Original Article

Assessing University Students Smokers Knowledge and Behaviours' Related Smoking

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ABSTRACT

Background: Smoking persists as a global health problem being one of the major risk factors to non-communicable diseases and early death particularly among youth. This study aims to assess the university student's smoker's knowledge and behaviours' related smoking. **Method:** A cross-sectional study design was utilized throughout this study on the World Wide Web (WWW) for globalization. The researchers used convenience sampling technique to select 120 university students' smokers. The researchers used three online self-administered questionnaires for data collection as follows: socio-demographic characteristics of students, subjective smoking behaviour, and knowledge of students regarding smoking. **Results** indicated that the mean age of students was 20.58±1.64 years. The males represented 100% and smoking daily with a mean number of cigarettes consumed per day was 17.4±5.51 cigarettes. Furthermore, 70.8% of students smoked their first cigarette as a sense of pleasure, peer pressure represented (68.3%), and (42.5%) tried to mimic smokers of family members. Moreover, 99.2% of the studied students had a poor score level of knowledge regarding smoking. **Conclusion:** The researchers concluded that the prevalence rate of smoking among university students was high and the common factors of smoking among students were tried to mimic smokers of family members and the pressure of peer smoking. In addition, most students have a poor level of knowledge regarding smoking. Accordingly, the researchers **recommend** an urgent need for higher education institutions to develop strategies for smoking cessation within universities. Implement educational programs to raise awareness of the smoking harms.

Keywords: smoking behavior, knowledge, tobacco smoke, young adult.

Introduction:

Smoking is a leading cause of preventable and premature death worldwide. Globally, tobacco use causes more than 8 million yearly deaths (World Health Organization [WHO], 2019). Overall mortality among smokers is about 3 times higher than non-smokers. Despite the severe health risks, 1.3 billion people are still smokers worldwide. Of these, about 80% live in low- and middle-income countries where the burden of tobacco-related illness and death is even more significant (Machado, Gomide, Bernardino, & Ronzani, 2022). It is an important risk factor for serious health problems and life-threatening diseases such as cerebro- and cardiovascular diseases, malignant tumors, and chronic obstructive pulmonary disease (Nomura et al., 2019).

A relevant issue is the diffusion of new nicotine-containing products, such as heated tobacco products, electronic cigarettes, and other emerging products (i.e., hookah, smokeless tobacco, and dissolvable tobacco) particularly popular among the young population (Boakye et al., 2022; Liu et al., 2019).

Smoking in Egypt constitutes a public health problem. One fifth (19.7%) of the Egyptian population are currently using some form of tobacco product. Men are more likely (38.1%) to use tobacco than women (0.6%) according to global adult tobacco survey (GATS) (Sabra & Hala, 2018).

University life is a critical transition stage through which young adults set out to discover tobacco use (Wang et al., 2019). University education stage can be a stressful and vulnerable period of development, marked by a tendency to adopt risky behaviors such as increasing tobacco use (Kabbash & Saied, 2020). University students experience fundamental changes in social contexts and identity, as they transition to life away from home (most but not all) and make new friends at university. Simultaneously, they face added social, emotional and educational challenges in the university (Amin, Shaheen, & Omran, 2016).

Starting smoking early increases the risk of regular smoking, and early adulthood is often associated with increasing cigarette smoking and the establishment of regular smoking habits. The

harmful effects of smoking at this stage of life can have lifelong consequences, as increasing risk of chronic disease, impairing cognitive function and reduced quality of life (Tian et al., 2016; Zhou et al., 2023; Fouad et al., 2020, Abd elKawi, Mohamed, & Farg, 2022).

Understanding the motivations that lead students to smoke is relevant because such an understanding can aid in preventing dependence and encouraging smoking cessation (Osman, 2023). Counseling and health education sessions are among roles of community health nursing toward main public health issues especially smoking during youth stage (Backhaus et al., 2020).

Aim of the Study

This study aimed to assess university students' smokers' knowledge and behaviours related smoking.

Research Questions

1. What are the university students' smokers' level of knowledge regarding smoking?
2. 2- What are the university students' smokers' subjective smoking behaviour?

Method

Study Design

A descriptive cross-sectional study design was utilized to accomplish this study.

Setting

This study was conducted on the World Wide Web (WWW) for globalization.

Subject and sampling

The study subjects were Mansoura University students' smokers aged 18 to 25 years; this age range has the highest smoking prevalence according to (Substance Abuse Mental Health Services Administration, 2014). The study subjects were selected according to the following criteria:

- Smoked 100 or more cigarettes in their lives and currently smoking at least 1 cigarette per day on 3 or more days of the week according to (Jamal, Agaku, O'Connor, King, & Kenemer, 2014; Ramo et al., 2015).
- Had internet access (e.g., e-mail, etc.).

Sample size calculation

Total sample size included 120 man students were selected from different academic years at different faculties of Mansoura University by used multistage sampling technique, first stage disproportionate quota sample, second stage convenience sampling technique.

Tools for data collection

The researchers used three tools for data collection:

Tool I. Students' socio-demographic self-administered structured questionnaire. used to assess demographic and personal data of university students' smokers such as age, gender, marital status, residence, etc…. In addition to socioeconomic level, which was adopted from the Fahmy and El-Sherbini Socio-Economic Scale, 1983, El Gilany, El-Wehady, and El-Wasify modified this tool in 2012. According to the El-Gilany et al. (2012) socioeconomic scale, the researchers assessed the socioeconomic level of students as:

- Very low socio-economic level scored 1–21 points.
- Low socio-economic level scored 22–42 points.
- The middle socio-economic level scored 43–63 points.
- The high socio-economic level scored 64-84 points.

Tool II. Online subjective smoking behavior assessment questionnaire. The researchers used this questionnaire to assess the smoking behavior of university students' smokers. It consisted of three parts, as follows:

Part (1). To assess the use of different forms of tobacco products, which included nine closed-ended questions and three open–ended questions

Part (2). To assess previous quit attempts in the past six months which included 14 closed ended questions and one open ended question.

Part (3). To assess motives for smoking, it composed of 14 items.

Tool III: Online knowledge assessment questionnaire about smoking. The researchers used this tool to assess the knowledge level of university students' smokers regarding smoking which covered seven main categories:

1) *Smoking hazards.* (It included 31 items = 31 marks).
2) *Smoking cessation benefits.* (It included 17 items = 17 marks).
3) *Control the cravings to smoke.* (It included 9 items = 9 marks).
4) *Quitting smoking strategies.* (It included 6 items = 6 marks).
5) *Nicotine withdrawal symptoms.* (It included 7 items = 7 marks).

6)*Secondhand smoke exposure dangers.* (It included 15 items = 15 marks).

7) *Methods to combat smoking.* (It included 5 items = 5 marks).

Scoring System; The total scores of the knowledge ranged from 0 to 90 marks. The scoring system was determined as one mark awarded for each correct response and zero mark for wrong or incomplete answers.

According to the researcher's cut point, the knowledge score level was categorized into three levels as:

Poor. < 50% of total scores (0 – less than 45 marks).

Fair. 50% to < 65% of total scores (45- less than 58.5 marks).

Good. ≥ 65% of total scores (58.5 marks and more).

Field work

Data were collected through two phases:

Preparatory phase. It included the following:

Administrative stage (Ethical consideration). The researchers obtained approval from the Research Ethics Committee of Faculty of Nursing, Mansoura University, to conduct the study. Then, obtained informed consent from the participants after clarifying the aim of the study and assuring them that their identities and responses would be confidential and used only for research purposes. In addition, their participation in the study was voluntary, and they had the right to withdraw from the study at any time.

Literature reviews. The researcher reviewed the national and international literature regarding smoking using scientific published articles and textbooks. This review was a guide for developing study tools.

Developing study tools. The researchers developed the tools for data collection based on reviewing the relevant literature except part two of tool I adopted.

Validity and reliability:

A jury of five experts in community health nursing tested the content validity. The experts reviewed the tools for clarity, relevance, completeness, simplicity, and applicability; minor changes were made, and developed the final form. **A pilot study** was carried out on 10% (12 university student smokers) before data collection to test applicability, and feasibility of the tools. The students who were included in the pilot were excluded from the study sample. Tool reliability

was calculated by Cronbach alpha test which measured the tool internal consistency, which was 0.86 for the knowledge questionnaire.

Operational phase. It included the following steps:

Assessment. The researchers introduced themselves and gave a brief explanation of the study's aim. Eligible individuals after the prescreen were required to sign a consent form after including the selected criteria. All participants uploaded and completed the online self-administered questionnaires on the Google form.

The researchers used tools (I, II, and III) to assess university students' smokers' socio-demographic characteristics, subjective smoking behavior, knowledge about smoking, each questionnaire lasted (25-30 minutes) to be completed. The researchers contacted with students by e-mail and social media.

Statistical analysis. The researchers sorted, coded, organized, categorized the data, then transferred it into specially designed formats. The researchers analyzed the data using SPSS (Stands for Statistical Product and Service Solutions) version 20.0. The normality of the data was first tested with a one-sample Kolmogorov-Smirnov test. Descriptive statistics were used in presenting the frequency and percentage. Continuous variables were presented as mean ± SD (standard deviation) for normally distributed data and median (Min-Max) for non-normal data and percentages for categorical variables.

Results

Table 1 clarifies that the mean age of students was 20.58±1.64 years and all of them 100% are men. Regarding marital status, 98.3% were single, 95.8% of students were living with their parents. Regarding their residence, 57.5% of the students were living in rural areas. Regarding socio-economic status, 65% of students belonged to the middle socio-economic level.

Figure 1 shows distribution of students according to faculty, revealed that 15.8% of students were in faculty of Education, while 2.5% of students were in faculty of Tourism and hotel management.

Figure 2 presents the studying year of students; 28.3% were studying in the fourth year,26.7% in the second year, 22.5% in the third year. While 11.7% in the first year and 4.2% were postgraduate students.

Table 2 reveals students' tobacco smoking status. All students were smoking daily. The mean number of cigarettes per day was 17.4±5.51 cigarettes and the mean number of water pipe tobacco sessions / week was 0.43±1.17 on average.

Table 3 reveals students use of e-cigarettes: 15.8% of students were smoking electronic cigarettes irregularly, whereas only 6.7% of students were smoking daily. Only3.3% used an e-cigarette previously. As regards causes of using e-cigarette, 19.2% enjoyed smoking, 16.7% used it when traditional cigarettes are not available and 10.8% liked its flavors.

Table 4 reflects distribution of the students regarding the starting smoking reasons and smokers among their friends and family. In relation to reasons for starting smoking, 70.8% of students had a sense of pleasure, 68.3% had peer pressure. Also, 30.8% and 30% had family problems, a sense of masculinity, and study pressure, respectively. Moreover, 29.2% of students used to attract attention and were influenced by famous people they liked. In addition, 25.8% and 10%, used to relieve stress and temptations of media and social media, respectively. Regarding family/peer smoking, 55.8% of students had 1-3 family members smokers and 53.3% of them reported smokers among peers.

Table 5 declares distribution of the students according to their quit attempts in the past 6 months. 26.7% tried quitting smoking. Also, 20.8% of students were without assistance. Only 4.2% and 3.3% of students used nicotine replacement therapy and counseling at smoking cessation clinic, respectively to help quit.

According to students' motives to quit smoking over the past 6 months, 25.8% of students were worried about their health. 17.5% of their close friends and family refused to smoke. Only 5.8% and 2.5% of students were advised to quit smoking tobacco by health professionals and the effects of the health education campaign, respectively.

Table 6 indicates that 100%, 99.2%, 96.7%, 91.7%, 97.5%, 60.8%, and 99.2% of the studied students had a poor score level of knowledge regarding smoking hazards and controlling the cravings to smoke, quitting smoking benefits, quitting smoking strategies, nicotine withdrawal symptoms, dangers of second-hand smoke, and ways to combat smoking with a mean of 3.85±1.54, 2.38±1.63, 0.65±0.84, 0.65±0.89, and 2.02±1.07, 2.36±1.05, and 1.83±1.27 marks, respectively. Also, 99.2% of the studied students had a poor total score level of knowledge regarding smoking, with a total mean of 13.75±7.93.

Table 1. *Students' Socio-Demographic Characteristics*

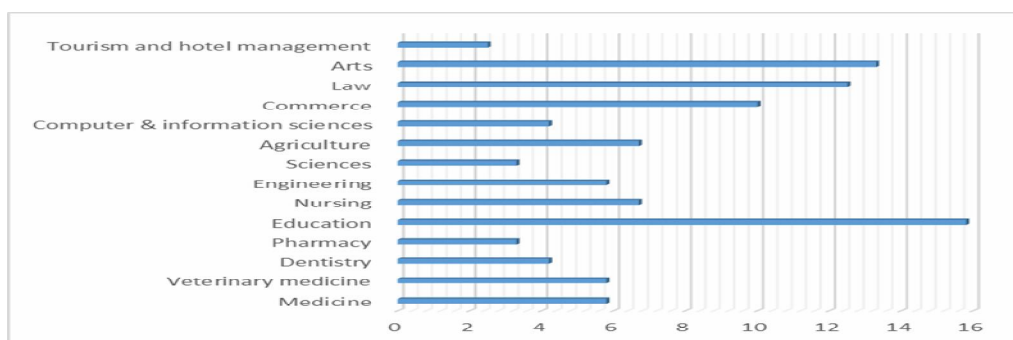| Item	n=120	%
Age (Years)		
$\overline{X}$±SD (20.58±1.64) Min-Max (18-25)		
Gender		
Man	120	100.0
Residence		
Rural	69	57.5
Urban	51	42.5
Marital status		
Single	118	98.3
Married	2	1.7
Working students	20	16.7
Lives with		
Parents	115	95.8
Only mother	3	2.5
Father and stepmother	2	1.7
Socioeconomic status		
Low	9	7.5
Middle	78	65.0
High	33	27.5

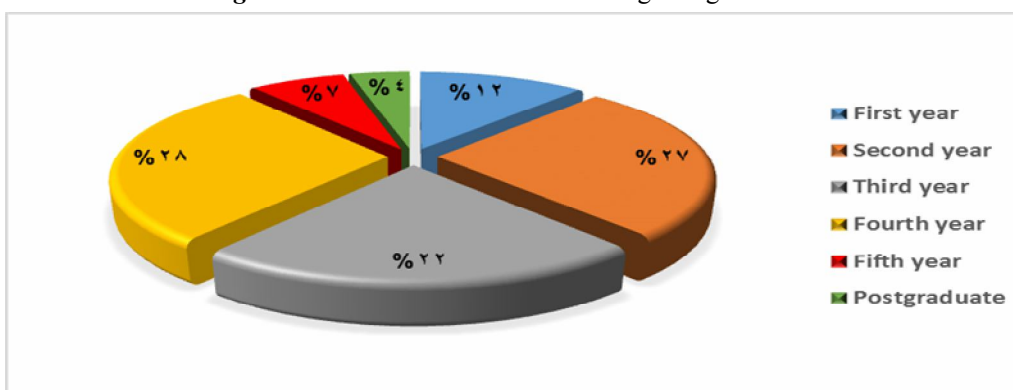***Figure 1.*** Distribution of the students regarding faculties

Figure 2. Distribution of the students according to the academic level

Table 2. *Students Daily/Weekly Tobacco Smoking Consumption*

Item	n=120	%
Current tobacco smoking status		
Daily smoking	120	100.0
Number of traditional cigarettes/days		
2-5 cigarettes/day	1	0.8
6-10 cigarettes/day	13	10.8
11-20 cigarettes/day	84	70.0
>20 cigarettes/day	22	18.3
Mean ± SD	17.4±5.51	
Smoking the first cigarette after waking up		
6-30 minutes	15	12.5
31-60 minutes	34	28.3
More than 60 minutes	71	59.2
Difficult to refrain from smoking in public places	40	33.3
The cigarette that is difficult to give up		
The first one in the morning	85	70.8
Any other	35	29.2
Smoke more frequently inthe morning than the rest of the day	29	24.2
Smoke even if is sick in bed most of the day	10	8.3
Average number of water pipe tobacco sessions / week		
Mean ± SD	0.43±1.17	
Median (Min-Max)	0 (0-6)	

Table 3. *Distribution of the students according to their use of e-cigarette*

Item	n=120	%
Current use of electronic cigarettes		
Not at all	93	77.5
Irregular	19	15.8
Daily	8	6.7
Past use of electronic cigarettes	4	3.3
Duration of use e- cigarette on a daily basis for daily smokers		
4 to < 12 months	2	1.7
1-2 years	6	5.0
Causes of electronic cigarette use*		
Enjoy of smoking	23	19.2
Unavailability of tobacco cigarette	20	16.7
Less harmful than smoking tobacco	19	15.8
Like its flavors	13	10.8
Not applicable	93	77.5

*Note. * More than one answer was awarded.*

Table 4. *Distribution of the students regarding starting smoking reasons & smokers among friends and family*

Item	n=120	%
Reasons for starting smoking*		
Family problems	37	30.8
Mimic family member	51	42.5
Sense of masculinity	36	30.0
Peer pressure	82	68.3
Easy to get cigarettes	82	68.3
Stress relief	31	25.8
Sense of pleasure	85	70.8
To attract attention	35	29.2
Temptations of media and social media	12	10.0
Influenced by famous people	35	29.2
Trying something new	75	62.5
Study pressure	36	30.0
Number of family members who smoke		
None	50	41.7
1-3	67	55.8
More than 3	3	2.5
Number of peers who smoke		
None	2	1.7
Some of them	64	53.3
Majority of them	43	35.8
All of them	11	9.2

Table 5. *Distribution of the students according to their quit attempts in past six months*

Item	n=120	%
Tried to quit in the past six months	32	26.7
Duration of last quit attempt (days)		
Mean (SD)	2.83 (8.4)	
Median (Min-Max)	0 (0-60)	
Quit methods ever used*		
Counseling at smoking cessation clinic	4	3.3
Nicotine replacement therapy such as patch or gum	5	4.2
Without assistance	25	20.8
Friends/family support	17	14.2
Motivation to quit smoking past six months*		
Health care professional advice	7	5.8
Worried about own health	31	25.8
Concern about negative effects on non-smokers	20	16.7
Increasing price of smoking products	19	15.8
Indoor smoking restrictions at work or in public places	13	10.8
To be a role model for children	15	12.5
Close friends and family reject of smoking	21	17.5
The effect of health education campaign	3	2.5
Religious beliefs	9	7.5

Note. * More than one answer was awarded

Table 6. *Distribution of the students according to their score` knowledge level regarding smoking*

Knowledge Items	Score levels						Mean ± SD
	Poor		Fair		Good		
	N	%	N	%	N	%	
Smoking hazards (31)	120	100.0	0	0.0	0	0.0	3.85±1.54
Quitting smoking benefits (17)	119	99.2	1	0.8	0	0.0	2.38±1.63
Control the cravings to smoke (9)	120	100.0	0	0.0	0	0.0	0.65±0.84
Quitting smoking strategies (6)	116	96.7	2	1.7	2	1.7	0.65±0.89
Nicotine withdrawal symptoms (7)	110	91.7	10	8.3	0	0.0	2.02±1.07
Dangers of second- hand smoke (15)	117	97.5	3	2.5	0	0.0	2.36±1.05
Ways to combat smoking (5)	73	60.8	15	12.5	32	26.7	1.83±1.27
Total knowledge score (90)	119	99.2	1	0.8	0	0.0	13.75±7.93

Good= scores more than 65% of total scores.   ($\geq$ 58.5 mark)

Fair= scores 50% to less than 65% of total scores.   (45- < 58.5)

Poor= scores less than 50% of total scores.   (0 – < 45)

Discussion

Tobacco use is one of the leading risk factors for premature morbidity and mortality worldwide. Despite the well-documented health risks associated with tobacco use, many young people continue to smoke or experiment with smoking. The harmful effects of smoking at this stage of life can have lifelong consequences, including increased risk of chronic disease, impaired cognitive function, and reduced quality of life **(Zhou et al., 2023)**.

This study assessed the university students' smoker's knowledge and behaviours' related smoking. The findings of the present study show that the mean age of students was 20.58±1.64 years, with an age range of 18–25 years. This finding is consistent with the findings of **Wamamili, Wallace-Bell, Richardson, Grace,**

and Coope (2019), in New Zealand; **Nasser and Zhang (2019)** in Hodeidah University, Yemen; and **Sabra and Hala, (2018)** in Assiut University, Egypt. Also, in the same line with **Campo, Lumia, and Fustinoni (2022)** in Milan University, Italy. Which aimed to assess smoking habits, attitudes and knowledge among university students, and they revealed that the majority of the studied sample were in the age group of 18–25years. Additionally, **Alves, Precioso, & Becoña (2022)** study, in northern Portugal, reported that the average age of the sample was 20.78± 4.22 years.

Regarding students' gender, the current study indicates that all students were males. This finding is consistent with the findings of **Granja et al. (2019)**, in a Brazilian private university, **Karadogan, Önal & Kanbay (2018)**, in Coruh University, Artvin, Turkey, **Sarioglu et al., (2016)**, Balıkesir University, Turkey, **Nasser and Zhang (2019)**, and **Wamamili et al., (2019)**, they revealed that male students smoked more than female students. Also, **Bin Abdulrahman et al., (2022)** study in Riyadh, Saudi Arabia, who revealed that high percentages of participants were male students. Unlike **Alves et al., (2022)** who found that there were no any differences between the gender of respondents regarding to smoking behavior

Regarding marital status, most of the students were single, and less than one fifth were working. In addition, most of them were living with their parents. These findings are consistent with **Sabra and Hala, (2018)** findings, which aimed to assess smoking habits among Assiut University students in Egypt: prevalence and associated risk factors, revealed that about three-fourths of students were living with their families and most students were single. While this result disagrees with **Nasser and Zhang's (2019)** result, who revealed that less than two-thirds were living with their parents.

Regarding students' socio-economic level, about two thirds of them belonged to the middle socio-economic level. This result disagrees with **Nasser and Zhang's (2019)** result at Hodeidah University, Yemen, who reported that more than half of the students affiliated to low-income families.

In relation to the distribution of students according to faculty, the present study declares that students were studying in different academic years at different faculties of Mansoura University, with a high percentage in the faculties of education, arts, and law, followed by commerce, nursing and agriculture, medicine, veterinary medicine, and engineering. Followed by dentistry and computer

and information sciences; pharmacy and sciences; and few percentages of students were in the faculty of tourism and hotel management. This result agrees with **Nasser and Zhang's (2019)** result, who revealed that more than one-third of students were in the College of Commerce and Economics, followed by Engineering and Medicine.

Regarding the year of study, the present study indicates that less than one third was in the fourth year, more than one fourth in the second and third years, and few percentages in the first year. This finding is agree with **Nasser and Zhang's (2019)** finding, who revealed that senior students in third and fourth years were more likely to smoke than junior students (p<0.001).

Regarding students' tobacco smoking status, the current study found all the students were smoking daily and more than two-thirds declared to smoke 11–20 cigarettes/ day, with a mean of 17.4±5.51 cigarettes. This finding is identical with the findings of **Campo et al. (2022)** in Italy, who revealed that most smokers declared smoked daily. Additionally, **Bin Abdulrahman et al., (2022)** in Riyadh, Saudi Arabia, and **Karadogan et al., (2018)** in Turkey, revealed the same results.

From the researchers' point of view, those students consumed almost whole pack each day. This may be due to the fact that college students are stressed by their studies, pressure from friends, family, and social obligations. Also, this result is inconsistent with the result of **Campo et al. (2022)** study, who revealed that most smokers' students declared to smoke less than 10 cigarettes/day. In addition, **Alves et al., (2022)** in northern Portugal documented that daily smokers consume on average 8.33 ± 4.870 cigarettes per day.

As regards students' use of e-cigarettes, the findings of the present study illustrate that less than one quarter of students were current e-cigarette users, and a few percentages used in the past. Among current users, few percentages had been using e-cigarettes daily for 1-2 years. This finding agrees with **Boakye et al. (2022) and Liu et al. (2019)**, who indicated that most young people are using these products. **Bold et al., 2018** added that These products represent a gateway for nicotine addiction in non-users**.**

However, these findings are inconsistent with **Campo et al. (2022)**, findings who revealed that a small percentage of students reported current using of e-cigarette and less than one quarter reported ever using e-cigarettes. Also, **Bin Abdulrahman et al. (2022)** revealed that only five

percent of students were current users of e-cigarettes.

As regards causes of using e-cigarette. The current study found that less than one-quarter of the current users enjoyed smoking, used electronic cigarettes when traditional cigarettes were not available, less harmful than traditional cigarettes, and few percentages liked its flavors. These findings disagree with the findings of **Campo et al., (2022)**, who revealed that more than one-third using electronic devices because these products less dangerous for health than traditional cigarettes because toxicants and carcinogens have been found in e-cigarette emissions, even in concentrations lower than those found in emissions from traditional cigarettes.

Concerning students' attempts to quit smoking six months ago, the current study shows that more than one-quarter of students attempted to quit smoking at least once or twice times with a mean of 2.83 (8.4) days. This result, in agreement with **Campo et al., (2022)**, results who revealed that more than half attempted to quit smoking at least once. **Wamamili et al., (2019),** reported the same result.

Regarding the students' previous quitting smoking methods, the current study reveals that less than one quarter quit smoking without assistance. Less than one fifth received help from close friends and family. A few percentages of students used NRT and counseling as a quitting method. According to students' quitting smoking motives, one-quarter of students were worried about their own health. Less than one fifth of them were due to family disapproval, and a few percentages wanted to be a good model for children. Also, restrictions of indoor smoking at work or /and public places, related to religious beliefs and health professionals' advice.

While this result disagrees with **Campo et al., (2022)** result, who reported that more than one third of smokers received health professionals' advice, most of them had quit smoking without help; and more than two-thirds worried about their own health. Additionally, this result, in agreement with **Bin Abdulrahman et al. (2022)** revealed that the most common strategies to quit smoking are instantaneous and nicotine alternatives among more than half of students. Also, **Loffredo et al. (2015)** supported these who declared that the protective factors against smoking are classified into intrinsic factors such as health reasons, self-esteem, and extrinsic factors such as religious beliefs, family influences, and prevention messages of control programs.

In relation to reasons for starting smoking, more than two thirds for a sense of pleasure, peer pressure and get cigarettes easily. Less than two-thirds reported trying something new. Also, less than one-third reported family problems, a sense of masculinity, and study pressure. Moreover, more than one-fourth started smoking to attract other attention and were influenced by famous people they liked. Also, one-fourth mentioned that smoking is a method of relief stress. A few percentages of students reported the temptations of the media & social media. Regarding family/peer smoking, more than half of students had 1-3 family members who smoke and reported smokers among peers.

These findings are consistent with **Alves et al., (2022)** findings in northern Portugal, who revealed that more than half of respondents at least some of their friends were smokers. Also, they are consistent with the findings of other studies: **Georgiev, A. M., Kotur-Stevuljević, J., & Krajnović (2019)** in Belgrade, Serbia; **Almutairi (2016)** in Saudi Arabia; **Al-Dubai et al.** (2014) in Malaysia; **Menati et al.(2016)** in Ilam city, Iran; **Soliman, Selim, Ismail, and Kamel (2017)** in Egypt; **Kamimura, Ahmmad, Pye, and Gull (2018)** in Bangladesh. All revealed the same results.

Additionally, **Leshargie et al. (2019)** in Ethiopia conducted a systematic review and revealed that students who had pressure from their friends were more likely to smoke cigarettes. Also, **Fouda et al. (2018)** in Egypt, **Karadoğan et al. (2018)** in Artvin, Coruh University, Turkey, and **Sabra and Hala, (2018)** in Egypt revealed that students with a smoker father, brother, or friend had a significantly higher prevalence of smoking. Also, this is the same finding of (**Mbatchou Ngahane, Atangana Ekobo, & Kuaban, 2015)**. in Douala, Cameroon

Moreover, this finding is consistent with **Bin Abdulrahman et al., (2022)** finding who revealed that controlling anxiety and friends were the most common reasons for becoming a smoker. In addition, more than half indicated that one or more of their family members were smokers. There was a strong relationship between having a family member who smokes and being a smoker. The prediction of students who will smoke in the family had one or more smoking members is 2.63 times or more than students who smoke in the family had not any smoker members. This result is logical, because they are affected by their role models, such as their parents or older brother **(Alshanberi et al.,**

2021). (**Alasqah, Mahmud, East, & Usher, 2021; Alotaibi & Durgampudi, 2020; Alzahrani, 2020**).

In the Anatolian side of Istanbul, Turkey, **İÇMELİ, TÜRKER, GÜNDOĞUŞ, ÇİFTCİ, and AKTÜRK (2016) found** that curiosity and enjoying the taste, were the most commonly reported reasons to start smoking. The **Mbatchou Ngahane et al. (2015)** found in Douala, Cameroon, that the main reasons for starting smoking were curiosity, followed by pleasure, and stressful situations.

Furthermore, this finding is consistent with the findings of **Bobo et al. (2018)** in western Ethiopia, who revealed that adolescents who have the perception that boys who smoke are attractive and smoking cigarettes makes young people look cool were more likely to be susceptible to smoke, and father/peer smoking are factors that are common among smoking-susceptible participants.

In addition, **Xu, Liu, Sharma, & Zhao (2015)** found of more than half of participants, in an urban China, that the motivations of high school students for smoking their first cigarette satisfied their curiosity and less than one quarter smoke to relieve stress, relive social pressures and imitate smoker friends.

Concerning students' knowledge level regarding smoking, the findings of the present study reveals that most students had a poor score level of knowledge about smoking. This result is consistent with the Several studies that have shown that smokers have low levels of knowledge, suggesting that increasing knowledge about the effects of smoking would decrease smoking rates during academic years. As **Janik-Koncewicz et al., (2012)** study, who revealed that the level of knowledge about the diagnosis and treatment of tobacco dependence among the students of the Medical Faculty at Wroclaw Medical University, Poland, was low and requires improvement through educational activities at both the facultative and compulsory study levels.

And **Abu Shomar, Lubbad, El Ansari, Al-Khatib, and Alharazin (2014)** indicated that smokers had less knowledge about smoking health risks among university students in Gaza, Palestine and concluded that actions are required to educate university students in Gaza on tobacco cessation counseling, the dangers of tobacco use, and effective stress management strategies to help them cope with stressors. As well as a **Provenzano, Santangelo, Grigis, Giordano, and Firenze (2019)** study at the University of Palermo, Italy, concluded that students and graduate nurses need to

be aware of current knowledge in the smoking cessation field, and they have an influential role in modifying patient behavior in order to assist them in smoking cessation.

On the other hand, these findings are inconsistent with the findings of **Campo et al., (2022)**, who found that most students were aware of health issues related to the active smoking of traditional cigarettes and considered passive smoking of traditional cigarettes dangerous for health. Also, **Alves et al. (2022)** revealed that the level of knowledge about tobacco was moderate. **Xu et al. (2015)** conducted a study in four municipal areas of Chongqing, China, and revealed that young adult males with higher education have a better knowledge of smoking hazards; however, this knowledge does not necessarily translate into healthy behavioral outcomes such as not smoking.

Furthermore, **Rahman et al. (2022)** in a private university in Malaysia revealed that more than half of the students had a positive attitude and good knowledge of smoking cessation. This result shows the need for more education and raising awareness among students about smoking.

Limitations of the study

The present study has some limitations. This sample was generally male, consistent with the fact that young adult men have a higher rate of smoking. Females weren't represented in the sample, which may be due to social stigmatization. Females certainly smoke less in our society due to familial, social, and cultural restrictions.

Conclusion

The researchers conclude that the prevalence rate of smoking among university students was high and the common factors of smoking among students were tried to mimic smokers of family members and the pressure of peer smoking. In addition, most students have a poor level of knowledge regarding smoking.

Recommendations

The researchers recommend an urgent need for higher education institutions to develop strategies for smoking cessation within universities to prevent or reduce tobacco smoking. Implement socio-educational programs to raise awareness of the smoking harm that impacted on university students' health.

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