

Smoking and Its associated Health Behaviors and Academic Achievement among Nursing Students in October 6 University

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Abstract

Background: University students are at higher risk of smoking. Health-related behaviours related to smoking seem to be important and affect on students' academic achievement. **Aim:** This study aimed to assess smoking and its associated health behaviors and academic achievement among nursing students in oct 6 university. **Research Design:** A descriptive exploratory research design was used to achieve the aim of this study. **Setting:** This study was conducted at Faculty of nursing in oct 6 university, Cairo governate, Egypt. **Sample:** A stratified random sample of 264 nursing students in oct 6 university was selected. **Tool:** An online structured questionnaire was used. **Results:** About one third of the studied nursing students were smokers who the majority of them were male. There was no significant difference between smokers and nonsmokers students regarding the regularity and disturbance of sleep and practicing sport activity ($P > 0.05$). While, there was a significant difference between them regarding eating fruits or vegetables which were more among nonsmoker ($P < 0.05$). **Conclusion:** this study concluded that Less than third of the studied nursing students were smokers who the majority of them were male and low academic achievers may be more vulnerable to smoking but it is not the dominant factor affecting academic achievements. **Recommendations:** Integrated antismoking programs among students in universities are recommended to discourage smoking and raise knowledge of the harmful health impacts of smoking.

Keywords: Smoking, Health Behaviors, Academic Achievement

Introduction

A cigarette is a well-known narrow cylinder containing psychoactive material such as tobacco, rolled into thin layer of paper for smoking. Cigarette smoke is very virulent, addictive and it contains around 4000 chemicals that are poisonous, a lot of carcinogenic chemicals, and oxidants such as oxygen free radical which is assumed to be

the major causes of molecular damage caused by the cigarette smoke.

Smoking is a known risk factor for non communicable diseases, including cardiovascular disease (CVD), asthma, COPD, stroke, and cancers. It imposes a great burden to the health care system and society and is associated with early mortality. Tobacco is responsible for the 6 million deaths annually worldwide, most in low-income and developing countries

Many factors, including health-related behaviours, belief, and life problems, are involved in encouraging people to smoke, but health-related behaviours seem to be important. Various studies have investigated lifestyle, dietary habits, and physical activity are related to smoking

Effects of smoking on academic achievement: Studies have shown that smokers suffer from poor compatibility, anxiety, dissatisfaction with oneself, poor self-control, rebellion, and psychological pressure. Mindfulness, the dissolution of the mental powers of the brain due to impure blood that affects brain cells, causing a poor level of academic achievement for students who smoke.

Tobacco products consumption became a public health concern in Egypt as it causes different non communicable diseases which in turn negatively affect the social and economic aspects of the country and and imposes public health burden (World Health Organization, Egypt Stepwise Survey, 2020).

Smoking prevalence remains highly significant in most of the Arab countries (In addition, recent studies in some Arab countries, gave different rates of smoking among students, it still alarming rates, Egypt 46.7% (Nasser, Geng, & Al-Wesabi, 2020). Egyptian socio-demographics have changed affecting the smoking profile. Smoking remains more prevalent among males although the number of female smokers is increasing nowadays due to increased number of employed women and the exposure to the Western background. The electronic cigarette, a new form of tobacco products, has invaded our community. Unfortunately, electronic cigarette gained popularity among youths because of its favorable flavors and the beliefs of being less harmful than other tobacco products (Anwar, and Senosy., 2021) (Kabbash, Atalla, & Atlam, 2023).

As reported in May 2020 by the Central Agency for Public Mobilization and Statistics (CAPMAS) in Citing a 2020/2021 survey - titled the Income, Expenditure, and Consumption Survey - CAPMAS said 16.8

percent of Egyptians over the age of 15 use tobacco, 33.8 percent of all men and 0.3 percent of all women (Silva, Moreira, & Martins, 2020). University students are at higher risk of smoking since they are more likely to accept cigarettes smoking and close association with smoking peers. Simultaneously, they face added social, emotional and educational challenges when they enter the university

Aim Of The Study:

The present study was conducted to fulfill the following aim: assess smoking and its associated health behaviors and academic achievement among nursing students in oct 6 university through the following:

- 1- Assess the prevalence of smoking among nursing students in oct 6 university
- 2- Assess the smoking associated health behaviors among nursing students in oct 6 university
- 3- Assess academic achievement among nursing students in oct 6 university.

Research Question:

- 1- What is the prevalence of smoking among nursing students in oct 6 university?
- 2- Does smoking affect students' behaviors and academic achievement?

Subjects and methods:

I. Technical design:

The technical design included research design, setting, subjects and tools for data collection.

(A) -Research design:

The current study was conducted through using a descriptive exploratory research design. Descriptive research design is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way. Its common means of obtaining information include the use of the questionnaire, personal interview schedule, and observation checklist (Shyama, 2020).

(B) -Setting:

The study was conducted at Faculty of nursing in oct 6 university, Cairo governate, Egypt

(C) -Subjects:

A stratified random sample of 264 nursing students in oct 6 university was selected to achieve 80% power analysis and significance level of 0.05

The sample size calculated by using power analysis:

Type I error with significant level (α) =0.5 with confidence level 95%

Type II error by power test (1-B) =90%

The total sample size according to this formula was (246) students.

(D)-Tool for data collection:

An online structured questionnaire was adapted from *Attalla, et al 2020* and modified by the researcher based on the related literature (*Amiri and Behnezhad 2020* & *Elesawy et al., 2021*). It was written in simple Arabic language and included three parts as the following:

scoring system

First part: It included 9 MCQ questoins that concerned with students' sociodemographic characteristics as age, gender, marital status and residence. Also, the smoking history as type, amount, causes and its effect on their mood.

Second part: It included 16 questoins MCQ that concerned with students' smoking associated health behaviors included sleeping patterns , nutritional habits and physical activity.

Third part: It included 8 questoins MCQ was concerned with effect of smoking on students' academic achievement

Scoring system:

Each question had one response which scored zero when not selected and scored one when selected. Total score for the sconded part was 16 degree and 8 degree for the third part.

II. Operational design:

It included preparatory phase, tool validity, reliability, pilot study and field work.

A- The Preparatory Phase:

It included reviewing of current and past, national and international related literature and theoretical knowledge of various aspects of the study using books, articles, periodicals, magazines and internet to develop tools for data collection.

B- Tools Validity and Reliability:

Testing validity referred to how well as a scientific test actually measures what it is intended to measure of the proposed tools by using face and content validity.

Face validity aimed to inspect the items to determine whether the tools measure what supposed to measure.

Content validity was conducted to determine whether the content of the tools cover the aim of the study. It ascertained by a jury of 5 expertise from different academic categories (two professors and two assistant professors of Medical Surgical Nursing department at Faculty of Nursing at Ain Shams University and one from psychiatric nursing department at Faculty of Nursing at Cairo University). The expertise reviewed the tools for objectivity, comprehensiveness, clarity, relevance, simplicity and applicability of tools; minor modification was done. Finally, the final form was developed.

Testing reliability of the proposed tools was done statistically by Cronbach alpha test for the total items. It was used to examine whether the questionnaire had internal consistency.

• Pilot Study:

Before performing the actual study, a pilot study was carried out on (10%) of students from the study subjects to test clarity, applicability, feasibility, and relevance of the tools used to determine the needed time for the applications of the study tools. The necessary modifications on tools were done according to the result of the pilot study. The students who were included in the pilot study excluded from the main study group.

- **Field of work:**

Data collection took about Three months started from the begainig of Jan 2024 until March 2024; purpose of the data collection was simply explained to the students to participate in the study prior to any data collection. An online structured questionnaire link was sent to the students at faculty of Nursing at October 6 University at their official online groups, the content was written in simple Arabic language and consistent with the related literature met students' level of understanding. Each student fill the questionnaire individually and their responses were collected and analyzed automatically.

III Administrative design:

Official permission was taken from Faculty of Nursing at October 6 University to conduct the study and requesting the permission for data collection from the studied sample.

Ethical considerations:

Approval to carry out this study was obtained from the Scientific Ethics Research Committee in the Faculty of Nursing at October 6 University before starting the study under approval number PRC-NU-6102024004. The researcher clarified the objective and the aim of the study to the patients included in the research study. The researcher assured maintaining anonymity and confidentiality of the subjects' data. Patients were informed that they were allowed to choose either to participate or not in the study and that they have the right to withdraw from the study at any time without given any reason. The researcher clarified that all information would be used only for scientific research assuring to respect their ethics, values, beliefs and culture.

IV. Statistical design:

The data were collected, tabulated and subjected to statistical analysis. Statistical analysis was performed by the computer Statistical Package for Social Science (SPSS Version 20) was used for data handling and graphical presentation. Quantitative variables were described by mean, Stander Deviation

(SD), while qualitative categorical variables were described by proportions and percentages. **Chi-squared test** of independence was used for categorical variables. Probability (p-value) was used and regarding significance, the observed difference and association were considered as following:

Non-significant (NS)	P-value > 0.05
Significant (S)	P-value ≤ 0.05
Highly significant (HS)	P-value ≤ 0.001

Results:

Table (1) shows socio-demographic characteristics of the Studied students. The mean age of them was 20.6 ± 1.8 and 51.1 % of them their age 18-20 years Also, 58.7 % of them resident in rural areas, 87.9 have suitable encome and 69% were female males **Figure 1** shows the smoking prevalence among the studied nursing students that 31% of them were smokers.

Figure 2: show that about 69% of the studied smoker students smoke cigarettes

Figure 3 shows that friends are the major factor encourage the student to smoke with 79.9% as reported by them.

Table 2 shows that there was statistically significant difference between smokers and non smokers regarding the effect of smoking on nutrition in relation to eating fruit and vegetables which were more among nonsmoker . Also, regarding eating fast food which is higher among smoker. While, there was no statistically significant difference between smokers and nonsmokers nursing students in relation to practice sport activity and sleep

Table 3 Show that was no significance statistical difference among smoker and non smoker nursing students regarding regularity of the study. While, highest significance statistical difference was found between them regarding to regularity of attended lecturers which was higher among non smokers .

Figure 4 Show that the GPA less 3 was more among smoker while GPA more than 3 was higher among non smoker students.

**Table (1):
Frequency Distribution of the Studied Sample as Regards to Demographic
Characteristics (N=264).**

Socio demographic data	No	%
<hr/>		
Age (years)		
18 - 20	156	51.1
21- 23	92	34.8
24 ≤ 28	16	6.1
X+SD	20.6± 1.8	
Economic status		
Suitable		
Not Suitable	232	87.9
	32	12.1
Gender		
Male	181	69
Female	83	31
Residency		
Rural	155	58.7
Urban	109	41.3
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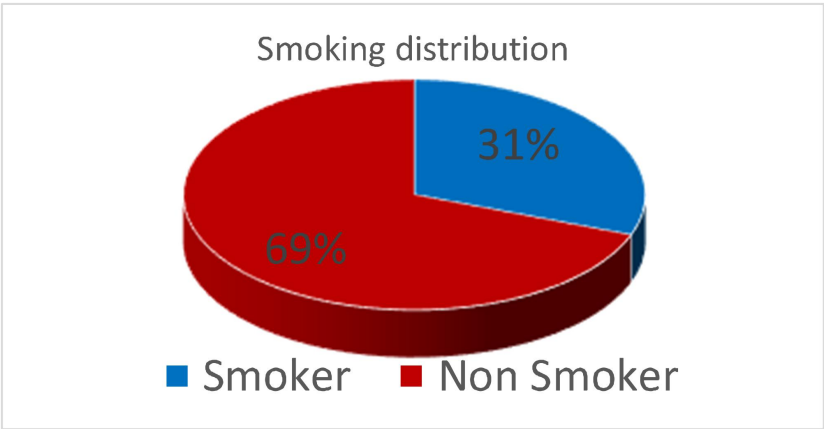


Figure (1): Smoking prevalence among the studied nursing students (N=264).

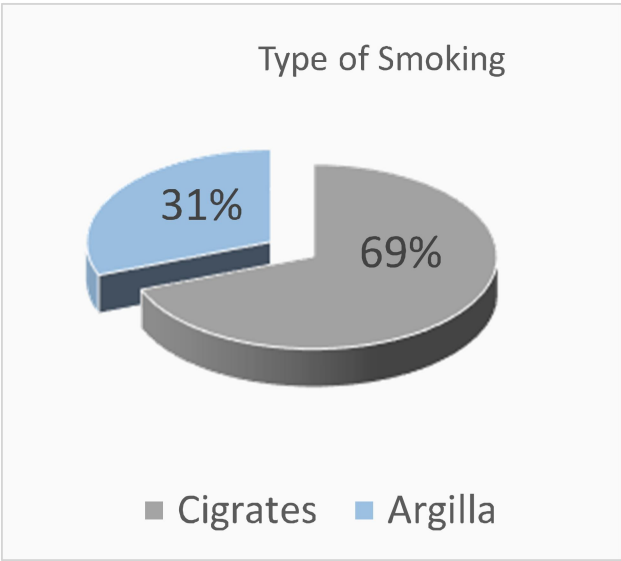


Figure (2): Percentage Distribution of the Studied Sample according to type of Smoking (N= 81).

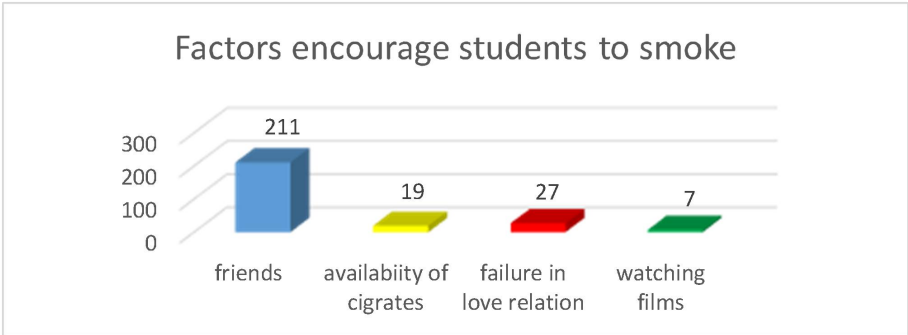


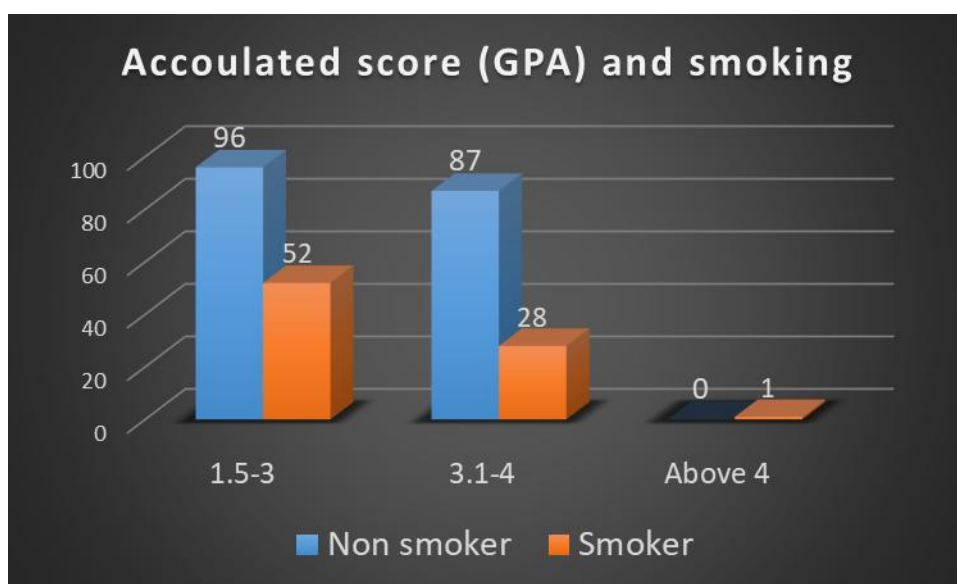
Figure (3) Frequency Distribution factors encourage to smoke as Reported by the Studied Sample (N=264).

Table (2): Frequency Distribution the effect of smoking on lifestyle among the nursing students (N=264).

Effect of smoking on Life style	Smoker		Non Smoker		Chi-Square Test statistic / p-value
	N	%	N	%	
Regularity of sleeping					
No	36	35.3%	66	64.7	X ² =1.66 / .435
sometimes	24	27.6%	63	72.4	
yes	21	28.0%	54	72.0	
Disturbance during sleeping					
No	24	27.3%	64	72.7%	X ² =2.053 / .358
sometimes	24	28.2%	61	71.8%	
yes	30	36.3%	58	63.7%	
Eating fruits					
No	7	58.3%	5	41.7%	X ² =14.63 / .001*
sometimes	34	27.6%	45	57.0%	
yes	40	23.1%	133	76.9%	
Eating Vegetables					
No	6	31.6%	13	68.4%	X ² =8.46 / .015*
sometimes	31	44.3%	39	55.7%	
yes	44	25.3%	130	74.7%	
Eating Fast food					
No	6	19.4%	25	80.6%	X ² =6.37/ .041*
sometimes	16	22.9%	54	77.1%	
yes	59	36.4%	103	63.6%	
Take breakfast					
No	17	34.7%	32	65.3%	X ² =0.651 / .772
sometimes	25	28.1%	64	71.9%	
yes	34	30.6%	86	69.4%	
Drink gas fluids					
No	8	28.6%	20	71.4%	X ² =4.19 / .122
sometimes	16	21.6%	58	78.4%	
yes	56	34.8%	105	65.2%	
Practice sport activity					
No	25	33.3%	50	66.7%	X ² =0.349/ .840
sometimes	47	29.6%	112	70.4%	
yes	9	30.0%	21	70.0%	

Table (3): Frequency Distribution of the effect of smoking on Academic performance among the nursing students (N=264).

Effect of smoking on Academic performance	Non Smoker		Smoker		Chi-Square Test statistic / p-value
	N	%	N	%	
Have Information about bad effect of smoking					
No	11	78.6%	3	21.4%	$X^2=4.782 / .092$
Not enough	62	77.5%	18	22.5%	
yes	110	64.7%	60	35.3%	
Spend time between lectures					
Rest	157	76.6%	48	23.4%	$X^2=58.7 / .000*$
Revision	22	84.6%	4	15.4%	
Smoking	0	12.1%	31	100%	
Regularity of study					
No	47	62.7%	28	37.3%	$X^2=2.52 / .283$
sometimes	86	73.5%	31	26.5%	
yes	50	69.4%	22	30.6%	
Study in weekend					
No	85	70.8%	35	29.2%	$X^2= .237 / .626$
yes	98	68.1%	46	31.9%	
Regularity in attend lectures					
No	20	50.0%	20	50.0%	$X^2=16.73 / .000*$
sometimes	50	61.0%	32	39.0%	
Yes	113	79.6%	29	20.4%	

**Figure (4): Frequency distribution regarding GPA as reported by the Studied nursing students (N=264).**

Discussion:

Regarding to socio-demographic characteristics of the Studied students. The mean age of them was 20.6 ± 1.8 and half of them aged between eighteen and twenty years old which is the most common age among the students in the university. Also, about two third of them resident in rural areas which may be due to little private universities in rural area. Moreover, more two third of them were female that reflect the Egyptian culture as nursing is preferable for female than male.

Concerning the smoking prevalence among the studied nursing students, the result of the current study showed that 31% of them were smokers. This is in the same line with the result of the research study by **Alsayed et al., 2019** titled "smoking prevalence and determinants among university students in cairo" who stated that the prevalence of the smokers among university students was (24.2%). In additions (**Fouda et al., 2018**), smoking among females remained less than males. This could be due to our conservative cultural traditions which reject the female smoking habit.

The current results showed that the majority of smokers were males and friends are the major factor encourage them to smoke. **Abdulrahman et al., 2022** in his study about Smoking Habits among College Students at a Public University in Riyadh, Saudi Arabia. and **Alzahrani, 2020** in his study Levels and factors of knowledge about the related health risks of exposure to second hand smoke among medical students: emphasized that it is predicted that male university students are more than times more likely to be smokers/former smokers than females, $p < 0.001$ and women tend to be more cautious and concerned about their health.

Moreover, the recent results showed that the majority of smokers stated that their friends were the major factor encourage them to smoke. In the same line, **Anwar and Senosy 2020** also stated that about three quarter of the university students expose to peers' pressure for smoking. This could be justified by the fact that male smokers tend to encourage their friends to smoke so that they can have things in common. Therefore, they spend much time together smoking in coffee shops and other public places.

Concerning students' activity, the present research study results, there was no statistically significant difference between smokers and nonsmokers nursing students in relation to practice sport activity. This

result disagreed with **Veliz et al., 2017** who stated that practicing sports and having hobbies was high among smokers and this result also disagreed with **Alsayed et al., 2019** study which revealed that practicing sports lowers the probability of young adults to smoke as participating in sports activities and hobbies helps young adults to use their time usefully. In our community, young adults practicing sports either in clubs or in gymnastic centers. Both are opportunity to socialize and meet other peers who have risky behaviors including smoking. In addition, both places don't follow strict rules to prohibit smoking

Regarding eating behaviors, the present study results showed that there was statistically significant difference between smokers and non smokers regarding the effect of smoking on nutrition in relation to eating fruit and vegetables which were more among nonsmoker. Also, regarding eating fast food which is higher among smoker. **Elesawy et al., 2021** reported that smokers consuming more high-fat foods and fast-food fats. Nicotine dependence was positively correlated with the frequency of general food cravings and cravings for high fats, sweets, and carbohydrates/starches.

Additionally, the current study results revealed that there was no statistically significant difference between smokers and nonsmokers nursing students in relation to sleep. It is contradicted by the study conducted by **Amiri and Behnezhad 2020** Smoking is associated with sleep-related issues. It is posited that nicotine affects sleep through its stimulation of cholinergic neurons in the basal forebrain, resulting in physiological arousal

Regarding students' academic achievement, the current study showed that was no significance statistical difference among smoker and non smoker nursing students regarding regularity of the study. While, highest significance statistical difference was found between them regarding to regularity of attended lecturers which was higher among non smokers. Moreover, students' GPA was less 3 among smoker while more than 3 was higher among non smoker students.

This is contradicted with **Attalla et al., 2020** who found that about half of the smoker students came to class early and studied on weekends and the majority of them attend classes regularly. Mean CGPA

for smoker students is 2.6 so smoking is proven to be associated with low academic performance among university students.

Alqahtani 2023 also found that smokers had significantly lower GPA, higher absenteeism rate, and higher number of academic warnings when compared to nonsmokers ($p < 0.001$). Heavy smokers demonstrated significantly less GPA ($p = 0.036$), higher days of absences ($p = 0.017$), and more academic warnings ($p = 0.021$) compared to light smokers. Generally, Smoking status and nicotine dependence were predictive of worsening academic performance, including lower GPA, higher absenteeism rate and academic warnings. In addition, there is a substantial and unfavorable dose-response association between smoking history and cigarette consumption with impaired academic performance indicators

smoking and raise knowledge of the harmful health impacts of smoking.

- Supervision of the behavior of student's peers and friends and institutional care for students living away from family is important to prevent smoking.
- This research holds strong significance for researchers and public health practitioners in the field of health promotion and education, which is more specific to undergraduate students of a multicultural and multi ethnic country.

Conclusion:

Based on the findings of current study, it can be conclude that:

Less than third of the studied nursing students were smokers who the majority of them were male and two third of them smoke cigarette. The smoking percentage is higher among the third and fourth level. Friends is the most reported factor encourage students to smoke. Regarding the smoking related health believes, there no significant difference between smokers and nonsmokers students regarding the regularity and disturbance of sleep and practicing sport activity. While, there was a significant difference between them regarding eating fruits or vegetables which were more among nonsmoker. Furthermore, it was found that the student's academic achievement was lower among smokers than non-smokers.

Recommendations:

Based on the findings of the present study, the following recommendations were inferring from the study:

- University should take strict measure to make hostels and campus smoke free, because smoking prevalence among boarder scholars is alarming and worrisome.
- Integrated antismoking programs among students in universities are recommended to discourage

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