

Health Instructions to Control Tobacco Use among Cairo University Students Hostels

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Abstract: Worldwide smoking is the most widespread form of drug dependence and a leading cause of preventable death and disability. This study **Aimed** to evaluate the health instruction to control tobacco use among students hostels in Cairo University. **Study design:** A quasi- experimental design was used. **Study sample:** All students using tobacco were recruited for the study. The total number was 880 students. **Tools:** A self-administrated questionnaire was used. **Results:** Showed that about one quarter and less than one fifth were ever and current smokers respectively. Less than half of the students were males, while a minority of them were females of the ever smokers, the ever smokers had significantly more smoker friends (46%) than never smokers (18.9%). 11.47 %, 27.06% and 45.41% of the ever smokers believed that smoking makes girls more beautiful, helps to relax and affects weight respectively. Slightly less than two thirds of the studied smokers agreed that smoking is addiction. Almost half of the ever smokers tried to quit last year, and only a minority of them succeeded. The majority of students agreed that passive smoking is hazardous to health. The ever smokers showed significantly higher use of shisha, bango and alcohol than the never smokers. Less than two thirds of all students encourage while almost half of the students want to participate in smoking health instruction There were statistically significant difference between before and after health instruction implementation concerning knowledge and attitude ($P = <0.001$). The **study concluded** that according to the findings and research hypothesis, the health instruction improved students knowledge and attitude toward tobacco control among students hostels. The study **recommended** that the smoking control activities should include students from the first year to achieve proper prevention and early control not only for cigarette smoking but also for shisha, and bango use. And they should be actively involved in control activities. Health instruction sessions are needed to make those students aware about hazards of smoking (active & passive) and to correct their wrong beliefs about smoking.

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1. Introduction

Worldwide smoking is the most widespread form of drug dependence and leading cause of preventable death resulting in an estimated 3 million deaths annually. Unless steps are taken to reduce smoking rate the world wide annual death due to smoking is expected to reach 10 million by 2025 with 7 million deaths in developing world (1).

Tobacco kills one person every 10 seconds in the world. The death caused by tobacco products is estimated to be around three million per year and is expected to rise to 10 million by 2030 (19). In Egypt, tobacco kills 14 people every day. It is a uniquely harmful consumer product, and the single most preventable cause of death. Although the risks of smoking have been extensively documented worldwide many people continue to smoke cigarettes (20).

Nearly all first use of tobacco occurs before the age of 18. Smoking in young people is associated with poor overall health and a variety of health effects and the associated risk of other drug use (6).

Adolescence is the crucial life stage for preventing tobacco use and its consequences. Therefore a youth centered preventive policy is a crucial part of any coherent antismoking strategy (5).

In addition to cigarettes, other types of tobacco use are common as water pipe (shisha), which is now a fashionable trend among youth (7). This was confirmed by Nassar who found that among Cairo University students who smoked cigarettes, 85.2% smoked shisha as well (4). In a survey conducted among Cairo university students, there were 31.5% ever smokers and 11.8% current smokers (4).

The report of the Surgeon General (2008) (21), in Egypt, addressed the health hazards of smoking on respiratory cancers, non-respiratory cancers, cardiovascular disease, non-malignant respiratory disease, and reproduction. For respiratory cancers, the report documented the markedly increased risks of cancers of the lung and larynx in smokers. It showed that the risk of lung cancer increases with the number of cigarettes smoked daily, and with the total number of years smoked. The report also stated that

smoking retarded fetal growth and increased the risk of abruption placenta, placenta previa, bleeding during pregnancy, premature and prolonged rupture of the membranes, and preterm delivery. Furthermore, it stated that smoking impairs fertility and lowered the age of natural menopause by several years.

Community health nurses form the largest group of health care professionals and are frequently involved in the care of clients who smoke. As such they have the potential to exert a profound effect on the reduction of tobacco use (22). Therefore, community health nurses have the responsibility for preparing themselves to help their clients and or students in smoking cessation and for meeting the health challenges raised by tobacco use(23).

Significance of the study:

In Egypt, 21% of population smoke cigarette, 48% of adult smoke cigarettes, with 3.8% under 15 years and 0.6% under 10 years(2). In a study conducted among 1057 physicians, 36.3% were current smokers and 9.1% were former regular smokers and smoking had been started in more than 60% of them during college study, which is a serious situation [3]. In a survey conducted among Cairo university students, there were 31.5% ever smokers and 11.8% current smokers (4).

Nurses have a key role to play in influencing the health of students. Whether working in a hospital or the community, nurses are ideally placed to encourage smokers to give up. Even the most basic intervention by a health professional can have a profound effect on encouraging a smoker to stop or to seek help in stopping.

Aim:

The study aimed to evaluate the health instruction to control tobacco use among Cairo University student's hostels through:

- 1- Assessing tobacco prevalence among first year students.
- 2- Assessing first year students' knowledge and attitudes towards tobacco.
- 3- Assessing first year students desire to be actively involved in control activities.
- 4- Implementing a health instruction to students, which can help them to stop or minimize tobacco use.
- 5- Evaluating the health instruction on improving students knowledge and attitudes to control tobacco use.

Hypothesis:

A health instruction may have direct or indirect effect on improving the student's knowledge and attitudes towards tobacco control.

Operational definitions:

The prevalence of current tobacco smoking (including cigarettes, cigars, pipes or any other smoked tobacco products). This study used the same cigarette smoking definitions utilized by the Arizona College Student Tobacco Survey(8).

Never smokers: Those who never smoked a cigarette (not even a puff).

Ever smokers: Those who ever tried smoking including current and former smokers.

Current smokers: Those who smoked in the last 30 days preceding the study including:

Regular smokers: Students smoked at least 100 cigarettes in their life.

Experimental smokers: Those who have not smoked 100 cigarettes in their life.

Former smokers: Students who did not smoke in last month preceding the study.

2. Subjects and Methods:

Research design:

A quasi-experimental research design was used in carrying out the study.

Research setting:

This study was carried out on students living and residing in Cairo University Hostels.

Sample:

The total number of students in the first term of the academic year 2010 / 2011 was 8800 students. They were studying in different faculties. Ten percent from the total number of students i.e., eight hundred and eighty students were selected randomly from both sexes (males & females) living and residing in Cairo University students hostels. The sample was selected according to the following inclusion criteria: (a) age \leq 25 years; (b) smokers. (c) resident in hostel.

Tool of the data collection:

A self-administrated questionnaire was designed and utilized by the researchers to collect the necessary data. It is divided to (7) items:

The first part: Includes questions related to socio-demographic characteristics regarding the participants e.g., age, sex, education, and duration of residency in hostel.

The second part: Includes questions related to smoking prevalence among students hostels (Tobacco use).

The third part is a set of questions related to knowledge and attitudes about smoking.

The fourth part is a set of questions asked about quitting ability, trials and reasons.

The fifth part is a set of questions related to opinion and attitudes about passive smoking.

The sixth part is a set of questions related to the use of shisha, bango and alcohol.

The seventh part is a set of questions related to knowledge, opinion, and desire to be actively involved in control program.

Scoring system:

Measuring the score of student's knowledge toward tobacco use, a known item was scored one point (1), and an unknown item was scored zero (0). These scores were converted into percent score.

The student's knowledge was evaluated good if scored $\geq 75\%$; while it was considered average if the percent score was less than 75% or more; and poor if the percent score was less than 50%.

Nicotine dependence was calculated using the heaviness of smoking which includes two questions: How soon after waking up do you smoke your first cigarette? The smoker was given a score of 1, 2 or 3 if the person smokes within 31-60, 5-30 or <5 minutes after waking up respectively. The second question was about the average number of cigarettes smoked per day: The smoker was given a score of 1, 2 or 3 if the person smoked 11-20, 21-30 or >30 cigarettes/ day respectively. The sum of the two questions was calculated then heavy, moderate and light smokers were defined as those having a score of 5-6 points, 3-4 points and 0-2 points respectively.

Field work:

The actual field work started from the first term of the academic years 2010/2011 i.e; from September to February, three days weekly for three hours/ day. The researchers were at the students hostels.

An official approval was obtained from the administrative personnel of the University and hostels, in order to carry out the study. Then, the researchers explained the purpose and nature and process of the study to students. and got their oral consent The researchers emphasized strongly that the information collected would be used for scientific research only, would be confidential, will be carried out to improve students knowledge and attitudes related to tobacco control .

The interviewing questionnaire was held with each student by the researchers to obtain the exact meaning from them. Each interview lasted that the researchers read the questionnaires then explained each element simply and briefly for about 20-30 minutes in the resident hostels Cairo University.

The health instruction was developed based on reviewing of related literature and the result of the assessment tools (pretest).

Content validity of the tool was checked by a panel of five experts from the Community Health Nursing specialty and modifications were done based on their opinions.

A pilot study was carried out on 30 students in order to test clarity and applicability of the tool. The pilot study was also used to estimate the time needed for each subject to fill in the questions. Modifications were done based on the results of the pilot study. Those who shared in the pilot study were excluded from the main study sample

Health instruction construction:

It consisted of three phases:

First: Preparatory phases:

A review of recent, current, national and international related literature in various aspects of the subject was done, to design the study tools.

Second: Planning and implementing phases:

General objective: The objective of health instruction to improve the student's knowledge and attitudes towards tobacco control.

Content of the health instruction included: health hazard of smoking on respiratory cancers, cardiovascular disease. Cancer of the lung and larynx, causes, types, reasons to quit among ever smokers, and then instruct the students by appropriate and accurate information after reviewing the relevant literature. The researchers, taking into consideration differing levels of students understanding used simple and clear language.

The sessions were implemented over a period of 6 months; it was carried out in 7 sessions (time allowed 8 hours distributed on 7 sessions: 5 hours for theory and 3 hours for practice. The duration of each session ranged from 30 - 90 minutes.

At the beginning of each session, the researchers started by a summary about what was given through the previous sessions, and objectives of the new one, taking into consideration using simple and clear language to suit the participants level of understanding.

Different teaching methods were used by the researchers including lectures, group discussion, and role-play to implement the health instruction.

The educational media were guide line brochures concerning the health instruction, colored posters, laptop screen show and real objects.

At the end of each session, the students were informed about the content of the next session and its time

Third: Evaluation phase:

Evaluation was based on scores of acquired knowledge and attitudes in pre-test and immediate post-test.

Ethical considerations:

During the interview, the students were informed about the nature of the study, and their right to withdraw at any time, or refuse to answer any specific question without giving any reason. Student's verbal agreement to participate was obtained. Confidentiality of their names and information was regarded.

Statistical Analysis:

Data collected, were coded and transferred into special design formats to be suitable for computer feeding. The Statistical Package for Social Sciences (SPSS), version 14 was utilized for statistical analysis and tabulation, as well as some graphic presentations of the results.

3. Results:

Table (1-a): shows the socio- demographic characteristics of students. Their mean age was 17.8 ± 1.2 (ranging from 17 to 23) 46.1 % of the studied students were males and 9.8% were females. They were classified according to their smoking status into (table 1-a):

The never smokers: Were 662 students (75.2%) with a mean age of 17.4 ± 1.0 (ranging between 17-23) ever smokers were 218 students (24.8%) with a mean age of 18.3 ± 1.4 the (ranging between 17-22).

The current smokers were 151 students (17.1%) including the regular smokers 54 students (6.1%) and the experimental smokers, 97 students (11%), while the former smokers were 67 students (7.6%).

Regarding smoking intensity, 51 (33.8%) of current smokers do so every day and the average number of cigarettes per day was 4.6 ± 6.3 with a maximum of (30). Approximately, 47 % of males and 20% of females who smoke do so everyday. Males on the average smoked 5.2 ± 5.7 cigarettes per day with a maximum of (30) and females smoked 2.2 ± 2.5 cigarettes per day with a maximum of 12 with statistically significant difference (p-value=0.001).

Table (1): Concerning smokers sex, 46.1% of males and 9.8% of females were ever smokers. Current smokers accounted for 30.7% and 7.3% of male and females respectively. The smoking initiation mean age among ever smokers was 16.2 ± 2.3 (ranging from 9-20) years. It was 17.1 ± 1.1 (ranging 12-20) years for females and 15.9 ± 2.5 (ranging from 9-19) years for males with statistically significant difference (p-value=0.003)

Table (2) shows that most of students (80.6) who had smoker close friends were ever smokers. Also friends represented less than half of persons encouraging male or female ever smokers to smoke.

Table (3): shows that certain criteria which reflect the severity of addiction among current smokers: 15.9% smoked in first 5 minutes of day, 29.1% find it difficult to stop smoking in no-smoking places, and 16.6% smoked during illness. By using the heaviness of smoking index $>70\%$ of current smokers were light nicotine dependents (figure 1).

Table (5-a) : Among ever smokers, 67.4% had confidence in their ability to quit smoking and 40.3% tried to quit last year but only 6.9% succeeded. Among those who tried last year about 24.3% tried >2 times and 51.5 % tried <7 days. (table 5-c). Health (34.9%), religion (22.5%) and family (15.6 %) were the most common reasons to quit among ever smokers (table 5-b).

Table(6-a) : It indicates that a significantly higher ever use and current use of shisha, bango and alcohol among the ever than the never smokers. Nearly one third of shisha users (33.8%) were encouraged by their friends (table 6-c). Mean age of first time shisha use was 16.6 ± 1 (ranging 14-19) among never smokers compared to 16.0 ± 2.2 (ranging from 13-20) among ever smokers with no statistically significant difference.

Table (7-a) : Reveals that pre health instruction, 37.16% and 45.41% of the never and ever smokers respectively believed that smoking affects weight, which improved post instruction to be only 2.72% and 22.94%. Concerning smoking is addiction, pre health instruction, students represented 72.05% and 60.09% of the never and ever smokers, which improved post instruction, the majority 84.4 % & 8.26% . Table (7b) reveals that students are knowledgeable about presence of religious instruction (fatwa) about not to smoke and agreed with it.

Table (8-a): Shows that 14.35 % and 13.76 % of the never and ever students pre instruction knew that passive smoking is harmful to health, which improved to be 75.53 % and 82.57 % after health instruction table (8-b) reveals that 70.4% and 62.7% of the nonsmokers (never smokers/ former smokers) could take active actions to protect themselves against it by leaving the place and ask smokers to stop smoking when present with them in the same place. result shows also that there were highly statistically significant differences (at $p < 0.001$) between students attitude about the passive smoking hazards .

Table 9 a, b : Indicate that 13.75% and 18.35% of the never and ever smokers students knew about smoking control law applied in students hostels . Students are encouraged and wanted to be involved in Kasr El Aini smoking control program. (Table 9-b): These findings improved to 75.53% and 87.16% after health instruction .However 45.8% of the ever

smokers and 24.0% of the never smokers had or may had the intention to smoke within the next 5 years (table 9-c).

4. Discussion :

This study showed that the over all prevalence of ever smoking among Cairo University students hostels was less than quarter and less than half among males & a minority representing less than tenth among females. While the current cigarette smoking prevalence was found to be almost one fifth and less than third among males & a minority of less than tenth among females). This relatively low smoking rate among females represents social norms that make it less acceptable for women to smoke. In a national survey in Egypt, 21% of the population smoke cigarettes, 48% of adult smoke cigarettes, with 3.8% under 15 years and 0.6% under 10 years(2).

Table 1: Distribution of the students according to their socio demographic characteristics (n= 880).

Student's Socio-demographic Characteristics	No	%
Sex:		
Male (ever smoker)		
Female (ever smoker)	167	46.1
Ever smokers:(n=218)		
Former smokers	51	9.8
Current experimental	218	24.8
Current regular	67	7.6
Current smokers :		
Every day	97	11
Some days	54	6.1
	51	33.8
	100	66.2

Table (2) : Number of smokers among students close friends:

Friends	Never smokers		Ever smokers	
	No	%	No	%
No	537	81.1	96	44
1-2	53	8.0	38	17.4
3-5	49	7.4	47	21.6
6-9	12	1.8	20	9.2
10+	11	1.7	17	7.8
Total	662	100	218	100

p-value<0.001

Table(3): Persons engaged male &female ever smokers to smoke:

Sex	Male		Female	
	No	%	No	%
Person				
Male friend	81	48.5	2	3.9
Female friend	4	2.4	25	49
Relative	14	8.4	8	15.7
No one	68	40.7	16	31.4
Total	167	100	51	100

Table (4)-: Smoking pattern among current smokers:

Smoking Pattern	Current Smokers(n=151)	
	No	%
First time smoking after waking up		
5 min	24	15.9
>5-30min	26	17.2
>30-60min	15	9.9
>60 min	86	57.0
Urgent cigarette		
Morning	39	25.8
Any other	68	45.0
not any	44	29.2
Difficulty to stop smoking in no-smoking places		
Yes	44	29.1
No	107	70.9
Smoking during illness		
Yes	25	16.6
No	126	83.4

Table (5-a): Smoking quitting ability and last year trial among ever smokers

Quitting Ability	Ever smokers(n=218)	
	no	%
Having the ability to quit		
Yes	147	67.4
No	36	16.5
Not sure	35	16.1
Trying to quit last year		
No	115	52.8
yes-failed	88	40.3
Succeeded	15	6.9

Table (5 -b): Reasons to quit among ever smokers

Reason for quitting :	Ever Smokers(n= 218)	
	no	%
Health	76	34.9
Money	31	14.2
Family	34	15.6
Friends	10	4.6
Doctor	9	4.1

Religion	49	22.5
Others	9	4.1

Table(5-c): Last year quitting trials number and last trial duration

Quitting trials:	Students trails to quit smoking	
	No	%
Trials number		
1-2 times	78	75.7
3-5 times	7	6.8
6- times	18	17.5
Last time quitting duration (in days)		
1-7 days	53	51.5
8-30 days	16	15.5
1-6 months	14	13.6
>6 months	20	19.4

Table(6-a): Ever and current use of shisha, and bango, and alcohol by all students

Smoker use	Never smokers (no=662)		Ever smokers (no=218)	
	No	%	No	%
Ever use				
Shisha*	34	5.1	108	49.5
Bango*	2	0.3	26	11.9

Alcohol*	9	1.4	40	18.4
Current use				
Shisha*	14	2.1	60	27.5
Bango*	1	0.2	8	3.7
Alcohol*	3	0.5	14	6.4

* p-values <0.001 for comparison between never and ever smokers

Table(6-b): Frequency of shisha, and bango use/month among current users

Frequency use	Shisha		Bango	
	No	%	No	%
1-2 times	35	47.29	4	44.44
3-5 times	20	27.03	1	11.11
>5 times	19	25.68	4	44.44
Total	74	100	9	100

Table(6-c): Persons encouraging shisha use

	Shisha users	
	No	%
Family	30	21.2
Friend	48	33.8
No one	64	45
Total	142	100

Table(7-a): Students, attitude about smoking pre/post health Instruction

Students Attitude	Never smokers				Ever smokers				Chi-square	
	Pre		Post		Pre		Post			
Boys more attractive	18	2.72	10	1.51	14	6.42	8	3.67	0.002	0.962
Girls more beautiful	14	2.11	7	1.06	25	11.47	15	6.88	0.104	0.747
Makes more friends	63	9.52	22	3.32	63	28.90	35	16.06	2.052	0.152
Help to relax	53	8.01	25	3.78	59	27.06	22	10.09	0.456	0.499
Weight changes	246	37.16	18	2.72	99	45.41	50	22.94	49.511	0.000
Smoking is addiction	477	72.05	280	42.30	131	60.09	18	8.26	34.991	0.000
Shisha less dangerous	246	37.16	200	30.21	99	45.41	23	10.55	27.136	0.000

Table (7-b): Students knowledge about the presence of religious instruction (fatwa) not to smoke

Know	Never Smokers		Ever Smokers	
	No	%	No	%
Yes	559	84.4	180	82.6
No	103	15.6	38	17.4
Total	662	100	218	100

Table(8-a): Students attitude about passive smoking hazards:

Students Attitude	Never smokers				Ever smokers				Chi-square	
	Pre		Post		Pre		Post			
	No	%	No	%	No	%	No	%		
Yes	95	14.35	500	75.53	30	13.76	180	82.57	0.334	0.563
Relatively	422	63.75	180	27.19	135	61.93	20	9.17	18.318	0.000
No	62	9.37	40	6.04	16	7.34	8	3.67	0.285	0.593
Not sure	140	21.15	280	42.30	37	16.97	10	4.59	37.001	0.000
Total	719	108.61	1000	151.06	218	100.00	218	100.00		

Table (8-b): Students practices of current nonsmoker students against passive smoking

Students Practices	Never Smokers (n=662)		Former smokers (n=67)	
	No	%	No	%
Sometimes leave the Place because of Smoking*				
Yes	466	70.4	42	62.7
No	196	29.6	25	37.4
Ask their friend to stop Smoking when present Together in the same place**				
Yes	458	69.2	40	59.7
No	204	30.8	27	40.3

*p-value=0.19 **p-value=0.11

Table (9-a): Students knowing a smoking control law is applied in students hostel

Item	Never smokers				Ever smokers				Chi-square	
	Pre		Post		Pre		Post			
	N	%	N	%	N	%	N	%	X ²	P-value
Yes	91	13.75	500	75.53	40	18.35	190	87.16	0.491	0.484
No	191	28.85	127	19.18	58	26.61	20	9.17	5.484	0.019
Not sure	380	57.40	35	5.29	120	55.05	8	3.67	0.640	0.424
Total	662	100.00	662	100.00	218	100.00	218	100.00		

Table (9-b) : Students opinion about the importance of smoking control_program in student's hostels

Importance	Never Smokers				Ever Smokers				Chi-square	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post		
Very	485	73.26	500	75.53	127	58.26	180	82.57	5.815	0.016
Yes	30	4.53	120	18.13	15	6.88	25	11.47	5.351	0.021
Not very	12	1.81	2	0.30	10	4.59	5	2.29	1.435	0.231
No	18	2.72	5	0.76	16	7.34	3	1.38	0.239	0.625
Not sure	117	17.67	35	5.29	50	22.94	5	2.29	5.031	0.025
Total	662	100.00	662	100.00	218	100.00	218	100.00		

Table (9-c) :Students having Intention to smoke within 5 years among all students:

Intention to smoke	Never Smokers		Ever Smokers	
	No	%	No	%
Yes	1	0.2	20	9.2
No	502	75.8	98	45.0
Not sure	159	24.0	100	45.8
Total	662	100.0	218	100.0

p-value<0.001

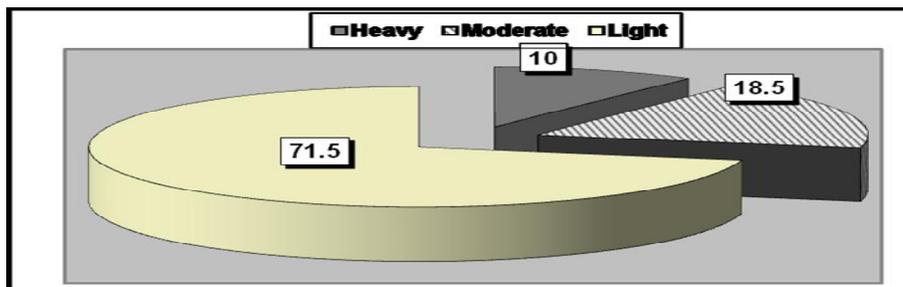


Figure (1): Nicotine dependence using the heaviness of smoking index among current smokers.

In another survey conducted on tobacco use among 559 students of many faculties in Cairo University (Faculty of Medicine was not included), ever smokers represented 31.5% of all students (50.9% among males & 11.9% among females) while the current smokers were 11.8% (22% among males & 1.7% among females) (4). The difference in current smoking prevalence between this study and Cairo University survey may be attributed to the as they interviewed the students, while in this study, the researchers used an anonymous self-administered questionnaire.

In another study, conducted in Egypt, among 443 first year Faculty of Tourism students, smoking was ever tried by less than half of students (46.8%), while 13.6% were current smokers and 7% didn't answer if they were current smokers or not (11). In a study to measure the prevalence of smoking among 635 rural secondary school students in Qalyobia Governorate in the academic year 2002/ 2003, 29% were ever smokers (40% among males & 7% among females) and 7.7% current smokers (11.5% among males & 0 % among females) (12). The higher percent of current smokers in this study may be due to that it was conducted among older university students, living in urban community. Western countries have shown a higher smoking prevalence rate as in Argentina, where a study was conducted among 3909 high school students and found that 32% of males and 29% of females were current smokers (5). However, in USA, Arizona College students, tobacco survey was conducted in the year 2002 among 601 students and it was found that 19% were current smokers (55.7% males & 44.3% females). Arizona adults and youth have lower tobacco use rates than has been found in most other states of USA as Arizona has been operating a comprehensive tobacco control program since the mid- 1990s and since then smoking rate has declined significantly [8].

Regarding smoking initiation age: In the present study, it was 15.9 ± 2.5 among males and 17.1 ± 1.1 among females, while in the study of Gadalla et al., it was 11 years and in a similar study, as mentioned by Gadalla et al., in Ismalia governorate where the age of the studied population ranged from 13 to 22 years old, with a mean of 13.2 ± 3.1 [12]. In the study of Cairo University students, it was 14 for males and 16 for females (4). As well Kotb et al. found that 27.2% of smoker physicians started smoking before college study (3), and El Nouman et al. found that 12.9% of smokers started at primary school, while 29% at preparatory school, 37% at secondary school and only 21% started at their first year in the faculty of tourism (11). Knowing the age of initiation among studied

population is very important in determining the right time for intervention programs. Early, the US surgeon general report in 1994 suggested that if adolescents can be kept tobacco free, most would never smoke as adults [13].

In the present study, smoking intensity was reflected from the prevalence of every day smoking accounting for one third of the current smokers and average cigarette number smoked per day (5.2 with a maximum of 30 among males & 2.2 with a maximum of 12 among females). However Nassar found that 71.2% were every day smokers and the average cigarette number smoked per day was 14.3 with a maximum of 40 among males, and 5.8 with a maximum of 10 among females, which is higher than the present study results that involved first year students only i.e., younger age than Nassar survey which involved all students [4]. Another possible cause is that found by Morello et al., who found an inverse association between school performance and current smoking status. As all faculties of medicine students used to be with high school performance so they are expected to have different smoking status than students from other faculties [5].

This study finding showed that slightly more than third of current smokers were regular smokers (i.e. smoked > 100 cigarettes) while Gadalla et al. found 21% regular smokers among current smokers [12]. In USA, the Arizona College students' tobacco survey found 81.7% regular smokers among current smokers [8].

More than half of those who encouraged students to smoke were their friends. This finding was in accordance with that of El Nouman et al., in which friends represented 55.4% of smoking encouragers (11). This finding was also supported by Gadalla et al., who found that having one or more friends who smoke triple the risk of student to become a smoker (12). Similarly Conrad et al. found that peer's influence rated higher than parental influence regarding cigarette smoking (14). Interestingly, burt and Peterson added that peer influences was not only on smoking initiation but also on quitting. They proceeded that peer influences were strong predictors of smoking initiation (15).

This study also described the nicotine dependence status among current smoker students using the heaviness of smoking index and results revealed that one tenth, less than fifth and less than three quarters were heavy, moderate and light dependents respectively. While in the study of Gad et al. found that, 43%, 48% and 9.2% of adult male smokers low, moderate and heavy dependents respectively (16). However, in USA the prevalence of heavy nicotine dependence among smokers was 24%

diagnosed by the WHO's composite international diagnostic interview (17).

In the present study, those who believed that **they have the ability to quit** constituted approximately two thirds, while those who tried last year were less than half of these who succeeded were a minority, health, religion and family were the most common reasons for trying to quit, which improved after health instruction. This finding was supported that by of a study of **El Nouman et al.**, who found that 47.9% of smokers tried to stop smoking(11). However in the study of **Gadalla et al**; 75% of students believed they had the ability to quit and 82% tried to quit (12) . Trying to quit is lower in the present study which might be due to that the researchers were asking about last year trials only, while Gadalla et al. , study, they asked about all trials. On the other hand, 72% of the Arizona College the ever smoker students tried to quit and 32.9% succeeded which may be attributed to that Arizona has been operating a comprehensive tobacco control program since the mid-1990 (8).

Regarding **shisha, bango and alcohol use**, results revealed significantly higher use among the ever smokers than the never ones. Ever shisha use constituted 5.1%, 49.5% and 66.2% among never smokers, ever smokers and current smokers respectively. In a study carried out by **Gadalla et al.** , they found that 83% of current smokers ever used shisha (12), while in the study of **Nassar**, only 15.7% and 2.1% of male and female students used shisha (4).The low shisha use prevalence in Nassar's study may be referred to that students were interviewed, while in the present study an anonymous self-administered questionnaire was used . In Argentina **Morello et al.** also found significantly higher use of alcohol and marijuana among current smokers than nonsmokers [5].

In the current study, pre instruction intervention more ever smokers than never smokers misbelieved that smokers look more attractive, makes more friends an relax easier, however their beliefs improved after health instruction. There were highly statistically significant differences between pre and post health instruction. Studies in other countries, as that in the United Arab Emirates carried out by **Fikri and Abisaab** , reported that 33.0% of all student believed that smokes is look more attractive (18) .

In this study, results indicated significantly more never than ever smokers believed that smoking is addiction , which is in agreement with **Gadalla et al.** who found similar result (12). However, **Nassar** found that 49.6% of all students believed that smoking is addiction (4).

In the current study, relatively high percentages representing more than third of the never smokers

and less than half the ever smokers believed that shisha is less hazardous pre health instruction which post intervention, they decreased to less than third and minority respectively.

In the present study, concerning student's knowledge about the presence of the religious instruction (fatwa) for not to smoke, the majority of the never and ever smoker students know and agreed with the religious rulings (fatwa) with statistically significant differences between ever and never smokers. This finding agrees with of **Radwan et al** [18] that is why there is a need for intensive efforts from religious leaders to translate the current belief into action by quitting smoking among smoker students.

Among both never and ever smokers the minorities believed that **passive smoking** is harmful to health, which improved to represent the majority of both of them after health instruction .This finding was consistent with that of Gadalla et al , in Egypt (12) , and Fikri Abi Saabin the United Arab Emirates (18), and Morello et al .; in Argentina(5).

In the present study pre instruction minorities of students **knew about smoking control law applied** in students hostels in Cairo University, which improved to represent more than three quarters for both groups the never smokers and ever smokers after health instruction and near percentages **believed it is important**, not only that ,but interestingly , more than half of the never smokers and more than one third of ever smokers wanted to be an **active member of smoking control team**. This identifies the importance of disseminating different knowledge about the applied smoking laws and antimoking activities.

Investigating the students intention to smoke within the next five years, results of this study indicated that, among the never and the ever smokers almost three quarters and less than half respectively do not **intend to smoke in the future**, while less than quarter and less than half are not sure . In the study of Gadalla et al .(12) 96% of females and 79% of males do not intend to smoke in the future .

Conclusion:

The study concluded that students knowledge and attitude improved toward tobacco control after implementing the health instruction .This improvement was proved statistically.

Recommendations:

Tobacco use appears to be an important problem among students residing university hostel. So the health instruction intervention is to be applied yearly for newly admitted students in hostels.

- There is a need for more detailed researches about quitting reasons, methods and factors with or against their success.
- Close observation and follow up are needed to students who participated in the study in the next years.
- Smoking control activities should include students from the first year to achieve proper prevention and early control not only for cigarette smoking but also for shisha, and bango use, and they should be actively involved in control activities.
- Health instruction sessions are needed to make those students aware about hazards of smoking (active & passive) and to correct their misbeliefs about smoking. They need also to know their rights to be in a smoking free place and when to ask for. This together with enforcement of smoking laws could help in smoking control.
- Religious role, as religious ruling (fatwa) need to be more enforced and illustrated by religious leaders. That is why arranging periodic meetings with students and giving them a chance to ask and discuss could help in smoking cessation.
- Help smokers to quit by providing hotline service and special clinics with properly trained staff in student's hostel will help those having the desire to quit, and even those who have tried several times and failed.
- Spreading the antismoking message by organizing sports and painting competitions.

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