



Global Advanced Research Journal of Medicine and Medical Sciences (ISSN: 2315-5159) Vol. 4(12) pp. 556-561,
December, 2015 Special Issue
Available online <http://garj.org/garjmms>
Copyright © 2015 Global Advanced Research Journals

Full Length Research Paper

Smoking Habit and its Determinants Among Students of Health Colleges in Al-Baha University, Al-Baha, Saudi Arabia: A Cross-Sectional Study

Ibrahim A. Eljack^{1*}, Naif A. Alghamdi², Faisal G. Alzahrani² and Saeed D Alzahrani²

¹Department of Community and Family Medicine, Faculty of Medicine, Al-Baha University, Al-Baha, Saudi Arabia

²Medical interns, Faculty of Medicine, Al-Baha University, Al-Baha, Saudi Arabia

*Corresponding Author E-mail: aljack123@yahoo.com

Accepted 07 December, 2015

Smoking is considered as a major health problem causing a public health threat, which is gradually increasing all over the world. The present study was conducted to estimate the prevalence of smoking habits and its determinants among male students at the health colleges of Al-Baha University in Al-Baha, Saudi Arabia. A cross-sectional survey was conducted during the period from the beginning of September 2016 to the end of October 2016 in Al-Baha University, Al-Baha, Saudi Arabia. Simple random sampling technique of male undergraduate students from the health colleges was used. Presenting a pretested questionnaire for 327 under graduated males students for information collection. The overall prevalence of smoking found to be 27.5% (90/327). The common reason given for the smoking habit was the Desire (36.3%). Being in the health field of study increase the awareness of 91.4% of the students about the smoking and its effect. The study showed that 30% of current smokers were motivated to stop smoking. Smoking habit was more prevalent among married than unmarried students and the prevalence increase with age; these associations were statistically significant ($P < 0.001$). The smoking habit was significantly associated with the type of college ($P < 0.001$) and it was increased among Applied Science College followed by the Medicine College and finally the Pharmacy College. There was a high prevalence rate of smoking habit among male students at the Health Colleges of Al-Baha University in Al-Baha, Saudi Arabia. Smoking habit was more prevalent among married students; affected by the type of Health College and the prevalence increase with age. Measures including antismoking promotion program, supported by laws addressing smoking habit predictors and targeting health colleges' students and their friends, families and other university members should be taken by health and higher education authorities. Provision of health care services and smoking cessation clinics in the health colleges and university settings can reduce this high prevalence of smoking and promote the students to quit smoking successfully and without relapse.

Keywords: Smoking habit, Prevalence, Students of health colleges, Al-Baha University, Saudi Arabia.

INTRODUCTION

Tobacco is the only legal drug that kills many of its users when used exactly as intended by manufacturers. WHO has estimated that tobacco use (smoking and smokeless) is currently responsible for the death of about six million people across the world each year with many of these deaths occurring prematurely (WHO, 2015). This total includes about 600,000 people are also estimated to die from the effects of second-hand smoke. Although often

associated with ill health, disability and death from non-communicable chronic diseases, tobacco smoking is also associated with an increased risk of death from communicable diseases (WHO, 2015). Most of the tobacco consumed throughout the world is in the form of smoking tobacco, such as manufactured cigarettes, hand-rolled cigarettes, cigars, pipes, waterpipes, kreteks, and bidis. Overall, the prevalence of current tobacco

smoking ranges from 39% in Russian Federation to 4% in Nigeria. Among men, eleven Global Adult Tobacco Survey (GATS) countries have prevalence of 40% or above. For women, eleven countries have a prevalence of more than 5%. With the exception of Bangladesh and India, most smokers smoke cigarettes, particularly manufactured cigarettes. Men commonly smoke bidis in India and Bangladesh. The use of the waterpipe is relatively high in Viet Nam, Egypt, Turkey, Russian Federation, and Ukraine. Prevalence of smoking is generally much higher for men than women in every GATS country. The male-to-female prevalence ratio for smoking is highest in Egypt (76:1) and lowest in Poland and Uruguay (both less than 2:1). The majority of current smokers are daily smokers in all countries except for Mexico (Asma et al., 2015). Smoking is an important as it is considered a growing problem worldwide, specifically among Saudi males and females (Bassiony, 2009). In Saudi Arabia; smoking was among the major public health problems. Review articles in Kingdom of Saudi Arabia that reviewed the literature on the epidemiology, consumption, trade, control, prevention, and treatment of tobacco smoking in Saudi Arabia, showed that the prevalence of current smoking in Saudi Arabia ranges from 2.4-52.3% (median = 17.5%). Among school students, the prevalence of current smoking ranges from 12-29.8% (median = 16.5%), among university students from 2.4-37% (median = 13.5%), and among adults from 11.6-52.3% (median = 22.6%). In elderly people, the prevalence of current smoking is 25%. The prevalence of smoking in males ranges from 13-38% (median = 26.5%), while in females it ranges from 1-16% (median = 9%). The conclusion of this review included the followings; smoking is prevalent in the Saudi population at different age groups. The prevalence of current smoking is much higher in males than in females at different ages. More research is needed in the area of prevention and treatment of smoking (Bassiony, 2009). There are a variety of factors that play a role in smoking. This makes it a complex health issue to address. The review of risk and protective factors in Saudi Arabia showed that; higher smoking prevalence and daily cigarette consumption were associated with age, being male, single, and highly educated. Desire (32%), idleness (28%), imitation (22%), and enjoyment (20%) are among the motives to smoke. Relief from psychological tension, boredom, and imitating others (especially friends, siblings, and parents) were the most important reasons for smoking. Among females, 30% reported no specific reasons for smoking. Psychological pressures, smoking contacts, and travel to foreign countries were the risk factors for relapse among smokers. Health and religious considerations were the most important reasons for not smoking and for quitting smoking. Financial reasons were less important for quitting smoking, probably because of the low price of cigarettes. Setting a good example for children was the most important reason for not smoking

among physicians (Bassiony, 2009). The previous studies conducted in Saudi Arabia, investigated the prevalence of smoking among Saudi population, however little or no data are available about the prevalence of smoking and possible determinants among health colleges students. Epidemiological surveys to determine the prevalence of smoking and possible determinants are of high importance especially those targeting university students. Being smoker greatly raises the risk for other health problems; thus, more studies are needed among university students to provide evidence-based data to health authorities to assist in the design of appropriate strategies in controlling smoking among the study population. The aims of the present study were to determine the prevalence of smoking habits among male students of the university's health colleges and to identify it is possible determinants; Age, marital status, type of college, study level, psychological tension, boredom, and imitating others among students of health colleges of Al-Baha University in Al-Baha, Saudi Arabia.

METHODS

Ethical statement

Informed consent was taken from the students. In the consent we insured that all information of the participants will be safe and will be used only for the research purposes and the privacy of the participants will not be violated by any of the researchers. The importance and aims of the study were explained and permission to participate in the study was obtained.

Study design

A community based cross-sectional study was conducted during the period from September 2016 to October 2016 among undergraduate students from the health colleges of Al-Baha University, Al-Baha, Saudi Arabia. The questionnaire was developed based on possible motives and reasons of smoking and was pretested in a few subjects similar to the study participants for validity. The questionnaire included information such as socio-demographic characteristics, history of smoking, reasons and motivating factors, quitting smoking and relapse.

Sample size

The sample size was estimated using the single population proportion formula $N = z^2 p q / d^2$ Where, p = prevalence of smoking, $q = (1 - P)$ and z = standard score which corresponds to 1.96. For the calculation, a 95% confidence interval (z) was used. The sample size was calculated to be 296 and we completed them to 327 by adding 10%, and then select them using simple random sampling.

Table 1. Shows the distribution of male students in the Al-Baha University health colleges' (<http://portal.bu.edu.sa/web/14807342>) and sample size estimation calculation.

College	Students Number	Total	Sample size estimation
Medicine	910	1507	76
Pharmacy	522	1036	52
Applied Health sciences	1012	2183	108
Total	3104	5838	292

Study area

Al-Baha is a city in the south west of Saudi Arabia. It is the capital of Al-Baha Region nestled between the resorts of Mecca and Abha, Al-Baha is one of the Kingdom's prime tourist attractions. It enjoys a pleasant climate and is surrounded by more than forty forests, including Raghdan, al Zaraeb and Baidan. Al-Baha is the headquarters of the Governor, local councils and branches of governmental departments. Receiving the state's special attention, the city of Al-Baha abounds in educational, tourist and health institutions, It is considered the capital of the Ghamidi and Zahrani tribes in Saudi Arabia, And most of its inhabitants are from the native tribes (https://en.wikipedia.org/wiki/Al_Bahah). Al-Baha University is a university in Al-Baha city, the capital of Al-Baha province, Saudi Arabia. It is a public university that was founded in 2006. The main campus is at Alaqiq about 25 km away from Al-Baha city. The other campuses are in Almikhwah, Almandaq, and Baljurashi. The university emphasizes public services in all of its disciplines (https://en.wikipedia.org/wiki/Al_Baha_University).

Study population

The study was carried out in three major health colleges in Albaha University (Medicine, Pharmacy and Applied Health Sciences). The study sample was collected from each college proportional to the size of the students' population according to the estimation in table 1.

Statistical analysis

Data of the smoking were entered and analyzed using SPSS 15 (Statistical Package for Social Science, version 15). Descriptive and inferential statistics were performed and the association between each exposure and presence of smoking was tested using Chi-squared test. 95% confidence interval (95% CI) was performed to measure association strength between smoking and possible determinants. A univariate analysis was run to study the independent association of variables (Age, marital status, type of college, study level, psychological tension, boredom, and imitation others with smoking. A p-value of less than 0.05 was considered statistically significant.

RESULTS

Demographic characteristics

A sample of 327 students was taken from the health colleges and included in the study. Table 2 shows the age group distribution, type of college and marital status of the students. The students' age ranged between 18 and 26 years. The mean age of the students that were 21.5 years with a standard deviation of 1.6. Few percentages of the students were married (5.2%) and the remains were single.

Prevalence of smoking

The overall prevalence of smoking was estimated to be 27.5%. Most of the smokers among the students (78.9%) start the smoking habit before the age of 20 years old. The smoking habit increase among Applied Science College followed by the Medicine College and finally the Pharmacy College and it was significantly associated with the type of college ($P < 0.001$). Smoking habit was more prevalent among married than unmarried students and the prevalence increase with age ($P < 0.001$). More than one quarter of the smoker students (25.6%) used to smoke 10 to 15 cigarettes per day.

Smoking and it is possible determinants

The common reasons given for the smoking behavior was the desire (36.3%) followed by imitation of a friend (28.6%) and stress (27.5%). Being in the health field of study increase the awareness of 91.4% of the students about the smoking and it is effect. Most of the students (94.2%) think that the smoking is harmful. The students stated that the smoking had many effects including the followings: Health problem (24.5%), economic effect (7.6%), social effect (2.8%) and most of them stated that the smoking had all the above effects (63.3%). About 11.4% of the smoker students stated that they were suffering from a disease related to their smoking habit, but only 90% of them were diagnosed by the following diseases: Cardiovascular diseases (22.2%), Respiratory diseases (33.3%) and 44.4% of them diagnosed by other types of diseases. The study showed that most of the current smokers (72.7%) intend to quit, but most of them (60.3%) were uncertain of the time when should quit the

Table 2. Showed the sociodemographic characteristics distribution among students of Al-Baha health colleges in Al-Baha city during the period from September 2016 to December 2016 (n=327)

Age Group in years	Frequency	Percent
Less than 20	100	30.6
Between 20-23	192	58.7
More than 23	34	10.4
Missing	1	0.3
Total	327	100.0
Type of college	Frequency	Percent
Medicine	86	26.3
Pharmacy	53	16.2
Applied medical sciences	187	57.2
Missing	1	0.3
Total	327	100.0
Marital status	Frequency	Percent
Married	17	5.2
Single	308	94.2
Missing	2	0.6
Total	327	100.0

Table 3. Showed the prevalence of smoking habit among students of Al-Baha health colleges in Al-Baha city during the period from September 2016 to December 2016 (n=327)

Smoking status	Frequency	Percent
Smoker	90	27.5
Non-smoker	235	71.9
Missing	2	0.6
Total	327	100.0
Start of smoking	Frequency	Percent
Less than 10 years	6	1.8
Between 10 - 15	16	4.9
Less than 15 - 20	46	14.1
Less than 20 - 25	19	5.8
Missing	4	1.2
Non applicable	236	72.2
Total	327	100.0
Cigarettes smoked per day	Frequency	Percent
Less than 5	10	3.1
Between 5 - 10	17	5.2
More than 10 - 15	23	7.0
More than 15 - 20	22	6.7
More than 20 - 30	13	4.0
More than 30	4	1.2
Missing	2	0.6
Non applicable	236	72.2
Total	327	100.0

Table 4. Showed the smoking motives among the students of Al-Baha health colleges in Al-Baha city during the period from September 2016 to December 2016 (n=327)

Reasons of smoking	Frequency	Percent
Psychological stress	25	7.6
Desire interest	33	10.1
Friend imitation	26	8.0
Family member imitation	7	2.1
Missing	1	0.3
Non applicable	235	71.9
Total	327	100.0

smoking. More than half of the smokers (60%) tried to quit smoking but all of them failed to continue quitting the habit because of the followings; 30.9% had weak ability, (29.1%) didn't find support and suitable help, (23.6%) failed to deal with alternatives, (3.6%) stated all of the previous reasons and 12.7% had others reasons.

DISCUSSION

In the present study, the prevalence of smoking and its determinants were estimated among university students, studying at health colleges of Al-Baha University, Saudi Arabia. The prevalence of smoking was higher among the health colleges' students (27.5%). Although, most of the smoker students start the smoking habit early, we found that more than the quarter of them used to smoke higher number of cigarettes per day. No doubt this might predict future prevalence of smoking and its complications. In this study, the smoking habit was associated with marital status and type of college. In contrast, one study done in 2005 among medical students of the College of Medicine, King Saud University in Riyadh showed lower prevalence (13%) than that of our study (Al-Turki, 2006). Another articles review investigated the prevalence of smoking in eleven studies among young adults (university students) in Saudi Arabia during the past two decades (eight out of 11 studies were carried out on medical science students (medical, dental, pharmacy)). It showed lower prevalence of current smoking among young adults, which ranges from 2.4 - 37% (median = 13.5%) (Bassiony, 2009). On the other hand, our data was in agreement with the previous reported study done in Riyadh, KSA by Hashim T (Hashim, 2000). The higher smoking prevalence among married people might increase the risk of smoking habit among children in the future. This was obvious in a studies done by Leonardi-Bee J and his colleagues and Johnston V and his colleagues, which showed that children who live with parents or siblings who smoke are up to 3 times more likely to become smokers themselves than children of non-smoking households (Leonardi-Bee et al., 2011; Johnston et al., 2013). It is estimated that, each year, at least 23,000 young people in England and

Wales start smoking by the age of 15 as a result of exposure to smoking in the home (Passive smoking and children, 2010). Moreover, the higher smoking prevalence among married people also raises a concern about the health effects of passive smoking among those in the same household. This was shown in articles review done by Jarvie J and Malone R, which showed that the secondhand smoke (SHS) exposure is a known cause of disease among nonsmokers, contributing to lung cancer, heart disease, and sudden infant death syndrome, as well as other diseases (Jarvie and Malone, 2008). On the other hand, appreciable percentage of the smoker students in this study (25.6%) used to smoke a large number of cigarettes per day (10 to 15). No doubt, this large amount of smoking might lead to future adverse effects on the health of those students.

The reasons given for the smoking in these study were the personal choice and desire, imitation of a friend and stress (36.3%, 28.6% and 27.5% respectively). This reflected the strong influence of the friends and peers among the smokers, which was still prevailing. Our finding was comparable by studies done among secondary schools in Jeddah and Madinah during 2013 in Saudi Arabia (Fida and Abdelmoneim, 2013; Al-Zalabani and Kasim, 2015). Our result was also comparable to the study of Riyadh, KAS, which was among male medical students at the College of Medicine, King Saud University (<http://portal.bu.edu.sa/web/14807342>). More than ninety percent of health colleges' students in this study stated that, being in the health field of study increase their awareness about the smoking and its effect. In addition to, more than ninety percent of them know that smoking is harmful. Higher percentage of awareness was also found in a study done by Siddiqui S and his colleagues, which showed that awareness regarding the harmful effects of smoking was high (97.2%) (Siddiqui et al., 2001). Most of students in our study (63.3%) stated that, the smoking had many effects on the smokers including health problem, economic effects and social effects. Appreciable percentage (11.4%) of the smoker students stated that they were suffering from a disease related to their smoking habit, and 90% of them were diagnosed by the following diseases: Cardiovascular diseases (22.2%),

Respiratory diseases (33.3%) and 44.4% of them diagnosed by other types of diseases. Giving up smoking, even late in life, can result in significant improvements in health and life expectancy. Lifelong smokers lose, on average, 10 years of life, and quitting by age 40, 50, or 60 results in average gains of 9, 6, and 3 years of life, respectively (Asma et al., 2015). Almost, three quarters of the current smokers in our study intend to quit, but most of them (60.3%) were uncertain of the time when should quit this habit. In this study, we found that high percentage of the smokers (60%) tried to quit smoking but all of them failed to continue quitting the habit because of the followings; 30.9% had weak ability, (29.1%) didn't find support and suitable help, (23.6%) failed to deal with alternatives, (3.6%) stated all of the previous reasons and 12.7% had others reasons. According to the Global Adult Tobacco Survey, 2015, which showed that the percentage of those who believe that smoking causes heart attack ranges from 39% in China to 95% in Egypt, and for stroke from 27% in China to 89% in Egypt and Romania. The majority of adults from all 22 countries are aware that smoking causes lung cancer, ranging from 73% in Nigeria to 99% in Argentina (Asma et al., 2015). The quit ratio (the percentage of former daily smokers among ever daily smokers) is an important indicator of the impact of tobacco control policies and programs. In seven countries (Bangladesh, China, Egypt, India, Indonesia, Malaysia, and Russian Federation), the quit ratio is less than 20% for men. It exceeds 40% in Brazil and Uruguay for both men and women (Asma et al., 2015). Bassiony M (Bassiony, 2009) study showed that over 7 in every 10 smokers want to quit, and more than 5 out of 10 tried to stop smoking during the last year among adolescents in Saudi Arabia. Among university students, 69% have thought about quitting smoking, while 57-70% of medical students have the motivation to stop smoking. Islam is the most important protective factor against start smoking, and the most important motivation for quitting smoking.

CONCLUSION

This study reflects not only the prevalence of smoking among students of health colleges, but also showed the health situation of universities and some of the problems facing the students. Some of the conclusions emerging from the survey findings include the followings: The high prevalence of smoking, start the smoking habit earlier and the high number of cigarettes smoked per day reported in this study are alarming. Smoking habit was more prevalent among married students and the prevalence increase steadily with age. Desire, imitation of a friend and stress were the common reasons given for the smoking behavior. Being in the health field of study increase the awareness of the students about the smoking and its effect. Most of the current smoker students intend to quit smoking and more than half of the

smokers tried to quit smoking. Build on the belief in the harmful health effects of smoking among the health colleges' students, health and education authorities need to design an appropriate and effective antismoking promotion program addressing these predictors and targeting not only health colleges' students but also their friends, families and other university members. Health laws should be the cornerstones for any organized tobacco control activities, which are urgently needed to combat the expected future epidemic of smoking-related health problems. We emphasize that the provision of health care services and Tobacco cessation clinics in the health colleges and university settings can reduce this high prevalence of smoking and promote the students to quit smoking successfully and without relapse.

ACKNOWLEDGMENTS

Authors would like to thank the administrations of the health colleges of Al-Baha University for facilitating the study. Also we would like to thank the students of these colleges for participating in the study.

REFERENCES

- Al-Baha (internet communication at https://en.wikipedia.org/wiki/Al_Baha).
- Al-Baha University (internet communication at https://en.wikipedia.org/wiki/Al_Baha_University).
- Albaha University, (internet communication at <http://portal.bu.edu.sa/web/14807342>).
- Al-Turki Y (2006). Smoking habits among medical students in Central Saudi Arabia. *Saudi. Med. J.* 27 (5): 700-703
- Al-Zalabani A, Kasim KH (2015). Prevalence and predictors of adolescents' cigarette smoking in Madinah, Saudi Arabia: a school-based cross-sectional study. *BMC Public Health.* 15:17.
- Asma S, Mackay J, Song SY, et al (2015). The GATS Atlas. CDC Foundation, Atlanta, GA.
- Bassiony M (2009). Smoking in Saudi Arabia. *Saudi. Med. J.* 30 (7): 876-881.
- Fida H, Abdelmoneim I (2013). Prevalence of smoking among secondary school male students in Jeddah, Saudi Arabia: a survey study. *BMC Public Health.* 13:1010.
- Hashim T (2000). Smoking habits of students in College of Applied Medical Science, Saudi Arabia. *Saudi. Med. J.* 21: 76- 80.
- Jarvie J, Malone R (2008). Children's Secondhand Smoke Exposure in Private Homes and Cars: An Ethical Analysis. *Am. J. Public Health.* 98(12): 2140-2145.
- Johnston V, Thomas D, Westphal D, et al (2013). Starting to Smoke: Experiences of Indigenous Youth. Melbourne: The Lowitja Institute.
- Leonardi-Bee J, Jere ML, Britton J (2011). Exposure to parental and sibling smoking and the risk of smoking uptake in childhood and adolescence: a systematic review and meta-analysis. *Thorax.* doi:10.1136/thx.2010.153379.
- Passive smoking and children (2010). Royal College of Physicians, London, 2010 (pdf).
- Siddiqui S, Ogbeide D and Al Khalifa I (2001). Smoking in a Saudi Community: Prevalence, Influencing Factors, and Risk Perception. *Fam. Med.* 33(5): 367-370.
- WHO (2015). Global report on trends in prevalence of tobacco smoking, Smoking-prevention and control, Smoking-trends, Smoking-epidemiology, Wld, Hlth Org., ISBN 978 92 4 156492 2 (NLM classification: WM 290), Geneva 27, Switzerland. □