

Smoking among Students of Suez Canal University

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A cross-sectional survey was conducted to determine the percentage of smokers among students of Suez Canal University' schools in Ismailia, Suez, Port-Said and El- Arish cities. It aimed also to find out the associated risk factors of being current smokers, to determine the percentage of students who live with smokers, and to determine the percentage of current non smokers who intend to be smokers in the future.

One thousand and 503 students out of 12312 were selected as a systematic random sample from alphabetically ordered lists to detect a smoking prevalence of 20% at 95% confidence level.

A questionnaire was used to collect data about socioeconomic status of students, being smokers or not, type of cigarettes they smoke, factors that drove them to smoke, how much they spend in buying cigarettes and the source of that money. It was also inquired about the future intention to smoke among current non smokers and what would drive them to be smokers.

Seven hundred and 25 students answered the questionnaire. The mean of their ages in years was 20.4 ± 1.7 . The percentage of current smokers was 12.7. The mean age in years among smokers was 20.9 ± 1.8 . It was 20.4 ± 1.6 among non- smokers. Among male students (n=435) 19.5% were current smokers. Among female students (n=290) 2.4% were current smokers. Fifty-five percent of smokers were living in urban areas and 80% of them living with smokers. The mean payment for cigarettes was 1.7 ± 1 Egyptian pounds. Seventy-six percent of smokers used their pocket money to buy cigarettes. Thirty- six of the smokers started smoking just to try (39.1%). The following factors were given as causes for continuing smoking; habit (40.2%), frustrations (22.7%) and failure to quit (22.8%). While 71.4% of smokers knew exactly the hazards of smoking 94.6% thought they knew all the hazards. Thirty-six (5.8%) out of 620 non-smokers intended to smoke in the future. There would be around 700 future smokers among students. Three hundred and 71 (52.9%) out of 701 students lived with cigarette smokers who smoked in average 21 ± 17 cigarettes per day for at least 10 years.

There is a need for an educational program that help smokers to quit and non-smokers not to start. In depth research for the passive smoking problem and to find out the attitudes of the active smokers towards the right and the need for non-smokers for clean environment from cigarette's smoke.

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Introduction

Nicotine (cigarette smoking) is now being recognized as a highly addictive substance by such major medical organization as the office of U.S. Surgeon General, the World Health Organization, (1992) (ICD-10), the American Medical Association, the American Psychiatric Association

(1994) (DSM-IV), the American Psychological Association, the American Society of Addiction, and the Medical Research Council in the United Kingdom. All of these organizations acknowledge tobacco use as a form of drug dependence or addiction with severe health consequences (Kessler, 1994). In DSM-IV (American Psychiatric Association, 1994), Nicotine related psychiatric disorders include Nicotine Use Disorder (Dependence), Nicotine Induced Disorder (Withdrawal) and Nicotine Related Disorder not otherwise specified.

Epidemiological survey of psychiatric disorders in the U.S. indicated that 13% to 24% of Americans suffer from substance abuse disorders at sometimes in their lives including Nicotine Related Psychiatric Disorders, making cigarette smoking the most prevalent of all psychiatric disorders in the U.S. (Smith, 1996). In Egypt, Soief (1996) has reported smoking in university students to be over 20% and more and linked it to substance abuse.

Through prospective studies the hazards of cigarette smoking are well evidenced (Doll, et. al., 1994 and Peto, 1994), however, smokers especially in developing countries including Egypt are increasing. Most of the smokers started in young age just to try cigarettes. Current cigarette smokers among male students in different secondary schools at Ismailia were 36.6% and less than 1% among female students (Raslan, 1984). Current cigarette smokers among medical male students in Bahrain was 27.5% and 2.3% among female students (Hamadeh, 1994). As advertisement of the cigarettes producing companies concentrate on youth to sell their products, it is important to know the prevalence of cigarette smoking and what have drove especially the youth to smoke.

The first step in a series of researches focussing on the smoking problems (Nicotine use) among Egyptian young adults should start with estimation of the size of the problem and the factors underlying these adverse health habits before plan-

ning for intervention programs. This study aimed to determine the prevalence of smoking among Suez Canal University students and to find out the factors that made them smoke.

Subjects and Methods

Cross-sectional survey was selected as it was suitable to determine the prevalence of cigarette smoking among students and the factors associated with smoking.

One thousand and 503 students from 12312 were selected using the systematic random sample from alphabetically ordered lists of Suez Canal University students. This sample was enough to detect a prevalence rate of 20% at 95% confidence level. The estimated drop out was 20 percent. The sample size was calculated using the following equation: $n = \frac{Z^2 P(1-P)}{D^2}$. $D = 0.5$ the desired sample confidence interval (0.05). $P =$ estimated prevalence (Kish and Leslie, 1965).

The included students were from 15 different schools located in Ismailia, Suez, Port-Said and El-Arish cities. The lists of students' names were acquired from the University's Education's office.

A self-administered questionnaire was used to collect data regarding smoking behavior among students, their socioeconomic status, factors which drove them to smoke, their level of knowledge about hazards of smoking, how much they spent to buy cigarettes and the source of that money.

The questionnaire also inquired about the intention of non smokers to start smoking. Included in the questionnaire items related to Nicotine Dependence such as duration of smoking, evidence of tolerance and continuation of smoking such as need to increase the amount of cigarettes till it become a habit, reasons behind such continuation such as to alleviate and/or decrease anxiety, and evidence of withdrawal such as previous trial to quit smoking. These questions were derived from DSM-IV categories of nicotine dependence (American Psy-

chiatric Association, 1994). The questions were coded and put in envelopes to be delivered personally to the students through research assistants or officials from the students' affairs office in each school. The students were informed that there was no need to write their names and data would be used for scientific reasons only. Permissions from the schools' deans were taken to carry out the research. The study was conducted between 1992-1993 university academic year. The response rate was fairly moderate (48.2%). Several trials were made to collect more responses but the cost would have been so high as many schools were in different cities. These trials included going to look for these students selected from the lists at least addition some students were busy to prepare for examination as different schools had very different schedules.

Some students didn't provide answers to a few questions, hence there were missed data for some questions.

Epi-info 5 software was used for data entry and analysis. The chi-square test was used for comparisons and the level of significance was set at $P < 0.05$. The grouped logistic regression was done using stata (statistical data analysis program, version 3.1, Texas 77840 USA, 1993) to find out the risk factors for being a smoker. The independent variables were age, sex, educational year, social status, family social status, family income, having his own income and whether living with a smoker.

Results

The study included 435 male and 290 female university students. The mean of their ages was 20.4 years $\pm$ 1.7 years standard deviation. Their ages ranged from 16 years to 28 years. Male students represented 60% of the sample. About 49% (48.8%) of 12.8% lived in semi-urban areas. Twenty six percent of the students lived in the student hostels. About 86% of the students were single (85.7%), 12.8 were engaged, 1.1% were married and 0.4% were married and had children. Both parents lived with

their siblings in 26.1% of the surveyed students (Table 1).

Ninety two out of 725 (12.7%) of the students of both sexes were current smokers. The male smokers were 19.5% ($n=85$), non-smokers were 80.5% ($n=350$). The counterpart percentages for females were 2.4% ($n=7$) and 97.6% ($n=283$). There was an association between the sex and being a cigarette smoker ($X^2 = 45.97$ and $p < 0.05$). Eighteen percent of males aged under 20 years and 20.6% of those older than 20 years were smokers (table 3). The mean age among smokers versus non-smokers was 20.9 ± 1.8 and 20.4 ± 1.6 (Table 3).

There was an association between the age and smoking status among students ($X^2 = 9.77$ and $p < 0.05$). No association was found between the smoking status and the parents' jobs and their educational level ($p < 0.05$) (Tables 4 and 5).

Thirty-six (39.1%) out of the 92 students started smoking just to try cigarettes and to get rid of tension was the reason to start smoking among 16.2% (Table 6).

Thirty seven (40.2%) of the smokers continued smoking because it became a habit, 21.7% to alleviate frustrations and decrease anxiety and 22.8% tried to quit but failed. The current smokers in average smoked 10 ± 8 cigarettes per day. In average they paid 1.7 ± 1 Egyptian pounds. The source of the money paid to buy cigarettes was their pocket money in the case of 76 percent (Table 7).

All smokers smoked cigarettes, 56.5% of the smokers used to smoke cleopatra small size brands which contained 1 mg nicotine and 15 mg tar per a cigarette (Table 7).

In addition to cigarettes 29.9% out of 87 smoked water pipes.

Fourteen (15.4%) out of 91 smokers started smoking below age of 15 years (mean age to start smoking $\pm$ standard deviation was 16.5 ± 3.6 years). Twenty-five (27.2%) out of the 92 smokers tried to

quit but failed. The probability to be a cigarette smoker = $-2.2 \text{ cons} - 0.06 \text{ sex} + 0.1 \text{ educational year} - 0.07 \text{ social status} + 0.07 \text{ living with a smoker}$ (Table 8).

Three hundred and 71 (52.9%) out of 701 students lived with smokers. One hundred and 23 (39.2%) out of 314 of those lived with smokers for less than 10 years and 60.8% of them lived for 10 years or more. They lived in average 11.8 ± 7.4 years with the smokers. Seventy three

(80.2%) out of the 91 smokers lived with smokers. There was an association between smoking status among students and living with a smoker ($X^2 = 31.27$, $p < 0.05$).

Thirty six (5.8%) out of 620 of current non-smokers intended to smoke in the future. Ten of those (27.8%) would smoke to try cigarettes, 22.2% because of friends and 22.2% because they were unconvinced with the hazards of smoking.

Table 1
Distribution of the Studied Students According to Some Sociodemographic Characteristics and Smoking Status

Smoking Status		Smokers		Non-Smokers		X^2	P Value
Character		Freq	%	Freq	%		
Residence:						3.69	>0.05
Rural		9	10.1	80	89.9		
Urban		51	14.5	300	85.5		
Semi- Urban		14	15.2	78	84.8		
Student Hostel		18	9.6	169	90.4		
The Student Social Status:						2.4	>0.05
Single		74	12	544	88		
Engaged or Married		18	17.5	85	82.5		
The Family Social Status:						12.3	<0.05
The father:							
lives with them		53	12.9	359	87.1		
works in an Arab Country		5	12.8	34	87.2		
The Parents are:							
divorced		6	35.3	11	64.7		
living with them		18	9.6	169	90.4		
Only the mother lives with them		5	10.6	42	89.4		
Extended family		4	26.7	11	73.3		

This table shows that there is an association between the family social status and the smoking status of the students.

Table 2
Relationship Between Sex of the Student and Smoking Status, by Age of Students

Age	<20 years				>20 years			
	Males		Females		Males		Females	
Sex	Freq	%	Freq	%	Freq	%	Freq	%
Smoking status								
Smokers	22	18	1	0.9	63	20.6	6	3.4
Non- smokers	99	82	111	99.1	243	79.4	172	96.6
Total	121	100	112	100	306	100	178	1

Table 3
Distribution of Students According to The Age Group and Smoking Status

Smoking Status	Smokers		Non-Smokers		Non-Smokers	
Age group	Freq	%	Freq	%	Freq	%
16-19	23	10.1	205	89.9	228	100
20-23	61	13.3	398	86.7	459	100
24 >	8	32	17	68	25	100
Missed data			13		13	100
Total	92	12.7	633	87.3	725	100

Chi-Square = 9.77

P<0.05

The age mean $\pm$ standard deviation was 20.4 ± 1.7

The range of their ages: 16 - 28 years

The mean of the age among smokers was 20.9 ± 1.8 years.The mean of the among non- smokers was 20.4 ± 1.6 years.

There is an association between the age of the students and their smoking status.

Table 4
Smoking Status Among SCU Students and Their Parents' Occupation

Smoking Status	Smokers		Non-Smokers		Total	
Parents' Occupation	Freq	%	Freq	%	Freq	%
Father: Skilled Profession Mother: Housewife	10	10.9	84	13.3	94	13
Father: Merchant Mother: Housewife	13	14.1	84	13.3	97	13.4
Father: Farmer Mother: Housewife	7	7.6	64	10.1	71	9.8
Father: Profession Mother: Housewife	30	32.6	131	20.7	161	22.2
Both: Profession	6	6.5	44	7	50	6.9
Both: Other Occupations	25	27.2	213	33.6	238	32.8
Missed data	1	1.1	13	2	14	1.9
Total	92	100	633	100	725	100

Chi-Square= 7.04

P >0.05

There is no association between the parents' occupation and the smoking status of the students

Table 5
Smoking Status Among Students and Their Parents' Educational Level

Smoking Status	Current Smokers		Non-Smokers		Total	
Educational Level	Freq	%	Freq	%	Freq	%
Both: Illiterate/ or read and write	13	14.1	136	21.5	149	20.6
Father: < High School	15	16.3	119	18.8	134	18.5
Mother: Illiterate						
Both: High School	30	32.6	174	27.5	204	28.1
Father: University Graduate	16	17.4	78	12.3	94	13
Mother: High School						
Both: University Graduates	14	15.2	76	12.	90	12.4
Missed data	4	4.4	50	7.9	54	7.4
Total	92	100	633	100	725	100
Chi-Square= 5.14				P value > 0.05		

Table 6
Reasons for Starting Smoking

The reason	Frequency	Percent
To try	36	39.1
Imitation to:		
A teacher	4	4.3
The parents	1	1.1
The peers	9	9.8
To get rid of tension	15	16.3
Other reason	4	4.4
Missed data	23	25

Table 7
Money Paid in Egyptian Pounds by SCU Students Current Smokers in
Buying Cigarettes per Day and its Source

Money's Source	Daily pocket money		Other Sources (e.g. Wages)	
	Freq	%	Freq	%
< 2 Egyptian pounds	49	53.3	9	9.8
2-3	6	6.5	6	6.5
3-5	11	11.9	2	2.2
> 5 Egyptian pounds	4	4.3	3	3.3
Missed data	2	2		

Table 8
Cigarette's Type and its Content of Nicotine and Tar that SCU
Students Current Smokers Used to Smoke

Cigarette's Type	The content of:		Current Smokers	
	Nicotine	Tar	Frequency	Percent
Belmont	1 mg	15 mg	1	1.1
Cleopatra (small)	1 mg	15 mg	52	56.5
Cleopatra (super)	2 mg	20 mg	11	11.9
Marlboro	1.2 mg	17 mg	18	19.6
Lights	0.8 mg	12 mg	3	3.3
Others			5	5.4
Missed data			2	2.2

Table 9
The Outcome of Grouped Logistic Regression

The Variable	Coefficient	P Value	95% Conf. Interval
Sex	- 0.06	0.0001	- 0.08, - 0.05
Educational year	+ 0.1	0.0001	+ 0.06 + 0.1
Social Status	- 0.07	0.001	- 0.12, - 0.03
Living with a smoker	+0.07	0.0001	+ 0.03, + 0.1
Cons.	- 2.3	0.0001	- 2.4, - 2.1

Probability to be a cigarette smoker = - 2.2 - 0.06 sex + 0.1 educational year - 0.07 Social Status + 0.07 living with a smoker.

Table 10
Distribution of Students According to The Sex and Smoking Status

Smoking Status	Smokers		Non-Smokers		Total
	Freq	%	Freq	%	
Males	85	19.5	350	80.5	435
Females	7	2.4	283	97.6	290
Total	92	12.7	633	87.3	725

Chi- Square 45.97

P<0.05

There is an association between the sex of the student and being smoker or not.

Discussion

This study showed that the prevalence rate of smoking among Suez Canal University students was low in general (19.5%). The frequency of smoking among female students was very low (2.4%). However, it was consistent with the reported rates in other studies in Egypt.

Our results are compatible with other reports of cigarette smoking which suggest that 13 percent of young adults are the most likely to have smoked a pack or more of cigarettes a day, that males (17%) are more likely to report heavy use, and to be more likely associated in the future with other types of substance abuse (National Institute on Drug Abuse, 1991).

Psychiatrists must be particularly concerned and knowledgeable about nicotine dependence for many reasons. First, because of the very high proportion of psychiatric patients who smoke which reach more than 50% of all psychiatric outpatients, second, patients with depressive or anxiety disorders are much less successful in their attempt to quit smoking than other people, and thirdly, because smoking has been reported to be the early predictor and the royal road to other addictive substance use disorder (Breslau et al, 1992).

In a report of the National Research on Addiction (1996) on a randomly selected sample of 16635 subjects all over Egypt, it was found that 74.9% of those abusing drugs were smokers in comparison to 35.6% of those who never used drugs and that 86.43% of those who smoke have tried cannabis (Hashish). Moreover, non-smokers were at a lower risk to abuse drugs and when they have to try it they abuse it for shorter duration (23 for less than 6 months) in comparison to smokers. In that comprehensive report the association between smoking and drug abuse was strongly evident as smoking prove to be a risk factor, a substitute and alternative to drug abuse.

In other Arabic countries, smoking has been linked to drug and substance abuse. For example over 90% of drug addicts were smokers compared to only 18 of normal healthy non addicts in united Arab Emirates ($P < 0.001$) (El Marzouky et al, 1994). Furthermore, smoking was found to be less prevalent in university students (21.6%) in comparison to more than 90% of hospitalized drug abusers and prisoners (El Marzouky et al 1993).

Raslan (1984) found less than 1% of secondary schools' females were smokers. University's female students started smoking after joining university and not early in secondary schools as families gave them more independence. Findings from Egyptian National Survey current smokers were 21.2% out of 52881 aged 15-29 years and 18.4% out of 27981 in age group 20-29 (AREMOH, 1987). Moreover, in Egypt, the Scientific Committee of the National Council for Eradication of Drug Abuse and Narcotics. (1992) in their report addressing the national size of the problem presented surveys that were conducted among secondary school pupils, male and female university students and industrial workers regarding their drug habits. The results revealed that on average the most abused substance was nicotine which accounted for 10.8% in secondary schools, 20% in male and 0.8% in female university students, and 52% in industrial workers. Female university students smoke less cigarettes than male university students (Soief, 1994).

In Ismailia 34.4% of 328 male physicians were current smokers (Riskalla, Awad, and Mishriky, 1993). In Bahrain 2.3% among female medical students were smokers (Hamadeh, 1994). WHO (1993) reported that between 2 and 10% of women in Asian countries were smokers. Rates among women in European countries was very high; 49% among spanish women and 39% in other Europe-

an countries (de Onis and Villar, 1991). Social traditions that made cigarette smoking unacceptable behavior for females could be the reason in Egypt. Under-reporting was a minimal possibility inspite of the fairly moderate response rate (48.2%) because the questionnaire was anonymous and confidentiality of data was ensured. Self-reported cigarette consumption through a questionnaire was considered a reliable method inspite of its dependence on honesty and accuracy of respondents in reporting their own behavior (Hatzindreu, et. al, 1989). Hamadeh (1994) got a very high response rate (96.4%). This could be possible as she took the sample from only a medical school. In this study with its sample design was difficult as it included many schools in the university with very different schedules and in different governorates. Cost would be so high if trial to reach a specific student would be more than three times. She put under-reporting for smoking among females than three times. She put under-reporting for smoking among females as a possibility. It would be a shame to admit being a smoker for a female (Hamadeh, 1994).

The importance of our data is suggested by the facts that dependence on nicotine develops quickly, probably because of the activation by nicotine of the ventral tegmental area dopaminergic system, the same system affected by cocaine and amphetamine (Perkins et al, 1993 and Pomerleau, 1992), moreover, the development of dependence is enhanced by strong social factors that encourage smoking in some setting and that persons are likely to smoke if they have parents or siblings who smoke and who serve as role models (Ginsberg et al, 1992, Schelling, 1992). Happy social occasions and socialization with friends ranked first and second reasons behind substance abuse in secondary schools, university students and industrial workers

(Soeif, 1994). Furthermore, several recent studies have also suggested a genetic diathesis toward nicotine dependence (Carmell et al, 1992).

The most popular brand was cleopatra small size. It is a product of the Egyptian company. It contained a high nicotine and tar than would be permissible in western countries. (Malboro was the most popular brand among Bahraini medical students (Hamadeh, 1994).

Evidences suggest that smoking is being associated with low levels of education and that quitting smoking has been fastest among well-educated young men (Fiore, 1992). For this reason it is expected that cigarettes smoking might reach higher figures in those without university education, of lower socioeconomic levels, and to be more associated with illiteracy than in those with better levels of education (Carmell et al, 1992, De Grandpre et al, 1993).

The money spent by a smoker per month in this study would be equivalent to a monthly university's graduate salary. Cigarette smoking could be an economic burden on the smoker.

Passive smoking could be a problem with its hazards among SCU students as 52.9% lived already for at least 10 years or more with active smokers who smoked in average 21 ± 17 cigarettes per day. In depth survey for the problem of passive smoking and the attitudes of active smokers towards the right of non-smokers to have non-smoking environment is needed.

It was found that current smokers among males were 19.5 percent. Most of them started smoking in young ages (16.5 ± 3.6). Pierce, Lee and Gilpin (1994) found that among 102626 respondents if a male or a female who reached 18 years without starting to smoke would be less susceptible to the cigarette advertisement as they achieved a degree of ma-

turity. In this survey 5.8% of non-smokers intended to smoke. If it happened 700 new smokers would be added to smokers. Intervention to help them not to start means not to be added to smokers. Intervention to help them not to start is needed. Primary prevention of cigarette smoking which entails the eradication or modification of the addictive behavior in the community should include identification of vulnerability factors, modification of upbringing and educational policies, and early detection of subclinical cases through community research, scientific activities and cigarette smoking awareness programs.

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Fumégation parmi les étudiants de l'université de Canal El Suez

Une étude surveillance a été conducté pour déterminer le pourcentage de ceci qui fume parmi les étudiants de l'université du Canal, les élèves de l'école à Ismaïlia, Suez, Port-Said et El.Arish et aussi pour déterminer les facteurs liés au fumégation.

التدخين بين طلبة جامعة قناة السويس

تم اجراء دراسة مسحية أثناء السنة الدراسية ١٩٩٢ - ١٩٩٣ لتحديد نسبة المدخنين بين طلبة وطالبات كليات جامعة قناة السويس بالاسماعيلية، السويس، بورسعيد والعريش ولعرفة العوامل التي تساعد على التدخين بين الطلبة.

تم اختيار ١٥٠٣ طالبا وطالبة من ١٢٣٠٢ طالبا وطالبة من قوائم مرتبة ترتيباً أبجدياً كعينة عشوائية منتظمة وتم توزيع استبيان عليهم بهدف جمع بيانات عن التدخين والعوامل التي تساعد على حدوثه مثل الحالة الاجتماعية للطالب والظروف العائلية والاقتصادية. ولقد هدف الاستبيان أيضاً لجمع بيانات عن الأسباب التي دفعتهم في البداية للتدخين.

أجاب على الاستبيان ٧٢٥ منهم ٤٢٥ طالبا و ٢٩٠ طالبة. بلغت نسبة المدخنين بانتظام ١٢,٧٪ من الطلبة والطالبات. وبينما بلغت نسبة المدخنين بين الطلبة ١٩,٤٪ كانت النسبة بين الطالبات ٢,٤٪ ولقد بدأ ٢٩,١٪ من الذين يدخنون كمجرد تجريب له. وقد وجد ان أسباب الاستمرار في التدخين هي: أصبحت عادة (٢,٤٠٪)، الأحباط (٧,٢٢٪) والفشل في الأكلع عنه (٨,٢٢٪). لقد أوضحت النتائج العلاقة بين النوع والتدخين والحالة الاجتماعية والأقامة مع مدخنين. وكانت تلك العلاقات ذات دلالة أحصائية. أوضحت النتائج أن ٥,٨٪ من ٦٢٠ طالبا من غير المدخنين ينوون تدخين السجائر في المستقبل. أظهرت النتائج أنه ربما تكون هناك مشكلة للتدخين السلبي بين الطلبة نظراً لأن ٥٢,٩٪ من ٧٠١ طالبا يعيشون مع مدخنين لمدة لا تقل عن ١٠ سنوات ويدخن هؤلاء في المتوسط ٢١ ± ١٧ سيجارة في اليوم.

هناك حاجة لعمل برنامج تثقيف صحي بين طلبة الجامعة لمساعدة الذين ينوون التدخين في المستقبل على أن لا يبدأوا (حوالي ٧٠٠ طالب في المتوسط) وأن يتوقف الذين يدخنون فعلاً. سوف يكون هناك أهمية لدراسة بحثية لمشكلة التدخين السلبي ودراسة اتجاهات المدخنين تجاه حاجة وحق غير المدخنين لبيئة خالية من دخان السجائر.