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Original Research Article.

Factors Associated with Smoking Behaviors among Military Cadets of King Khalid Military Academy (KKMA), Riyadh, Saudi Arabia (2015-2016)

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ABSTRACT

Background: Smoking is one of the most significant risk factors for premature death with nearly six million deaths occurring worldwide. The percentage of smokers in Saudi population vary by age groups and regarding to adult group the prevalence is ranging from 11.6 - 52.3% and about 35%among military personnel in KSA.

Objectives: To estimate prevalence of smoking among cadets, to identify factors that motivate cadets to smoke, to assess knowledge of cadets about hazard of smoking and to assess exposure of cadets to passive smoking among military cadets of KKMA.

Methodology: A cross sectional study was conducted at King Khaled Military Academy in Riyadh. The study covers all military cadets of KKMA in the year 2015-2016 in all levels. A self-generated Arabic questionnaire was used with total 38 questions to assess the prevalence and factors associated with smoking among military cadets. The questionnaire was distributed by the military supervisors in the academy who know about the study objectives during the educational classes.

Results: Three hundred male participants completed the questionnaire (response rate 100%). Age ranged from 18 – 26 years with mean age 20.31 years old (SD=1.27), 131 subjects (43.7%) were smokers and most of them they had the first cigarette at age between 6 – 19 years with a mean of 14.78 years (SD=2.4). 209 participants (69.7%) having positive history of passive smoking exposure. Smoking frequency was found to be highest among cadets whose in third year 70% and cadets with income less than 5000 SAR (t=43.68, p=0.001) and (t=6.95, p=0.03) respectively. The mean motivational score was 4.08/9 (SD=1.575), and the most important motivational factor for smoking are friends (n=257, 85.7%), work stressor (n= 231, 71%) and social stressor (n=202, 67.3%). The mean knowledge score was 11.34/15 (SD=1.67). There is no difference in the knowledge score between smokers and nonsmokers (t=0.94,p=0.34) and the participants whose exposed to passive smoking are getting higher score in motivation score (t=2.16, p=0.031). Smokers with better knowledge about smoking hazard having more desire to quit smoking (mean=11.68, SD=1.397) than smokers with less knowledge (mean=10.25, SD=2.329) (t=4.35, P=0.001).

Conclusion: Despite good knowledge about the hazards of tobacco consumption, this study identified high prevalence of smoking and passive smoking among military cadets of King Khaled Military Academy. Most of smokers in this study they started smoking at young age even before they joined the academy. More than two thirds of smokers have the desire to quit. The most important motivational factors behind start smoking in the study were friends influence, work stressors and social stressors.

Key words: Smoking, Military, Prevalence, Saudi Arabia.

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INTRODUCTION

Tobacco smoking considered epidemic and one of the biggest public health threats the world has ever faced. Cigarette smoking is the most preventable leading cause of death. It is responsible for nearly six million deaths worldwide and over 400,000 deaths in the United States (US) annually.[1,2] If present trends continue, this number Expected to rise to over 8 million deaths per year by 2030, with 80 percent of those deaths occurring in the developing world where tobacco use is increasing.[2]

Up to one-half of all tobacco users can be expected to die from a tobacco-related disease. The economic burden of tobacco use is estimated to be $197 billion per year, which includes $96 billion in health care costs and an additional $97 billion in productivity losses.[1] Tobacco smoke contains a deadly mix of more than 7,000 chemicals. Hundreds are toxic and about 70 can cause cancer.[3] Tobacco is used in many different ways around the world, it can be smoked like cigarettes, cigars, pipes, and water pipes or

smokeless tobacco in the form of chewing tobacco and snuff.[4] Smokers can be classified into three categories according to number of cigarette that been smoked per day, light (≤10 cig./day), moderate (11-20 cig./day) and heavy (>20 cig./day).[5]

Smoking affects both smokers and people around smokers. Nonsmokers exposed to secondhand smoke in everyday life exhibit an increased risk of both fatal and nonfatal cardiac events.[6] The most important causes of smoking-related mortality are atherosclerotic cardiovascular disease (CVD), lung cancer, and chronic obstructive pulmonary disease (COPD).[1,7]

Tobacco use also increases the risk of many other acute and chronic diseases, including cancers at many sites other than the lung. An estimated 30 percent of cancers in the US are tobacco-related.[8] Smoking cessation is associated with clear health benefits and should always be a major health care goal.[9]

The prevalence of smoking cigarettes among US adults has declined from 42.4 percent in 1965 to 19.3 percent in 2010.[10] However, there has been little decline in adult smoking prevalence since 2005, in contrast to the dramatic declines of past decades.[11] Cigarette smoking among adolescents remains one of the most important public health challenges & almost every adult who smokes started smoking by the age of 18 years.[12]

Recent data suggest that smoking initiation among young adults may be increasing, particularly in vulnerable population like in military recruits.[13] Sometimes it comes to mind that smoking is part of the military culture due to long history of tobacco use to cope with stressor in military settings.[14] The most frequent reasons for smoking among military personnel were pleasure and relaxation (24.9%), allaying anxiety (21.4%) and peer influence (34.1%).[15]

Although there is a health warning on every packet of cigarettes indicating that smoking is the main cause of lung cancer, lung diseases and of heart and artery diseases, and in spite of the anti-smoking clinics distributed all over the Kingdom, smoking in Saudi Arabia is increasing rapidly, particularly among the young, partly due to aggressive marketing by tobacco companies.[5]

Smoking is prevalent in the Saudi population at different age groups and ranging from 2.4 to 52.3% (median = 17.5%).The prevalence of current smoking is much higher in males than in females at different ages. 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%.[16]

The studies showing wide variations between the countries in the prevalence of smoking among military personnel. For example, the prevalence rates in the Lithuanian army reaching 70%,[17] French army 54.1%[18] and 39% among USA soldiers.[19] The UK had one of the lowest rates, with 31.3% of soldiers being current smokers.[20]

Smoking is prevalent among military personnel in KSA reaching about 35%, with higher rates in the Navy and Air Force, among privates, younger age group, lower education and income, and divorced/widowed status.[21]

Tobacco imports in the form of manufactured cigarettes have increased dramatically over the years, and an average of 600 million Saudi Riyals (about $150 million) are spent annually on tobacco.[22]

Most current smokers know the harmful effects of smoking,[23] which emphasizes the need to increase smoking cessation programs in addition to increase people awareness about smoking hazard. Several national and international studies showing high prevalence of Cigarette smoking in general population and military personnel, but no published data about prevalence of Cigarette smoking in in King Khalid Military Academy.

This study aimed to estimate prevalence of smoking among cadets, to identify factors that motivate cadets to smoke, to assess knowledge of cadets about hazard of smoking and to assess exposure of cadets to passive smoking among military cadets of KKMA, Riyadh, Saudi Arabia.

SUBJECTS AND METHODS

A cross sectional descriptive study design using self-administered questionnaire was adopted at King Khalid Military Academy (KKMA) of National Guard- Riyadh, Saudi Arabia. The population studied was all military cadets of KKMA in the year 2015-201 6involving all the three levels, who were not on leave and agreed to participate in the study.

The total number of military cadets in the academy in the academic year 2015-2016 was1000. The prevalence of smoking among military personnel is estimated to be (41%) based on a study by DiNicola, et al,[23] Considering confidence interval (95%), margin of error 5 and design effect 1. Using open Epi-epidemiologic calculator the estimated sample size was 272 adjusted to 300 to account for non-response.

All cadets are belonging to the cadets 'battalion, which composed of six military companies divided into three educational levels: primary, intermediate and final. Each two military companies represent one level and each company has three platoons. From each platoon we randomly selected number of cadets that is proportionate to the total number of subjects in that platoon. We used the computerized data that are available in KKMA then the Subjects were chosen randomly using Microsoft access 2010 software by KKMA trained personnel. A total number of 300 subjects were selected distributed into 100 subjects from each educational level.

After extensive review of the literature, 38 questions tool was built to assess the prevalence and factors associated with smoking among military cadets. The self-administered questionnaire was distributed to study participants in Arabic language. The questionnaire includes data about personal and socioeconomic data (6 questions), question assess the exposure of the cadets to passive smoking (1 question), questions assess the prevalence of smoking among the military cadets (4 questions), questions assess the knowledge of the cadets about health related hazard of smoking (15 questions), questions assess factors that motivates the military cadets to smoking (9 questions) and questions assess smoking quitting (3 questions). To ensure content validity of the questionnaire, two experts in the field of smoking researches verified the questionnaire. The questionnaire was then translated to Arabic and the translation was validated using back translation method. Pilot study was done over 10 participants. The questionnaires were distributed by the military supervisors who know about the study objectives and they were instructed about the different items of the questionnaire. All the questionnaires

were distributed after the cadets' educational classes. The data were verified manually, entered and analyzed using IBM-SPSS version 21. Composite scores were created to assess participant knowledge and motivations in smoking. Correct answers about knowledge were scored with 1 and wrong answers with 0. Each item in motivation was scored 1.

Table 1: Demographic characteristics of all participants in the study sample (n=300), for smokers (n=131) and (n=91) for those who are willing to quit.

Demographic characteristics		N	%
Nationality	**Saudi**	289	96.3
	Non Saudi	11	3.7
Marital Status	**Single**	288	96
	Marriage	12	4
Level of education	**Intermediate**	5	1.7
	Secondary	295	98.3
Economic Status	**<5000SR**	48	16
	5000-10000SR	81	27
	>10000SR	171	57
Passive Smoking	**No**	91	30.3
	Yes	209	69.7
Smoking Status	**No**	169	56.3
	Yes	131	43.7
Number of Cigarette per Day	**<10 light**	50	38.2
	10-20 moderate	48	36.6
	>20 heavy	33	25.2
Desire to Quit	**No**	40	30.5
	Yes	91	69.5
Number of Smoking Quitting Attempt	**0**	27	20.6
	1	33	25.2
	2	34	26
	3	12	9.2
	>3	25	19.1
Type of Quitting Attempt	**Personal Effort**	73	70.2
	Visiting Doctor	13	12.5
	Going to Smoking Cessation Clinic	18	17.3

Table 2: Smoking motivational factors for all participants (n=300)

Motivational factors		N	%
Friends	**No**	43	14.3
	Yes	257	85.7
Relatives	**No**	121	40.3
	Yes	179	59.7
Curiosity	**No**	116	38.7
	Yes	184	61.3
Social Stressor	**No**	98	32.7
	Yes	202	67.3
Work stressor	**No**	87	29
	Yes	213	71
Making You Attractive	**No**	254	84.7
	Yes	46	15.3
Sign of Manhood	**No**	270	90
	Yes	30	10
Movies	**No**	191	63.7
	Yes	109	36.3
Others	**No**	297	99
	Yes	3	1

Table 3: Smoking Knowledge for All Participants (n=300)

Knowledge		N	%
▪ **Smoking Decrease Life Expectancy**	**No**	58	19.3
	Yes	242	80.7
▪ **Smoking Cause Osteoporosis**	**No**	81	27
	Yes	219	73
▪ **Cigarette Contain Addictive Substance**	**No**	19	6.3
	Yes	281	93.7
▪ **Smoking Decrease Respiratory Disease**	**No**	172	57.3
	Yes	128	42.7
▪ **Smoking Increase IHD**	**No**	15	5
	Yes	285	95
▪ **Contain Carcinogenic Substance**	**No**	10	3.3
	Yes	290	96.7
▪ **Dose Not Affect the fertility**	**No**	188	62.7
	Yes	112	37.3
▪ **Smoking During Pregnancy Affect Fetal Health**	**No**	30	10
	Yes	270	90
▪ **Increase Risk of Stroke**	**No**	28	9.3
	Yes	272	90.7
▪ **Smoking Decrease Weight**	**No**	122	40.7
	Yes	178	59.3
▪ **Increase Risk of Gum Cancer**	**No**	18	6
	Yes	282	94
▪ **Smoking Decrease Cholesterol Level**	**No**	125	41.7
	Yes	175	58.3
▪ **Decrease Headache and Make You Calm**	**No**	145	48.3
	Yes	155	51.7
▪ **Increase Bladder Cancer**	**No**	120	40
	Yes	180	60
▪ **Smoking Have No Effect on Health**	**No**	272	90.7
	Yes	28	9.3

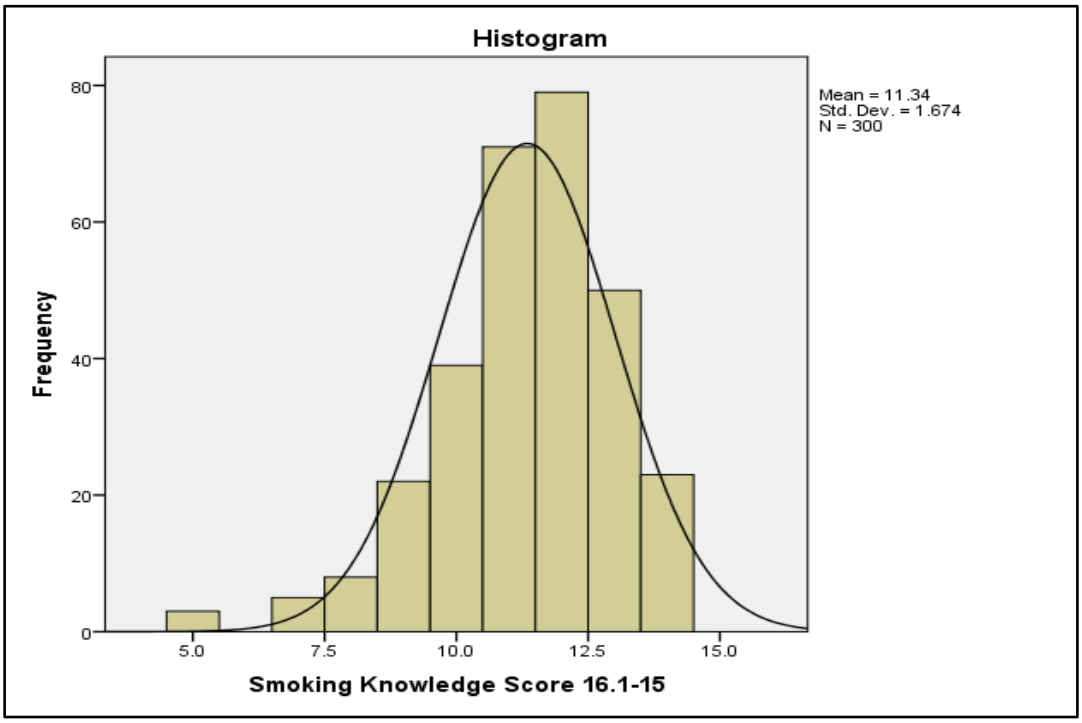

Figure 1: Smoking knowledge score among the participants (n=300)

RESULTS

Three hundred male participants completed the questionnaire, 100 subjects from each academic level, (response rate was 100%). Age ranged from 18 – 26 years with mean age 20.31 years old (SD=1.27). Majority of the participants 289 (96.3%) were Saudis and finished the secondary school (98.3%). Almost two-thirds of them 209 participants (69.7%) had positive history of passive smoking exposure. The marital status was descried into two levels single and married because of the low percentage of participants in widow and divorced, 288 (96%) of participants were single. Less than half (43.7%) were smokers. Most of the smokers they had the first cigarette at age between 6 – 19 years with a mean of 14.78 years (SD=2.4). (Table 1)

Among the participants, the mean motivational score was 4.08/9 (SD=1.575). Among all participants, they think that the most important motivational factor for smoking were friends (n=257, 85.7%), work stressor (n=231, 71%) and social stressor (n=202, 67.3%). However 254 (84.7%) participant they don't think that the smoking make smoker more attractive and 270 (90%) they don't think the smoking is a sign for manhood. (Table 2)

In the 300 study participants, the mean knowledge score was 11.34/15 (SD=1.67 as shown in Figure (1). Majority of them 290 (96.7%) chose the right answer and they know that smoking contain carcinogenic substance, and 181 (93.7%) of participants know that cigarettes contain addictive substance. 112 (37.3%) of the participants are unaware that smoking may affect the fertility. 175 (58.3%) of participants they think smoking will decrease cholesterol level. 120 (40%) subjects they don't know the smoking can cause bladder cancer. (Table 3)

Table 4: Smoking status according to different factors

Factors		Smoking (Yes)			
		%	Chi-Square	P	OR
Academic level	**1**	**24**	43.68	0.001	
	2	**37**			
	3	**70**			
Economic Status	**<5000 SAR**	**60.4**	6.95	0.03	
	5000-10000	**39**			
	>10000 SAR	**40.9**			
Marital Status	**Single**	**43.05**	1.89	0.38	
	Marriage	**58.3**			
Passive Smoking	**No**	**17.4**	36.36	0.001	5.76
	Yes	**55.02**			

Table 5: Knowledge and Motivation Scores according to different factors

Factors		N	Mean	SD	T	P
Knowledge score vs smoking status	**Smoking**					
	No	169	11.42	1.522	0.95	0.34
	Yes	131	11.24	1.854		
Motivation Score vs smoking status	**Smoking**					
	No	169	3.92	1.428	2.01	0.045
	Yes	131	4.28	1.731		
Knowledge score vs passive smoking	**passive smoking**					
	No	92	11.36	1.434	0.106	0.916
	Yes	208	11.34	1.773		
Motivation score vs passive smoking	**passive smoking**					
	No	92	3.78	1.333	2.16	0.031
	Yes	208	4.21	1.657		
Knowledge score vs Desire to Quit	**Desire to Quit**					
	No	40	10.25	2.329	4.35	0.001
	Yes	91	11.68	1.397		
Motivation Score	**Desire to Quit**					
	No	40	4.53	1.797	1.03	0.303
	Yes	91	4.19	1.693		

We found that 24 (24%) participants from level one, 37 (37%) participants from level two and 70 (70%) participants from level three were smokers (t=43.68, p=0.001). Also, 29 (60.4%) of participants with income less than 5000 SAR, 32(39%) of participants whose income ranging from 5000-10000 SAR and 70 (40.9%) of those with income more than 10000 SAR were smokers (t=6.95, p=0.03). From all smokers (n=131) 16 (12.2%) participants had negative history of passive smoking exposure while 115(87.8%) participants had positive history of passive smoking exposure and 94(55.62%) participants were nonsmoker

with positive exposure to passive smoking(t=36.36, p=0.001,OR=5.76 {3.15-10.54}). Educational level and marital status were not significantly associated with smoking status. (Table 4) Almost half 51(51%) of the participants from first year, 74 (74%) from second year and 83 (83%) from third year were found to have positive history of passive smoking (x^2=25.61, p=0.001) as shown in Figure (2). Salary, educational level, smoking frequency, number of cigarette per day, desire to quit, number of attempt and type of quitting attempt had no significant relationship with passive smoking. The mean knowledge score the smokers was 11.24 (SD=1.854) and the mean knowledge score of nonsmokers was11.42 (SD=1.522). There was no difference in the knowledge score between smokers and nonsmokers (t=0.94, p=0.34). The mean motivation score was 4.21(SD=1.657) for participants whose exposed to passive smoking and 3.78 (SD=1.333) for those with no history of passive smoking exposure. The participants whose exposed to passive smoking were getting higher score in motivation score (t=2.16, p=0.031) .Smokers with better knowledge about smoking hazard having more desire to quit smoking (mean=11.68, SD=1.397) than smokers with less knowledge (mean=10.25, SD=2.329) (t=4.35, P=0.001). (Table 5)

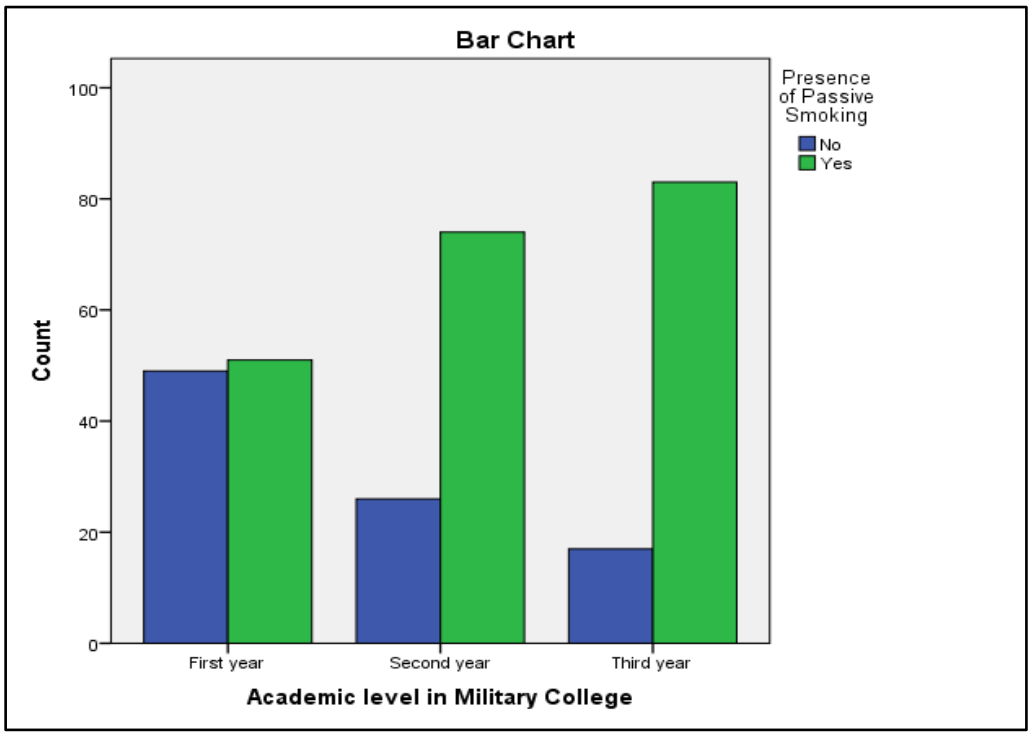

Figure 2: The relationship between academic level and passive smoking.

DISCUSSION

In our study, the majority of the participants 288 (96%) were singles, this goes with the social trend in Saudi Arabia to marry after completing the proper educational certificate enabling the person to secure a job.

Most of smokers in our study had the first cigarette at age between 15y-17y which is similar to local studies,[24,25] but it happened younger than the age of starting smoking in US population.[12] However these results show that people starting smoking before the age of 18 years and social individuals are increasingly starting smoking at younger ages. Therefore antismoking programs are advised to be conducted at early stages as at intermediate and secondary schools.

This study shows high rate of smoking among military cadets of King Khalid Military Academy and the results demonstrate that more than (43.7%) of participants were smokers. This rate was higher than the prevalence of smoking in similar local study in Saudi Arabia which was published in 2014 by about (8%) that was (35%).[21] This difference may be attributed to the difference in sample size, age range or study sitting. The rate in our study is slightly higher than the prevalence among US army (39%)[19], but lower than French army (54.1%)[18] and much lower than what was reported in Turkey (63.6%).[26]

We have noticed that the frequency of smoking increases with increasing in the academic level of the cadets in the rate of 24 (24%) participants from first year, 37 (37%) participants from second year and 70 (70%) participants from third year and the highest was among those who are in the third level that can be contributed to possible factors such as accumulative stressors, effect of peers and spending more time in the academy. Also we noticed that 29(60%) of cadets with income less than 5000 SAR were smokers which is similar to results in other studies,[21] this fact can be attributed to many factors such as facing more stressors as a result of financial problems,[28] easy accessibility of cigarettes, relatively low cost of cigarettes.....etc. Otherwise results show no significant relationship between smoking frequency and educational level nor between smoking frequency and marital status which was not going with the findings of other studies.[21,28]

The proportion of desire to quit smoking among cadets in our study was high measuring (69.5%) of all smokers. That means, more than two thirds of smokers have desire to quit which is similar to other study,[29] which found that among current smokers, 24 percent planned to quit in the next 30 days, 38 percent planned to quit within the next 6 months, and 48 percent tried to quit in the past year. But only 17.3% of those who have desire to quit in our

study went to smoking cessation clinic in the academy and the majority of them tried to quit by personal effort (70.2%).This fact gives us clear idea about the importance of activating the role of smoking cessation clinic more the academy and creating proper plan for its improvement. The study also demonstrated that the smokers whose scoring high in knowledge score have more desire to quit than the others who scored less.

In our study the mean motivational score was (4.08 out of 9) and we found that the most common three reasons behind starting smoking in military setting were: friend's influence (85.7%), work stressors (71%) and social stressors (67.3%). These findings go along with the results of other studies in military setting such as those done in Nigeria[15], Turkey[26] and KSA[21]. Also when we correlate motivational score with smoking status of the cadets we found that the higher number of motivational factors the more likely to be a smoker.

In regard to knowledge score, the study shows that there is no significant difference in the knowledge score between smokers (11.24/15) and nonsmokers (11.42/15). Which is opposite to the result of study done in Taiwan[30] that showed the nonsmokers have good knowledge in compare with smokers. This can be attributed to many factors for example: health warning on every packet of cigarettes, awareness camping that broadcasting via social media, smoking cessation clinics in the academy…..etc.

The rate of exposure of cadets to passive smoking for all participants in this study was high (69.7%) which nearly similar to study done in submarine,[31] and we found a dramatic increase in the proportion of exposure to passive smoking from one level to another higher level in the academy as the following 51(51%) participants from first year, 74 (74%) participants from second year and 83 (83%) participants from third year.

When we compare between the passive smoking and smoking frequency both of them had high prevalence and both of them increase with proportion to higher academic level. Also the results show that more than half of nonsmokers 94 (55.62%) exposed to passive smoking. This fact means that if the cadet exposed to passive smoking he has 5.76 times more likely to be a smoker (OR=5.76, range 3.15-10.5, p=0.001). This urges the need for tobacco control policies to encourage cessation and reduce consumption among current smokers and to reduce the exposure to environmental tobacco smoke (ETS) among nonsmokers.[32] Furthermore, the results show positive relationship between passive smoking and motivational score as follow: The cadets who exposed to passive smoking score higher on motivational score (4.2/9) than the cadets without passive smoking exposure. Otherwise no significant relationship between passive smoking and knowledge score.

LIMITATIONS

The study was carried out only in King Khalid Military Academy and doesn't necessary reflect whole NGHA military personnel. Data collection tool was questionnaire, which carries a risk of recall bias by the participants.

CONCLUSION

Despite good knowledge about the hazards of tobacco consumption, this study revealed high prevalence of smoking and passive smoking among military cadets of King Khalid Military Academy. Most of smokers in our study started smoking at younger age even before they joined the academy. More than two thirds of smokers have the desire to quit. The most important motivational factors behind starting smoking in our study were friends influence, work stressors and social stressors.

RECOMMENDATIONS

1) Since the prevalence of smoking in Saudi Arabia is high and majority of smokers usually start smoking at younger age, therefore the smoking cessation education and programs should be implemented and targeting intermediate and high schools.

2) Counseling and educational sessions in regular basis for the cadets on effective strategies to cope with stressor, how to choose the friends and educate them about the hazard of passive smoking because these are the main predisposing factors for smoking.

3) Activating the role of smoking cessation clinic in the academy, since we have high smoking prevalence with high desire to quit but the cadets are not utilizing the clinic properly.

4) Strict roles to prohibit smoking in the academy and to prevent easy accessibility of tobacco.

REFERENCES

1. Smoking-attributable mortality, years of potential life lost, and productivity losses--United States, 2000-2004. MMWR Morbidity and mortality weekly report. 2008;57(45):1226-8.

2. Epidemic WHORotGT. Warning about the dangers of tobacco. World Health Organization. 2011.

3. CDC. Use SGsRoSaT. Chemicals in Tobacco Smoke, 2010.

4. Tobacco Atlas. Types of Tobacco Use.Available at http:// TobaccoAtlas.org.

5. Abolfotouh MA, Aziz MA, Alakija W, Al-Safy A, Khattab MS, Mirdad S, et al. Smoking habits of King Saud University students in Abha, Saudi Arabia. Annals of Saudi medicine. 1998;18:212-6.

6. Glantz SA, Parmley WW. Passive smoking and heart disease: mechanisms and risk. Jama. 1995;273(13):1047-53.

7. WHO. Cigarette smoking among adults and trends in smoking cessation - United States, 2008. MMWR Morbidity and mortality weekly report. 2009;58(44):1227-32.

8. Services UDoHaH. The Health Consequences of Smoking. Center for Disease Control, Washington 2004. 2004.

9. General rotS. Health benefits of smoking cessation. Department of Health and Human Services, Washington, DC 1990. 1990.

10. Quitting smoking among adults--United States, 2001-2010. MMWR Morbidity and mortality weekly report.2011;60(44):1513-9.

11. WHO. Vital signs: current cigarette smoking among adults aged >/=18 years--United States, 2005-2010. MMWR Morbidity and mortality weekly report. 2011;60(35):1207-12.

12. Turner L, Mermelstein R, Flay B. Individual and contextual influences on adolescent smoking. Annals of the New York Academy of Sciences. 2004;1021:175-97.

13. Haddock CK, Lando HA, Pyle SA, Debon M, Weg MV, Klesges RC, et al. Prediction of adult-onset smoking initiation among U.S. Air force recruits using the pierce susceptibility questionnaire. American journal of preventive medicine. 2005;28(5):424-9.

14. Nelson JP, Pederson LL. Military tobacco use: a synthesis of the literature on prevalence, factors related to use, and cessation interventions. Nicotine & tobacco research: official journal of the Society for Research on Nicotine and Tobacco.2008;10(5):775-90.

15. Hussain NA, Akande M, Adebayo ET. Prevalence of cigarette smoking and knowledge implications among Nigerian soldiers of its health. East African journal of public health. 2010;7(1):81-3.
16. Bassiony MM. Smoking in Saudi Arabia. Saudi medical journal. 2009;30(7):876-81.
17. Kelbauskas E, Kelbauskiene S, Paipaliene P. Smoking and other factors influencing the oral health of Lithuanian Army recruits. Mil Med. 2005;170(9):791-6.
18. Marimoutou C, Queyriaux B, Michel R, Verret C, Haus-Cheymol R, Mayet A, et al. Survey of alcohol, tobacco, and cannabis use in the French army. Journal of addictive diseases. 2010;29(1):98-106.
19. Ornelas S, Benne PD, Rosenkranz RR. Tobacco use at Fort Riley: a study of the prevalence of tobacco use among active duty soldiers assigned to Fort Riley, Kansas. Mil Med. 2012;177(7):780-5.
20. Owers RC, Ballard KD. "What else is there to do?"--A qualitative study of the barriers to soldiers stopping smoking. Journal of the Royal Army Medical Corps. 2008;154(3):152-5.
21. Al-Khashan HI, Al Sabaan FS, Al Nasser HS, Al Buraidi AA, Al Awad AD, Horaib GB, et al. The prevalence of smoking and its associated factors among military personnel in Kingdom of Saudi Arabia: A national study. Journal of family & community medicine. 2014;21(3):147-53.
22. Jarallah JS, Al-Rubeaan KA, Al-Nuaim ARA, Al-Ruhaily AA, Kalantan KA. Prevalence and determinants of smoking in three regions of Saudi Arabia. Tobacco control. 1999;8(1):53-6.
23. DiNicola AF, Scott NC, McClain AM, Bell MP. Tobacco Product Usage Among Deployed Male and Female Military Personnel in Kuwait. Military medicine. 2013;178(1):3-.
24. Al-Damegh SA, Saleh MA, Al-Alfi MA, Al-Hoqail IA. Cigarette smoking behavior among male secondary school students in the Central region of Saudi Arabia. Saudi Med J. 2004;25(2):215-9.
25. Al Ghobain MO, Al Moamary MS, Al Shehri SN, Al-Hajjaj MS. Prevalence and characteristics of cigarette smoking among 16 to 18 years old boys and girls in Saudi Arabia. Annals of thoracic medicine. 2011;6(3):137-40.
26. Tekbas F, Vaizoglu S A, Gulec M, Hasde M, Guler C. Smoking prevalence in military men, and factors affecting this. Mil Med. 2002;167(9):742-6.
27. Pyle SA, Haddock CK, Poston WS, Bray RM, Williams J. Tobacco use and perceived financial strain among junior enlisted in the U.S. Military in 2002.Preventive medicine.2007;45(6):460-3.
28. Di Nicola M, Occhiolini L, Di Mascio R, Vellante P, Colagrande V, Ballone E. Smoking habits in a sample of young Italian soldiers. Mil Med. 2006;171(1):69-73.
29. Bray R M, Pemberton M R, Hourani L L, Witt M, Olmsted K L, Brown JM, et al. Department of Defense survey of health related behaviors among active duty military personnel. DTIC Document, 2009.
30. Lin YS, Wu DM, Lai HR, Shi ZP, Chu NF. Influence of knowledge and attitudes on smoking habits among young military conscripts in Taiwan. Journal of the Chinese Medical Association : JCMA. 2010;73(8):411-8.
31. Yarnall NJ, Hughes LM, Turnbull PS, Michaud M. Evaluating the effectiveness of the US Navy and Marine Corps Tobacco Policy: an assessment of secondhand smoke exposure in US Navy submariners. Tobacco control. 2013;22(e1):e66-e72.
32. Jahnke SA, Hoffman KM, Haddock CK, Long MA, Williams LN, Lando HA, et al. Military tobacco policies: the good, the bad, and the ugly. Mil Med. 2011;176(12):1382-7.

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