Pro Index | Journal of Science in Medicine and Life

Volume: 2 Issue: 5 Year: 2024

http://journals.proindex.uz

The Prevalence and Determinant of Smoking among Tikrit Medical Students

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Abstract: **Background:** The prevalence of smoking among Tikrit medical students is a concerning issue, reflecting wide trends in Iraq and globally. Despite being well-informed about the health risks linked with smoking, some medical students still join in this habit. Factors contributing to this acceptance include peer influence, stress from attentive academic demands, cultural norms, and the addictive feature of nicotine. Efforts to stop smoking should involve targeted educational campaigns, programs for smoking cessation, and institutional policies encourage a smoke-free campus environment for the well-being of coming healthcare professionals.

Objective: The aim of this research is to evaluate the prevalence of smoking between medical students to help encourage effective antismoking measures in this community.

Methods: A cross-sectional study was carried among medical students at Tikrit University. A structured questionnaire was used, comprising parts on demographic information, smoking behavior, and environmental factors. The questionnaire was self-administered as an online form and was pilot-tested for reliability before administration. Simple random sampling approach was used to ensure representation through different academic years. Ethical considerations were considered, including obtaining informed agreement and ensuring confidentiality with participation being optional and anonymous. Descriptive statistics were used to summarize demographic and smoking prevalence among medical students. Chi-square tests were employed to assess associations between smoking status and categorical variables such as gender, age, and academic year.

Results: Almost 38.4% of respondents have smoked at least once, while 61.6% have not. There is a balanced gender distribution, with approximately 49.8% female and 50.2% male respondents among the 281 participants with higher prevalence among males. The majority of smokers began between the ages of 19-24 years old. Daily smokers account for 44.6% of respondents who smoke, with many smoking fewer than 5 cigarettes a day. Cigarettes are the most common smoking choice among respondents. Roughly 73.5% have attempted to quit smoking, and about half of those who tried managed to quit permanently. Stress seems to influence the smoking habits of around 76.3% of respondents as a coping mechanism. There is a significant portion (18.9%) that reported having psychiatric disorders. Nearly 55.2% of respondents have immediate family members who either smoked or currently smoke. About 74.4% received formal education on smoking dangers during their medical studies. Around 81.5% believe medical students should set an example by not smoking. Peer pressure affected the smoking decisions of approximately 33.8% of respondents.

Conclusion: This conclusion highlights the effect of gender on smoking habit, emphasizing the higher frequency among males. It identifies cigarettes as the most popular kind of smoking, followed by shisha and vaping. The prevalence of smoking is generally low to moderate, with most participants using fewer than 5 cigarettes per day. While a majority of students have family members who smoke, they are not significantly affected by their family's smoking practice. Additionally, smoking is often used as a coping method for stress, indicating a psychological dependency between smokers.

Key points: smoking; medical students; tobacco smoking; vaping and passive smoking.

INTRODUCTION

Tobacco smoking has been a constant and serious global social trouble for years.

According to WHO reports, more than 8 million people die from tobacco use every year, nearly 50% of its users. More than seven million of those deaths result from direct tobacco use, while approximately 1.2 million as a results of exposure of non-smokers to second – hand smoke. There is limited details on smoking behaviors between medical university students in Iraq. Smoking lead to health inequalities. Multiple pathways involve targeted marketing and prepared access for less educated population at greater danger, ties to cultural standard around smoking, and the challenges of communicating hazard of smoking. Disproportions continue with regard to access to cessation services and prevention programs. (1)

A variety of clear trends in smoking have been seen among medical students around the world. In Pakistan, more than half of the smoker medical students (51.7%) began smoking after admission to the medical college. Multiple causes contribute to the beginning and adoption of this habit, some of the primary being due to pressure, cheap life, social acceptance, life problems, alleviation of worry, stress, aggravation, and frustration, smoking frequency in the family, illiterate parents, advertisement through social media, and the craving result from nicotine hold in cigarettes. Despite having a cute insight into the health risk of both passive and active smoking, students smoke in a lot, leading to utilization rate equal to or even more than that of their non-medical students. Being a respected part of society, healthcare workers are not heard only but also heeded. However, the general community also sight them as role models. Thus, smoking among medical students have consequences that can only be addressed by education and counseling. Although smoking rate among medical students, has decreased in many developed countries, it still inconsistent in developing countries. (2)

A recent study established that Palestinian smoking university students adjust towards unhealthy practices such as consuming large amounts of caffeinated drinks as well as fast food, which would increase the occurrence and seriousness of smoking health problems. Some studies within the Arabian Peninsula and close countries found the unhealthy lifestyle among university students using the Pender model. This model focused on a lifestyle that precipitate the consumption of a low-fat diet, performing regular physical activities, preserving ideal body weight, and preventing smoking and anxiety in youth. (3)

Smoking is a behavioral alter that may occur slowly through several phases of preparation, beginning, experimentation, constant smoking, and addiction. Smoking is associated with broad spectrum of diseases such as strokes, cancers, cardiovascular diseases, and pulmonary diseases. Death rate at early age among smokers is higher than among nonsmokers. Medical students will be responsible for provision healthcare to the community and can affect the future health policies of their communities; besides, health care workers who smoke mail an ambiguous message to patients whom they have encouraged to stop smoking. The frequency of smoking among medical students has been established to vary widely from country to country. As medical students will be the future doctors and make as role models in their communities thereafter, it is necessary to explain the characteristics of smoking hazard among medical students and the underlying risk factors. (4,5)

The best way is to initiate tobacco modules, promote students to engage in antismoking campaigns, provide non-smoking hospitals, non-smoking university campuses, nonsmoking dormitories, and to provide medical assistance to student smokers who want to quit. Medical professionals should argue their patients to stop smoking and impact their home communities to stop initiation of this habit. It has been frequently shown that even brief counseling of a primary care health worker to his patients lead to as many as 5 to 10 percent stopping smoking, while more inclusive interventions can result in abstinence at even higher rates.

One objective of medical education is to get ready students to stand against smoking when they become physicians. Since a significant rate of medical students are smokers, it is worth convince a student smoker to stop this harmful habit. Medical schools should provide an anti-tobacco module

to enhance interest in anti-smoking campaigns that may lead to decrease the prevalence of student-smokers. (6)

Material and Methods

Study design: Descriptive cross-sectional study took place in Tikrit city. A total of 281 students were consider as the study sample size.

Study population: Students in Tikrit university college of medicine. All students who were present throughout the study period were included.

Type of sample: Simple random sampling.

Data collecting instrument: Data were get from questionnaire and checklist utilizing an online form. The research team communicated with the group leader of each academic year in the college to outreach students and asked them to share the electronic link to all students in the same academic year. To ensure getting a valid number of answers, the electronic link was shared with all students at the medical college. The questionnaire involves demographic data (age, residency, sex, and year of study), tobacco use pattern (age of initiation and the type of smoking), tobacco smoking, and passive smoking.

Statistical analysis: Data was analyzed by statistical tests and presented by suitable tables and figures using Microsoft office programs. Chi square used to study relationship between smoking and various categorical variables (sociodemographic). The level of significance was sited at $P<0.05$ throughout the study.

Ethical issues: Ensuring that participants given informed consent to share in the study and understood the objective and potential risks was significant with safeguarding the privacy and confidentiality of participants, especially since smoking tendency may be stigmatized, minimizing potential hurt to participants including emotional or psychological distress. Being culturally sensitive to the regional norms and values of Tikrit when planning and conducting the study but at the same time carry out to transparency and honesty in recording the findings of the study, even whether they are pleasing or not to the medical student community.

RESULTS

Table 1: There were 281 participants, 38.4% of respondents have smoked at least once, while 61.6% have not. The research findings reveal significant associations between smoking behavior and various sociodemographic factors. Notably, gender exhibited a strong correlation ($\chi^2 = 36.64$, $p < 0.0001$), with a higher prevalence of smoking among males (87%) compared to females (13%). Academic year and smoking status displayed no significant association ($\chi^2 = 2.449$, $p = 0.784$), suggesting consistent smoking patterns across different academic levels. Additionally, parental education levels showed no statistically significant influence on smoking behavior, with p-values exceeding 0.05 for both father's ($\chi^2= 0.15$, $p = 0.927$) and mother's education ($\chi^2 = 0.28$, $p = 0.869$). These findings provide

valuable insights into the complex interplay between sociodemographic factors and smoking habits among the surveyed population.

Table 1: Smoking habit according to sociodemographic characteristics

Sociodemographic N (%)	Non smoker N (%)	Ever smoked N (%)	Total N (%)
Sample	173	108	281
Gender Male Female X^2 DF *P*-value	 47(27.2) 126(72.8) 36.64 1 < 0.0001	 94(87) 14(13) 58.69 1 < 0.0001	 141(50.2) 140(49.8)

Academic year 1 2 3 4 5 6 X^2 DF *P*-value	 24(77.5) 22(86.8) 27(62.8) 37(61.7) 43(53.8) 20(57.1) 2.449 5 0.784	 7(22.5) 10(13.2) 16(37.2) 23(38.3) 37(46.2) 15(42.9) 3.924 5 0.56	 31(11) 32(11.4) 43(15.3) 60(21.4) 80(28.5) 35(12.5)
Residence Tikrit city	 68(52.7)	 61(47.3)	 129(45.9)
Father's education University or above Secondary Intermediate or below X^2 DF *P*-value	 139(62.1) 23(57.5) 11(64.7) 0.15 2 0.927	 85(37.9) 17(42.5) 6(35.3) 0.22 2 0.895	 224(79.7) 40(14.2) 17(6.1)
Mother's education University or above Secondary Intermediate or below X^2 DF *P*-value	 83(62.4) 39(57.4) 51(63.8) 0.28 2 0.869	 50(37.6) 29(42.6) 29(36.2) 0.43 2 0.806	 133(47.3) 68(24.2) 80(28.5)

Figure 1: The bar chart illustrates the distribution of daily cigarette consumption among participants. The majority, 55.1%, smoked fewer than 5 cigarettes per day, while 10.1% fell into the 5-10 range. Another 10.1% reported smoking between 10-15, with 11.2% consuming 15-20 cigarettes daily. Notably, 13.5% of participants exceeded 20 cigarettes per day, providing a comprehensive view of smoking habits within the surveyed population of 89 cigarette smoker.

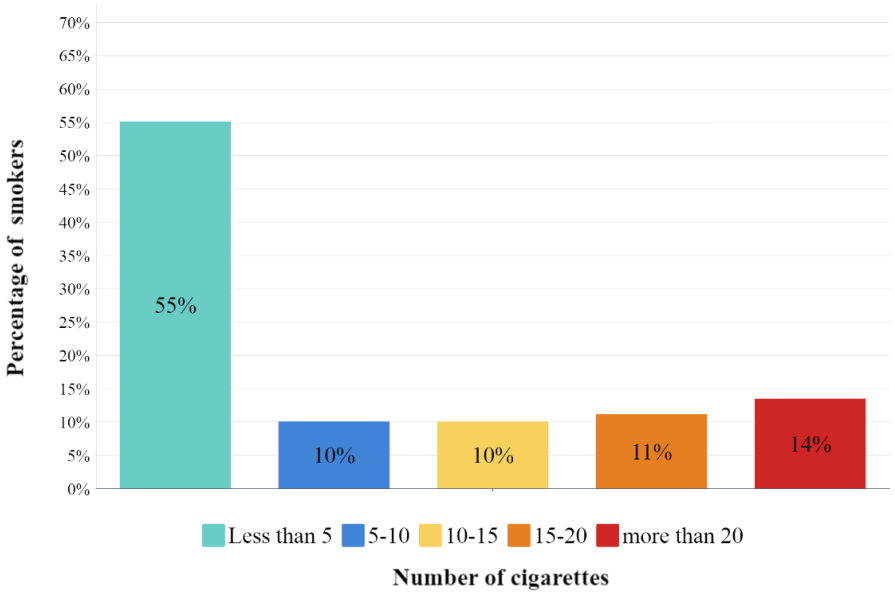

Figure 1: Frequency of daily cigarette smoking

Figure 2: This pie chart displays the percentage of using smoking as a stress management tool. The data indicates that the majority of smokers (76,3%) have used smoking as stress management and (23,7%) have not.

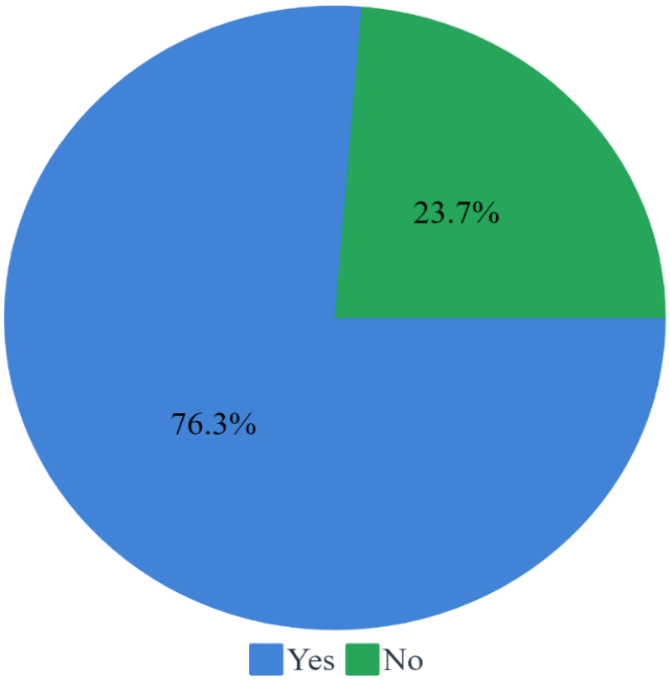

Figure 2: Use of smoking as a stress management tool

Figure 3: This pie chart explains the types of smoking. It was found that the majority of smokers smoke cigarettes at a rate of 71.3% (82), while 46.1% (53) smoke hookah, with vaping at a rate of 28.7% (33). The electronic cigarette was at a lower rate of 11.3% (13). At last, the least smoked type is pipe, 1.7% (2).

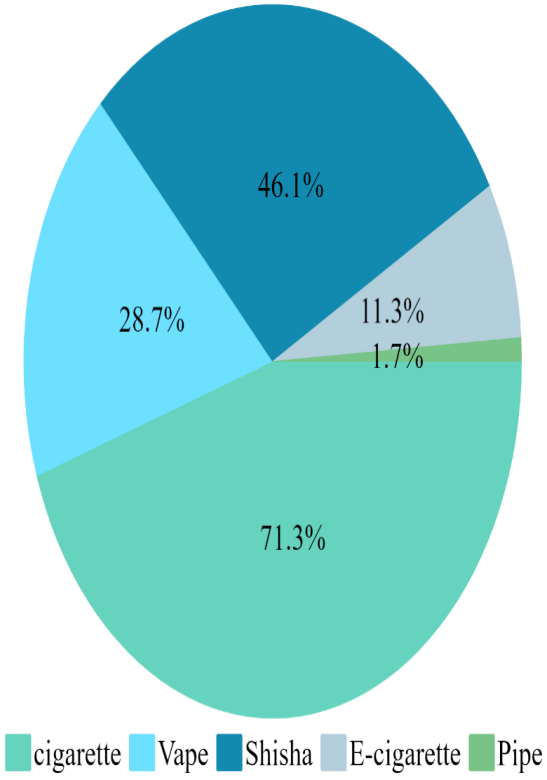

Figure 3: Types of smoking

Figure 4: The survey found that 33.8% of respondents were influenced by peer pressure to smoke, while 66.2% were not. This highlights that while peer pressure can affect smoking behavior for some, it's not universally impactful.

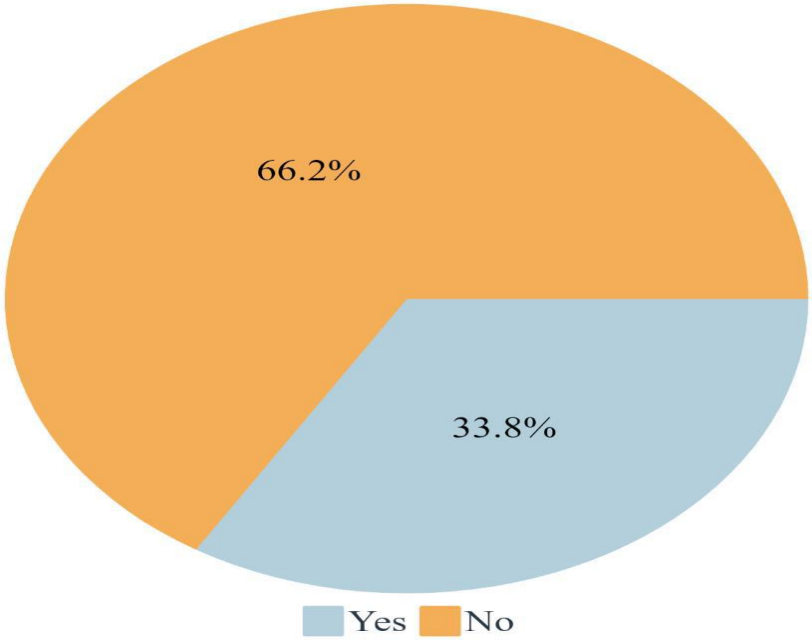

Figure 4: Peer influence on smoking habit

Figure 5: This bar chart explains the role of family history in smoking behavior among medical students. It appears that 55.2% of the students' families are smokers and 44.8% of their families are non-smokers. It was found that the majority of them, about 81.1%, are not affected by their families' smoking habits, while the minority, 18.9%, are affected by their families' smoking habit.

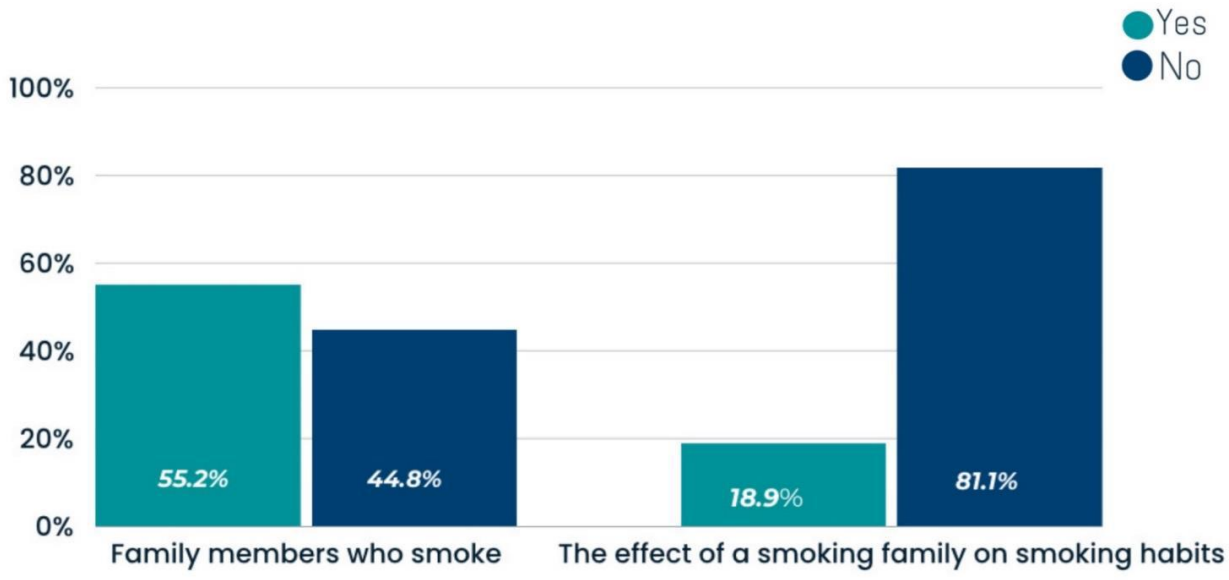

Figure 5: The role of family history in smoking behavior

Figure 6: Of the 281 participants only 53(18,9%) had associated psychiatric disorder but a significant number 32(60%) have smoked while in those with no history of psychiatric disorders 228(81.1%) only 76(31%) have smoked suggesting a clear association between smoking and psychiatric disorders showed by the bar chart below.

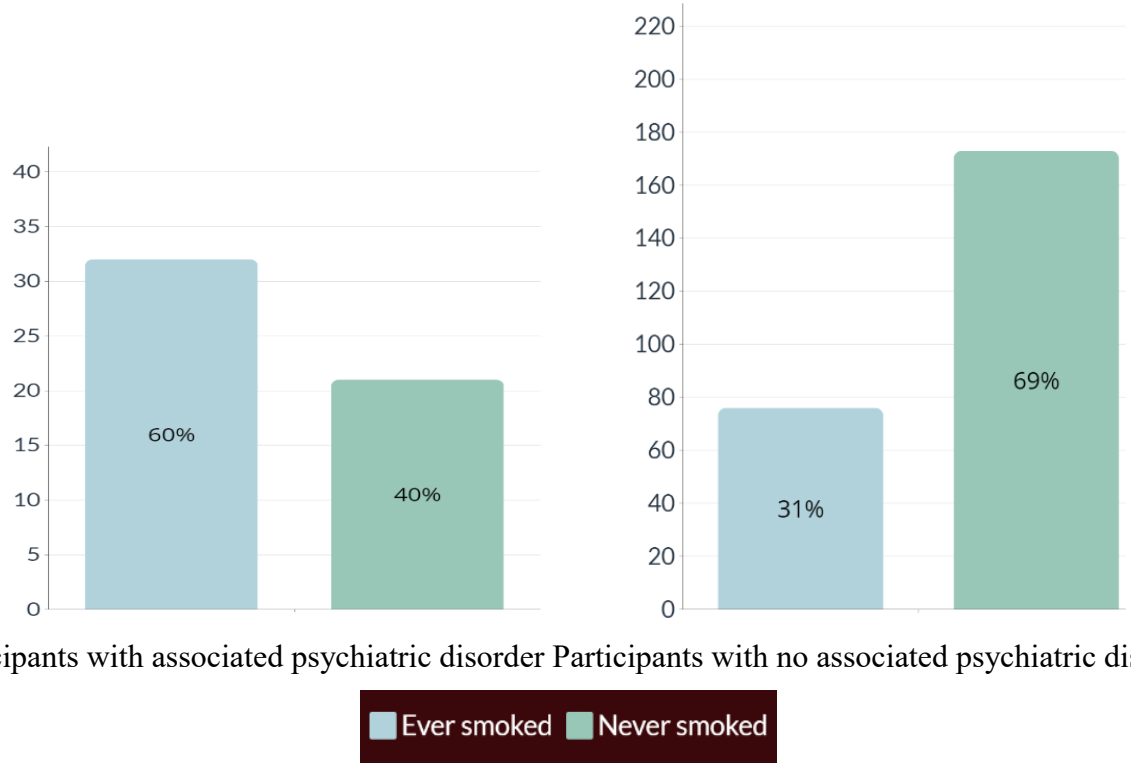

Figure 6: The relation between psychiatric disorders and smoking habit

DISCUSSION

This study was done to assess the prevalence of smoking among medical students at Tikrit university and the result shows approximately 38.4% having experimented with smoking and 61.6% of them smoke. This suggests a significant frequency of smoking. The study shows a significant gender gap in smoking prevalence, with 87% of males and only 13% of females reporting as smokers. This is in line with global trends where smoking is often more frequent among males. Social acceptability and cultural norms might contribute to this discrepancy, as seen in Arab cultures where smoking is less accepted for females. [7,8,9]

A noteworthy finding is the relationship between smoking and academic year. There was no significant association between smoking status and academic year. Relatively similar smoking rates are noticed at all academic years indicating that university life may play role to increased smoking initiation. This aligns with the concept that peer influence, stressors, and newfound freedoms during study years may help to the adoption of smoking habits and this lines with a study done among undergraduate students in Kathmandu valley, Nepal and other study among Medical Students at Jazan University, Saudi Arabia, revealed that higher frequency of smoking among students with later academic stage. [10,11]

Level of parental education showed no statistically significant influence on smoking habit. Other study reveals significant association between professional jobs and the high educational level of parents with the smoking status of students, while higher parental education is associated with high level of awareness, the study suggests that it may be due to better socioeconomic conditions and lack of parental supervision as a result of work commitments, impacting the students' smoking habits. This finding suggests that the occupation of mothers may influence their children's smoking habits. Housewives might be less aware of the risks of smoking among youth, while mothers with professional jobs might be too busy providing financial support without enough time for oversight. (4)

All types of smoking are equally common among our community except pipe. The most common type of smoking among student were cigarettes (71.3%) followed by shisha (46.1%) in second place. vape (28.7%) and E-cigarette (11.3%) showed some significance while pipe was the least

popular (1.7%). The cause for more prevalent cigarette smoking among medical student compared to the rare types is explained by an easier availability of tobacco products on the market. In comparison, the standard of smoking at Jazan university was shisha (53.5%) followed by cigarettes (25.6%) indicating that the most of students prefer cigarettes and shisha over other products. (12)

The distribution of daily cigarette expending among the surveyed people of smokers reveals a range of habits. The majority smoked less than 5 cigarettes per day (55.1%), with a smaller part falling into the 5-10 range. Additionally, some respondents reported consuming between 10-15 or 15-20 cigarettes daily, while a notable proportion exceeded 20 cigarettes per day (13.5%). This varied distribution indicates the various smoking habits within the surveyed population. The study provides insights into the prevalence of smoking among Kyrgyzstan medical students, particularly point on the number of cigarettes smoked per day and the distinction between regular and occasional smokers. It shows that a substantial portion of students are daily cigarette smokers, with the mean daily cigarette smoking frequency standing at 21%. The study shows gender disparities, with female students showing a significantly less daily cigarette smoking compared to male. Furthermore, it mentions that in spite of being ever smokers, many students show low smoking dependence. [13]

About the frequency of using smoking as a stress management tool, the data in this study indicates that the majority of smokers (76,3%) have used smoking as stress management and (23,7%) have not. Regarding other study the percentage was lesser than this, as Two hundred and eight medical students completed the study and about half of participants (49.5%) weren't smokers. 38.9 % were current smokers and 11.5% were ex-smokers. The data showed 41% smoked for social reasons 33.3% smoked for pleasure and fun and 25.7% for distress and anxiety. Other study showed that almost 25.8 % of Lebanese medical students identify themselves as smokers and the top causes given by smoking students to smoke were that they either enjoy the act 59.9 % or it relieves their stress 54.8 %. [7,9]

It is important to notice the influence of social networks in molding smoking behavior among young adults. A study shows that having smokers peers, whether housemates or friends, significantly increased the possibility of smoking among students. This suggests that social interactions and the normalization of tobacco products within peer groups play important role in influencing individuals' smoking habits. (14)

A marked increase was seen in the prevalence of smoking among respondents who had a positive history of psychiatric disorders as 60% of them have smoked before at least once. In comparison to the 31% smokers with no history of psychiatric problems displaying an immense difference. In another study compelling evidence of the association between psychiatric disorders and smoking was provided. It found that recent smokers had significantly elevated odds of experiencing these symptoms in comparison to non-smokers. There was a dose-response association, with a higher number of packs smoked per year correlating with higher risk of psychotic experiences. These discoveries underscore the complex relation between psychiatric disorders and smoking behavior, indicating that smoking may serve as a risk factor and a consequence of these conditions. [15]

Conclusion

Gender plays a significant role in smoking behavior, with males exhibiting a much higher prevalence of smoking compared to females.

Cigarettes are the most commonly smoked type, followed by hookah and vaping, with electronic cigarettes and pipes being less prevalent.

The majority of participants consume fewer than 5 cigarettes per day, suggesting a low to moderate level of smoking intensity.

A slight majority of medical students come from families with smokers, but the majority are not significantly affected by their families' smoking habits.

A substantial portion of smokers use smoking as a stress management tool, indicating a potential psychological dependence on cigarettes.

RECOMMENDATIONS

1. Integrated Smoking Cessation Programs: Put smoking cessation lessons into medical education curricula to provide future healthcare professionals with the expertise and knowledge to help patients in stopping smoking effectively.
2. Campus-Specific Tobacco Control Policies: Enforce and Implement tobacco-free policies on the medical school campuses, associated with educational campaigns to enhance a smoke-free environment and prevent smoking initiation among students.
3. Peer Support Networks: Establish peer support system or student-led initiatives within medical schools to supply resources, and accountability for smoking stopping among smoking students , creating a supportive environment to change behavior.

Conflict of Interest: None

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