

Smoking in a Saudi Community: Prevalance, Influencing Factors, and Risk Perception

Saima Siddiqui, MRCGP; D.O. Ogbeide, FWACP, FRCGP; I. Al Khalifa, FRCGP

Background and Objectives: *Smoking is a major preventable cause of morbidity and mortality all over the world, but little information is available about the prevalence of smoking in Saudi Arabia. This study determined the prevalence of and major factors influencing smoking in our community.* **Methods:** *We used a questionnaire to determine smoking prevalence of males over age 12 attending a primary care clinic in Saudi Arabia. The questionnaire included items about factors influencing the decision to start smoking, attempts to stop smoking, and awareness of the risks of smoking.* **Results:** *Of 634 subjects, 34.4% (218) were current smokers, 16.4% (104) were ex-smokers, and 49.2% (312) were nonsmokers. The most common (66%) reason for starting smoking was friends' influence. About 75% had thought of stopping smoking, and 55% had actually attempted to stop. The most common (34%) reason reported for failed attempts to stop smoking was lack of willpower. Awareness regarding the harmful effects of smoking was high (97.2%). More than 80% thought that a special smoking clinic would be helpful for quitting smoking.* **Conclusions:** *Smoking prevalence is high in our community in Saudi Arabia. Most of the smokers know that smoking is dangerous and want to quit smoking but fail to stop for various reasons. Interventions are needed to decrease the prevalence of smoking in Saudi Arabia.*

(Fam Med 2001;33(5):367-70.)

Cigarette smoking is a major health problem that is responsible for a wide range of preventable health problems throughout the world.¹⁻⁵ It is estimated that over the next 20 to 30 years, cigarette smoking will result in 10 million deaths annually on a worldwide basis, of which 70% will occur in developing countries.⁶

In 1981, the most recent year for which official data are available, Saudi Arabia imported 36.5 million kg of tobacco, costing an estimated 979 million Saudi riyals (260.64 million US dollars) for a population of about 15 million people.⁷ Lung cancer, a smoking-related disease, is a leading cause of cancer deaths among Saudi males,⁸ suggesting that cigarette smoking is becoming an important public health problem among men in Saudi Arabia.

Nonetheless, there are no statistics available about the current prevalence of cigarette smoking in our community in Saudi Arabia. Therefore, this study deter-

mined the prevalence of smoking among males in our community in Saudi Arabia. We also conducted additional analyses to identify behavioral factors related to smoking in our population.

Methods

Subjects for this study were patients attending the primary care clinics of the Department of Family and Community Medicine of Alkharj Military Hospital in Saudi Arabia. We included all male patients, ages 12 and above, seen in the clinics between November 1 and November 30, 1999.

Subjects were divided into three groups: smokers, ex-smokers, and nonsmokers. Smokers were defined as individuals who reported smoking one or more cigarettes per day during the last month. Ex-smokers were defined as subjects who previously smoked but who had quit smoking for 1 month or more. Nonsmokers were those who had never smoked.

As each patient presented to the clinic, the patient's primary care physician explained the study and obtained verbal consent. Each subject was then presented with a

From the Department of Family and Community Medicine, Alkharj Military Hospital, Alkharj, Saudi Arabia.

Table 1

Profile of Smokers According to Number of Cigarettes Smoked Per Day

	Number of cigarettes smoked per day				
	1-10	11-20	21-30	31-40	> 40
Number of smokers	64	101	28	15	3
Average age (years)	30	38	47	38	48
Married (number of subjects)	34	62	23	14	3
Single (number of subjects)	30	39	5	1	0
Number of years smoking	9.4	17.8	26.4	21.4	12.3

Table 2

Factors Influencing the Onset of Smoking and Awareness of Smoking Risks, According to Number of Cigarettes Smoked Per Day

Factors influencing onset of smoking	Number of cigarettes smoked per day				
	1-10	11-20	21-30	31-40	> 40
	Number of subjects				
Friends	42	70	23	7	2
Family	14	12	3	1	0
Family and friends	7	13	2	0	0
Friends and advertisement	5	4	1	0	0
No reason stated	3	9	4	0	0
Thought of stopping	50	73	20	10	1
Know dangers to self	66	102	29	13	3
Know dangers to others	58	86	26	13	2
Smoking clinic useful	57	88	22	8	2

questionnaire containing the items listed in Tables 1 and 2. The questions could all be answered with simple numerical responses or by providing yes or no answers to questions with multiple response options.

Data were analyzed by X^2 test using Epi-Info[®] software. P values of less than .05 were considered statistically significant.

Results

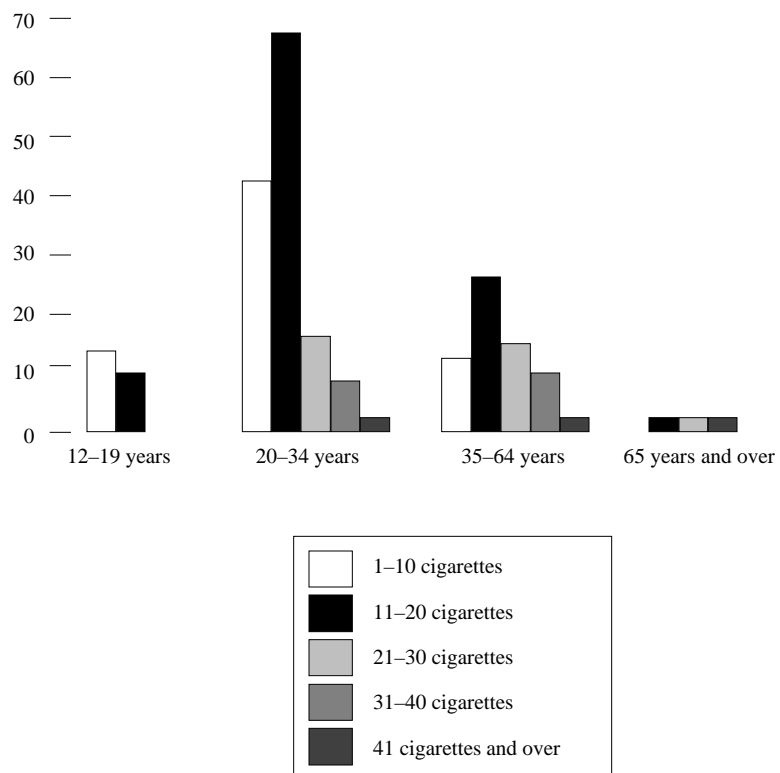
Data were collected for a total of 634 subjects. The subjects' average age was 37.3 years (range 13 years to 73 years). A total of 312 (49.2%) of the subjects were nonsmokers, 104 (16.4%) were ex-smokers, and 218 (34.4%) were smokers. The average age of non-smokers, ex-smokers, and smokers was 39.6 years, 40.2 years, and 32.1 years, respectively.

The average duration of smoking was 12.1 years (range=2 months to 45 years), and average cigarette consumption was 18.6/day (range=2 cigarettes to 80 cigarettes per day). Figure 1 shows a detailed pattern of cigarette consumption by smokers. Significantly more smokers used 11-20 cigarettes per day than 1-10 cigarettes per day ($X^2=13.62, P<.001$) or 21-30 cigarettes per day ($X^2=59.50, P<.0001$).

Detailed analysis of smokers' cigarette consumption, average age, influencing factors, knowledge of risk factors, and attitudes are shown in Tables 1 and 2. Table 2 and Figure 2 show the most common reasons for starting smoking. Friends' influence was a more

Figure 1

Number of Cigarettes Used by Smokers, According to Age Group



common reason for starting smoking than was the influence of a family member ($X^2=139$, $P<.0001$) or advertisements ($X^2=180$, $P<.0001$).

Among 218 smokers, 162 (74.3%) had considered stopping smoking, and 146 (91.1%) had actually attempted to stop. The average number of attempts at stopping was 2.4 per person. Reasons for failed attempts at stopping included: 45 (34%) subjects reported that the reason was lack of will power, 26 (19.7%) reported that a family member or friend influenced them to continue smoking, 19 (14.4%) cited social problems, and 2 (1.5%) cited withdrawal symptoms. Four (3%) cited a combination of the aforementioned reasons, and 36 (27%) of subjects cited no reason. Most of the smokers (177 or 81.2%) thought that a specialized smoking clinic would be effective in helping smokers to stop smoking, while 23 (10.5%) were not sure if this would help, and 18 (8.3%) thought that it would not be helpful.

Discussion

Our results showed a high prevalence of smoking—34.9% of males in our study reported smoking. This prevalence is higher than has been reported in other studies in Saudi Arabia and the United Kingdom.⁹⁻¹¹ We believe that the actual prevalence of smoking may

be even higher than our data indicate, because King Abdulaziz banned smoking on religious grounds in Saudi Arabia in 1926.¹² Thus, social, cultural, and religious inhibitions may have prevented smokers from providing accurate information about their smoking habits.

Our data indicate that smoking among our subjects began at a young age. The average age of smokers in the study was 32.1 years, and their average duration of smoking was 12.1 years. This implies that the average smokers started smoking at about age 20.

Our results also suggest that the influence of friends and family was a key factor involved in the decision to begin smoking. The influence of friends and family is not surprising, given that other studies have found that young people start smoking largely because of social reasons such as peer pressure.¹³⁻¹⁵ Although not measured in this study, two additional factors that may contribute to smoking in Saudi Arabia are unrestricted tobacco sales to minors and the low price of cigarettes. The average price for a pack of 20 cigarettes in Saudi Arabia is \$1.30 (US), compared with about \$3 (US) in the United States and \$5.40 (US) in Norway.¹⁶

The prevalence of smoking among our subjects occurred even though Saudis have a relatively high level of knowledge about the harmful effects of smoking. For example, 30% of smokers in China believe that smoking is harmful, while, based on our study and others, 70%–90% of Saudis believe it is harmful.^{10,17,18}

Two important limitations to our study should be noted. The first is that we studied individuals attending primary care clinics at one health care institution. These individuals may not have been fully representative of the Saudi population. The second limitation is that our study was confined to males, since sociocultural restrictions limited our ability to study women.

In conclusion, our results show a high prevalence of smoking in our Saudi community. Smokers begin smoking at a young age, and this occurs despite the awareness of the general public about the ill effects of smoking. There is an urgent need for public health efforts to decrease the rate of cigarette smoking and for regulation of tobacco companies marketing their products to minors.

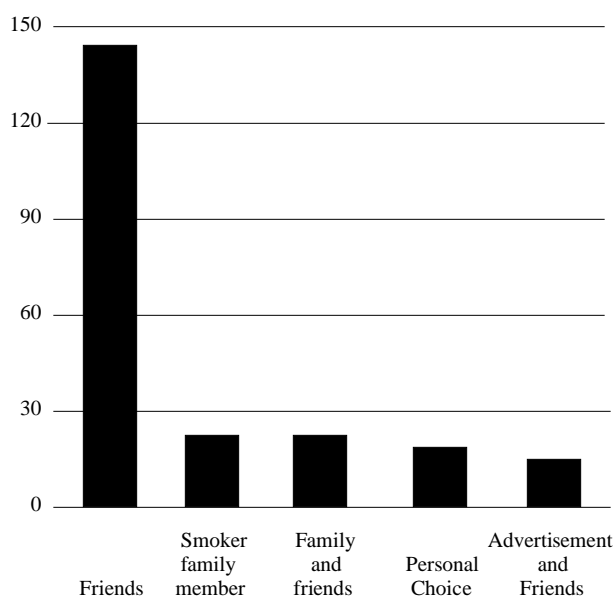
Acknowledgements: We thank Tariq Khan, PhD, FRC Path, FRSC, and Hasseb Khan, PhD, MRSC, for statistical advice and our primary care colleagues for help in collecting questionnaire data from patients.

This paper was presented at the American Academy of Family Physicians 2000 Scientific Assembly in Dallas.

Corresponding Author: Address correspondence to Dr Siddiqui, Family and Community Medicine, Alkharj Military Hospital, Saudi Arabia, PO Box 318, Alkharj, Saudi Arabia. 011-966-1-5441743. saima@awalnet.net.sa.

Figure 2

Reasons Given for Starting Smoking



REFERENCES

1. Rowlands DF, Shipster PJ. Cigarette smoking among K-12 year school boys. *Saudi Medical Journal* 1987;8(6):613-8.
2. Saeed AA, Khoja TA, Khan SB. Smoking behavior and attitudes among adult Saudi nationals in Riyadh City, Saudi Arabia. *Tobacco Control* 1996;5(3):215-9.
3. Liu B-Q, Peto R, Chen Z-M, et al. Emerging tobacco hazards in China: 1. retrospective proportional mortality study of one million deaths. *BMJ* 1998;317:1411-22.
4. Wolf PA, D'Agostino RB, Kannel WB, Bonita R, Belanger AJ. Cigarette smoking as a risk factor for stroke. The Framingham Study. *JAMA* 1988;259(7):1025-9.
5. Law MR, Morris JK, Wald NJ. Environmental tobacco smoke exposure and ischaemic heart disease: an evaluation of the evidence. *BMJ* 1997;315:973-80.
6. Peto R, Lopez AD, Boreham J, Thun M, Heath C. Mortality from tobacco in developed countries: indirect estimation from national vital statistics. *Lancet* 1992;339:1268-78.
7. Al-Bar M. Smoking and its effects on healthy Arabs, Jeddah, Saudi Arabia. *Saudi Medical Journal* 1993:163-73.
8. Al Tamimi TM, Al Barr A, Sauhaimi S, et al. Lung cancer in the eastern region of Saudi Arabia: a population-based study. *Annals of Saudi Medicine* 1996;16: 3-11.
9. Saeed AA. Smoking habits of students in the College of Allied Medical Sciences, Riyadh. *J R Soc Health* 1987;5:187-8.
10. Hashim TJ. Smoking habits of students in College of Applied Medical Science, Saudi Arabia. *Saudi Medical Journal* 2000;21(1):76-80.
11. Thomas M, Walker A, Wilmot A, Bennett N, Office for National Statistics. *Living in Britain: results from the 1996 general household survey*. London: Stationery Office, 1998.
12. Al-Mana M. *The unification of the Kingdom of Saudi Arabia*, first edition. Damam, Saudi Arabia: Motawaa Printing Company, 1982:109-26.
13. While D, Kelly S, Huang W, Charlton A. Cigarette advertising and onset of smoking in children: questionnaire survey. *BMJ* 1996;313:398-9.
14. Vaidya SG, Naik UD, Vaidya JS. Effect of sports sponsorship by tobacco companies on children's experimentation with tobacco. *BMJ* 1996;313:400-11.
15. Hastings G, MacFadyen L, Stead M. Tobacco marketing: shackling the piped piper (editorial). *BMJ* 1997;315: 439-40.
16. Schultz H, Ezzat A, Allam A, Gray A. Smoking and health: new insights and recent developments. *Annals of Saudi Medicine* 1998;18:1-5.
17. Bener A, Al Ketbi LM. Cigarette smoking habits among high school boys in developing countries. *J R Soc Health* 1999;119(3):166-9.
18. Chinese Academy of Preventive Medicine. *Smoking in China: 1996 national prevalence survey of smoking patterns*. Beijing: China Science and Technology Press, 1997.

This paper received the first-place award for a research paper presented by an international attendee at the American Academy of Family Physicians 2000 Scientific Assembly in Dallas.