Epidemiology of smoking among Kuwaiti adults: prevalence, characteristics, and attitudes

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Introduction In 1996 we conducted a cross-sectional survey to study the epidemiology of smoking among Kuwaiti adults.

Methods The 4000 participants were selected using a three-stage stratified cluster sampling design. Altogether 3859 participants (1798 males, 2061 females) returned a completed self-administered questionnaire.

Results The prevalence of smoking was 34.4% (95% confidence interval (CI) = 32.2–36.6) among men and 1.9% (95% CI = 1.3–2.5) among women. Among men, the highest prevalence (56.5%; 95% CI = 36.2–76.8) was observed in the youngest age group ($\leqslant$ 20 years). Among women the highest prevalence was observed in one of the older age groups (46–50 years) (7.1%; 95% CI = 3.1–11.1). Multiple logistic regression analysis showed that the following factors were independently associated with smoking: lower levels of education (odds ratio (OR) 3.5; 95% CI = 1.5–8.4), lower employment grade (OR = 4.1; 2.5–6.7), and being a separated, divorced, or widowed woman (OR = 4.9; 95% CI = 2.0–11.8). The majority of smokers (68%) began smoking when younger than 20 years; significantly more men (70%) than women (33%) began smoking at these ages (P <0.0001). On average, men began smoking at an earlier age (18 years vs 21 years; P <0.001) and therefore had smoked for a longer period (15 years vs 12 years; P <0.05); men also consumed a higher number of cigarettes each day (26 vs 17; P <0.05). A large proportion of smokers were ignorant about the health consequences of passive smoking: about 77% of those with children reported that they smoked in the presence of their children. Almost half (47%) of all smokers stated that they wanted to stop smoking, and about 56% had attempted to quit. The biggest perceived barrier to quitting was uncertainty about ''how to quit''. A total of 338 respondents (8.8%; 95% CI = 5.8–11.9) were classified as former smokers. About half of the former smokers had quit between the ages of 20 and 29 years; the average age of quitting was 28 years. Former smokers were more likely to have smoked fewer cigarettes per day and to have smoked for significantly less time than current smokers.

Discussion Given the fact that free education is provided at all levels by the government, anti-tobacco education and awareness should be included as an integral part of the curriculum in schools and colleges.

Keywords: smoking, epidemiology; smoking cessation; adult; age factors; sex factors; socioeconomic factors; Kuwait.

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Introduction

It is 50 years since the first clear evidence linking cigarette smoking to cancer was published (*1, 2*). Smoking is now well established as a recognized

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cause of cancer, lung disease, coronary heart disease, and stroke (*3–6*); it is considered to be the single most important avoidable cause of premature morbidity and mortality in the world. WHO has estimated that there are about 1100 million smokers worldwide; this represents about one-third of the global population aged over 15 years (*7*). About 73% of these smokers (700 million males, 100 million females) are in developing countries; in industrialized countries there are 200 million male smokers and 100 million female smokers. In the over 15-year-old population of developing countries, it is estimated that about 48% of males and 7% of females are smokers. The corresponding figures for industrialized countries are 42% for males and 24% for females (*7*).

Worldwide, tobacco use accounts for around 3 million deaths each year, and two-thirds of these deaths occur in industrialized countries (*8–10*). In recent years, the prevalence of smoking has been declining in many industrialized countries (*11*); however, in developing countries there has been a

large increase in the number of young adults starting to smoke and in per capita cigarette consumption (*12*). Between 1986 and 1991, per capita consumption increased by 2% in Eastern Europe and by 13.5% in Asia. Tobacco companies have projected that the demand for cigarettes in Asia would grow by 33% between 1991 and 2000. The prevention and treatment of tobacco addiction have been targeted by WHO as priorities for intervention in developing countries. It has been estimated that, unless immediate steps are taken to reduce smoking rates, the number of deaths due to tobacco use will rise to 10 million per year over the next 30–40 years, and 70% of these deaths will occur in developing countries (*8–10*). Several reasons have been suggested for this recent and continuing epidemic rise in smoking in the developing countries of Asia and the Middle East (*12*). However, little is known about the smoking behaviour, patterns of smoking, and attitudes towards smoking in these populations.

Kuwait and other oil-producing countries in the Middle East have experienced rapid economic, sociodemographic, and epidemiological transitions during the past three decades. Data on smoking behaviour in these countries, which share similar religious, cultural, economic, and ethnic backgrounds, are interesting because the sociocultural and economic patterns in these populations do not typically apply to either Western countries or to the situation in developing countries in Asia. To our knowledge, no prior work has comprehensively studied this issue in these populations. We therefore conducted a cross-sectional survey among Kuwaiti adults to study the epidemiology of tobacco smoking. The objectives of the study were: to assess the prevalence and correlates of smoking and its distribution by sociodemographic characteristics; to determine the pattern and types of tobacco smoking practised; to study characteristics of smokers and their attitudes; and to identify factors associated with continuing smoking and quitting.

Methods

Study population
According to the constitution of Kuwait, the government guarantees all Kuwaiti adults employment in the public sector. In 1995, about 94% of the employed Kuwaiti men and women worked in the public sector (*13*). In this study, the target population comprised Kuwaitis employed in all government ministries except Foreign Affairs and Defence. The rationale for studying this population was that since almost all Kuwaitis prefer to work for the government (because of guaranteed employment, attractive salary scales and allowances, and opportunities for early retirement with a good pension) our sample would provide a fair representation of Kuwaiti adults. A sample of 4000 people was thus drawn from this population.

Sampling procedure
A three-stage stratified cluster sampling design was used to select participants: the ministry was the first-stage unit, departments of the ministry were the second-stage units, and clusters of employees in each department were the final sampling units. At the first stage, the number of male and female employees working in each ministry was determined (*14*), and six ministries were systematically selected using a probability proportional to the number of employees in each ministry. The total sample size proposed for the study was distributed equally among the selected ministries and was stratified by sex to represent the proportion of men and women in the target population. In the second stage, three departments were selected from each ministry using a probability proportional to the number of employees in each department. In the final stage, employees in each department were grouped into clusters of a manageable size and a simple random sample of eight clusters was chosen.

Data collection and analysis
Data were collected using an anonymous self-administered questionnaire. The survey used a modified version of the standard WHO questionnaire for surveying smoking prevalence and behaviour (*15*). The survey collected information on sociodemographic characteristics (age, sex, marital status, level of education, income, and grade of employment), smoking behaviour (smoking status, age at which smoking started, number of cigarettes smoked per day, reasons for smoking, and perceived functions of smoking), quitting behaviour and attitudes towards quitting, and characteristics of smokers and their attitudes towards smoking. Respondents were defined as current smokers if they were smoking at the time of the survey and had smoked more than 100 cigarettes in their lifetime; they were defined as former smokers if they had smoked more than 100 cigarettes in their lifetime but no longer smoked; and they were defined as never-smokers if they had never smoked or had smoked fewer than 100 cigarettes in their lifetime.

Data were collected from April to December 1996. An Arabic language version of the questionnaire was pilot tested on a random sample of 243 individuals, and the wording of some of the questions was modified before it was formally administered. To minimize non-response and under-reporting, respondents were assured that the information obtained would be confidential and used only for statistical purposes. A team of trained researchers visited the ministries and systematically distributed and collected the completed questionnaires on the same day or the next day.

All data management and analyses were done using the SPSS statistical program. The χ^2 test was used to assess the significance of differences in the distribution of selected sociodemographic characteristics and smoking prevalence among the participants.

The *t*-test was used to compare the means of two independent groups. A *P* value of <0.05 was considered significant. The 95% confidence intervals (CI) around the prevalence rates were calculated assuming a binomial distribution. In order to determine the independence of the associations observed in the univariate analysis, a multiple logistic regression analysis was performed by simultaneously controlling for potential confounding factors.

Results

A total of 4000 people were initially selected to participate in the study; of these, 3859 (1798 males, 2061 females) returned completed questionnaires, yielding a response rate of 96.5%. The average age ($\pm$ SD) was 33.2 ($\pm$ 7.9) years for men and 31.5 ($\pm$ 6.3) years for women; the median age was 32 years for men and 31 years for women.

Prevalence, correlates, and patterns of smoking

Overall, 17% (95% confidence interval (CI) = 15.8–18.2) of the 3859 respondents were classified as current smokers, 8.8% (95% CI = 5.8–11.9) as former smokers, and 74.2% (95% CI = 72.6–75.8) as never-smokers. Table 1 shows the prevalence of smoking among Kuwaiti adults according to various sociodemographic characteristics. At all ages the prevalence of smoking was significantly higher among men than women: 618/1798 men smoked (34.4%; 95% CI = 32.2–36.6) compared with 39/2061 women (1.9%; 95% CI = 1.3–2.5) (*P* <0.0001). Among men, the highest prevalence of smoking (56.5%; 95% CI = 36.2–76.8) was observed in the youngest age group ($\leqslant$ 20 years), but there was no significant difference in prevalence at other ages. In contrast, there was a moderate increase in prevalence with age among women, and the highest rate of smoking (7.1%; 95% CI = 3.1–11.1) was observed in one of the older age groups (46–50 years). When data for both sexes were combined the prevalence of smoking was univariately associated with age, income, education (*P* <0.0001 for each variable), and grade of employment (*P* <0.05). For women (but not men), it was associated with marital status (*P* <0.0001).

In the multiple logistic regression models, the respondent's education, employment grade, and for women, marital status, were the strongest determinants of smoking. Respondents with only a primary education were more likely to smoke than those with a university education (odds ratio (OR) 3.5; 95% CI = 1.5–8.4; *P* <0.01); and those who were working at the lower grade of employment (grade 7–8), which is also a function of educational level, were 4.1 (95% CI = 2.5–6.7; *P* <0.0001) times more likely to smoke than those at the highest grades (1–2). For marital status, women who were separated, divorced, or widowed were 4.9 (95% CI = 2.0–11.8; *P* <0.001) times more likely to smoke than those who were currently married.

Table 2 shows the distribution of current smokers by the age at which they began smoking and the number of cigarettes consumed per day. The majority of smokers (68%) started smoking regularly when younger than 20 years old; significantly more men (70%) than women (33%) began to smoke regularly before they reached the age of 20 (*P* <0.0001), but women were more likely to begin smoking in the subsequent age groups. Women continued to start smoking well into middle age: for example, about 10% of female smokers started between the ages of 30 and 39 years compared with about 3% of men. The average age at which respondents began smoking was about 18 years in men and 21 years in women (*P* <0.001); the average

Table 1. **Prevalence of smoking among Kuwaiti adults by age, marital status, income, level of education, and employment grade**

Characteristics	No. of male respondents (% smokers)[a]	No. of female respondents (% smokers)[a]	All respondents (% smokers)
Age (years)			
18–20	23 (56.5)	12 (0.0)	35 (37.1)
21–25	293 (35.8)	369 (1.1)	662 (16.5)
26–30	461 (34.5)	619 (1.8)	1080 (15.7)
31–35	364 (34.1)	560 (2.1)	924 (14.7)
36–40	297 (32.0)	336 (1.8)	633 (16.0)
41–45	208 (35.1)	107 (2.8)	315 (24.1)
46–50	107 (30.8)	42 (7.1)	149 (24.2)
51–60	45 (35.4)	16 (0.0)	61 (26.2)
Significance[a]	NS	NS	*P* <0.0001
Marital status			
Single	453 (34.9)	596 (1.3)	1049 (15.8)
Married	1323 (34.0)	1360 (1.6)	2683 (17.6)
Separated/divorced/widowed	22 (45.5)	105 (8.6)	127 (15.0)
Significance[a]	NS	*P* <0.0001	NS
Income (KD/month)[b]			
<500	616 (36.7)	1348 (2.3)	1964 (13.1)
500–999	990 (33.6)	663 (1.2)	1653 (20.6)
1000–2000	180 (28.9)	34 (0.0)	214 (24.3)
>2000	12 (58.3)	16 (0.0)	28 (25.0)
Significance[a]	NS	NS	*P* <0.0001
Education			
Primary	18 (50.0)	14 (14.3)	32 (34.4)
Intermediate	281 (39.5)	257 (2.7)	538 (21.9)
Secondary	340 (38.5)	478 (2.3)	818 (17.4)
Technical qualification	726 (33.5)	806 (1.7)	1532 (16.8)
University or more	433 (28.6)	506 (1.0)	939 (13.7)
Significance[a]	*P* <0.01	*P* <0.01	*P* <0.0001
Employment grade[c]			
1–2	461 (27.8)	316 (1.3)[d]	777 (17.0)[c]
3–4	552 (31.7)	677 (2.1)	1229 (15.4)
5–6	568 (37.3)	756 (1.3)	1324 (16.8)
7–8	217 (47.5)	309 (3.6)	526 (21.7)
Significance	*P* <0.0001	NS	*P* <0.05
Total	**1798 (34.4)**	**2061 (1.9)**	**3859 (17.0)**

[a] NS: not significant.

[b] KD: Kuwaiti Dinar (KD 1 = US$ 3.3).

[c] Grade 1 is the highest level of employment in the public sector and 8 is the lowest.

[d] The numbers do not add to the total because of the missing data.

duration of smoking was 15 years for men and 12 years for women ($P < 0.05$). The average daily consumption of cigarettes was about 25, but men smoked considerably more cigarettes than women (26 and 17 cigarettes per day, respectively; $P < 0.05$). A number of current cigarette smokers had also occasionally used other methods to smoke tobacco. Altogether 57% of men and 69% of women reported that they had ever used a narghile (also known as a hubble-bubble, sheesha, hookah, or water-pipe), a traditional form of social smoking; 25% of men and 8% of women had smoked cigars, and 16% of men had smoked a pipe (data not shown).

Characteristics of smokers and their attitudes

The most common reasons for smoking, or the perceived functions of smoking, among both men and women were to relieve boredom and to feel relaxed (Table 3). When data were examined separately for each sex, men gave considerably more weight to using smoking to help them concentrate at work (40%) and women to using smoking to relieve anger and frustration (64%) (data not shown). About 77% of the 438 smokers with children reported that they smoked in the presence of their children; 73% of all respondents believed that smoking had so far not affected their health. Almost half (47%) of all smokers stated that they wanted to stop smoking, and about 56% had attempted to quit. The most common reasons for not quitting, or the perceived barriers to quitting, were uncertainty about how to quit, a perceived lack of will power, and the influence of other smokers around the respondent. When asked about smoking in the future, about half (56%) of smokers were confident that they would not be smoking in a year.

About half (47%) of the smokers had been advised by their physician that smoking was harmful to health and that they should try to stop. When asked, "What might lead you to decide to stop smoking?" (the respondents were asked to check all applicable reasons in the list), 44% of the respondents stated they might quit if they were convinced that smoking was harmful to their health. Only a few (5%) considered the cost of cigarettes to be an important reason for them to quit smoking. We also asked respondents: "Where do you enjoy smoking most?" The majority of men (61%) stated that they enjoyed smoking at *diwaniahs* (social gatherings of men), and 85% of women enjoyed smoking at home (data not shown).

Factors associated with quitting smoking

Of the 3859 respondents, 338 (319 males, 19 females) were classified as former smokers. Patterns of smoking and factors associated with quitting smoking are presented in Table 4 for both sexes combined. The distribution and average age at starting smoking (17 years for men, 20 for women) in former smokers were similar to those of current smokers. The average duration of smoking (10 years for men, 7 years for

Table 2. **No. (percentage) of current smokers by age started smoking and number of cigarettes smoked per day**

	Men (n = 618)	Women (n = 39)	All smokers (n = 657)
Age started smoking (years)			
10–14	85 (13.8)	3 (7.7)	88 (13.4)
15–19	349 (56.5)	10 (25.6)	359 (54.6)
20–24	131 (21.2)	18 (46.2)	149 (22.7)
25–29	35 (5.7)	4 (10.3)	39 (5.9)
30–39	18 (2.9)	4 (10.3)	22 (3.3)
No. of cigarettes smoked/day			
1–10	72 (11.7)	21 (53.8)	93 (14.2)
11–20	274 (44.3)	10 (25.6)	284 (43.2)
21–30	110 (17.8)	2 (5.1)	112 (17.0)
31–40	109 (17.6)	5 (12.8)	114 (17.4)
>40	53 (8.6)	1 (2.6)	54 (8.2)

Table 3. **Characteristics and attitudes towards smoking of 657 current smokers**

Characteristics and attitudes	No. (%)
Reasons for smoking[a]	
Relieve boredom	318 (48.4)
Relax	315 (47.9)
Concentrate at work	251 (38.2)
Relieve anger and frustration	228 (34.7)
Relieve pressure of working hard	146 (22.2)
Enjoy pleasant events	121 (18.4)
Get going in the morning	68 (10.4)
Mix in social situations	64 (9.8)
Boost self-confidence	30 (4.6)
Do you smoke in the presence of your children?[b]	
Yes	337 (76.9)
No	101 (23.1)
Has smoking ever affected your health?	
Yes	177 (26.9)
No	480 (73.1)
Do you want to quit smoking?	
Yes	309 (47.0)
No	254 (38.7)
Uncertain	94 (14.3)
Have you ever tried to quit smoking?	
Yes	366 (55.7)
No	291 (44.3)
Reasons for not quitting smoking[c]	
Not sure how to quit	276 (42.0)
Lack of willpower	198 (30.1)
People around me smoke	168 (25.6)
Don't want to stop	104 (15.8)
I like it very much	86 (13.1)
Stress at work	65 (9.9)
Stress at home	52 (7.9)
Fear of gaining weight	36 (5.5)
Do you expect to be smoking one year from now?	
Yes	153 (23.3)
No	365 (55.6)
Uncertain	139 (21.2)

[a] The question was: "Smoking helps me to: (check all that apply)".

[b] This question was only applicable to 438 respondents with children.

[c] The question was: "What prevents you from quitting smoking at this time? (check all that apply)".

Table 4. **Patterns of smoking and factors associated with quitting smoking among 338 former smokers**

Patterns	No. (%)
Age started smoking (years)	
10–14	66 (19.5)
15–19	188 (55.6)
20–24	67 (19.8)
25–29	10 (3.0)
30–39	7 (2.1)
No. of cigarettes smoked/day	
1–10	77 (22.8)
11–20	157 (46.4)
21–30	58 (17.2)
31–40	31 (9.2)
>40	15 (4.4)
Age quit smoking (years)	
10–19	24 (7.1)
20–29	181 (53.6)
30–39	116 (34.3)
40–49	17 (5.0)
Reasons for quitting[a]	
Harmful effect on health	154 (45.6)
Being a bad example to children	140 (41.4)
Scientific evidence of hazards of smoking	103 (30.5)
Messiness of the habit	93 (27.5)
Influence of spouse/family members	73 (21.6)
Did not really enjoy smoking	68 (20.1)
To improve sense of taste or smell	60 (17.8)
Advised by physician	54 (16.0)
Cost of cigarettes	16 (4.7)
Method used to quit[b]	
Just quit/stopped suddenly	254 (75.1)
Gradually decreased the number of cigarettes	48 (14.2)
First switched to low tar cigarettes	16 (4.7)
Set a date and quit	16 (4.7)
Quit with a friend/relative	15 (4.4)
Nicotine chewing gum/patch	7 (2.1)
Attended stop smoking programme	6 (1.8)

[a] The question was: ''Why did you stop smoking cigarettes? (check all that apply)''.

[b] The question was: ''What method(s) did you use to help you stop smoking? (check all that apply)''.

women) was, however, significantly shorter compared with current smokers ($P <0.0001$ men, $P <0.05$ women) (data not shown). On average, former smokers had consumed fewer cigarettes per day compared with current smokers (21 cigarettes per day for men and 14 per day for women; $P <0.0001$ men, $P = 0.07$ women). Approximately half of the former smokers (54%) stopped smoking between the ages of 20 and 29 years; the average age of quitting (28 years) was similar for men and women. The most common reasons for quitting for both men and women were the harmful effects of smoking on health (46%) and being a bad example to children (41%). Scientific evidence on the effects of smoking was reported as the third most important reason for quitting. A majority of former smokers (75%) reported they had "just quit" without any formal plan. Other methods used for quitting were to gradually decrease the number of cigarettes smoked, switch to low-tar/low-nicotine brands, and to use nicotine chewing gum or a patch. We also asked respondents: "How do you feel since you stopped smoking?" Almost all of the former smokers stated that they felt better psychologically and physically after stopping smoking (data not shown).

Discussion

There are no published data on the epidemiology of smoking in Kuwait that might be generalized to the population as a whole. Published studies on the prevalence of smoking have been restricted to specific groups, such as physicians, university students, and married couples. These studies have reported prevalence rates of 38.1% in physicians (16), 30% in male students (17), 37% in married men, and 0.5% in married women (18). Mimeographed reports of the two national health surveys conducted by the Ministry of Public Health in 1984–85 and 1996 provide some indication of the extent of tobacco use in the general population. In these surveys, smoking was included as just one of several variables. In the first survey (19), conducted on a sample of people drawn from 3358 households, the prevalence of smoking among Kuwaiti males and females aged ⩾12 years was 27.4% and 2.1%, respectively. Data on former smokers, however, were not collected. In the more recent survey (20), conducted on a sample of people drawn from 3673 households, the information about the whole family was obtained from the head of the household. The reported prevalence of smoking among Kuwaiti males and females aged ⩾15 years was 32.4% and 1.5%, respectively. In both surveys, cigarettes were the most popular way to smoke tobacco; other forms of smoking (narghile, cigar, pipe) were done exclusively by <1% of all smokers. Rates of smoking among Kuwaiti men are generally similar to the rates reported for their counterparts in other oil-producing countries (Table 5). However, they are considerably lower than those reported for men in most other Middle Eastern and North African populations and among men in most of south-east and central Asia. Smoking rates among Kuwaiti women, on the other hand, are among the lowest reported for women in these countries (7, 21–26).

In general, patterns of smoking in men and women are different in developing and industrialized countries; significantly more men (40–60%) but fewer women (2–10%) smoke in developing countries compared with the approximately 25–30% of both men and women who smoke in industrialized countries (27). Women in developing countries tend to have lower rates of smoking, start smoking later than men, and consume fewer cigarettes daily. This is mainly the result of sociocultural, religious, or economic factors. For example, in some societies, it may be considered improper and indecent for

females to be seen smoking in public; in addition, there may be religious and economic arguments against it. It is noteworthy that the large majority (85%) of female smokers in our study preferred to smoke in the privacy of their homes. Because of its negative sociocultural connotations, females (particularly girls) may underreport their smoking habits. The Kuwaiti women in our study appeared to follow this pattern.

In addition to the significantly low prevalence of smoking among women, they tended to start smoking when they were older and, therefore, had smoked for a shorter length of time. They also consumed significantly fewer cigarettes per day than men. Women who were separated, divorced, or widowed were about 5 times as likely to smoke as those who were married. Older women are perhaps more likely to admit that they smoke; and separated, divorced or widowed women in some societies probably suffer more sociocultural and financial stress than others which may lead them to smoke. There was about a fivefold difference between the number of separated, divorced, or widowed men and women (22 males vs 105 females) in our study. The difference is perhaps partly explained by the sociocultural factors whereby men are more likely to remarry than women.

Education and socioeconomic factors have been associated with smoking in most populations (11, 23–26). We also found an inverse relation between education and smoking prevalence: respondents with less education (educated only to primary level) were 3.5 times more likely to smoke than those with more education (university level). A similar association was also observed with the grade of employment, which is also a function of education. In contrast, a recent study from Saudi Arabia (22) showed that smoking prevalence was significantly higher among Saudis who were literate (21–30%) than among those who were illiterate (11%). The authors described this finding as being similar to the experience of industrialized countries where before the advent of anti-smoking campaigns smoking was more popular among the higher social classes because it was considered to denote elevated social status and prestige.

Kuwait and other oil-producing countries in the Middle East have experienced rapid social and economic development over the past four decades. The population is going through a demographic and epidemiological transition. For Kuwaiti nationals, these changes have included substantial increases in per capita and disposable income, important declines in infant mortality (11.4/1000 live births), and improvements in life expectancy (75 years) (28, 29). Kuwait also has one of the highest annual population growth rates in the world (4.5%) and has greatly increased the literacy rate to about 85%. There has also been the social and economic liberation of women which has led to their participation in the workforce. Additionally, there is the influence of so-called Western culture. These changes, along with the

influence of religion and traditional values, have brought Kuwait and other oil-producing countries in the Middle East to the crossroads between developed and developing countries.

Programmes to control and prevent the use of tobacco in Kuwait and other oil-producing countries in the region need to be tailored to the factors likely to contribute to an increase in smoking in developing countries in the future. These programmes should use the experience of industrialized countries in tobacco control in combination with specific knowledge of the local factors involved. Research, public health education, environmental action and legisla-

Table 5. **Prevalence of smoking among men and women in selected Asian and North African countries (listed in order of highest prevalence of smoking among men in each region)**

Geographical area, year(s) of survey	Prevalence (%)	
	Men	Women
Middle East		
Jordan, 1984	65.0	15.0
Turkey, 1988	63.0	24.0
Israel, 1989	45.0	30.0
Cyprus, 1990	42.5	7.2
Bahrain, 1981–83 (non-Bahrainis) (ref. 21)	40.4	7.9
Saudi Arabia, 1994 (Saudi Arabians) (ref. 22)	40.0	8.2
Iraq, 1990	40.0	5.0
Kuwait, current study (Kuwaitis)	34.4	1.9
Bahrain, 1981–83 (Bahrainis) (ref. 21)	30.6	9.5
North Africa		
Tunisia, 1985	58.0	6.0
Algeria, 1980	53.0	10.0
Egypt, Cairo, 1986	39.8	1.0
Morocco, 1990	39.6	9.1
Nigeria, 1990	24.4	6.7
South and south-east Asia		
Nepal, 1983	85.4	62.4
Cambodia, 1990	85.0	6.0
Viet Nam, 1995 (ref. 23)	72.8	4.3
Republic of Korea, 1989	68.2	6.7
Bangladesh, 1990	60.0	15.0
Japan, 1994	59.0	14.8
Sri Lanka, 1988	54.0	0.8
Indonesia, 1986	53.0	4.0
China, Taiwan province, Taipei City, 1986–88 (ref. 24)	49.0	8.0
Thailand, 1995	49.0	4.0
India, New Delhi, 1985–86 (ref. 25)	45.0	7.0
Philippines, 1987	43.0	8.0
Malaysia, 1986	41.0	4.0
Brunei Darussalam, 1979	40.0	14.0
Singapore, 1995	31.9	2.7
Pakistan, Karachi, 1980	27.4	4.4
Central Asia		
China, Minhang district, 1993 (ref. 26)	66.6	1.7
Mongolia, 1991	40.0	7.0
Uzbekistan, 1989	40.0	1.0
Turkmenistan, 1992	26.6	0.5

Except for the indicated references, all data are from *Tobacco or health: A global status report*, Geneva, World Health Organization, 1997.

tive action will be needed to ensure the success of tobacco control activities.

The majority of regular smokers begin smoking in early adolescence. In our study, the highest prevalence of smoking was observed among men aged ≤ 20 years; and about 70% of all male smokers had started smoking before they reached age 20. Considering Kuwait's high rate of population growth and its young population (55% of Kuwaitis are 20 years old or younger), a major effort should be directed towards implementing health education programmes for children and adolescents. A research project conducted by our students on substance use among medical students at Kuwait University showed that 33% of those who had ever used tobacco began smoking at high school, and 50% began smoking at medical school (*30*). Given the fact that free education is provided at all levels by the government, anti-tobacco education and awareness should be included as an integral part of the curriculum in schools and colleges.

In traditional societies, the family value system exerts an important influence on an individual's behaviour and attitudes. In our study, about 77% of current smokers with children smoked in front of their children. Conversely, "being a bad example to children" was reported as the second most common reason for quitting smoking, and the influence of a spouse or family member was considered to be an important reason by about 22% of former smokers. These findings also raise the important issue of the awareness of the health consequences of passive smoking or environmental tobacco smoke, particularly for children. In recent years, evidence of the serious health consequences of environmental tobacco smoke for both adults and children has accumulated (*31*). About one-third of male smokers in our study indicated that the place where they most enjoyed smoking was at the workplace, and 61% enjoyed smoking at *diwaniahs* (data not shown). The influence of smoking among peers was the third most common reason for not attempting to quit. These findings make a strong case for restricting smoking in public places and at work, educating people about the hazards of environmental tobacco smoke, and discouraging people from smoking at home, particularly in the presence of children.

Tobacco is not cultivated and tobacco products are not manufactured in Kuwait and other members of the Gulf Cooperation Council (Bahrain, Oman, Qatar, Saudi Arabia, the United Arab Emirates). Consequently there is a highly lucrative market for the products of Western multinational tobacco companies in these countries. In addition, because there are negligible import duties or other taxes, a pack of 20 cigarettes costs around just US\$ 1. In 1995, the National Assembly in Kuwait approved legislation for tobacco control. The articles of this law (see Appendix) should be implemented alongside an increase in anti-smoking campaigns and awareness of health hazards; and special attention should focus on tobacco companies in order to monitor and control their promotional activities. Because some of the issues concerning tobacco control are beyond the domain of national policies and legislation, Kuwait and other members of the Gulf Cooperation Council may consider joining the International Framework Convention for Tobacco Control initiated by WHO. The international collaboration is aimed at sharing policy and programme information and implementing tobacco control strategies (*32*).

Our findings may not be generalizable to all sectors of the Kuwaiti population, and similar studies in other groups are needed, particularly among children and adolescents, and the heterogeneous and transitory group of expatriates who come from over 50 countries. The role of other correlates of smoking, such as smoking among parents and other family members, the locus of control, self-esteem, and acculturation, also need to be assessed. Cross-sectional studies should be conducted regularly to monitor changes in prevalence, knowledge, attitudes, and behavioural and socioeconomic determinants of starting, continuing, and quitting smoking. These studies would provide baseline data for anti-smoking interventions and permit evaluation of these programmes. ■

Résumé

Epidémiologie du tabagisme chez les Koweïtiens adultes : prévalence, caractéristiques et attitudes

L'OMS estime qu'il y a environ 1,1 milliard de fumeurs dans le monde, ce qui représente près d'un tiers de la population mondiale de plus de 15 ans. La plupart (73 %) de ces fumeurs (700 millions d'hommes, 100 millions de femmes) vivent dans les pays en développement ; les pays industrialisés comptent 200 millions d'hommes et 100 millions de femmes chez les fumeurs. Récemment, la prévalence du tabagisme a diminué dans bon nombre de pays développés, contrairement aux pays en développement où l'on a enregistré une augmentation importante du nombre de jeunes adultes qui commencent à fumer et aussi de la consommation de cigarettes par personne. On sait peu de choses du tabagisme dans ces populations. Nous

avons mené une enquête transversale chez les Koweï-tiens adultes travaillant dans le secteur public afin d'étudier l'épidémiologie du tabagisme. Nous voulions évaluer la prévalence, les indicateurs et la distribution du tabagisme à l'aide de caractéristiques sociodémogra-phiques, afin de déterminer le mode et les différents types de consommation tabagique, d'étudier les caractéristiques des fumeurs et leurs attitudes et d'identifier les facteurs associés au fait que les gens continuent à fumer ou s'arrêtent.

Un échantillon de 4000 personnes a été choisi parmi les Koweïtiens employés dans tous les ministères publics, à l'exception des Affaires étrangères et de la Défense. Un échantillon par grappes stratifié à trois degrés a été employé. L'enquête a été effectuée en 1996 et on s'est servi pour la mener d'une version modifiée du questionnaire OMS standard visant à évaluer la prévalence du tabagisme et les comporte-ments qui lui sont liés.

En tout, 3859 personnes (1798 hommes et 2061 femmes) ont renvoyé le questionnaire rempli. La prévalence du tabagisme était de 34,4 % (intervalle de confiance à 95 % (IC) : 32,2-36,6 %) chez les hommes et de 1,9 % (IC 95 % : 1,3-2,5 %) chez les femmes. Chez les hommes, la prévalence la plus élevée (56,5 % ; IC 95 % : 36,2-76,8 %) a été observée dans les classes d'âge les plus jeunes (⩽ 20 ans). En revanche, chez les femmes, la prévalence la plus forte a été observée dans l'une des classes d'âge les plus élevées (46-50 ans) (7,1 % ; IC 95 % : 3,1-11,1 %). Une analyse de régres-sion logistique a montré que les facteurs suivants étaient indépendamment associés au tabagisme : faible niveau d'instruction (odds ratio (OR) : 3,5 ; IC 95 % : 1,5-8,4), emploi subalterne (OR : 4,1 ; IC 95 % : 2,5-6,7) et le fait d'être une femme séparée, divorcée ou veuve (OR : 4,9 ; IC 95 % : 2,0-11,8).

La plupart des fumeurs (68 %) avaient commencé à fumer avant l'âge de 20 ans. Beaucoup plus d'hommes (70 %) que de femmes (33 %) avaient commencé à ces âges-là (p <0,0001). En moyenne, les hommes avaient commencé à fumer plus jeunes (18 ans contre 21 ans ; p <0,001) et fumaient donc depuis plus longtemps (15 ans contre 12 ans ; p <0,05) ; la consommation journalière des hommes était également plus élevée (26 cigarettes contre 17 ; p <0,05). Nombreux étaient les fumeurs qui ignoraient les conséquences du tabagisme passif pour la santé : près de 77 % de ceux qui avaient des enfants ont indiqué qu'ils fumaient en présence de leurs enfants. Près de la moitié (47 %) de l'ensemble des fumeurs ont indiqué qu'ils voulaient arrêter de fumer et environ 56 % d'entre eux avaient déjà essayé. La difficulté apparemment la plus importante pour eux était de ne pas savoir « comment s'arrêter ».

Trois cent trente-huit personnes interrogées (8,8 % ; IC 95 % : 5,8-11,9 %) ont été rangées dans la catégorie des anciens fumeurs. Près de la moitié de ces anciens fumeurs avaient arrêté entre 20 et 29 ans ; l'âge moyen de l'arrêt était de 28 ans. Ces anciens fumeurs avaient sans doute fumé moins de cigarettes par jour et pendant moins longtemps que les fumeurs de l'enquête.

Etant donné que dans ce pays l'enseignement public est gratuit à tous les niveaux, la sensibilisation aux ravages du tabac et l'éducation antitabac devraient faire partie intégrante des programmes scolaires et universitaires.

Resumen

Epidemiología del tabaquismo en la población adulta de Kuwait: prevalencia, características y actitudes

La OMS estima que hay unos 1100 millones de fumadores en todo el mundo, lo que representa aproximadamente una tercera parte de la población mundial de más de 15 años. La mayoría (73%) de estos fumadores (700 mi-llones de hombres y 100 millones de mujeres) viven en países en desarrollo; en los países industrializados hay 200 millones de fumadores y 100 millones de fumadoras. Últimamente la prevalencia de tabaquismo ha disminuido en muchos países desarrollados, pero en los países en desarrollo se ha registrado un gran aumento del número de adultos jóvenes que empiezan a fumar y del consumo de cigarrillos per cápita. Sin embargo, poco se sabe sobre las características de ese hábito en tales poblaciones. Llevamos a cabo un estudio transversal entre adultos de Kuwait empleados en el sector público, a fin de estudiar la epidemiología del consumo de tabaco. Nuestro objetivo era evaluar la prevalencia del hábito, los factores con él relacionados y su distribución usando variables sociode-mográficas, al objeto de determinar las pautas de consumo de tabaco y el tipo de tabaco utilizado, las características y la actitud de los fumadores, y los factores asociados a la persistencia del hábito y al abandono del mismo.

Se partió de una muestra de 4000 kuwaitíes empleados en todos los ministerios del Gobierno, exceptuando Asuntos Exteriores y Defensa. Se utilizó un diseño de muestreo por conglomerados estratificado en tres etapas. La encuesta se llevó a cabo en 1996, empleando una versión modificada del cuestionario estándar OMS de evaluación de la prevalencia del tabaquismo y el comportamiento de los fumadores.

En total, 3859 personas (1798 hombres y 2061 mu-jeres) rellenaron y devolvieron el cuestionario auto-administrado. La prevalencia de tabaquismo fue del 34,4% (intervalo de confianza del 95% (IC95%): 32,2%-36,6%) entre los hombres y del 1,9% (1,3%-2,5%) entre las mujeres. Entre los hombres, la mayor prevalencia (56,5%; 36,2%-76,8%) se observó en los grupos de edad más jóvenes (⩽ 20 años). Entre las mujeres, la mayor prevalencia se observó en uno de los grupos de edad avanzada (46-50 años) (7,1%; 3,1%-11,1%). La regresión logística múltiple mostró que los siguientes factores estaban relacionados de forma independiente con el tabaquismo: bajo nivel de educación (razón de posibilidades (OR): 3,5; IC95%: 1,5-8,4), menor estatus profesional (OR: 4,1; IC95%:

2,5-6,7), o el hecho de ser una mujer separada, divorciada o viuda (OR: 4,9; IC95%: 2,0-11,8).

La mayoría de los fumadores (68%) empezaron a fumar con menos de 20 años; a esas edades había comenzado a fumar un número significativamente mayor de hombres (70%) que de mujeres (33%) ($P< 0,0001$). Como promedio, los hombres empezaban a fumar más precozmente (18 años frente a 21 años; $P< 0,001$), y por tanto habían fumado durante más tiempo (15 años frente a 12; $P< 0,05$); los hombres fumaban también más cigarrillos cada día (26 frente a 17; $P< 0,05$). Un gran número de fumadores ignoraban las consecuencias sanitarias del tabaquismo pasivo: un 77% de los que tenían niños declararon que fumaban en presencia de ellos. Casi la mitad (47%) de todos los fumadores declararon que deseaban dejar de fumar, y un 56% había intentado hacerlo. El problema principal que percibían para dejar de fumar era que no sabían exactamente «cómo hacerlo».

De las personas que respondieron, un total de 338 (8,8%; IC95%: 5,8%-11,9%) fueron clasificadas como ex fumadoras. Aproximadamente la mitad de esos ex fumadores habían dejado el tabaco entre los 20 y los 29 años; la edad promedio de abandono del hábito era de 28 años. En general los ex fumadores habían fumado menos cigarrillos por día, y de forma significativa habían fumado también durante menos tiempo que los que aún fumaban.

Teniendo en cuenta que el Gobierno imparte educación gratuita en todos los niveles, es necesario incluir la educación y la sensibilización contra el tabaco como parte fundamental de los planes de estudio en las escuelas y los institutos.

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Appendix
State of Kuwait, law No. 15 of 1995: On smoking control
Issued on 17 May 1995

Having perused the constitution, the National Assembly has approved the law of the following provisions, which we hereby ratify and promulgate:

Article 1

Plantation of tobacco and/or import of its seeds or plants into Kuwait are prohibited, save for scientific purposes. Moreover, local manufacturing of all types of cigarettes is also prohibited.

Article 2

Import of all types of manufactured cigarettes into Kuwait, including the elements they consist of, as well as raw tobacco, with its derivatives and smoking papers and requirements, are prohibited unless they satisfy the conditions prescribed by the Ministry of Public Health.

Article 3

Selling or offering cigarettes and all types of tobacco, with its derivatives, to any person below 21 (twenty-one) years of age is prohibited.

Article 4

Smoking in public places, which shall be identified under a resolution issued by the Minister of Public Health, is prohibited. Such a resolution may prescribe the smoking places assigned therein.

Article 5

Smoking by those providing catering services or working at foodstuff shops or cafeterias is prohibited while they are preparing food or beverages to be served to customers. Moreover, smoking while driving a motor car or any other means of public or private transport is also prohibited.

Article 6

Publicity and advertising for promotion of cigarettes, all types of tobacco, and its derivatives is hereby banned.

Article 7

Every contravention committed against the provisions of this law shall hold the defaulter liable to pay a penalty of KD 50/-(fifty Kuwaiti Dinars), which shall be doubled in the event of recidivism, in addition to confiscation in case of violating the provisions of Articles 1 and 2 of the law hereof.

Article 8

The Minister of Public Health shall issue all rules and regulations necessary for the implementation of the provisions of this law.

Article 9

The Prime Minister and Ministers, each within his jurisdiction, shall implement this law which shall be operative after a lapse of one month from the date published in the Official Gazette.