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Prevalence of Smoking and Students' Knowledge about Oral Cavity, and Oropharyngeal Cancer at Assiut University

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Abstract
Background: Globally public health concerns about oral cavity and oropharyngeal cancer are growing. It is a debilitating disease that may result in severe impacts on a patient's emotional, functional, and financial aspects while also significantly reducing their quality of life. **Aim of the study**: Assess prevalence of smoking and students' knowledge about oral cavity, and oropharyngeal cancer at Assiut University. **Methodology:** In this study, a descriptive research design was used. **Sample:** The total 925 students from Assiut University participated in the current study, which used multistage random samples. The study utilized two instruments: **Tool I** was a self-administered questionnaire on the student's personal characteristics; **Tool II** part one was a knowledge test covering the effects of smoking on the oral cavity and oropharyngeal cancer part two the prevalence of smoking. **Results:** It indicated that 19.2% of students were smokers. and 4.9% of students had a good knowledge score about oral cavity, and oropharyngeal cancer, while 74.9% of students had a poor knowledge score, **Conclusion:** The students knowledge regarding oral cavity and oropharyngeal cancer , and the adverse effects of smoking on the oral cavity is insufficient. **Recommendation:** An educational program should be given for university students about smoking, oral health, and oropharyngeal cancer**.**

Keywords: Knowledge, Oral cavity, Oropharyngeal cancer, Smoking.

Introduction
It is well known that smoking poses a significant risk for a number of illnesses and disorders, including periodontal disease, potentially fatal illnesses, and oral cancer. Smoking is also one of the modifiable risk factors for many oral ailments **(da Silva et al., 2021).**

Twenty-one percent of Egyptians are between the ages of fifteen and twenty-four. Egypt's population is expected to expand by 2% year, but the country's smoking rate is predicted to rise by 8% annually **(Fouda et al., 2018).**

A person's oral cavity is subjected to a variety of irritants during the course of their lifetime. The oral mucosa acts as a barrier to keep out infections, trauma, and irritants that might cause cancer. Tobacco is thought to have the greatest damaging effect on dental health among all the hazardous irritants **(El-Aziz et al., 2020).**

The term "oral cancer" describes the malignant transformation of the oral tissues. Squamous carcinoma typically develops as a result of a series of dysplastic alterations that occur first. Any malignant tissue inside the mouth that affects the tonsils, base of the tongue, soft palate, and posterior pharyngeal wall is known as oropharyngeal cancer **(Mendenhall et al., 2021).**

Certain lifestyle choices and behaviors, such as alcoholism, tobacco use, exposure to sunlight and ultraviolet (UV) radiation, human papillomavirus (HPV) infection, poor oral hygiene, and bad nutritional habits are risk factors for oral cavity and oropharyngeal cancer **(Rupel et al., 2023).**

A lump or thickening in the back of the mouth (pharynx), unusual bleeding or discomfort in the mouth, a white or red sore on the gums, tongue, or lining of the mouth that does not heal; Cancer may result in symptoms such as difficulty speaking or breathing, a lump or thickening, difficulty chewing or swallowing food, or a feeling like something is stuck in the throat. Persistent soreness in the throat, ear pain, and difficulty hearing **(Yarbrough, 2021).**

Oral cavity and oropharyngeal cancer stages: Cancer is classified into stages using the tumor, lymph nodes, and metastasis (TNM) approach. Using TNM, the TNM system describes the quantity and distribution of cancer in a patient's body. The letters T, N, and M stand for tumor size and any surrounding tissue or lymph node cancer spread, respectively, and metastasis (the spread of cancer to other regions of the body). The four stages of most cancer types are numbered from 1 to 4. Stage 1 often denotes a little malignancy that is contained in the original organ. Stage 2 often indicates that although the tumor has grown compared to stage 1, the cancer has not yet

begun to spread to the surrounding tissues **(Richard & Randal, 2021).**

Stage 2 might occasionally indicate that cancer cells have invaded nearby lymph nodes. Depending on the specific kind of cancer, Stage 3 typically indicates a larger malignancy. There are cancer cells in the adjacent lymph nodes, and they might have begun to expand into the surrounding tissues. Stage 4: denotes the spread of the cancer to an additional organ within the body **(Richard & Randal, 2021).**

The oral cavity is easily accessible for inspection. Once abnormalities arise, they should be simple to diagnose. A thorough head and neck examination is necessary to look for synchronous main tumors, concealed primary tumors in patients of presenting neck illness, and neck metastases (the lungs are the most prevalent locations of distant metastasis). Self-examination determines the size of the presenting lesion and the condition of the lymph nodes are given special consideration **(Viale. 2020).**

According to the 2020 State of the World's Nursing report, approximately 59 percent of the global health workforce is made up of nurses. Achieving Sustainable Development Goals 3.4 and 3.8-which center on lowering the burden of NCDs, particularly cancer, and attaining universal health coverage requires an efficient nursing workforce **(WHO, 2020).**

Significance of the Study

Approximately 20% of cancer-related deaths are caused by smoking. It has been established that tobacco use causes oropharyngeal and oral cancer; smoking is responsible for around 75% of oropharyngeal and oral malignancies. After quitting smoking, the risk of oral and oropharyngeal cancer decreases by around 35% in 1-4 years. Smoking cessation is important for improving survival rates. Patients who continue to smoke are more likely to have cancer recurrence and show a lower response to treatment than those who quit before treatment **(Gray et al, 2019).**

Oral cancer, which ranks as the 13th most prevalent cancer globally, encompasses malignancies of the lip, various oral tissues, and the oropharynx. 2020 is expected to see an estimated 377,713 new cases and 177,757 deaths worldwide due to oral and oropharyngeal cancer. Males are more likely than females to get oral cancer, and socioeconomic position has a major impact on the disease's incidence and mortality rate. Based on the most recent WHO characteristics, oral cancer deaths in Egypt were 793 in 2020, or 0.15 percent of all fatalities. Egypt comes in at number 170 in the world with 1.16 fatalities per 100,000 inhabitants **(WHO, 2023).** So this study was carried out to assess prevalence of smoking and students' knowledge about oral cavity, and oropharyngeal cancer at Assiut University.

Aim of the study

To assess prevalence of smoking and students' knowledge about oral cavity, and oropharyngeal cancer at Assiut University.

Specific objectives:

a. To estimate the prevalence of smoking among the students at Assiut University.
b. To assess students' knowledge about smoking's effects on the oral and oropharyngeal cancer at Assiut University.

Research Questions

1. Is smoking more prevalent for students in university?
2. Do students have knowledge about how smoking affects the oral cavity and oropharyngeal cancer?

Methodology

Research design: In this study, a descriptive research design was utilized.

Setting: The study was carried out at Assiut University, which has 20 faculties divided into 8 theoretical and 12 practical colleges. Five faculties were chosen randomly to participate in this study.

Faculty	Number of students	Sample size	Percent %
Faculty of Physical Education	5095	173	18.7
Faculty of Nursing	2512	85	9.2
Faculty of Science	1755	60	6.5
Faculty of Social Services	9784	333	36
Faculty of Education	8074	274	29.6
Total	27220	925	100

Sample size: There are 27220 students listed in total in the chosen faculties. With a 99.9% Confidence Interval (CI) and the software EPI/Info, version 3, it was determined that the sample size was 881 students. In order to account for the 5 % dropout that was added to the initial sample size, the final sample size is 925.

Tools of the Study:

Tool one: Personal characteristics include student gender, age, telephone number, residence, name of faculty, grade, parents' level of education, and parents' profession.

Tool two: include two parts: **part one** assesses students' knowledge about the prevalence of smoking as the reason for smoking, number of years of smoking, number of cigarettes per day, type of cigarettes, smoking risks, and the causes of smoking.

Part two: assess students' knowledge about the meaning of oral cavity and oropharyngeal cancer, anatomical site of the oral cavity and oropharynx, risk

factors, early signs, and symptoms, oral cavity and oropharyngeal cancer diagnosis, sources of information, family history of cancer, the role of the nurse, prevention, and treatment **(Shadid et al.,2022 & Elif et al.,2020).**

The scoring system of knowledge: The scoring system followed each correct answer given (1 grade) and incorrectly given (0 grade). Total scoring (97 grades) was classified as poor if the score was <50 % (<49 grades), fair if the score was 50-70 % (49-68 grades), and good knowledge if the score was >70% (>69-97 grades) **(Gray et al., 2019).**

Validity of the study tool: -

The validity of the instruments was carried out by five academic specialists from the community health nursing department of the Nursing Faculty at Assiut University. They examined the tools to make sure they were understandable, applicable, comprehensive, and clear.

Reliability of the study tool: -

The Cronbach's alpha coefficient test was used to assess the reliability of the student knowledge questionnaire. It was found to be (0.906).

Methods of characteristics collection: -

Administrative phase:

Before conducting the study, an official permission letter was obtained from the Dean of the Faculty of Nursing at Assiut University, the President of Assiut University, and the Dean of each of the selected colleges. The letter included permission to carry out the study and explained the purpose and nature of the study.

A pilot Study:

A pilot study was conducted on about 92 students (10%), which were included in the study. The purpose of the pilot study was to determine the clarity of the tool and the time required to fill out the questionnaire. There is no modification in the tool applied for the study.

Field Work

Characteristics for the current study were collected during the period from the beginning of October 2021 till the third week of December 2021, two days every week. Before beginning the process of gathering characteristics, a brief explanation of the study's goal was given to the students. Following their clarification of the instructions, the students completed a self-administered knowledge questionnaire. The average time taken to complete each self-administered questionnaire sheet was around 20-30 minutes /40:45 students per day.

Ethical consideration:

The study plan has been approved by the Faculty of Nursing's ethical committee (Approval no: 1120240321). The research participant was not at any risk while the study was being conducted. Participants' freedom to leave the study at any moment served as guidance. Anonymity and confidentiality were guaranteed. The study complied with standard ethical guidelines for clinical research.

Statistical design :

The statistical package for social science, SPSS version 22, was used for both characteristics entry and analysis. Numbers, percentages, means, and standard deviations were used to display the characteristics. To compare between qualitative variables, the chi-square test was employed. When $P < 0.05$, the P-value is regarded as statistically significant.

Results:

Table (1): Distribution of students according to their personal characteristics at Assiut University, 2022 (n=925).

Personal Characteristics	No. (925)	%
Age: (years)		
< 20	706	76.3
≥ 20	219	23.7
Gender:		
Male	517	55.9
Female	408	44.1
Residence:		
Urban	335	36.2
Rural	590	63.8
Faculty:		
Physical Education Faculty	173	18.7
Nursing Faculty	85	9.2
Science Faculty	60	6.5
Social Services Faculty	333	36.0
Education Faculty	274	29.6
Father's level of education:		
Illiterate	76	8.2
Basic education	154	16.6
Secondary school	412	44.5
University or higher	283	30.6
Mother's level of education:		
Illiterate	192	20.8
Basic education	121	13.1
Secondary school	430	46.5
University or higher	182	19.7
Father's Occupation:		
Government employee	434	46.9
Craftsman	64	6.9
Farmer	95	10.3
Free Business	248	26.8
Not working	84	9.1
Mother's Occupation:		
Housewife	707	76.4
Employee	194	21.0
Craftworker	24	2.6
Family history of an oral cavity and pharyngeal cancer:		
Yes	8	0.9
No	917	99.1

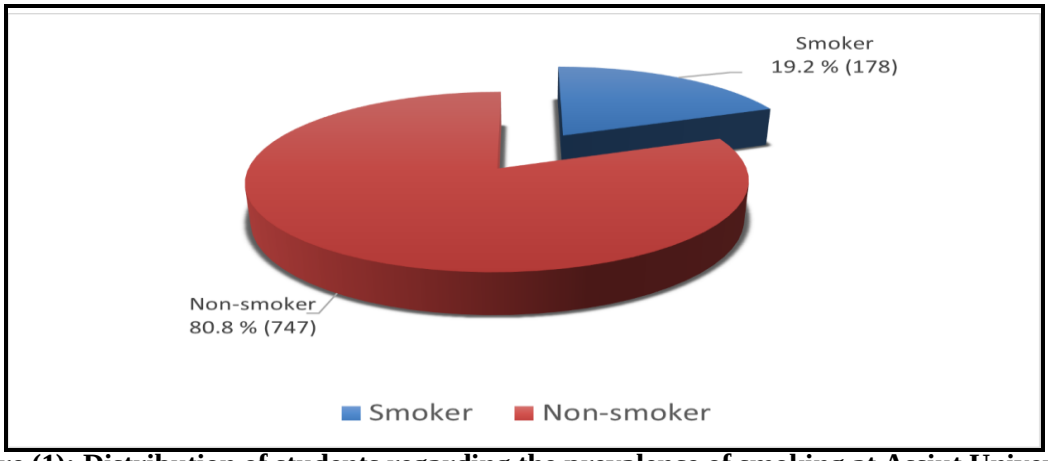

Figure (1): Distribution of students regarding the prevalence of smoking at Assiut University, 2022(n=925).

Table (2): Distribution of the smoker students regarding the history of smoking at Assiut University, 2022 (n=178).

Items	No. (178)	%
#Dangers of smoking:		
Respiratory System	73	41.0
Heart And Blood Vessels	26	14.6
Digestive System	23	12.9
Bones	6	3.4
Premature Aging	5	2.8
Teeth	4	2.2
Mouth	3	1.7
Reproductive System	1	0.6
#Reasons that cause smoking:		
Friends	49	27.5
The pressures of life	47	26.4
Advertisement and social media	21	11.8
Parents	3	1.7
#Types of smoking:		
Cigars	143	80.3
Shisha	130	73.0
Electronic cigarettes/ vaporizers	29	16.3

#More than one answer

Table (3): Relation between smoker students' number of cigarettes per day and duration of smoking regarding the oral cavity and oropharyngeal cancer at Assiut University, 2022(n=178).

Number of cigarettes per day	Duration of smoking (years) (N=178).				P-value
	< 5 (n= 88)		≥ 5 (n= 90)		
	No.	%	No.	%	
< 10	29	33.0	39	43.3	0.154
≥ 10	59	67.0	51	56.7	

Table (4): Distribution of the students' knowledge regarding oral cavity and oropharyngeal cancer at Assiut University, 2022 (n=925).

Items	No. (925)	%
Definition of the oral cavity and oropharyngeal cancer:		
Correct	724	78.3
Incorrect	201	21.7
#The most common parts of oral cavity and oropharyngeal cancer:		
The tongue	151	16.3
The lips	131	14.2
Gums	85	9.2
The roof of the mouth	72	7.8
The pharynx	65	7.0
Liner the inner cheeks	34	3.7
Floor of the mouth (bottom of the tongue)	33	3.6
Tonsil wall	13	1.4

Items	No. (925)	%
#Causes of oral cavity and oropharyngeal cancer:		
Smoking (cigarette, cigar, pipe)	400	43.2
Drug abuse	51	5.5
Drink alcohol	50	5.4
Chewing tobacco	49	5.3
Nutritional factors	48	5.2
poor attention to oral hygiene	31	3.4
Excessive exposure to the sun	13	1.4
Viruses such as human immunodeficiency virus, syphilis, and candida	12	1.3
Weakened Immune System	11	1.2
Genetic factors	5	0.5
#Early symptoms of oral cavity and oropharyngeal cancer:		
A sore that does not heal on the lips or inside the mouth	150	16.2
Painless red spots in the mouth	102	11.0
Difficulty swallowing	89	9.6
Change in voice such as hoarseness or inability to speak	75	8.1
Painless white patches in the mouth	65	7.0
Bleeding in the mouth	43	4.6
Weight loss	31	3.4
#Methods of diagnosing cancer of the oral cavity and oropharynx:		
Magnetic Resonance Imaging	108	11.7
Physical examination	104	11.2
Examination under general anesthesia	95	10.3
X-rays	81	8.8
Computed tomography	78	8.4
Positron emission tomography or positron emission tomography	51	5.5
Sample with a mouth brush	26	2.8
Ultrasound	25	2.7
#Methods of treatment:		
Chemotherapy	186	20.1
Radiotherapy	131	14.2
Surgical treatment	114	12.3

#More than one answer

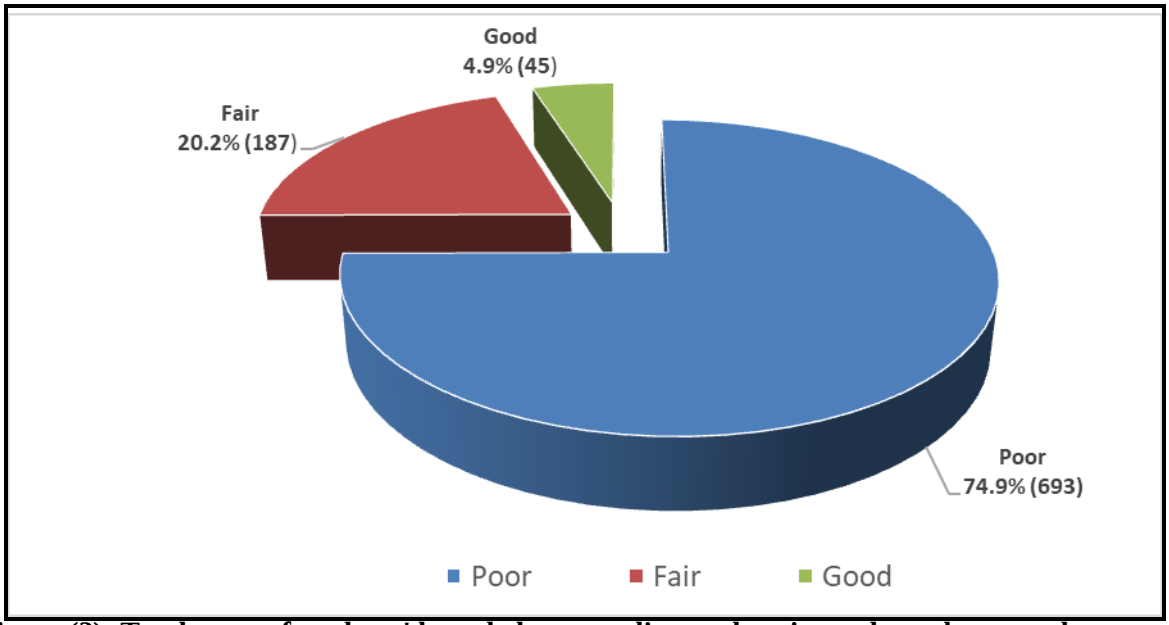

Figure (2): Total score of students' knowledge regarding oral cavity and oropharyngeal cancer at Assiut University, 2022 (n=925).

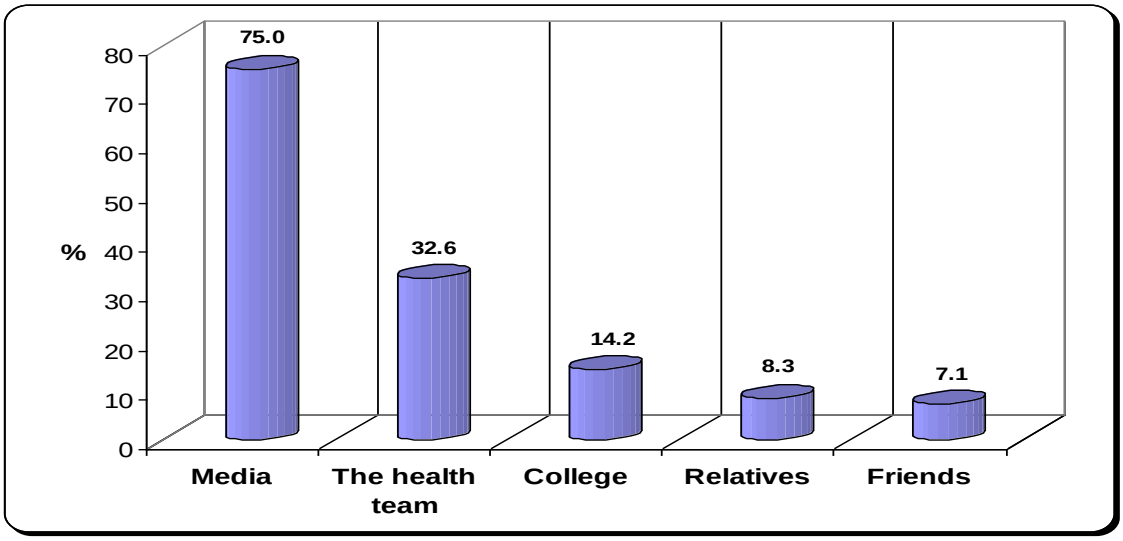

Figure (3): Distribution of students regarding sources of information about oral cavity and oropharyngeal cancer at Assiut University, 2022(n=925).

Table (5): Relation between students' knowledge score and Personal characteristics regarding the oral cavity and oropharyngeal cancer at Assiut University, 2022(n=925)

Personal Characteristics	Knowledge score (N=925)						P-value
	Poor N (693)		Fair N (187)		Good N (45)		
	No.	%	No.	%	No.	%	
Age: (years)							
< 20	535	75.8	137	19.4	34	4.8	0.527
≥ 20	158	72.1	50	22.8	11	5.0	
Gender:							
Male	410	79.3	83	16.1	24	4.6	0.001*
Female	283	69.4	104	25.5	21	5.1	
Residence:							
Urban	258	77.0	60	17.9	17	5.1	0.420
Rural	435	73.7	127	21.5	28	4.7	
Faculty:							
Physical Education Faculty	131	75.7	32	18.5	10	5.8	
Nursing Faculty	51	60.0	21	24.7	13	15.3	
Science Faculty	42	70.0	14	23.3	4	6.7	0.001*
Social Services Faculty	228	68.5	90	27.0	15	4.5	
Education Faculty	241	88.0	30	10.9	3	1.1	
Father's level of education:							
Illiterate	66	86.8	9	11.8	1	1.3	
Basic education	122	79.2	31	20.1	1	0.6	0.001*
Secondary school	314	76.2	87	21.1	11	2.7	
University or higher	191	67.5	60	21.2	32	11.3	
Mother's level of education:							
Illiterate	159	82.8	32	16.7	1	0.5	
Basic education	102	84.3	17	14.0	2	1.7	0.001*
Secondary school	313	72.8	99	23.0	18	4.2	
University or higher	119	65.4	39	21.4	24	13.2	
Father's Occupation:							
Government employee	294	67.7	103	23.7	37	8.5	
Craftsman	51	79.7	11	17.2	2	3.1	
Farmer	88	92.6	6	6.3	1	1.1	0.001*
Free Business	194	78.2	50	20.2	4	1.6	
Not working	66	78.6	17	20.2	1	1.2	
Mother's Occupation:							
Housewife	571	80.8	121	17.1	15	2.1	
Employee	113	58.2	54	27.8	27	13.9	0.001*
Craftworker	9	37.5	12	50.0	3	12.5	

**Statistical significant difference (P < 0.05)*

Table (1): It was clear that the distribution of students according to their personal characteristics at Assiut University. It was apparent from the distribution of students' personal characteristics that (76.3%) of students were under the age of twenty. Concerning sex, (55.9%) of the students were men, and (63.8%) of them came from rural areas. Regarding a family history of oropharyngeal cancer and the oral cavity, just 0.9% of students acknowledged having a family history.

Figure (1): It was found that the prevalence of smoking among students at Assiut University. It was found that (19.2%) were smokers, while (80.8%) were non-smokers.

Table (2): It was revealed that the distribution of smoker students according to the history of smoking at Assiut University. It was cleared that (41.0%) mentioned respiratory effects as the dangers of smoking. According to reasons that cause smoking (27.5%%) illustrate friends as the most common factor of smoking, (80.3%%) of the studied students mentioned cigars most common type of smoking, and (16.3%) mentioned electronic cigarette vaporizers.

Table (3): Shows the relation between smoker students' number of cigarettes per day and duration of smoking of the oral cavity and oropharyngeal cancer at Assiut University. The number of cigarettes smoked per day and the duration of time smoked were shown to be statistically insignificant differences (p-value = 0.154).

Table (4): It was found that the distribution of the students' knowledge regarding oral cavity and oropharyngeal cancer at Assiut University. The definitions of the oral cavity and oropharyngeal cancer were properly answered by (78.3%) of students. (16.3%) of students stated that the tongue is the most prevalent location for the oral cavity and oropharyngeal cancer, while 1.4% mentioned the tonsil wall.

According to the knowledge of students about the causes of oral cavity and oropharyngeal cancer**,** (43.2%) mentioned smoking (cigarette, cigar, pipe) as the cause of oral cavity and oropharyngeal cancer while (0.5%) mentioned genetic factors. only (11.7%) mention Magnetic Resonance Imaging while (2.7%) mention Ultrasound. Regarding methods of treatment, (20.1%) of the students mentioned chemotherapy while (12.3%) mentioned surgical treatment.

Figure (2): Shows the overall of students' knowledge score concerning oral cavity and oropharyngeal cancer at Assiut University. It was found that (74.9%) had poor knowledge, while (20.2%) had fair knowledge, and only (4.9%) had good knowledge regarding oral cavity and oropharyngeal cancer.

Figure (3): Displays the distribution of students regarding sources of information about oral cavity and oropharyngeal cancer at Assiut University. It was found that (75.0%) of students mention media as the most common source of information while (7.1%) mention friends.

Table (5): Shows the relation between students' knowledge level and socio-demographic characteristics regarding oral cavity and oropharyngeal cancer at Assiut University. The results showed that there were statistically significant differences between students' gender, type of faculty, parents' education, and parents' occupation with knowledge (p-value = 0.001),while there was a statistically insignificant difference between students' age and residence with knowledge (p-value = 0.527, 0.420).

Discussion

Oral cavity and oropharyngeal cancers are thought to be very common worldwide, and in recent years, their fatality rates have been rising steadily. While they primarily afflict men over 45, their incidence has also been steadily rising in females. They are strongly associated with high degrees of socioeconomic deprivation **(Johnson et al., 2020).** The present study designed to determine prevalence of smoking and students' knowledge about oral cavity, and oropharyngeal cancer at Assiut University

The results of the present study found that more than three-quarters of students' ages range from 18 to 25 years old. These findings are consistent with **Zhou et al., (2022)** study, which examined residents' awareness and understanding of oral cancer and found that students' ages ranged from 15 to 29. Furthermore, these findings are consistent with those of **Shubayr et al. (2021)**, who conducted research in Saudi Arabia to evaluate oral cancer prevention knowledge, attitudes, and practices among students, interns, and faculty at Kazan University's College of Dentistry. They found that students ≤ 35 years old participated in the study.

The present study's findings regarding the gender distribution of the students revealed that over half of them were men. The findings of **Bukhary et al., (2020)**, who investigated awareness and knowledge of head and neck cancer risks. Do Saudi adults know enough? are consistent with our results, more than half of the students, according to their report, were male.

As regards the college year, the current study displayed that the majority of study students' college year was in the first grade; this might be attributed to the fact that when students are in the first grade of college, they are more likely to attend lectures than other grades.

The current study revealed that the prevalence of smoking among students was less than one-fifth. These results are agree with **Alqaryan et al., (2020),**

who carried out a study about awareness of head and neck cancers in Saudi Arabia and mentioned that less than one-fifth were smokers. They also supported these results with **Shamala et al., (2023)**, who conducted a multi-institution study in Yemen on senior dentistry students' knowledge, attitudes, and practices about oral cancer and reported that fewer than one-fifth were smokers.

According to smoking risks, The study findings showed that almost two-fifths reported smoking (cigarette, cigar, or pipe) as the primary risk factor for oral cavity and oropharyngeal cancer, these results are similar to those of **Rupel et al., (2023)**, who have a study about knowledge and awareness of oral cancer through a cross-sectional survey in Trieste, Italy and **Firincioglulari et al., (2021)**, who conducted a study about oral cancer knowledge and awareness among patients referred to a university dental hospital in North Cyprus, who documented smoking (cigarette, cigar, or pipe) as the primary risk factor for oral cavity and oropharyngeal cancer.

The current study displayed that over one-quarter of study students illustrated friends as the most common reason to encourage smoking. These results are similar to those of **da Silva Leonel et al., (2021)**, who conducted a study on tobacco use, attitudes, knowledge, and perceptions about smoking cessation counseling among Brazilian dental students: a cross-sectional study that mentioned more than half were friends as the most common reason to encourage smoking, while the results of the current study disagreed with those of **Al Omari et al**., **(2021)**, who conducted a study about knowledge, attitudes, prevalence, and associated factors of cigarette smoking among university students, a cross-sectional study that mentioned only 1.8% peer pressure as the most common reason to encourage smoking.

The results of the study presented that nearly two-fifths mentioned respiratory effects as a smoking risk; this may be due to the advertisement about the effects of smoking on the lungs on the cigarette pack.

The results of the study it was cleared that there were statistically insignificant differences between the number of cigarettes per day and the duration of smoking (p-value = 0.154). the number of cigarettes per day could increase or decrease with the duration of smoking according to the pressure of life.

Concerning the definition of oral cavity and oropharyngeal cancer**,** more than three-quarters of the students correctly acknowledge the definition. These results are consistent with **Shadid et al., (2022),** who found that the majority of students correctly acknowledge the definition.

According to the results of the current study, less than one-fifth of the students knew that oral cavity and oropharyngeal cancer commonly impact the tongue. These results agree with **Shamala et al., (2023)**, who stated that less than two-thirds of them said oral cavity and oropharyngeal cancer commonly impact the tongue.

Regarding oral cavity and oropharyngeal cancer symptoms, fewer than one-fifth of students stated that lesions on the lips or within the mouth do not heal; These findings were corroborated by **Wimardhani et al., (2019)**, who studied elderly residents of Depok City, West Java, Indonesia, regarding their knowledge of oral cancer, mentioned that slightly more than one-fifth identified non-healing mouth or lip sores as the most typical indications of oral cavity and oropharyngeal cancer. These findings also align with those of **Zhou et al., (2022)**, who found that that two-fifths of the participants thought that open sores in the mouth were the most typical indications of oral cavity and oropharyngeal cancer.

Furthermore, the recent study showed that approximately three-quarters of participants had inadequate knowledge of oral cavity and oropharyngeal cancer. While about a fifth of the students had fair knowledge and only 4.9% had adequate knowledge, It could be explained by a shortage of faculty programs that addressed the oral cavity and oropharyngeal cancer. These findings conflict with a study conducted by **Raghavendran et al., (2019)**, to evaluate patients' attitudes and knowledge about preventing oral cancer at Rama Hospital in Mandhana, Kanpur, displayed that less than one-fifth of the respondents had inadequate knowledge, the majority had fair knowledge, and only 0.2% had good knowledge of the study sample. Also, these results disagree with **Shadid et al., (2022)**, who reported that one-third had adequate knowledge while two-thirds of the study sample had low knowledge.

Concerning the distribution of students according to information sources about three-quarters mention media as the main source of information for the majority of students. This is due to the excessive use of the internet by youth groups nowadays, which is considered a more available and accessible information source. These results agree with **Bukhary et al**., (**2020)**, who mention the media as the main source of information for the study sample.

In referring to the connection between personal characteristics and the mean score of knowledge, the results demonstrated that there were statistically significant differences (p = 0.000) between students' gender, type of faculty, parents' education, and parents' occupation. While insignificant statistically differences (p-value 0.527, 0.420) between students' age, residence, and knowledge, respectively. These results were in line with those of **Rupel et al., (2023)**, who used a cross-sectional survey to study oral cancer awareness and knowledge in Trieste, Italy. They

found that knowledge of oral cancer varied statistically significantly depending on age (p = NS), gender (p = 0.02), and education (p = 0.01).

Conclusion:

Concluding the study's findings: the prevalence of students who smoke represented about one-fifth of them, the students had insufficient knowledge about smoking, oral cavity, and oropharyngeal cancer.

Recommendations:

1. Educational programs to improve students' knowledge about smoking's effects on the oral cavity, and oropharynx which cause cancer.
2. Libraries of faculties should have adequate Arabic booklets related to smoking oral cavity, and oropharyngeal cancer.
3. For researchers to gather a more diverse sample of the public's opinions on the causes, risk factors, and prevention of oral and oropharyngeal cancer, more study on various individuals in community settings is definitely advised.

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