



Knowledge, Attitudes, and Practices Regarding Tobacco Products Among Alberoni University Students in Kapisa, Afghanistan

Dr. Mohammad Hussain Rustampoor¹, Aziz Ehsani², Shokrullah Hussaini², Ahmad Zubair Shafaq², Nasratullah Mehrabi², Ahmad Omid Abdullah², Mohammad Hussain Mohammadi²

¹Department of Para-Clinic, Faculty of Medicine, Alberoni University, Kapisa, Afghanistan. Doctoral Researcher, Afghan Islamic International University (AIU), Kabul, Afghanistan.

²MD Graduate of Alberoni University, Faculty of Medicine, Kapisa, Afghanistan

| DOI: xxxxxx

| Corresponding Author Email: hussainrustampoor@gmail.com

Received: 05/Jan/2025

Accepted: 08/Mar/2025

Published: 21/Dec/2025

Absrtact

Tobacco use is a major public health concern, particularly among university students. Understanding students' knowledge, attitudes, and practices toward tobacco use is key for designing effective interventions. This cross-sectional study aimed to assess these factors among 370 Alberoni university students, using a smoking knowledge, attitude and practice (s-KAP) scoring system. The cumulative scores for the three factors were categorized into low (0-12), medium (13-24), and high (25-34). Descriptive statistics and the Chi-square test were used for analysis. Most (70%) participants were aware of major health risks associated with tobacco use. Knowledge and attitude scores averaged 5.87 and 5.4 out of 11 respectively, while the practice score was much lower (1.02 out of 12). The average cumulative score for the three factors was 12.29. Current tobacco users made up 25.7% of participants, with 50% reporting previous use. Peer influence was cited as the main motivator for tobacco use by 81.6% of participants, and 88.6% acknowledged the need for awareness programs on tobacco's harms. The study found a remarkable gap between knowledge and practice of tobacco products among students, highlighting the need for educational interventions to translate this knowledge into positive practice.

Keywords: Alberoni University, Tobacco Products, Knowledge, Attitude, Practice

1. Introduction

The epidemic of tobacco usage is one of the biggest health challenges worldwide killing more than eight million people each year. While cigarette smoking is the most prevalent form of tobacco use, all forms of tobacco products are harmful, and there is no safe level of exposure [1]. In recent years, there has been an annual increase in the consumption of smokeless tobacco products in developing countries [2]. Some studies found that the quantity of detrimental components of tobacco was higher in local products as compared to factory-manufactured products [3].

Almost all who use tobacco products commence it during adolescence [4]. Unhealthy behaviors developed at this age may persist into adulthood [5]. The use of tobacco products and other stimulants has been considered a way of coping with anxiety. [6]. Another factor influencing university students' tobacco habit is residency in dormitories. A study comparing tobacco use among school students in Afghanistan, Oman, and Kuwait found a significant inverse association between parental monitoring and tobacco use [7].



In Saudi Arabia, the prevalence of Cigarette smoking, Shisha smoking, Snuff, and smokeless tobacco was reported as 30.1%, 28.3%, 16.8%, and 14.6%, respectively among college students [8]. In Pakistan, it is reported that one in every five adults uses some form of tobacco, and several forms of tobacco products are consumed like Waterpipes, “Shisha,” “Pan,” “Gutka,” and “Niswar” [9]

Afghanistan is among the countries with limited national survey data on smoking prevalence, due to several conflicts that have substituted this priority [11]. Though there are some reports on the prevalence of tobacco use at the community level, few studies have addressed the behavior of university students toward tobacco products. However, some studies focused on the use of special types of tobacco products among university students. For instance, Niazi et al. reported that the prevalence of Waterpipe smoking among male and female students of Herat university was 27.1% and 7.6%, respectively [12].

This study aimed to assess the knowledge, attitudes, and practices regarding four tobacco products (Cigarettes, Snuff, Pan, and Waterpipe) among students at Alberoni University in Kapisa, Afghanistan. The findings of this study should help academic staff identify and strengthen the weak points in knowledge, attitude, and practice of tobacco products among university students. It is further intended to aid policymakers in designing effective intervention programs.

Materials and Methods

1.1. Study Design

This cross-sectional study was conducted at Alberoni University between September and December 2024. Located in Kapisa province of Afghanistan, Alberoni university educates 4066 students in nine different faculties. The eligibility criteria were being an undergraduate student of any faculty and giving informed consent to attend the study.

1.2. Sample size and Sampling Technique

The Raosoft sample size calculator was used to determine the sample size. Having a population size of 4066, a confidence level of 95%, and a margin of error of 5% the sample size was calculated to be 352 students. An additional ten percent was added to the sample size to account for potential non-responses. The general list of students enrolled at Alberoni university in the database of the directory of statistics and planning of the university was used as the sampling frame. The total number of students (4066) was divided by 387 to find an index number. The first student to attend the study was selected randomly and then every eleventh student was selected from the list to complete a total number of 387 students. These students were selected disproportionately from different faculties. From these 11 students refused to attend and 6 questionnaires were excluded due to missing data. Finally, 370 students (95.6% response rate) were included in the study.

1.3. Data collection and instruments

To quantify students' knowledge, attitude and practice regarding tobacco products, the method used by Al-Shami et al was adopted with some modifications [13]. A Self-administered questionnaire was developed which consisted of 37 items grouped into four sections: the demographic section (3 items), the knowledge section (11 items), the attitude section (11 items), and the practice section (12 items). To gather comprehensive data, a multi-response approach was employed, where each question offered two to four options with 'yes' or



'no' responses. Each correct (yes) answer was given one mark and each incorrect (no) answer was given a zero mark. A pilot test was conducted with 40 students and Kuder-Richardson Formula 20 (KR-20 formula) was calculated to determine the internal consistency of the questionnaire, which yielded results of more than seven. The total s-KAP score could range from 0-34 (0-11 for the knowledge and attitude sections and 0-12 for the practice section). We defined a score of (0-12) as low knowledge, negative attitudes, and poor practices indicating a significant need for education and support. A score of (13-24) as moderate knowledge and positive attitudes, but still room for improvement in practices, and a score of (25-34) as high knowledge, positive attitudes, and strong practices.

Statistical Analysis

IBM Statistical Package for Social Sciences (SPSS version 26th) was used for data analysis. Descriptive statistics were used to find the prevalence of use of different tobacco products. To compute s-KAP score for each section the mean score for all question included in that section was calculated. The chi-square test was used to elucidate the possible relationship between categorical variables.

Ethics

The ethical committee of Herat University protocol number (13) approved this study (approval code: #241202-13). Furthermore, informed consent was given from participants on the same page as the questionnaire.

2. Results

2.1 Characteristics of participants

A total of 370 students were included in this study. The mean age was 21,4 (range 18-29) years. The range for education years of students was one to six years. Most of the participants were in their primary years.

Knowledge

The proportion of participants knowledgeable about the harms of the four tobacco products is presented in table 1. Table 2 shows the difference in knowledge of participants about the health risks of tobacco products according to their age categories. There was a significant association between the age of participants and knowledge about the carcinogenic effects of tobacco products. Figure 1 shows the level of knowledge of participants regarding the major harms of tobacco products. The mean score for the knowledge section was 5.87 (out of 11).

Table 1. Proportion of participants knowledgeable about the harms of tobacco products.

Knowledge of harm	Cigarette is harmful to health	Snuff is harmful to health	Pan is harmful to health	Waterpipe is harmful to health
Proportion of participants	82.7%	76.8%	69.2%	51.1%
More harmful product	Cigarette is more harmful	Snuff is more harmful	Pan is more harmful	Waterpipe is more harmful
Proportion of participants	32.4%	13.2%	8.4%	45.9%

Table 2. Differences in knowledge of participants about health-risk of tobacco products according to the age.

Risk of tobacco products according to the age.					
Health risk	Age range				P-value
	18-23 years		24-29 years		
	Yes	No	Yes	No	
Tobacco causes cancer	70.6%	29.4%	92.2%	7.8%	0.00
Tobacco causes lung disease	80.4%	19.6%	82.8%	17.2%	0.65
Tobacco causes cardiovascular disease	52.3%	47.7%	57.8%	42.2%	0.42

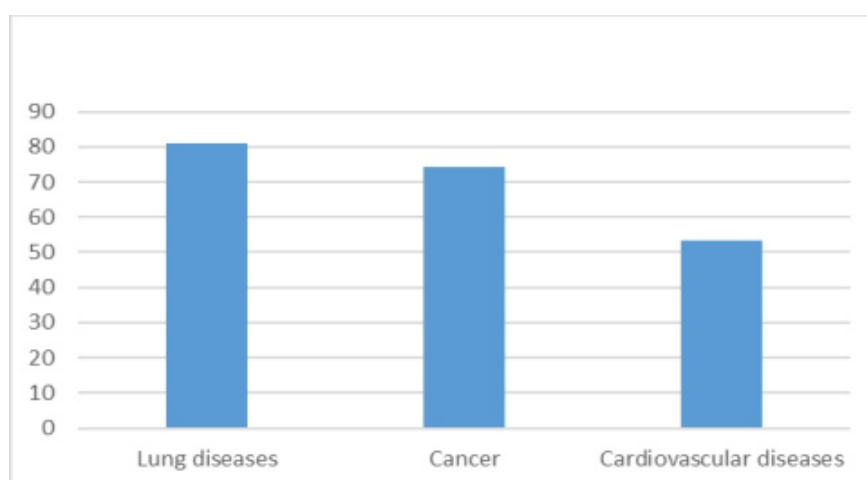


Figure 1. Knowledge of participants regarding tobacco products

Attitude

Of all participants, 93.8% believed that the use of tobacco products in public is not socially acceptable, and 89.5% believed that the trade of tobacco products should be abandoned. Although a small proportion of participants (8.4%) thought that 'Pan' was the most harmful among the four tobacco products, there was a significant association between this thought and the belief that the trade of tobacco products should be banned ($P = 0.004$). Table 3 presents proportion of social stimuli accused by participants as motivator for use of tobacco products. Furthermore, 88.6% of participants declared that there was a need for the organization of awareness programs regarding the harms of tobacco products for university students. Figure 2 describes that most of the participants suggested fasting as the best method of tobacco harm reduction program. The total score for the attitude section was 5.4 (out of 11).

Table 3. Social stimuli reported as motivator for use of tobacco products by participants.

Social stimuli	sadness	tiredness	smoker roommate	happiness
Proportion of participants believed	55.1%	21.6%	81.6%	14.3%

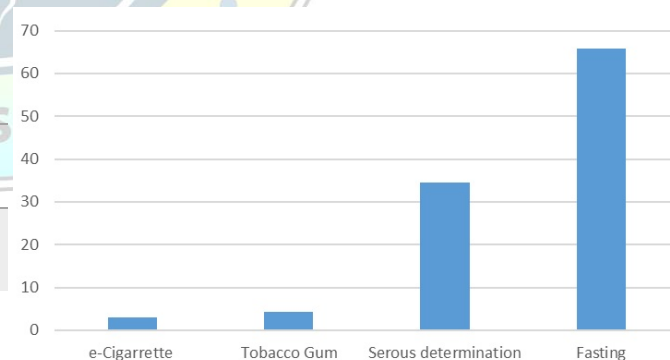


Figure 2. Tobacco harm reduction program suggested by participants

Practice

Table 4 shows proportion of participants who have ever used and currently use the four tobacco products. Table 5 provides a comparison between the prevalence of ever use and current use of these products. As shown in the table, statistically significant differences were observed between the proportions of participants who have ever used the four tobacco products and those who are current users. Figure 3 compares the proportion of participants who ever used the tobacco products with those who attempted to

quit their use. As evident from the figure, almost half of those who have ever used the four tobacco products have attempted to quit them. The total score for practice section was 1.02 (out of 12).

Table 4. Proportion of ever used and current users of the four tobacco products among participants.

Tobacco product	Cigarette	Snuff	Pan	Waterpipe
Ever used	25.1%	9.5%	8.9%	6.55
Current user	12.4%	4.6%	5.7%	3%

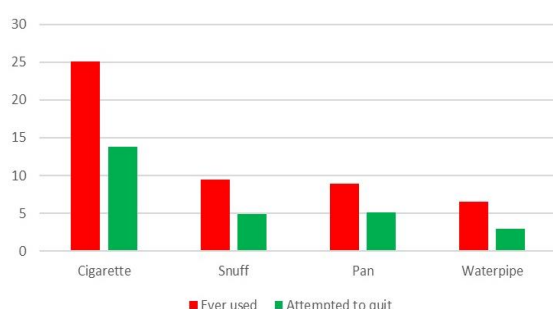


Figure 3. Comparison of ever used versus attempt to quit of tobacco products

Table 5. Comparison of who ever used and who are current users of the four tobacco products among participants.

Tobacco products	Ever used	Current user	P-value
Cigarette	25.1%	12.4%	0.00
Snuff	9.5%	4.6%	0.00
Pan	8.9%	5.7%	0.00
Waterpipe	6.5%	3%	0.00

3. Discussion

This study investigated the knowledge, attitudes, and practices regarding tobacco products among students at Alberoni University.

We found that most participants were familiar with the four tobacco products evaluated in this study (Cigarette, Snuff, Pan, and Waterpipe) and knew about major health damage (cancer, lung diseases, and cardiovascular diseases) associated with their use. Interestingly, knowledge of the carcinogenic effects of tobacco products increased significantly with age (92.2% vs 7.8% in age groups 24-29 and 18-23 years, respectively, $P < 0.001$). This finding suggests that awareness of the most serious health consequences of tobacco use increases with age and potentially with educational exposure. Only a small proportion (8.4%) of participants thought that “Pan” was the most harmful among the four tobacco products. This belief may contribute to students' growing habit of using “Pan”.

Most participants believed that using tobacco products in public is not socially acceptable and the trade of tobacco products should be prohibited. However, significantly smaller proportion of those who described the “Pan” as more harmful to health believed that the trade of tobacco products should be forbidden. This belief may arise from the fact that prohibition of the trade of tobacco products such as cigarettes may contribute to an increased usage of locally manufactured products like “Pan”. Previous studies have indicated increased consumption of alternative tobacco products, such as tobacco gum, with increase in price of Cigarette [14].

Regarding social influencers, most participants blamed peer influence followed by sadness, the two factors that students are more prone to face in dormitories and student lifestyles. Previous research has consistently shown that peer influence is a significant factor in the initiation of tobacco use [15, 16]. A high proportion of participants acknowledged the need for awareness programs on tobacco harms for university students.



Furthermore, most suggested fasting as the best method for tobacco harm reduction programs. Barakat et al. stated that the fasting of Ramadan presents a good chance for smokers to quit [17]. Mohsen et al. reported the severity of withdrawal symptoms was minimal during fasting [10]. Ahmad et al found that the severity of withdrawal symptoms from smokeless tobacco decreased with the duration of fasting [13]. This study found that 50% of participants reported ever using at least one of the four tobacco products, while 25.7% were current users. A statistically significant difference was observed between the proportion of students who have ever used these products and those who are current users. This finding might indicate that most of those who use tobacco products incidentally do not become regular users of these products, and the accidental use may reflect an aspect of peer influence or stress the two common events of student lifestyle. On the other hand, some regular users may have quit tobacco products prior to the start of this study. This interpretation follows our finding that 26.8% of respondents reported attempting to quit tobacco products.

It is worth mentioning that the prevalence of tobacco usage among students is much lower in Afghanistan as compared to Western countries. For example, a study reported that lifetime cigarette use among college students was 78,2% in the USA [5]. In Afghanistan, the prevalence of tobacco use at the community level is reported to be greater than our findings. For example, Alemi et al. used data from the Afghanistan Demographic and Health Survey 2015 and reported that the prevalence of use of any form of tobacco was 44,2% with cigarette smoking being the most prevalent (21,9%) followed by tobacco chewing (17,7%) and snuff (14,2%) among men [2]. This difference could be due to the higher knowledge of university students regarding the harms of tobacco products as compared to the general community. A recent study reported that tobacco consumption significantly decreased with educational advances [18].

We had a few limitations in the conduction of this study. For instance, we were unable to assess the knowledge, attitude, and practice of female students regarding tobacco products. Furthermore, we did not have access to potential experts in the field to have them examine content validity of the used questionnaire.

4. Conclusion

This study found a substantial gap between Alberoni university students' knowledge and attitudes toward tobacco products and their actual behavior. While students exhibited reasonable knowledge and aligned attitudes, half reported ever using tobacco products, and over a quarter were current users. Notably, the rate of quit attempts was slightly higher than the rate of current users, suggesting that some students have successfully quit. These findings indicate that many current users may be open to quitting with appropriate support and interventions.



5. Recommendations

1. Increase awareness of long term health risks of tobacco products thorough workshops, educational campaigns and preach of religious scholars.
2. Implement targeted tobacco cessation programs, such as counseling, group support, and nicotine replacement therapy.
3. Enhancing support on stress management through the existing psychological counseling center.
4. Regular assessment of students' knowledge, attitudes, and behaviors toward tobacco use for adjusting interventions.

6. References

1. <https://www.who.int/news-room/fact-sheets/detail/tobacco> [Internet]. [cited 16, Dec, 2024].
2. Alemi Q, Stempel C, Montgomery S. Prevalence and social determinants of tobacco use in Afghanistan. *International Health*. 2020;13(1):3-12.
3. Nasrin S, Chen G, Watson CJW, Lazarus P. Comparison of tobacco-specific nitrosamine levels in smokeless tobacco products: High levels in products from Bangladesh. *PLOS ONE*. 2020;15(5):e0233111
4. Gentzke AS. Tobacco product use and associated factors among middle and high school students—National Youth Tobacco Survey, United States, 2021. *MMWR Surveillance Summaries*. 2022;71.
5. Torabi MR, Yang J, Li J. Comparison of tobacco use knowledge, attitude and practice among college students in China and the United States. *Health Promotion International*. 2002;17(3):247-53.
6. Jodczyk AM, Kasiak PS, Adamczyk N, Gębarowska J, Sikora Z, Gruba G, et al. PaLS Study: Tobacco, Alcohol and Drugs Usage among Polish University Students in the Context of Stress Caused by the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*. 2022;19(3):1261.
7. Shaikh MA. Tobacco use in school students in Afghanistan, Oman and Kuwait and association with parental monitoring: analysis of data from Global School-based Student Health surveys. *Eastern Mediterranean Health Journal*. 2020;26(1):122-
8. AlQahtani J. Knowledge, attitude and practice of tobacco smoking among health colleges' students at Najran University, Saudi Arabia: A cross-sectional descriptive study. *Journal of Health Specialties*. 2017;5:35.
9. Hameed A, Malik D. Assessing the Knowledge, Attitude, and Practices of Cigarette Smokers and Use of Alternative Nicotine Delivery Systems in Pakistan: A Cross-Sectional Study. *Advances in Public Health*. 2021;2021(1):5555190.
10. Mohsen S, El-Gilany A-H, Essam N. Effect of Ramadan fasting on changes in smoking and vaping behaviors and withdrawal symptoms severity: a cross-sectional study. *Journal of Addictive Diseases*. 1-11.



11. Al-Mandhari A, Hammerich A, El Awa F, Bettcher D, Mandil AMA. Full implementation of the WHO Framework Convention on Tobacco Control in the Eastern Mediterranean Region is the responsibility of all. Eastern Mediterranean Health Journal. 2020;26(1):4-5.
12. Niazi AU, Shayan NA, Ozgur S, Joya SA, Ozcebe H. Waterpipe Smoking among Herat University Students: Prevalence, Attitudes, and Associated Factors. Addict Health. 2020;12(4):235-43.
13. Al-Shami AM, Elsayed TM, Elkalmi RM, Jamshed SQ, Dyab EA, Siddiqui MJ, FATA NAHAS AR. Knowledge, Attitude and Practice of Smoking among Pharmacy Students: Findings from a Public University. Journal of Clinical & Diagnostic Research. 2018 Dec 1;12(12).
14. Johnson MW, Bickel WK, Kirshenbaum AP. Substitutes for tobacco smoking: a behavioral economic analysis of nicotine gum, denicotinized cigarettes, and nicotine-containing cigarettes. Drug and Alcohol Dependence. 2004;74(3):253-64
15. Ahmed I, Ibrahim Y. RAMADAN FASTING: A STEP IN QUITTING SMOKELESS TOBACCO AND ALLEVIATING ITS WITHDRAWAL SYMPTOMS. Malaysian Journal of Public Health Medicine. 2024;24(1):165-71.
16. Henneberger AK, Mushonga DR, Preston AM. Peer Influence and Adolescent Substance Use: A Systematic Review of Dynamic Social Network Research. Adolescent Research Review. 2021;6(1):57-73.
17. Barakat MM, Al-Qudah RaA, Alfayoumi I, Al-Obaidi HJ, Jirjees FJ, Basheti I. Electronic cigarettes' withdrawal severity symptoms among users during intermittent fasting: a cross-sectional study. Addiction Science & Clinical Practice. 2021;16(1):10.
18. Nkomo NY, Adanlawo EF. The effects of education on tobacco consumption: A panel data analysis. Journal of Ecohumanism. 2024;3(3):308-16