Frequency of Smoking, Alcohol Consumption, and Substance Use in Relation to General Health Indicators in Guilan University of Medical Sciences

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Abstract

Background: The risk of substance use is increasing among university students, especially medical students. This study aimed to investigate the frequency of smoking, alcohol consumption, and substance use and its relationship with general health indicators among the students of Guilan University of Medical Sciences (GUMS) in 2020. The differences in the frequency of substance use were also investigated from 2005.

Methods: This was a cross-sectional analytical study conducted on 406 students of GUMS, Iran, in 2020. The data were collected through three online questionnaires including a demographic questionnaire, the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST), and the General Health Questionnaire (GHQ). The data were entered into SPSS software version 22 and analyzed using Chi-square, Fisher’s Exact tests, and logistic regression at a significance level of 0.05.

Findings: In this study, 53.9% of the participants were female, 46.1% were male, and 54.4% of them experienced using substances in their lifetime. The highest prevalence of use was in consumers of tobacco (46.8%), alcoholic beverages (34.7%), and cannabinoid compounds (19%). Besides, 48.5% of the participants were suspected of having some degree of psychiatric disorders, among which depression (11.6%) and anxiety (8.4%) were the most common. Moreover, substance use during students’ lifetime had a statistically significant association with anxiety, depression, and mental health.

Conclusion: The results of this study showed the prevalence of smoking, alcohol consumption, and substance use among the students of GUMS is worrying. The relationship between consumption and consumer's health indicators highlights the necessity of intervention and purposeful planning by policymakers in this field.

Keywords: Medical students, Substance, Alcohol, Smoking, General health


Received: December 25, 2022, Accepted: January 28, 2023, ePublished: October 29, 2023

Introduction

Substance use and its widespread and unpleasant side effects are among the most important concerns and the worst social harms today. The relationship of substance use and addictive behaviors with other deviances and misbehaviors, such as mental disorders, violence, committing a crime, academic failure, suicide attempts, and physical illnesses (AIDS, hepatitis, etc.) point to the importance of rethinking this issue. Furthermore, psychological, social, familial, spiritual, and biological factors are involved in substance use disorder, among which psychological factors are more prominent.

According to epidemiological studies, illicit substance use is more common among young people and university students than in other age groups. In a meta-analysis study on the prevalence of substance use in Iranian university students, the prevalence of one-year use in three groups including alcohol consumption, cigarette smoking, and other substance use were reported at 23% (95% CI 8-39), 21% (95% CI 6-37), and 14% (95% CI 10-18), respectively. In addition, the prevalence of substance use was reported 37.5% and 33% among the students of Tehran University of Medical Sciences.

The mental health of young people and university students is one of the biggest concerns of decision-makers. A research on Canadian medical students in 2021 reported that 27% of students suffered from mental disorders, with anxiety or depression showing the highest prevalence. In other studies, mental illness has been reported as a risk factor for substance use.

University students are prone to lose mental health due to their special conditions, such as being away from family, having economic problems, studying a large volume of materials during their courses, and having intense competition. Furthermore, medical students experience particular problems, including undergoing psychological
stress imposed by the environment, dealing with the
problems and issues of the patients, the lengthy education
process, and not having a bright job future.9,10 Globally,
medical students have reported high anxiety, depression,
burnout, and general psychological stress.11,12 Numerous
studies have shown that medical students experience
extreme stress while studying.13-15 Moreover, the findings
have identified several stressors for students, including
multiple exams, worries about grades, competition, and
lack of time for family, friends, and recreation.15

Some studies have revealed that the prevalence of
substance use increases from the first to the sixth year
of medical education for most substances. A study on
Turkish medical students showed a higher prevalence of
tobacco, alcohol, and illicit substance use among students
in the last year of the study than in the first year.16
Furthermore, another study on Spanish medical students
showed higher drug use in the second cycle of education.
17 During the last years of the medical course, the highest
emotional pressures are imposed on medical students.
This is due to more direct contact with patients and the
rigors of the internship.18

Understanding the factors inducing substance use
disorders in each area and timely identification of at-
risk populations will help the effectiveness of preventive
activities. Regarding the high prevalence of mental
health disorders and its possible association with
substance use, the present study aimed to investigate the
frequency of different types of substance consumption
and general health indicators among the students of
Guilan University of Medical Sciences to help take some
necessary preventive measures.

Methods
Study design and sampling
This was a cross-sectional analytical study to investigate
the frequency of smoking, alcohol consumption, and
substance use and in relation to general health indicators
among the students of Guilan University of Medical
Sciences (GUMS) in 2020. This study was conducted
using the census method. The inclusion criteria were
studying in the medical school of GUMS and willingness
to participate in the study. Incomplete questionnaires
and participants with a history of severe psychological
disorders were excluded. Three online questionnaires
were completed by the participants anonymously, and
their links were available to the students.

Measures
1. Demographic questionnaire: This questionnaire
included items on age, gender, marital status, residence
status, family economic status, parents’ level of education,
family structure, students’ level of education and grade
point average (GPA), history of smoking, and alcohol and
substance use in the family.

2. Alcohol, Smoking, and Substance Involvement
Screening Test (ASSIST): The ASSIST version 3.0
is an 8-item questionnaire. It collects respondents’
information about substance use in the lifetime and the
last three months. To ensure the validity and reliability
of this scale in international settings and the ability to link
with a brief intervention of the questionnaire, ASSIST has
passed three main stages as follows: Phase one: the WHO
ASSIST project, which was conducted between 1997
and 199819; Phase two: an international study to validate
the ASSIST questionnaire in various primary care and
addiction treatment settings which showed that ASSIST
had good concurrent, predictive, and discriminative
validity with the cut-off scores for “low”, “moderate”,
and “high” risk19-21; and Phase three: a controlled trial that
tested the effectiveness of brief intervention associated
with ASSIST scores.22

The translated version of the ASSIST questionnaire
was prepared by the Department of Prevention and
Treatment of Substance Abuse of the Ministry of Health.
The questionnaire’s content validity was confirmed by a
group of researchers, and its face validity was assessed by
pre-testing the questionnaire in a group of Master Public
Health (MPH) students.23

In this study, the first two items of the ASSIST
questionnaire were used.

3. General Health Questionnaire-28 (GHQ-28):
This screening and self-report instrument was used
to assess general health. It was developed by Goldberg
(1972) and has been widely used to diagnose mild
psychological symptoms in various situations.24 It
has four subscales (each with seven items), including
somatic symptoms, anxiety and insomnia, severe
depression, and social dysfunction. The Likert scale is
usually used for scoring (0 = not at all, 1 = no more than
usual, 2 = rather more than usual, and 3 = much more
than usual). The total score of the test varies from 0 to
84, and a higher score is associated with lower general
health. The cut-off point for diagnosing people with
the probable disorder is > 23 for the total score and > 14
for the subscales.25,26 The total reliability coefficient of
the questionnaire was 96%.27 The reliability coefficient
of the Persian version of GHQ based on test-retest,
half-split, and Cronbach’s alpha were 0.7, 0.93, and 0.9,
respectively.28,29

Statistical analysis
The sample size of the present study was calculated
considering the 30% prevalence of substance use in
students3 and the precision of 0.05. SPSS software
(version 22) was used for data analysis. Frequency tables
and graphs were used for descriptive statistics, and chi-
square, Fisher’s exact tests, and logistic regression were
utilized for inferential statistics. The significance level
was considered to be P < 0.05.
Table 1. The frequency of substance use during lifetime and the last three months according to demographic characteristics of medical students

<table>
<thead>
<tr>
<th>Variable</th>
<th>Status</th>
<th>No. (%)</th>
<th>Use during lifetime</th>
<th>Use during the last 3 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total = 406</td>
<td></td>
<td>N (%)</td>
<td>Yes (%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>P value</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>187 (46.1)</td>
<td>79 (42.2)</td>
<td>108 (57.8)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>219 (53.9)</td>
<td>105 (47.9)</td>
<td>114 (52.1)</td>
</tr>
<tr>
<td>Age (year)</td>
<td>&lt; 20</td>
<td>97 (23.9)</td>
<td>69 (71.1)</td>
<td>28 (28.9)</td>
</tr>
<tr>
<td></td>
<td>21-25</td>
<td>244 (60.1)</td>
<td>101 (41.4)</td>
<td>143 (58.6)</td>
</tr>
<tr>
<td></td>
<td>&gt; 25</td>
<td>65 (16)</td>
<td>14 (21.5)</td>
<td>51 (78.5)</td>
</tr>
<tr>
<td>Marital status</td>
<td>Single</td>
<td>376 (92.6)</td>
<td>170 (45.2)</td>
<td>206 (54.8)</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>30 (7.4)</td>
<td>14 (46.7)</td>
<td>16 (53.3)</td>
</tr>
<tr>
<td>Residence status</td>
<td>With spouse or family</td>
<td>227 (55.9)</td>
<td>122 (53.7)</td>
<td>105 (46.3)</td>
</tr>
<tr>
<td></td>
<td>Alone or with friends</td>
<td>98 (24.1)</td>
<td>24 (24.5)</td>
<td>74 (75.5)</td>
</tr>
<tr>
<td></td>
<td>Living in dormitory</td>
<td>81 (20)</td>
<td>38 (46.9)</td>
<td>43 (53.1)</td>
</tr>
<tr>
<td>Socioeconomic position</td>
<td>Low</td>
<td>15 (3.7)</td>
<td>8 (53.1)</td>
<td>7 (46.7)</td>
</tr>
<tr>
<td></td>
<td>Middle</td>
<td>339 (83.5)</td>
<td>158 (46.6)</td>
<td>181 (53.4)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>52 (12.8)</td>
<td>18 (34.6)</td>
<td>34 (65.4)</td>
</tr>
<tr>
<td>Father’s education</td>
<td>Under diploma</td>
<td>26 (6.4)</td>
<td>16 (61.5)</td>
<td>10 (38.5)</td>
</tr>
<tr>
<td></td>
<td>Diploma</td>
<td>106 (26.8)</td>
<td>36 (33)</td>
<td>73 (67)</td>
</tr>
<tr>
<td></td>
<td>College</td>
<td>271 (66.7)</td>
<td>132 (48.7)</td>
<td>139 (51.3)</td>
</tr>
<tr>
<td>Mother’s education</td>
<td>Under diploma</td>
<td>45 (11.1)</td>
<td>22 (48.9)</td>
<td>23 (51.1)</td>
</tr>
<tr>
<td></td>
<td>Diploma</td>
<td>120 (29.6)</td>
<td>41 (34.2)</td>
<td>79 (65.8)</td>
</tr>
<tr>
<td></td>
<td>College</td>
<td>241 (59.4)</td>
<td>121 (50.2)</td>
<td>120 (49.8)</td>
</tr>
<tr>
<td>Family structure</td>
<td>Living with family</td>
<td>369 (90.9)</td>
<td>175 (47.4)</td>
<td>194 (52.6)</td>
</tr>
<tr>
<td></td>
<td>Living with a member</td>
<td>17 (4.2)</td>
<td>4 (23.5)</td>
<td>13 (76.5)</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>20 (4.9)</td>
<td>5 (25)</td>
<td>15 (75)</td>
</tr>
<tr>
<td>Mental disease history</td>
<td>Yes</td>
<td>56 (13.8)</td>
<td>15 (26.8)</td>
<td>41 (73.2)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>350 (86.2)</td>
<td>169 (48.3)</td>
<td>181 (51.7)</td>
</tr>
<tr>
<td>Smoking, alcohol</td>
<td>Yes</td>
<td>145 (35.7)</td>
<td>32 (22.1)</td>
<td>113 (77.9)</td>
</tr>
<tr>
<td>consumption, and substance</td>
<td>No</td>
<td>261 (64.3)</td>
<td>152 (58.2)</td>
<td>109 (41.8)</td>
</tr>
</tbody>
</table>

* Chi-square test.
different levels of anxiety. In addition, some degrees of depression were observed in 11.6% of the participants, while 91.6% of medical students showed healthy social function. The study revealed there was no statistically significant relationship between physical health status and substance use during the lifetime of medical students (P=0.151) as well as between social function and lifetime substance use (P=0.113). However, substance use during lifetime had a significant relationship with anxiety, depression, and mental health status (P=0.001, P=0.0001, and P=0.008, respectively) (Table 4).

The Chi-square test demonstrated that substance use in the last three months had no statistically significant relationship with physical health status, social function, depression, and mental health status (P>0.05). Only a statistically significant relationship was found between anxiety and substance use in the last three months (P=0.012).

Using logistic regression, the subscales of GHQ were entered into an equation using the Enter method to examine the effect of the scores obtained from these subscales on substance use during lifetime. In the anxiety and depression subscales, high scores above the normal increased the chances of substance use during the medical students’ lifetime by 2.8 and 2.6 times, respectively (Table 5).

Furthermore, logistic regression showed that none of the subscales of GHQ increased the likelihood of substance use in medical students during the last three months (P=0.012).

Discussion

The present study aimed to investigate the frequency of smoking, alcohol consumption, and substance abuse in relation to general health indicators among the students of Guilan University of Medical Sciences in 2020. The differences in frequency of substance use were also examined from 2005. According to the findings, the frequency of substance use has increased over the past years among medical students at GUMS. Figures 2 and 3 demonstrate the changes in the prevalence of substance

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Table 2. The frequency distribution of substance use in medical students in the last three months

<table>
<thead>
<tr>
<th>Substance types</th>
<th>Use</th>
<th>1-2 Times in the last three months</th>
<th>3-3 Times monthly</th>
<th>1-4 Times weekly</th>
<th>5-7 Times weekly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco types</td>
<td>No. (%)</td>
<td>265 (65.3)</td>
<td>52 (12.8)</td>
<td>26 (6.4)</td>
<td>22 (5.4)</td>
</tr>
<tr>
<td>Opioids</td>
<td>398 (98)</td>
<td>4 (1)</td>
<td>2 (0.5)</td>
<td>1 (0.2)</td>
<td>1 (0.2)</td>
</tr>
<tr>
<td>Cannabis</td>
<td>351 (86.5)</td>
<td>36 (8.9)</td>
<td>5 (1.2)</td>
<td>5 (1.2)</td>
<td>9 (2.2)</td>
</tr>
<tr>
<td>Amphetaminestimuli</td>
<td>395 (97.3)</td>
<td>8 (2)</td>
<td>3 (0.7)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Sedatives</td>
<td>365 (89.9)</td>
<td>24 (5.9)</td>
<td>9 (2.2)</td>
<td>4 (1)</td>
<td>4 (1)</td>
</tr>
<tr>
<td>Alcoholic beverages</td>
<td>293 (72.2)</td>
<td>66 (16.3)</td>
<td>17 (4.1)</td>
<td>10 (2.5)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Inhalants</td>
<td>402 (99)</td>
<td>4 (1)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>401 (98.8)</td>
<td>4 (1)</td>
<td>1 (0.2)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Cocaine</td>
<td>404 (99.5)</td>
<td>2 (0.5)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

Table 3. Substance use in the last three months in medical students with different educational status

<table>
<thead>
<tr>
<th>Variable</th>
<th>Use</th>
<th>No. (%)</th>
<th>Recent</th>
<th>P value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education status</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Externship</td>
<td>62</td>
<td>56.4</td>
<td>48</td>
<td>43.6</td>
</tr>
<tr>
<td>Internship</td>
<td>37</td>
<td>34.9</td>
<td>69</td>
<td>65.1</td>
</tr>
<tr>
<td>Basic sciences</td>
<td>87</td>
<td>72.5</td>
<td>33</td>
<td>27.5</td>
</tr>
<tr>
<td>Physiopathology</td>
<td>40</td>
<td>57.1</td>
<td>30</td>
<td>42.9</td>
</tr>
<tr>
<td>GPA</td>
<td>17-20</td>
<td>105</td>
<td>69.1</td>
<td>47</td>
</tr>
<tr>
<td>14-17</td>
<td>106</td>
<td>48.2</td>
<td>114</td>
<td>51.8</td>
</tr>
</tbody>
</table>

GPA, grade point average; *Chi-square test.
consumption within 15 years after the previous study among GUMS students. Apart from opium whose frequency changes were not statistically significant, there was a significant increase in consumption of other substances in recent and lifetime abuse.

A similar study by Zarrabi et al on the prevalence of substance use among the students of GUMS from 2005 to 2006 showed at least 30.1% of students used substance once in their lifetime. It was also found that 26.36% of students used cigarettes, 17.04% alcohol, 3.86% opium, 2.78% hashish, 2.05% ecstasy, and 1.08% used heroin.3

The frequency of substance use in some domestic and foreign studies was compared with the present study. In this study, the lifetime consumption of all tobacco products was 46.8%, which was higher compared to the results of other studies. This increase might be partly related to hookah, traditionally used in Iran. In domestic studies, the prevalence of cigarette smoking and using hookah was investigated either separately or totally (Table 6).

Lifetime consumption of alcohol in the current study was 34%, which was higher than in other studies in Iran. The studies by Afrashteh et al32 and Mozafarinia et al31 showed a higher prevalence of alcohol consumption,
similar to the findings of the present study. A comparison of the frequency of alcohol abuse among students inside and outside Iran indicated that the frequency of alcohol abuse abroad was several times higher than that inside the country, which can partly be due to the religious and legal prohibition of alcohol consumption in Iran. The consumption of opioids in this study was equal to or less than that in previous studies, while the present study showed a higher use of cannabinoids compared to all domestic studies.

In terms of recent substance use, the results of the present study were compared with those of some domestic and foreign studies as shown in Table 7. The highest frequency of recent cannabis use was reported by Afrashteh et al.\textsuperscript{32} Although the lifetime consumption of alcohol in the present study (34.7%) was different from that of similar studies in Iran, this difference was not observed in recent consumption. In a meta-analysis study on Iranian university students, the one-year prevalence was reported at 23% for alcohol use, 21% for cigarette smoking, and 14% for other substances.\textsuperscript{4}

In the current study, there was a significant relationship between age group and consumption of cigarettes, alcohol, and substances during the lifetime and the last three months. The relative frequency of consumption was higher in older age groups. This finding was consistent with that of the studies by Zarrabi et al.\textsuperscript{3} and Akbari et al.\textsuperscript{30}

Based on the results of this study, no significant relationship was found between gender and consumption of cigarettes, alcohol, and substances during the lifetime and the last three months, which was not in line with most studies in Iran and abroad.\textsuperscript{3,7,11,30} However, the results of the study by Armani Kian et al.\textsuperscript{2} were consistent with those of the current study. In addition, the results of the study by Mozafarinia et al.\textsuperscript{31} showed alcohol and cigarette consumption had no significant association with gender. This finding might indicate that the consumption of cigarettes, alcohol, and substances has increased in women compared to men in recent years. The studies close to the current study made similar conclusions.\textsuperscript{2,31}

The present study also indicated that the history of substance abuse in the family had a significant relationship with the history of smoking, alcohol consumption, and substance use during the lifetime and the last three months. It can be due to the availability of these substances and familiarity with them at younger ages. Various studies have implicated that the presence of a substance abuser in the family is effective on the tendency of other family members to use substances.\textsuperscript{34}

This study showed a significant relationship between higher education level and consumption of cigarettes, alcohol, and substances during the lifetime and the last three months in medical students, which was consistent with some previous studies in other countries.\textsuperscript{2,16} More work pressure and stress at higher levels due to direct communication with the patients and the rigors of the internship period may be a reason for the greater tendency of this group to use substances.\textsuperscript{18}

In the current study, substance use in the last three

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**Table 6. Comparison of substance use among students in some domestic and foreign studies**

<table>
<thead>
<tr>
<th>Study</th>
<th>Substance</th>
<th>Tobacco</th>
<th>Alcohol</th>
<th>Cannabis</th>
<th>Opioid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taremian et al (2014)\textsuperscript{7}</td>
<td>Cigarette 18%</td>
<td>Hookah 25.7%</td>
<td>11.8%</td>
<td>2.2%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Armani Kian et al (2020)</td>
<td>Cigarette and hookah 29%</td>
<td>-</td>
<td>10.4%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Akbari Zardkhaneh et al (2012)\textsuperscript{30}</td>
<td>Cigarette 20%</td>
<td>Hookah 30%</td>
<td>13%</td>
<td>3.1%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Afrashteh et al (2021)\textsuperscript{32}</td>
<td>-</td>
<td>18.3%</td>
<td>6.1%</td>
<td>5.7%</td>
<td></td>
</tr>
<tr>
<td>Mozafarinia et al (2017)\textsuperscript{31}</td>
<td>Cigarette 26.3%</td>
<td>-</td>
<td>19.9%</td>
<td>7.1%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Gignon et al (2015)\textsuperscript{33}</td>
<td>Cigarette 16%</td>
<td>97%</td>
<td>96%</td>
<td>46.8%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Merlo et al (2017)\textsuperscript{11}</td>
<td>Cigarette 26.9%</td>
<td>-</td>
<td>96%</td>
<td>46.8%</td>
<td>9.1%</td>
</tr>
</tbody>
</table>

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**Figure 3. The frequency of recent use of different substances among medical students in a 15-year period**

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months was significantly higher among students with lower GPAs. In the study on French medical students by Gignon et al, the probability of failure in medical school exams was higher among cannabis users than non-users.\(^{33}\)

In the current study, 49.5% of the medical students had some degree of mental disorders. This result was consistent with the findings of other studies among Iranian university students, whose reports were between 19% and 55%.\(^{31,35,37}\) Besides, in the meta-analysis study conducted by Zare et al., mental disorders were significantly heterogeneous among university students, and almost 33% of students were suspected of having mental disorders, which gradually increased over time.\(^{26}\)

In addition, substance use during the lifetime had a significant association with anxiety, depression, and general health of the students. However, there was no significant relationship between physical health status and substance use and between social functioning and substance use. Depression and anxiety could increase the chance of substance use during the lifetime in the study group by 2.6 and 2.8 times, respectively. Symptoms of depression were common in substance abusers. Almost one-third to one-half of all people with opioid addiction or abuse and 40% of people with alcohol addiction showed symptoms of major depression at some point in their lives.\(^{31}\) Indeed, the primary anxiety and mood disorders in patients might have led to drug use. Meanwhile, long-term drug use might lead to substance-induced mood and anxiety disorders.

In the current study, only anxiety disorder, as one of the general health variables, had a significant relationship with recent substance use (last three months) in students. Many people drink alcohol to relieve their anxiety symptoms. Phobia and panic are particularly common in alcohol users.\(^{34}\) Alcohol, like benzodiazepine, facilitates the inhibitory function of GABA receptors. A study by Walters et al. on university students in 2018, showed no significant relationship between substance abuse in the last year and anxiety symptoms, which was contrary to the findings of the present study.\(^{34}\) Furthermore, a study on Canadian students found that the simultaneous presence of depression and anxiety symptoms in women increased the chance of being in a group of multiple substance abusers by four times. This chance was reported to be 2.5 times in men.\(^{39}\)

According to the results, the frequency of substance use among medical students of GUMS increased significantly during the last two decades. Furthermore, recent studies in other universities of medical sciences have shown similar results, which indicate an increase in the prevalence of substance consumption among medical students. It is necessary to pay more attention to this issue on the part of the policy-makers in this field and to carry out screening studies to identify students with moderate- to high-risk consumption for prevention and treatment measures. The relationship between public health and the consumption of various substances highlights the need to pay attention to the physical and mental health of students. The living conditions of students, importance of academic pressures and shifts, hope for job security, and academic advancement are the topics that can be further studied.

During this study, the COVID-19 pandemic and quarantine might have affected the prevalence of substance consumption among the university students leading to a change in the students’ daily habits. Moreover, since the questionnaires were completed online, it was not possible to check the proportion of the population of each group in the sampling process.

Conclusion
According to the present study, the prevalence of smoking, alcohol consumption, and substance use among the students of GUMS in the lifetime and last three months is worrying. The relationship between substance use and the health indicators of consumers necessitates intervention and purposeful planning by policy-makers in this field.

Acknowledgements
The authors would like to thank all participants.

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Writing–review & editing: All authors.

Competing Interests
The authors declare no potential conflict of interest.

Ethical Approval
The research was approved by the ethics committee of Guilan University of Medical Sciences (No. IR.GUMS.REC.1399.392), and informed consent was obtained from all participants.

Funding
The study received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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