 students (4.4%), followed by antipsychotic medications ($n = 18$, 2.5%), tricyclic antidepressants ($n = 15$, 2.1%), and sedative anxiolytics ($n = 32$, 4.4%).

Conclusion: The study highlights a notable prevalence of psychotropic drug use among medical students, along with various associated factors. It offers insightful data and suggestions for institutional educational initiatives to enhance students' mental health.

Keywords: Psychotropic drug; University students; Depression; Anxiety.

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INTRODUCTION

Globally, psychological problems are extremely common among college and university students and frequently have a detrimental impact of various aspects of students' lives [1]. Psychological distress is described as emotional suffering characterized by symptoms of depression, anxiety, and functional or somatic symptoms, such as headache, sleep deprivation, poor appetite, sexual dysfunction, and fatigue [2].

Over the past 30 years, numerous studies have examined drug use patterns among doctors, particularly medical students [3]. However, previous studies on Iraqi health sciences students have primarily focused on the use of substances such as narcotics and psychostimulants or psychedelics like dimethyltryptamine [4], rather than on the use of psychotropic drugs. These substances are often associated with addiction, legal consequences, and social stigma, making them more visible and concerning from a public health perspective [5]. In contrast, psychotropic drug use may be underrecognized or underreported, partly due to limited awareness and the cultural stigma surrounding mental health.

Due to the demands of their education, medical students face high expectations for performance and responsibility;

* Corresponding author: E-mail: saifali.salman@uobasrah.edu.iq
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they frequently experience sleep deprivation, extended study hours, and competitive environments, which are far from ideal conditions for learning [6]. These stressors can negatively affect both physical and mental health [6]. Moreover, psychological distress in students is strongly linked to reduced academic self-efficacy, slower progress, and increased risk of suicidal thoughts and behaviors [7].

In addition to the above causes, the ongoing stress from regional conflicts and wars in Iraq may lead students to adopt unconventional coping strategies, such as using psychotropic drugs. Limited mental health services and increased medical awareness may further drive self-medication and higher drug use among Iraqi students [4]. This highlights the urgent need for prevention, early detection, effective treatment, and overall mental health support. A psychotropic drug is any medication that can affect the mind, emotions, and behavior [8]. There are different types of psychotropic medications or chemicals used worldwide; they can be grouped into classes, the first one for the most frequently used psychotropic drugs (Sedatives/hypnotics, antidepressants, antipsychotics, stimulants, and opiates), while cocaine is less commonly used [9]. When used appropriately, psychotropic drugs can be a protective factor for mental health, but when abused, they may also be a risk. Recent studies have shown that the worldwide prevalence of young adults using psychotropic drugs can range from 6.5% to 22.3% [10]. According to the class of psychotropic medications that are being studied, the prevalence of psychotropic drug use among medical students ranges from 10.7% to 22.6% [11, 12]. The Norwegian Prescription Database (NorPD) reports that among 20 to 24-year-old young people, the 1-year prevalence of psychotropic drug usage has increased by around 29% over the past ten years, reaching 14% for females and 9% for men in 2019 [13]. Furthermore, an Australian case study that followed patients with mental problems aged 16 to 24 years old from 2009 to 2014 found a rising trend in the prescription of psychotropic drugs, with prescription levels for women being higher than for men [14].

The present study aims to determine the prevalence of psychotropic drug usage among students of three colleges: medicine, dentistry, and pharmacy, at the University of Basrah. This investigation is warranted due to increasing global concern about the misuse and non-medical use of psychotropic medications among university students, particularly those in healthcare fields who may have easier access to such drugs and higher academic stress. Understanding the extent and patterns of psychotropic drug use within this population is essential for guiding mental health policies, awareness programs, and early intervention strategies on campus.

MATERIALS AND METHODS

This was a cross-sectional, analytical observational study conducted during the second semester of 2024 (from February to June) at four governmental colleges of the University of Basrah, Basra, Iraq: The College of Medicine, Al-Zahraa College of Medicine, the College of Dentistry, and the College of Pharmacy. The duration of study is six years in the medical colleges, while it is five years in the colleges of dentistry and pharmacy.

The total number of students across the colleges was 6,155, including 2,825 in the College of Medicine, 969 in Al-Zahraa College of Medicine, 1,079 in the College of Dentistry, and 1,282 in the College of Pharmacy. However, due to contact

limitations, the questionnaire link was sent by email to 2,811 students only. The questionnaire was self-administered, developed by the authors in English based on a data collection form from Fasanella et al. [10] and distributed electronically via Google Forms through emails. The email included the link for both the informed consent and the questionnaire.

The survey consisted of three main sections. The first section collected demographic and academic information, including age, sex, and year of study. The second section focused on psychotropic drug use, asking students whether they were currently using or had previously used such medications during the past three years, the types of drugs consumed, and their reasons for usage. The third section explored psychological and social factors, including symptoms of depression and anxiety, as well as external influences such as family and peer pressure.

All students aged 18 and above, from the first year to the final year, were eligible to participate. The required sample size was calculated using the finite population method [15], assuming a 5% margin of error, 95% confidence level, and 50% population heterogeneity. Based on these parameters, a minimum of 244 participants was needed to ensure a representative sample. Although the calculated minimum sample size was 244, all 715 respondents were included in the analysis to enhance the statistical power and generalizability of the findings, reduce sampling bias, and allow for more robust subgroup analyses.

The research received approval from the Ethics Committee of the College of Medicine at the University of Basrah.

Data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 26 (IBM Corp., Armonk, NY, USA). Descriptive statistics were presented as counts and percentages for categorical variables and as means with standard deviations for continuous variables. The Chi-square test was used for analyzing associations between categorical variables, while the independent samples t-test was applied to compare means of continuous variables between the two groups, with a P-value of < 0.05 considered a statistically significant difference.

RESULTS

The study enrolled 715 students (response rate: 25.4%) out of the 2,811 students who received the email.

Of the 715 students enrolled in the study, 325 (45.5%) reported experiencing one or more psychological problems over the past three years. Among those with psychological problems, only 66 (20.3%) had a confirmed diagnosis. Of the diagnosed group, 56 (84.8%) were receiving treatment, and most (96.4%) adhered to medical advice. Only two individuals (3.6%) opted for non-medical recommendations. Notably, 6 students (1.5%) without a history of psychological illness reported previous drug use (Figure 1).

Depression was the most common indication for drug use (69.7%), while conditions like phobias, insomnia, and post-traumatic stress disorder were the least reported indications (Figure 2).

A total of 62 students (8.7%) reported a history of psychotropic drug use. There were no significant differences in sex or age between students with and without such a history (Table 1).

Family income showed a significant association with psychotropic drug use, with higher-income students more frequently reporting use (P-value = 0.001). No significant as-

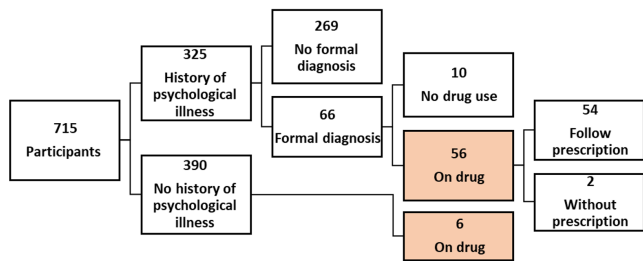


Figure 1. Breakdown of students throughout the study.

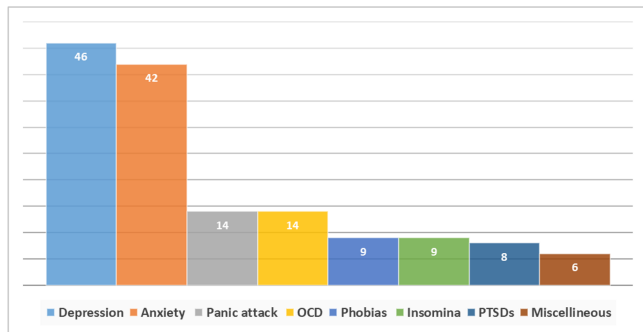


Figure 2. Number of cases who have different psychiatric disorders among the enrolled students. OCD: Obsessive-compulsive disorder, PTSD: Post-traumatic stress disorder.

sociations were found regarding social status, residency, or sleep duration. Students with a history of drug use were significantly more likely to report psychological illness (P-value = 0.001) (Table 2).

Drug use prevalence varied among colleges: 3.9% in Dentistry, 9.5% in Medicine, and 13.8% in Pharmacy, though this variation was not a statistically significant difference (P-value > 0.05). In contrast, the academic stage was significantly associated with drug use (P-value = 0.001), with higher usage among senior students. Additionally, students who had repeated an academic year were more likely (P-value = 0.027) to use psychotropic drugs (Table 3).

Among the commonly used drug classes, SSRIs and sedative anxiolytics were the most frequently reported (n = 32, 4.4%), while tricyclic antidepressants (TCAs) were the least used (n = 15, 2.1%), as shown in Figure 3. These medications were mostly prescribed by students (Figure 4).

Table 1. Demographic data of the enrolled students *.

Variable	Students with drug history (62)	Students without drug history (653)	P-value
Sex			
Male	19 (30.6%)	184 (28.2%)	0.810*
Female	43 (69.4%)	469 (71.8%)	
Age (years), (Mean ± Standard deviation)	22.11±1.9	20.72±2.25	0.340**

* Chi-Square Tests. ** The Independent Samples T-test.

Table 2. Student-related characteristics association with drug intake *.

Variable	Students with drug history (62)	Students without drug history (653)	P-value *
Social status			
Single	58 (93.5%)	631 (96.6%)	0.433
Married	2 (3.2%)	16 (2.5%)	
Divorced	1(1.6%)	3(0.5%)	
In relationships	1(1.6%)	3(0.5%)	
Residency			
Basra	50 (80.6%)	525(80.4%)	0.845
University dorm	12 (19.4%)	128 (19.6%)	
Family income			
More than 2 million	25 (40.3%)	124 (19%)	0.001
Between 1-2 million	21 (33.9%)	312 (47.8%)	
Less than 1 million	16 (25.8%)	217 (33.2%)	
Number of sleep hours per day			
Less than 4 hours	4 (6.5%)	35 (5.4%)	0.889
4-6 hours	14(22.6%)	179 (27.4%)	
6-8 hours	27 (43.5%)	273 (41.8%)	
More than 8 hours	17 (27.4%)	166(25.4%)	
History of psychological illness			
Yes	56 (90.3%)	269 (41.2%)	0.001
No	6 (9.7%)	384 (58.8%)	

* Chi-Square Tests.

Table 3. College and education association with drug intake *.

Variable	Students with drug history (62)	Students without drug history (653)	P-value *
College			
Dentistry	6 (3.9%)	147 (96.1%)	0.134
Medicine	48 (9.5%)	456 (90.5%)	
Pharmacy	8 (13.8%)	50 (86.2%)	
Stage			
1	2(3.2%)	156 (23.9%)	0.001
2	6 (9.7%)	63(9.6%)	
3	9 (14.5%)	212 (32.5%)	
4	16 (25.8%)	89 (13.6%)	
5	17 (27.4%)	64 (9.8%)	
6	12(19.4%)	69 (10.6%)	
Failed year			
Yes	7(11.3%)	30 (4.6%)	0.027
No	55(88.7%)	623 (95.4%)	
Passing Courses			
Yes	11 (17.7%)	63 (9.6%)	0.062
No	51(82.3%)	590 (90.4%)	

* Chi-Square Tests.

DISCUSSION

Mental health challenges and the associated use of psychotropic drugs among university students, particularly those

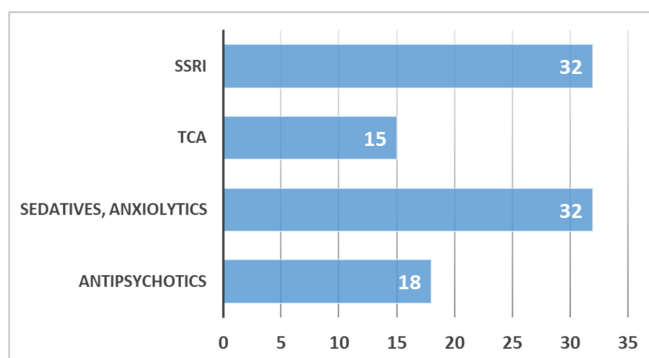


Figure 3. Types of medications reported by respondents. SSRI: Selective serotonin reuptake inhibitor, TCA: Tricyclic antidepressant.

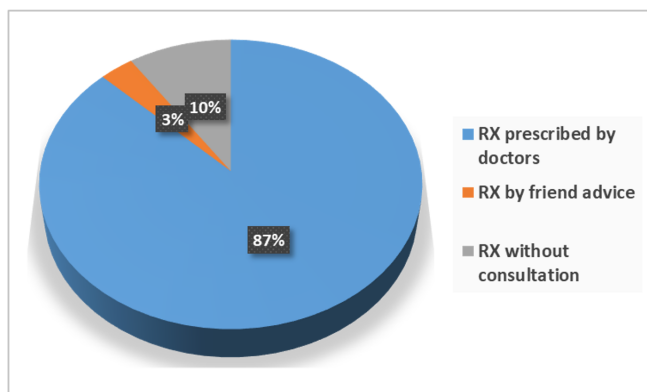


Figure 4. The influence of drug use. RX: Recipe (drug).

in medical fields, have become an increasing global concern. Medical students often face academic stress, competitive environments, and emotional exhaustion, all of which may predispose them to psychological distress and reliance on medication [16]. This study adds to the growing body of literature by focusing on psychotropic drug use among students at a medical university in Iraq, with attention to both diagnosed and undiagnosed psychological conditions.

A notable strength of this study is its comprehensive assessment of mental health status, capturing both formally diagnosed cases and self-reported psychological distress. Unlike many prior studies, it emphasizes the distinction between medically supervised psychotropic use and self-medication.

Compared to similar studies from other countries, the prevalence of psychological distress in our sample was higher. Research conducted in southeast France, for instance, found that 33.0% of young females and 15.7% of young males had psychological problems [17]. Iranian studies have documented prevalence rates among health students that range from 14% to 23% [18, 19]. These differences may stem from variations in cultural context, academic demands, assessment tools, and healthcare-seeking behaviors, which can differ significantly between Iraqi, French, and Iranian students.

Our findings are in line with international reports highlighting rising psychotropic drug use among university students. However, in contrast to French data reported by Balayssac et al., which showed a high prevalence of self-medication [20].

Our study found that most students used these medications under medical supervision. This may reflect stronger cultural, ethical, or institutional adherence to prescription norms in our setting. In the United States, longitudinal data from Midwest colleges (2003–2013) showed higher rates of prescription drug use, both medical and non-medical, compared to our findings [21]. Differences in healthcare accessibility, diagnostic practices, and the inclusion of non-psychotropic drugs may account for these discrepancies.

An intriguing observation in our study was that a small number of students receiving psychotropic medications reported no psychological difficulties. This could suggest underreporting of symptoms, stigma-related denial, or prescription for non-psychiatric conditions such as sleep disorders or neuropathic pain [22]. As noted in the literature, the non-medical use of medications such as alprazolam and tramadol has been linked to psychiatric morbidity and increased suicide risk, emphasizing the importance of regulated prescribing and clinical oversight [23].

The gap between self-reported psychological distress and formal diagnosis further underscores barriers in mental health service utilization. Factors such as stigma, poor awareness, and limited access may contribute to this underdiagnosis. These issues are particularly critical in medical schools, where student well-being directly influences academic performance and future professional behavior [24].

Consistent with prior research from Brazil and elsewhere, anxiety and depression were the most common indications for psychotropic drug use [25]. However, unlike some prior studies [26, 27], we did not find significant associations between drug use and factors like age, sleep duration, or marital status. This discrepancy may reflect local variations in stress perception, academic pressure, and social support systems across institutions.

Our observation that psychotropic drug use was more common among final-year students aligns with other research by Fasanella et al. [10], suggesting increased academic pressures and clinical responsibilities in these years. This highlights the need for targeted mental health interventions for students in the final years of medical training.

Another significant finding was the association between poor academic performance and higher drug use. Although causality cannot be established, this study reinforces existing literature by Grace et al. [28] suggesting a bidirectional relationship between academic struggles and mental health deterioration. Early identification of students at academic risk and provision of psychological support may help break this cycle.

The predominance of SSRIs and sedatives observed in our study aligns with global prescribing trends. Studies by Amiri et al. [29] and Quintana et al. [30] have reported similar findings among medical students. The lower use of antipsychotics and TCAs may reflect preferences for newer agents with more favorable side effect profiles.

This study's findings call for proactive institutional policies to address student mental health. Medical schools should strengthen support systems, facilitate access to mental health care, and reduce stigma through education. Furthermore, prescribers must ensure psychotropic drugs are used judiciously and based on thorough psychiatric evaluations. This study has several limitations. It was restricted to a single university, limiting generalizability. The overrepresentation of College of Medicine students may have inflated the proportion of drug users observed. Additionally, the study did not em-

ploy multivariate analysis to control for potential confounding variables, which limits the ability to determine independent associations between drug use and specific demographic or academic factors. Response bias is another concern, as the sensitive nature of the topic may have led to underreporting or social desirability bias, despite assurances of anonymity.

CONCLUSION

This study raises serious issues regarding mental health and psychotropic drug use among students in health-related fields. The patterns observed point to a pressing need for greater awareness, early identification of psychological distress, and the promotion of healthy coping strategies. Universities should prioritize accessible, stigma-free mental health services and integrate non-pharmacological interventions as part of comprehensive student support systems. Strengthening mental health literacy and fostering a supportive academic environment are essential steps toward reducing reliance on medication and enhancing student well-being. Future research should focus on evaluating targeted interventions that address the unique psychological demands faced by students in medical and allied health disciplines.

ETHICAL DECLARATIONS

Acknowledgments

None.

Ethics Approval and Consent to Participate

The study was approved by the Committee on Publication Ethics at the College of Medicine, University of Basrah. Informed consent was obtained from each participant.

Consent for Publication

Not applicable.

Availability of Data and Material

Data generated during this study are available from the corresponding author upon reasonable request.

Competing Interests

The authors declare that there is no conflict of interest.

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Authors' Contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work. The authors have read and approved the final version of the manuscript.

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