

TOBACCO SMOKING AMONG STUDENTS OF AL-GHAD COLLEGE FOR APPLIED MEDICAL SCIENCES FOR MALE IN RIYADH, SAUDI ARABIA

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DOI: 10.5455/ijmsph.2014.030720143

Received Date: 02.06.2014

Accepted Date: 03.07.2014

ABSTRACT

Background: Adolescence and young adulthood are the times when people are most susceptible to starting tobacco use. Young people are more vulnerable and more influenced by marketing than adults. They are also more willing to take risks, even with their health. Cigarette smoking by youth and young adults has immediate adverse health consequences, including addiction, and accelerates the development of chronic diseases across the full life course.

Aims & Objectives: This study was conducted to determine the prevalence and risk factors affecting tobacco use among students of Al-Ghad International College for Applied Medical Science, (Male-Riyadh) in Saudi Arabia.

Materials and Methods: Cross sectional approach was used in this study, where a sample size of 156 students was selected. By using questionnaire, the data were collected concerning main outcome variable i.e. the smoking status of students (smoker or non-smoker) and the predictor variables (risk factors) including socio-demographic characters of students (age, parent's education), parents and friends smoking status, smoking perception and alcohol and illicit drug use.

Results: The prevalence of current tobacco user students was 42.3%, previous or tried smoking in the past was 17.9% while 39.7% of students had never smoked. Of the current smokers, 34.8% were cigarette smokers, 21.2% were shisha smokers and 40.9% were both cigarette and shisha smokers. Smoking status was associated with age (OR=1.38; 95% CI=1.14-1.68), mothers educated up to middle school, friends smoking, attractive smoking perception, alcohol intake (OR=12.28, 95% CI: 4.01- 37.39) and illicit drug abuse (OR=16.57, CI: 4.72- 58.16).

Conclusion: Smoking prevalence was the highest among all studies conducted in Saudi Arabia. More studies in other private colleges are needed to identify if this high prevalence is specific for Al-Ghad College or it's a common characteristic for all private colleges.

Key Words: Al-Ghad; Student; Smoking; Saudi Arabia; Tobacco

Introduction

Adolescence and young adulthood are the times when people are most susceptible to starting tobacco use. Young people are more vulnerable and more influenced by marketing than adults. They are also more willing to take risks, even with their health. Cigarette smoking by youth and young adults has immediate adverse health consequences, including addiction, and accelerates the development of chronic diseases across the full life course.^[1]

The tens of billions of dollars that the smoking industry spends each year to market its products would thus appear to be a worthwhile investment in creating and sustaining high levels of youth smoking.^[2] As a consequence, most people begin using tobacco before the age of 18 years.^[3-5]

Saudi Arabia (SA) conducted school-based 'youth tobacco use survey' of students aged 10-15 years during

the academic year 2009-2010. About 24.9% of students had ever smoked cigarettes (Boys = 34.6%, Girls = 15.6%), 14.9% currently use any tobacco product (Boys = 21.2%, Girls = 9.1%), 8.9% currently smoke cigarettes (Boys = 13.0%, Girls = 5.0%), 9.5% currently smoke shisha (Boys = 13.3%, Girls = 6.1%) and 11.0% currently use other tobacco products (Boys = 15.3%, Girls = 7.1%).^[6]

Many studies have been conducted to assess the prevalence and characters of tobacco use among university students in SA.^[7-10] The prevalence of tobacco use ranged from 14.5% to 30.9% and was associated with older age, friends smoking and presence of smokers within the family.

However, all of these studies were conducted in governmental universities only. In the last decade, private universities started to spread all over SA. Up till now, there is no available data about tobacco smoking among students of these private universities.

Identification of tobacco smoking prevalence and determinants among students who joined these universities is an essential preliminary step in order to plan and implement smoking prevention program targeting these students. Our study aims identification of prevalence and risk factors (determinants) of tobacco smoking among students of Al-Ghad International College for Applied Medical Science for male in Riyadh, as one of many private colleges newly constructed in Saudi Arabia.

Materials and Methods

This study was based on an observational, cross-sectional approach where a representative sample of 156 students studying in Al-Ghad International College for Applied Medical Science was selected for the study. This sample constitutes about 50% of all students in the college. The inclusion criteria were: full-time student, studying at the Riyadh male campus during the academic 2013/2014. The majority of those students were preparatory year students (136 students), while the remaining were from medical imaging department (7 students) and health administration department (13 students).

Data Collection

Modified Arabic version of the Global Youth Tobacco survey (GYTS) questionnaire^[11] was used for data collection. From the original 71 items GYT questionnaire, only 25 items were selected by the research team as the most relevant items to study fulfilment and to avoid student exhaustion. These 25 items constitute the self-administered questionnaire used as a tool for data collection. Pilot study was carried out on 20 students to refine the questions before actual data collection. This self-administered questionnaire covered demographic data (age, marital status, parent education); tobacco use patterns (type of smoking, frequency, age of initiation, duration), as well as possible risk factors which could encourage students to start smoking (parents and friend smoking and alcohol and illicit drug use). Smoking status was the main outcome variable evaluated, and a participant was considered a current smoker if having ever actively smoked tobacco products (cigarettes, waterpipe etc.) even once in the preceding 30 days, including the questionnaire completion date. The time necessary for questionnaire filling was ranged between 30 and 40 minutes for each student. Anonymity of participants was emphasized and confidentiality strictly

maintained on all collected questionnaires. Permission for data collection was obtained from college administration, in addition to verbal permission from class instructors and students.

Data Analysis

Data were reviewed on a daily basis for completeness and accuracy, then managed and analyzed using SPSS, version 16.0. Data management included coding, entry, analysis and presentation in tables. Descriptive statistics [mean, standard deviation (SD) and proportion] were used to describe the study variables. Binomial logistic regression was used to measure the strength of association between smoking status of students and the risk factors (determinants) of smoking by calculating odds ratios (OR), with 95% confidence intervals. *P*-value < 0.05 was considered statistically significant.

Results

Our study revealed that 42.3% of studied students were current smokers, 17.9% were previous smoker or tried smoking in the past while 39.7% had never smoked (table 1).

The consumption pattern for tobacco products among current smokers was as follow: 34.8% were only cigarette smokers, 21.2% were only shisha smokers and 40.9% were both cigarette and shisha smokers (table 2).

Table 3 shows the characters of students and the relation between each character and smoking status. The mean age was 20.35 (SD 2.25) years. Age of most of the participants (71.8%) ranged between 18 and 21 years with average age of 20.35 (SD 2.25) years. The average reported age for smoking initiation was 14.7 (SD 3.4) Years. The majority of students were of single marital status (89.7%).

Table-1: Smoking prevalence among studied sample

Type	N	%
Never smoked	62	39.7
Tried or previous smokers	28	17.9
Current smokers	66	42.3
Total	156	100.0

Table-2: Tobacco use pattern among current smoker students

Type	N	%
Cigarette	23	34.8
Shisha	14	21.2
Both cigarette and shisha	27	40.9
Cigar	1	1.5
Chewing	1	1.5
Total	66	100.0

Table-3: Characters of the studied sample and their association with smoking habit

Characteristics	N	%	Smoker N (%)	OR (95% CI)	p-value
Age (years)					
18	17	10.9	6 (35.3)	1	
19	49	31.4	20 (40.8)	3.48 (0.99-12.22)	0.05
20	30	19.2	10 (33.3)	3.27 (1.25-8.55)	0.016*
21	16	10.3	10 (62.5)	9.50 (2.78-32.44)	0.000*
22-30	29	18.6	21 (72.4)	1.14 (0.32-4.06)	0.84
Missed	15	9.6	-		
Mean Age (Mean ± SD)	20.35 ± 2.25			1.38 (1.14-1.68)	0.001*
Initiation (Mean ± SD)	14.68 ± 3.41				
Marital Status					
Single	140	89.7	55 (39.3)		
Married	10	6.4	6 (60.0)		
Divorced	2	1.3	2 (100)		
Father's Education Status					
Illiterate	14	9	8 (57.1)	1	
Read & write	21	13.5	8 (38.1)	0.45(0.13-1.55)	0.2
Elementary	21	13.5	7 (33.3)	1.32(0.46-3.76)	0.59
Middle school	13	8.3	6 (46.2)	1.08(0.38-3.04)	0.87
High school	35	22.4	17 (48.6)	0.95(0.28-3.24)	0.93
University	49	31.4	18 (36.7)	0.61(0.25-1.46)	0.27
Mother's Education Status					
Illiterate	27	17.3	13(48.1)	1	
Read & write	25	16	7(28.0)	1.04(0.40-2.92)	0.88
Elementary	20	12.8	4 (20.0)	2.57(0.86-7.65)	0.09
Middle school	19	12.2	9 (47.4)	4.0(1.11-14.32)	0.03*
High school	24	15.4	11 (45.8)	1.11(0.36-3.38)	0.85
University	36	23.1	18 (50.0)	1.18(0.42-3.33)	0.75
Parental Smoking Status					
None of them	109	69.9	42 (38.5)		
Father only	36	23.1	16 (44.4)		
Mother only	1	0.6	1 (100)	1.14(0.57-2.27)	0.7
Both	3	1.9	2 (66.7)		
Don't know	3	1.6	3 (100)		
Friends Smoking Status					
None of them	24	15.4	3 (12.5)	1	
Some of them	71	45.5	27 (38.0)	26.25(5.11-134.92)	0.000*
Most of them	37	23.7	18 (48.6)	6.11(1.84-20.34)	0.003*
All of them	19	12.2	15 (78.9)	3.96(1.10-14.20)	0.035*
Perception that smoking is harmful					
Yes	143	91.7	59 (41.3)	1	
No	8	5.1	5 (62.5)	0.42 (0.10-1.83)	0.25
Perception that smoker is more attractive					
Yes	10	6.4	7 (70.0)	1	
No	106	67.9	38 (35.5)	0.54(0.12-2.46)	0.43
No difference	34	21.8	19 (55.9)	2.27(1.03-4.97)	0.04*
Perception that smoking increase weight					
Yes	10	6.4	3 (30)	1	
No	77	49.4	34 (44.2)	1.83(0.47-7.17)	0.38
No difference	60	38.5	28 (46.7)	1.25(0.63-2.47)	0.51
Alcohol Drinking					
Never	128	82.1	42 (32.8)	1	
Yes	24	17.9	22 (91.7)	12.28(4.01-37.39)	0.000*
Illicit drug user					
Never	129	82.7	42(32.6)	1	
Yes	27	17.3	24 (88.9)	16.57(4.72-58.16)	0.000*

*Significant association

Smoking significantly associated with age of students where the probability of smoking increased with older ages (OR=1.38; 95% CI=1.14-1.68), mothers educated up to middle school, friends smoking, attractive smoking perception, alcohol intake (OR=12.28, 95% CI: 4.01-

37.39) and illicit drug abuse (OR=16.57, 95% CI: 4.72-58.16).

Discussion

In this study we examined the prevalence and risk factors of tobacco smoking among students of Al-Ghad International College for Applied Medical Science for Male in Riyadh, Saudi Arabia. We found that 42.3% of the participants were current smokers, 17.9% were ever-tried or previous smokers, and 39.7% had never smoked. In comparatively, in studies conducted in other universities in Saudi Arabia, there is lower tobacco smoking prevalence, where it ranged between 14.5% and 30.9%.^[7-10] However, these studies differ from our study in the fact that, they were conducted in governmental universities (health and non-health related), located inside and outside Riyadh region and include both male and female students, while our study was restricted to students of Al-Ghad college (which is private college) for males in Riyadh. From the first look, we can attribute this high prevalence observed in our study to the fact that it's only conducted on male students with much more tobacco smoking prevalence than female students.^[7,9] However, in comparison with other studies conducted on male students in governmental universities^[8,10], our study still had higher smoking prevalence. This suggests that students of private universities (like Al-Ghad University) are more likely to be smoker than students of governmental universities. This can be attributed to the fact that, students of private universities are more likely to be of high socio-economic standard where smoking prevalence tend to be high.^[7,10]

However, overall findings of previous studies (in addition to our study) give very serious indicator on smoking trend among Saudi university male students where there is progressive increase in the smoking prevalence among these students.

Considering smoking pattern, 34.8% of students were cigarette smokers, 21.2% were water pipe smokers and 40.9% were both cigarette and water pipe smokers. This finding comes more or less similar to the findings of other study conducted in Saudi Arabia where 45.5% of the total sample was cigarette smokers and 45.2% were water pipe smokers.^[9]

Due to the different methodologies used, it was not easy to compare our findings with those from other countries. However, in comparison to other studies conducted in

the gulf region, lower smoking prevalence was found among male university students in Kuwait and Bahrain with similar findings (35.2%).^[12,13] Also, Omani students reported lower prevalence of shesha smoking (15.5%).^[14]

In addition to that, comparison with studies conducted in other Arab countries reveals lower smoking prevalence among male students of private universities in Egypt (16.3%) and Syria (26.1%).^[15,16] On the other side, higher smoking prevalence was found among Palestinian male students (52.7%).^[17]

Also, there is variable relation between our study and other international studies, where lower smoking prevalence was found among Portuguese high-school students (21.5%)^[18], while higher levels were reported in countries like Pakistan (53.6%)^[19] and USA (50%)^[20]. There was no clear explanation for this variability between different countries; however, a combination of economic, social and environmental factors may be responsible.

The average age of smoking initiation was 14.68 (± 2.41) years. This comes consistent with the findings of studies conducted in different countries to identify the average age of smoking initiation where it was 14.9 and 14.8 (± 3.0) respectively.^[21,22]

Smoking significantly associated with age of students, mother's education, friends smoking, attractive smoking perception, alcohol intake, and drug abuse. This comes consistent with the finding of similar studies conducted to assess the smoking predictors.^[9,18] However, contrary to the previous studies, there is a lack of association with parental smoking. This may be due to low sample size which doesn't permit the statistical tests (logistic regression) to give significant results.

Limitation

Considering the methodology of our study, it has several limitations. First, data collected was based on self-administered questionnaires; although this technique reduces the time and efforts necessary for data collection. However, there is higher probability of data missing and bias due to questions misunderstanding. To reduce this probability, data collection was done in presence of principle investigator where brief explanation about the research as a whole and specifically on the questionnaire items was done

immediately before data collection. In addition to that, for each student, brief review of the questionnaire for data missing was done at the end of data collection. In case of data missing, the student was asked to complete the missing items. Secondly, classification of participants as smoker or non-smoker was based only on their smoking history without any other additional mean. This leaves a chance for misclassification of the participants due to recall bias. Thirdly, low sample size of the study which may be responsible for lack of association between smoking and many studied variables. Furthermore, the study involved only male students of Al-Ghad College in Riyadh. Thus, the results cannot be generalized to all students or people in same age group in the entire country as this sample can't be considered as representative to same population of the country. However, we believe that our results give good indicator about the smoking behaviour among male university students at least in Riyadh region.

Conclusion

This study revealed high prevalence of tobacco use which is more than any study conducted on similar university students in Saudi Arabia. Because no data is available about tobacco use among students in other private college in the kingdom, it's not clear if this high prevalence is specific for students of Al-Ghad College, or it's a general characteristic for students in the private colleges in Saudi Arabia. So, more studies about tobacco use in the private universities are necessary to explore this issue.

ACKNOWLEDGEMENT

Authors want to express their gratitude to administration of Al-Ghad International College for Applied Medical Science, staff members (especially in health administration department), students who participate in the study and for our colleagues in public health and community medicine department, Al-Azhar faculty of medicine, for their help and co-operation during different stages of study.

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Cite this article as: Hassan HM, Mahmoud SS, Katasha MK, Isaa LF, Abdel-Wahed A, Mohammed SM, et al. Tobacco smoking among students of Al-Ghad college for applied medical sciences for male in Riyadh, Saudi Arabia. Int J Med Sci Public Health 2014;3:1196-1200.

Source of Support: Nil

Conflict of interest: None declared