

Tobacco Smoking after Egypt's Revolution among Male Students Living in Assiut University HostelsAsmaa G. M. Mohamed¹; Safaa A. M. Kotb¹ and Ekram M. Abdel Khalek²¹ Community Health Nursing, Faculty of Nursing. ² Public Health & Community Medicine, Faculty of Medicine, Assiut University, Egypt

Abstract: Smoking is a worldwide health problem. Tobacco smoking among the young is a health priority in Egypt. This study was conducted to determine smoking prevalence among male students living in Assiut University hostels and their knowledge and perceptions about this habit after Egypt's revolution using descriptive cross-sectional design. 400 students were randomly selected. A self-administrative questionnaire was used to collect socio-demographic data, smoking status, as well as students' knowledge and perceptions concerning tobacco smoking. The mean age of the participants was 20.47 ±1.33 years. More than one third (36.2%) were in theoretical faculties and 63.8% were in practical faculties. 13.2% were current smokers (25.5% daily smokers and 1.7% occasional smokers) and 30.2% started smoking before 15 years. The currently smokers were more frequently in theoretical faculties, their fathers were smokers and did not living with both parents ($P < 0.05$). Cancer was the common smoking hazard that reported by 33.2% of the participants followed by chest disease (30.0%). More than one fifth (22.8%) of the students in the present study affected by the Egypt's revolution on 25 January 2011 as regards smoking habit. **Conclusion:** An educational program aimed at changing behavior and attitude to tobacco smoking and including healthy life style with high emphasis on the adolescence may be a successful primary prevention. In addition; projects designed to improve university performance may lead to a reduction in smoking rates while providing an investment in the future of youth.

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1. Introduction

Tobacco is the most important cause of preventable death worldwide. It is responsible for death of one in ten adults constituting about 5 million deaths each year. If smoking pattern with which the 21st century started continues, it will cause 10 million deaths each year by 2020. About 650 million people will eventually be killed by tobacco, 70% are in the developing countries (Fakhfakh *et al.*, 2002, Maziak, 2004 ; WHO, 2005; WHO, 2008).

Early smoking initiation increases life time duration of smoking and burden of smoking related diseases (Beaglehole, 2005; Egyptian Smoking Prevention Research Institute, 2007; Frost-Pineda *et al.*, 2011). Tobacco smoking reduces life expectancy, increases overall medical costs and contributes to loss of productivity during the lifespan of an individual (Bronnum and Juel, 2001) therefore; smoking prevention programs have been given a high priority in World Health Organization policies (Cockerham, 1999).

Smoking is a great national disaster in Egypt as it affects health, economy and social aspects of the community. It has become worse and worse since 1990s as it has become more prevalent among youth and teenagers (Ahmed *et al.*, 1999; MOHP, 2000; Nassar, 2003; Egyptian Smoking Prevention Research Institute, 2007).

Data suggest that smoking prevalence is a public health problem in Egypt. The WHO report on the

Global Tobacco Epidemic revealed that the adult daily smoking prevalence was 14% (WHO, 2009a). The WHO non-communicable disease survey 2006 reported that the overall prevalence of daily tobacco smoking was 15.6% (WHO, 2009b). In 2008, among women and men aged 15–59 years, 0.7% of women currently used tobacco compared with 43.9% of men (El-Zanaty and Way, 2009). The percentage of the population that reported using any tobacco product was around 11% and nearly 23% among the age groups 15– 24 years and 25– 44 years, respectively (WHO, 2009b).

The most common form of tobacco use is cigarette smoking. The WHO estimated the number of smoking individuals as 1.1 billion, worldwide. A total of 700 million male smokers and 100 million female smokers are living in developing countries. In other words, 47% of the males living in developing countries and 7% of the females are smokers (Fakhfakh *et al.*, 2002; Maziak, 2004; WHO, 2008).

In Egypt, use of shisha is the second most common type of tobacco consumed. In the past, shisha smoking was generally limited to older males, usually of low socioeconomic level, in rural areas and in the older parts of cities. However, since the early 1990s there has been an increase in shisha use in cities and among new groups such as females, young people and those from high socioeconomic levels (WHO, 2005).

Smoking has been spreading rapidly among young people in developing countries. Concomitant to the psychological changes and risk-taking behavior that are

observed during adolescence, tobacco use rate increases (Yorulmaza *et al.*, 2002). Worldwide every day, 80,000-100,000 adolescents become smokers at a very young age (WHO, 2005).

It is much more important to prevent youth from ever smoke via continuous monitoring of risk factors for smoking among them to modify the modifiable factors and target who have non-modifiable risk factors with health education and smoking prevention programs (Mukhtar *et al.*, 2006; Baška *et al.*, 2010).

University students are at high risk of smoking as they become exposed to greater availability of cigarettes and intimate association with smoking peers (Abdel Hamid, 2000; Nassar, 2003; Mandil, 2007; Almutairi, 2010; Halperin *et al.*, 2010). So, the Public Health and Community Medicine in Assiut University with the collaboration of the Faculty of Medicine established Anti-smoking Unit since 1992 and the Egyptian Association for Anti-smoking in 2009. Their most important antismoking activities were declaration of Assiut Faculty of Medicine free from smoking and prohibition of sell cigarettes inside Cafeterias in the university. Awareness of people inside and outside the university about hazards of smoking and how to prevent it is the main objective of anti-smoking units through different workshops and health education sessions. Although the research activities of the unit, there is no available recent data about smoking situation among students in Assiut University. One study was conducted to determine the prevalence of smoking among Assiut University students in 1986 (Abdel Megeed, 1986).

Aim of the study:

This study aimed to determine the prevalence of smoking among male students living in Assiut University hostels and determine their knowledge and perception of smoking hazards after Egypt's revolution.

2. Subjects and Methods:

A descriptive cross sectional study was conducted during the academic year 2010/ 2011 among male students living in Assiut University hostels who comprised 4020 students from different faculties and grades. The sample size was calculated using EPI Info 2000 computer program. The calculated sample is 350 with prevalence 50% and 95% confidence level. In the present study, 400 students randomly drawn from the total 5 male hostels. After obtaining the approval of the Faculty of Nursing and Assiut University authority. Voluntary informed oral consents were got from students enrolled in the study after complete explanation of the study purpose. Data collection was done by the researchers using an anonymous self administrative questionnaire; it included aspects regarding socio- demographic characteristics, smoking status, causes among smokers as well as health beliefs

concerning this habit. Interviews were done at the room of the hostel's supervisors as it was the suitable place to conduct interviews. Meetings with students were done at different times during the day either after the lunch or at night to ensure availability of the students with the help of the hostel supervisors. A pilot study was done on 20 students who not included in the study and some modifications were done in the questionnaire. The researchers asked the students to respond freely and truthfully to each question. An assurance of confidentiality and security was provided. Students took approximately 10-15 minutes to complete the questionnaires.

Collected data were analyzed using SPSS version 16. A *P*-value <0.05 was considered statistically significant. Descriptive analysis in the form of means and standard deviations were calculated for numerical data. Qualitative data were described using percent distribution and chi square test was used to detect differences between categories.

3. Results:

Participants personal and socio demographic characteristics:

Table (1) shows the personal characteristics of the students participated in the study, their age ranged from 18-24 years with a mean of 20.47 ±1.33 years. More than half (53.5%) of them were in the age group 20-21 years. 36.2% were in theoretical faculties and 63.8% were in practical faculties. The students were mainly in first, second, third and fourth grades (85.3%) (Figure 1). About one third (32.2%) of the respondents had very good regarding the academic performance in the first term. 29.8% of the students spent one year at the university hostels and 39.0% spent 3-4 years. More than half of the students (65.0%) resided in rural areas, while 35.0% were urban residents. Regarding the students' family characteristics, Table (2) shows that 60.2% of the students their fathers' job was farming, while 72.2% their mothers were housewives. The family of the majority of the students was well constructed (92.2%), 87.8% of the students lived with both parents, (9.2%) lived with their mothers, 1.2% lived with their fathers, and 1.8% lived with others. The findings also show that more than one third (35.2%) of the students their fathers were current smokers and 90.8% of smoker fathers smoked in front of their sons. As shown in Figure (2), 32.8% of them their fathers had university education, while 29.5% their mothers were illiterates.

Prevalence of smoking:

Table (3) shows that 13.3% of studied students were current smokers while 73.5% of them were never smokers and 13.3% smoked and quit. 64.2% of the smokers were daily smokers. About two-thirds started smoking in the age group 15 to less than 20 and 30.2% started smoking before 15 years. Figure (3) illustrates

types of smoking among smoker students as 60.4% of them smoked cigarettes only, 3.8% smoked shisha only while 35.8% smoked both. The mean number of cigarettes per day was 15.4 ± 3.2 . Most of the smokers in the present study (88.7%) smoked in presence of other persons. Regarding the reasons for smoking, encouragement by friends and curiosity were the main reasons for smoking initiation as reported by 54.7% of smokers followed by pressures of life (27.4%). As regards the reasons of non smoking, 68.4% of those who never smoked stated that it religiously rejected and 55.4% mention it harmful to the health.

Table (4) demonstrates the relation between smoking and some personal characteristics of the respondents. There are statistically significant differences ($P < 0.05$) between currently smokers and non-smokers as the currently smokers were more frequently in theoretical faculties (23.4%), their fathers were smokers (18.4%) and did not living with both parents (22.4%).

Students' knowledge and perceptions about smoking:

Regarding the students' knowledge about the health hazards of smoking, Table (5) shows that cancer was the common smoking hazard that reported by 33.2% of the participants followed by chest disease (30.0%), death (13.5%), general weakness (12.0%) and heart diseases (9.8%). On the other hand, 15.8% of students did not know that smoking causes health hazards. 47.0% of the students reported that activation of the anti-smoking law is the best method to prevent smoking. Other methods were mentioned to prevent and control smoking as awareness by mass media (37.0%), use of leisure time (32.8%) and changing the surrounding environment (31.2%). About half of the students received their information about smoking hazards and how to prevent it from their study and 45.2% from their reading. Mass media was stated by 41.5%. The majority of the students (82%) did not receive any health education session about tobacco smoking and its hazards.

Table (6) shows the distribution of the current smokers according to their opinion about smoking effect on their study and health, 37.7% of them reported that smoking affects their academic performance, 70.0% of them mentioned that smoking relieves the pressure of studying, while 55.0% stated it helps in wake up for studying at night and 25.0% reported it helps to concentrate in studying. As regards to the possible students complaints, 51.2% of those who current smokers had long period of cough, 44.2% lost appetite and 37.2% lost their weight. 81.0% of current smokers attempt to quit and the common causes for quitting were their convention with the dangerous effects of smoking (54.7%) and the effect of smoking on their health (37.7%).

More than one fifth (22.8%) of the students in the present study affected by the Egypt's revolution on 25 January 2011 as the regards smoking habit. 79.1% shared in anti-smoking program in the university, 14.3% tried to quit, 4.4% became non-smokers while 2.2% began to smoke (Table 7).

Table (1): Personal and sociodemographic characteristics of the studied students, Assiut University Hostels, 2011

Variable	No. (n= 400)	%
Age in years:		
<20	98	24.5
20- 21	214	53.5
≥ 22	88	22.0
Mean ± SD	20.47±1.33	
Residence:		
Rural	260	65.0
Urban	140	35.0
Religion:		
Moslem	377	94.2
Christian	23	5.8
Faculty type:		
Practical	255	63.8
Theoretical	145	36.2
Academic performance in the 1st term:		
Excellent	31	7.8
Very good	129	32.2
Good	115	28.8
Acceptable	31	7.8
Passed with subjects	9	2.2
Years spent in the university hostels:		
One year	119	29.8
2 – 3	156	39.0
4 or more	125	31.2
Mean ± SD	2.86 ± 1.473	
Source of spending:		
Weekly/ monthly pocket money	333	83.2
Work during summer holiday	84	21.0
Work during studying	12	3.0
Others	9	2.2
Favorite hobbies activities:		
Yes	370	92.5
No	30	7.5
Pattern of hobbies:		
Sports	266	66.5
Cultural	116	29.0
Crafts	44	11.0

•More than one answer was stated

Figure (1): Faculty grades of the studied students, Assiut University Hostels, 2011

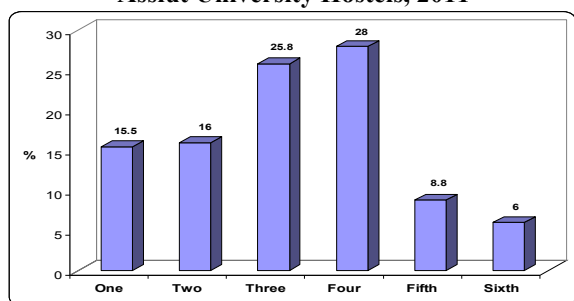


Figure (2): Educational level of the parents of the studied students, Assiut University Hostels, 2011

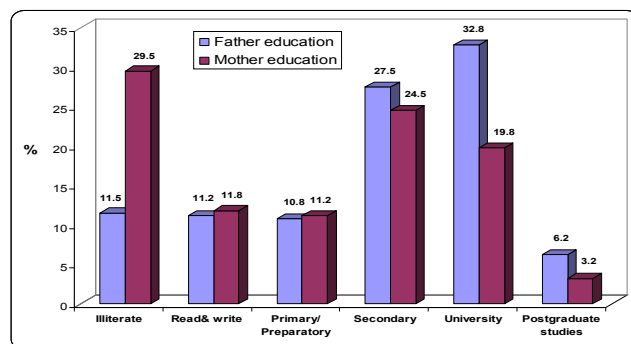
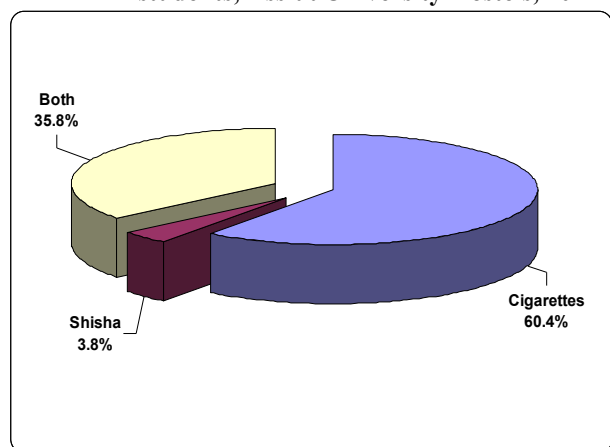


Table (2): Family characteristics of the studied students, Assiut University Hostels, 2011

	No. (n=400)	%
Family construction:		
Intact family	369	92.2
Divorced	10	2.5
One or both parents died	21	5.2
Living with whom:		
Both parents	<u>351</u>	<u>87.8</u>
Mother	<u>37</u>	<u>9.2</u>
Father	<u>5</u>	<u>1.2</u>
Others	<u>7</u>	<u>1.8</u>
Ordering among living siblings:		
First	119	29.8
2 nd -3 rd	156	39.0
4 th or more	125	31.2
Number of individuals in the household:		
< 6	97	24.2
6-8	239	59.8
> 8	64	16.0
Father occupation:		
Employer	241	60.2
Farmer	52	13.0
Free business	19	4.8
Skilled worker	12	3.0
Unskilled worker	34	8.5
Retired	27	6.8
Died	15	3.8
Mother occupation:		
House wife	289	72.2
Paid work	105	26.2
Father's smoking status:		
Smoker	141	35.2
Not smoked	218	54.5
Don't know	26	6.5
He smokes in front of you: (n= 141)		
Yes	128	90.8
No	13	9.2
Father is drug abuser/ drunker:		
Yes	3	0.8
No	389	97.2
Don't know	8	2.0

Table (3): Current smoking status among the studied students, Assiut University Hostels, 2011

	No. (n= 400)	%
Current smoking status:		
Currently smokers	53	13.3
Currently non-smokers	53	13.3
Never-smokers	294	73.5
Age of initiate smoking/ years:		
< 15	32	30.2
15 - < 20	69	65.1
≥ 20	5	4.7
Mean ± SD (Range)	15.4 ± 3.2 (6 – 23)	
Number of cigarette/ day:		
Mean ± SD (Range)	14.4 ± 9.5 (1 – 40)	
Smoking status:		
Smoke every day at least once	34	64.2
Occasional smoking	19	35.8
Smoking in presence of other people:		
Yes	47	88.7
No	6	11.3
Place of shisha smoking:		
Home/ hostel	12	57.1
café	8	38.1
Club	1	4.8
Causes of smoking: (n=106)		
My friends	58	54.7
Curiosity	58	54.7
Pressures of life	29	27.4
Because I became a man	2	1.9
Family disintegration	1	0.9
Reasons for not smoking: (n= 294)*		
Religiously rejected	201	68.4
Not belief about smoking	164	55.8
Harmful to health	163	55.4
Bad habit	109	37.1
Family role	107	36.4

Figure (3): Type of smoking among the studied students, Assiut University Hostels, 2011**Table (4): Relation between smoking status and personal characteristics of the studied students, Assiut University Hostels, 2011**

	Current smoking status				P-value
	Current smokers (n= 53)		Current non-smokers (n= 347)		
	No.	%	No.	%	
Age in years:					0.071
<20	8	8.2	90	91.8	
20- 21	36	16.8	178	83.2	
≥ 22	9	10.2	79	89.8	
Religion:					0.327
Moslem	52	13.8	325	86.2	
Christian	1	4.3	22	95.7	
Residence:					0.092
Urban	24	17.1	116	82.9	
Rural	29	11.2	231	88.8	
Faculty type:					0.000*
Theoretical	34	23.4	111	76.6	
Practical	19	7.5	236	92.5	
Father's smoking status:					0.006*
Yes	26	18.4	115	81.6	
No	18	8.3	200	91.7	
Don't know	6	23.1	20	76.9	
Birth order:					0.716
First	14	11.8	105	88.2	
2 nd – 3 rd	20	12.8	136	87.2	
4 th or more	19	15.2	106	84.8	
Living with parents together:					0.043*
Yes	42	12.0	309	88.0	
No	11	22.4	38	77.6	

Table (5): Students' knowledge about smoking health hazards and methods of prevention, Assiut University Hostels, 2011

	No. (n= 400)	%
Hazards of smoking:		
Cancer	133	33.2
Chest diseases	120	30.0
General weakness	48	12.0
Heart diseases	39	9.8
Psychiatric problems	27	7.0
Impotence	15	3.8
Liver diseases	10	2.5
Gum diseases	3	0.8
Death	54	13.5
Don't know	63	15.8
The best way to prevent smoking:		
Through the activation of the antismoking law	191	47.0
Through awareness by the mass media	148	37.0
Use of leisure time	131	32.8
Changing the surrounding environment	125	31.2
Through the school curriculum	72	18.0
Source of information about smoking:		
Study in school and faculty	194	48.5
Readings	181	45.2
TV/ radio	166	41.5
Friends	88	22.0
Family	82	20.5
Internet	29	7.2
Health education or workshop on smoking		
Yes	72	18.0
No	328	82.0

• More than one answer was stated

Table (6): Current smokers' opinion about effect of smoking on their studying and health, Assiut University Hostels, 2011

	No. (n= 53)	%
Does smoking affect your academic achievement:		
Yes	20	37.7
No	33	62.3
Effects of smoking*:		
Relieve studying pressure	14	70.0
Night awake	11	55.0
Study with concentration	5	25.0
Does smoking affect your health:		
Yes	43	81.1
No	10	18.9
Health effects:		
Long period of cough	22	51.2
Weight loss	16	37.2
Anorexia	19	44.2
Students attempts to quit:		
Yes	47	81.0
No	11	19.0
Reasons for quit smoking*(n= 47)		
My conviction with dangers of smoking	29	54.7
My health was affected	20	37.7
My parents /family	2	3.8
My friends	2	3.8

* More than one answer was stated.

Table (7): Effect of Egypt's revolution on smoking status, Assiut University Hostels, 2011

	No. (n= 400)	%
Effect of revolution on smoking:		
Yes	91	22.8
No	309	77.2
Type of effect: (n= 91)		
Share in anti-smoking program	72	79.1
Try to quit smoking	13	14.3
Became non-smoker	4	4.4
Became smoker	2	2.2

4. Discussion:

Smoking has been spreading rapidly among young people in developing countries (Yorulmaz *et al.*, 2002). Many persons take up the smoking habit despite its well-documented adverse health effects. The findings of the present study reveal that 13.3% of the participants were current smokers, while 73.5% of the students were never smokers. These percentages are less than results reported by Abolfotouh and his colleagues (2007) as 17.5% male students living in Alexandria University Hostels were currently smokers. Also, El-Sharkawy (2011) found that current smoking among male students in Zagazig University was

20.2%. Among a younger age Egyptian adolescents in Global Youth Tobacco Survey, 2005 smoking prevalence among males was 19.6%. The above-mentioned difference in prevalence of smoking among university students may be attributed to the cultural backgrounds. Another study conducted in Jordan revealed that 35% of Yarmouk University students were current smokers (Khader and Alsadi, 2008). In Saudi Arabia about one third (32.7%) of male students in Health Sciences College Riyadh indicated that they currently smoked cigarettes and 29% smoke shisha (Almutairi, 2010). Among university students in Pakistan, 31% males were classified as current smokers and their mean age and standard deviation of smoking initiation was 17 ± 2.6 (Ahmed *et al.*, 2008). Nouzar (2011) found that 22% of university male students in Iran were smokers. Also, the prevalence of ever smoking of 26.5% is less than that reported by Abdel Hamid (2000), who found the prevalence of ever smoking of 29.4% among Egyptian university students. The explanation of the lower percentage in the present study is most probably the increasing awareness of the horrible consequences of smoking and the increasing religion adherence. Among smoker students, 60.4% were cigarettes smokers, 3.8% were shisha smokers and 35.8% smoked both.

In the present study the mean age of smoking initiation was 15.4 ± 3.2 years and 95.3% of the students started smoking before age of twenty. These findings are higher than those found by El-Sharkawy (2011) as 93.3% of the students started smoking before 20 years. On the other hand, less than two thirds of smokers students were daily smokers and the mean consumed cigarettes per day was 14.4 ± 9.5 and these results are less than the findings of El-Sharkawy's study as all smokers were daily smokers and about their two thirds were mild to moderate smokers as they expire 20 cigarettes or less per day. While Youssef *et al.* (2002) reported that the mean age of smoking initiation was 18.1 years. The effect of peer pressure and curiosity were the main reasons for initiation of smoking among the studied students these findings are similar to that reported by Abolfotouh *et al.* (1998), and also it consistent with the findings of a study conducted by El-Sharkawy (2011) that participation with friends represented the main motive for smoking in more than 37%.

The significantly higher smokers among theoretical faculties' students were more than practical faculties' students. This result was supported by findings of previous studies conducted by Abdel Hamid (2000), Mandil *et al.* (2007) and El-Sharkawy (2011), This finding may be attributed to lack of knowledge about smoking hazards among the theoretical faculties' students. And also they have more leisure time which exposes them more to friends' pressure. The majority of smokers' fathers were

smokers and they did not living with both parents. Also, El-Sharkawy (2011) found that living away from the family. In El Minya Governorate, Harbour (2012) reported that Male youths who lived in a household with an adult male who smoked were much more likely to smoke

As regarding knowledge of the students about smoking hazards, 33.2% of the participants said cancer followed by chest disease (30.0%), death (13.5%), general weakness (12.0%) and heart diseases (9.8%). However, 15.8% of students did not know that smoking causes health hazards. Almutairi (2010) found that around 86.0% of smoking students had more knowledge about the harm of tobacco use. In a study conducted on freshman students of Tokyo Metropolitan University of Health Sciences, the majority of both ever-smokers and non-smokers had poor knowledge (Smith and Umenai, 2000). Also, Italian Medical students had limited knowledge of the epidemiology of smoking, attributable morbidity and mortality (Grassi *et al.*, 2012).

47.0% of the students reported that activation of the anti-smoking law is the best method to prevent smoking. Other methods were mentioned to prevent and control smoking as awareness by mass media (37.0%), use of leisure time (32.8%) and changing the surrounding environment (31.2%). About half of the students received their information about smoking hazards and how to prevent it from their study and 45.2% from their reading. Mass media was stated by 41.5%. The majority of the students (82%) did not receive any training program on tobacco smoking and its hazards.

The present results reveal that attempts to stop smoking were reported by 81.0% of the current smokers, while in another study in Saudi Arabia, the attempts to stop smoking represents three quarters of Faculty of education smokers and half of Faculty of Medicine smokers (Abolfotouh *et al.*, 1998).

After Egypt's revolution, 79.1% shared in anti-smoking program in the university, 14.3% tried to quit, 4.4% became non-smokers as positive behaviors and they participate in and do any activity for Egypt development in the next period. On the other hand, 2.2% began to smoke as a result of the stress from the events.

Limitations

Various methodological limitations must be considered when interpreting the data. For instance our study was limited to a sample of male students living in university hostels and did not include female students and this because the cultural nature of the Assiut society. Thus findings from the present study may not generalize to all university students. Secondly, the study involved cross sectional data that are useful for identifying the existence of potential relationships, but

not causality. This is solved by doing case-control analysis. Third, data are based on self reports that may be prone to recall bias. To reduce recall bias we concentrated on current smokers.

Conclusion:

The present study directs the attention to the fact that problem of smoking among university students- specially those living far from their families in the university hostels- still increased and it need the cooperation and coordination of the governmental and non governmental agencies to combat it. The onset of tobacco use generally occurs before age of 20; therefore, prevention of smoking initiation among children and adolescents is a powerful strategy for preventing much of the illness and mortality associated with tobacco use.

Recommendations:

Based on the findings of the present study the following items may be recommended:

- 1- Antismoking programs should be directed to all schools levels and universities.
- 2- Involvement of the students in the education campaigns that they may have greater effect on their peer group.
- 3- Specific parents teaching programs should be conducted especially for families with smoked parents.
- 4- Activation of the smoking law especially in universities.
- 5- Further studies with the longitudinal design to determine the prevalence of smoking among the Assiut University students, its effects and risk factors associated with these habits.

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