

Patients' Smoking Status: the Family Practice Physician's View

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Abstract

Background: Smoking rates have decreased in western countries as well as in Israel during the past 20 years.

Objectives: To estimate current rates of smoking and smoking cessation, and to assess factors associated with smoking and smoking cessation in family practice.

Methods: Prospective face-to-face interviews were conducted with 1,094 subjects, aged 16 years or older, registered in a family practice.

Results: Of all subjects studied, 746 (68.2%) were non-smokers, 237 (21.7%) were current smokers, and 111 (10.1%) had stopped smoking. Overall, 31.8% of the males and 13.8% of the females were current smokers, and 20.1% males and 2.4% females had stopped smoking. Current smoking and smoking cessation rates were significantly and inversely associated with age among males and females. Smoking rates were higher among males and females who were married, had 10–12 years of education, and among males of North African origin and females of Israeli origin. The number of cigarettes smoked per day was associated with smoking and smoking cessation in males, but not in females. The highest rate of quitting occurred among males who smoked ≥ 25 cigarettes per day. In a multiple regression analysis, gender and the number of cigarettes smoked per day were the most significant factors that predicted smoking cessation. The most common reason for stopping was the appearance of new signs of illness or the development of a new chronic disease, followed by a physician's recommendation to quit smoking.

Conclusions: Female smokers and male smokers who smoke less than 25 cigarettes per day are the least likely to quit smoking. Future programs should be designed for and targeted at these groups of patients.

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Australia [3], Spain [4] and Denmark [5]. In France, smoking prevalence has declined among men but has increased among women [6].

Studies conducted in the last 20 years in Israel [7–10] show a decline in smoking prevalence among males and females. Also evaluated in Israeli primary care clinics was the relationship between smoking or quitting and age, gender, marital status and education [9,10]. The present study is part of a project carried out at the primary care level. Comparison of the characteristics of successful quitters with those who relapsed, examination of characteristics of the maintenance stage, and the reasons for not resuming smoking have been reported separately [11].

What are the trends in the current smoking and cessation prevalence rates? And what are the characteristics of active smokers and successful quitters? To answer these questions this study set out to evaluate smoking and smoking cessation rates in a family practice, to characterize the smoking habits of current smokers and quitters, and to examine the latter's reasons for quitting smoking.

Methods

The study was carried out in an urban family practice in southern Israel, with a listed population of 1,356 patients aged 16 years and older, for a period of 8 months between May and December 1995. Using questionnaires (see appendix), prospective face-to-face interviews were conducted by the physician (L.B.) with 1,094 of the subjects (80.7%) who attended the practice. Questionnaire assessments of smoking habits have proved to be reliable, especially as part of ongoing medical studies [12]. During the interviews, sociodemographic characteristics of the study population were examined and smoking history was obtained. In addition, all patients who claimed they had stopped smoking were questioned about their reasons for doing so.

A regular smoker was defined as someone who had smoked more than one cigarette per day for at least one year. A quitter was defined as someone who had stopped smoking at least one year prior to the interview; those who had stopped smoking more recently were considered as current smokers [13]. The reasons given by quitters were classified into groups.

The significance of differences in proportions was tested using the Chi-square test; if the predicted size of any cell was 5 or less, the Fisher exact test was used. The

During the past 20 years smoking prevalence has changed in different parts of the world. In the United States the annual prevalence of cigarette smoking among adults declined during 1965–90 but remained virtually unchanged during 1990–92 [1,2]. Smoking prevalence also declined in

significance of differences between continuous variables was assessed using Student's *t*-test. All tests of significance were two-tailed. Multiple regression analysis was used to examine the association between smoking or quitting and age, gender, marital status, education, duration of smoking, the number of cigarettes smoked per day, and age at starting to smoke. A significant difference was defined as $P < 0.05$ assuming a power of 0.8. The data were analyzed using the Statistical Package for the Social Sciences.

Results

Of the entire sample, 746 (68.2%) had never smoked, 237 (21.7%) were current smokers, and 111 (10.1%) were successful quitters. Table 1 shows the distribution of age and sex among smokers, quitters and non-smokers. The overall smoking rate reached 31.8% among males and 13.8% among females. An overall quitting rate of 20.1% was found among males and 2.4% among females. Current smoking and quitting rates were significantly and inversely associated with age among males and females. Smoking rates, which were highest in the 25–44 age group among both males and females, declined with age. The mean age of male and female quitters was significantly higher than of smokers

($P < 0.0001$). Mean age did not differ significantly between male and female smokers, quitters and non-smokers.

Table 2 demonstrates a significant association between smoking and educational level: males and females with 10–12 years of education were more likely to smoke ($P < 0.001$). Rates of smoking were the highest, although not significantly so, among males of North African origin and females of Israeli origin. No significant association was found between marital status and smoking or quitting either for males or females, but this association was significant for both genders together ($P < 0.05$).

Table 3 indicates no significant association for either males or females between age at starting to smoke or duration of smoking, and current smoking or quitting. The mean age at starting to smoke was lower among male smokers than female smokers ($P < 0.05$). No significant difference was found in the mean age at starting to smoke and the duration of smoking between smokers and quitters, for both genders. The number of cigarettes smoked per day was significantly associated with smoking and smoking cessation in males ($P < 0.01$), but not in females.

The results of multiple regression analysis indicated that among various variables such as age, gender, marital status, education, duration of smoking, the number of cigarettes

Table 1. Age-sex specific smoking status of the study population (%)

	Males				Females			
	Population (n=478)	Smokers (n=152)	Non-smokers (n=230)	Quitters (n=96)	Population (n=616)	Smokers (n=85)	Non-smokers (n=516)	Quitter (n=15)
Age (yr)								
<18	0.4	0.7	0	1.0	0.2	0	0.2	0
18–24	4.8	6.6	5.2	1.0	2.9	2.3	3.1	0
25–44	32.8	46.7	30.0	17.8	30.0	62.4	25.0	20.0
45–64	35.2	35.5	32.6	40.6	35.2	29.4	36.4	26.7
≥65	26.8	10.5	32.2	39.6	31.7	5.9	35.3	53.3
Total (%)	100	31.8	48.1	20.1	100	13.8	83.8	2.4
Mean age (SD)	51.5 (17)	44.6 (14.1)	52.9 (17.6)	58.7 (15.9)	53.3 (16.6)	43.2 (12.2)	54.9 (16.6)	60 (16.4)

Table 2. Characteristics of smokers, quitters and non-smokers

	Males			Females			Total*		
	Smokers (n=152) %	Non-smokers (n=230) %	Quitters (n=96) %	Smokers (n=85) %	Non-smokers (n=516) %	Quitters (n=15) %	Smokers (n=237) %	Non-smokers (n=746) %	Quitters (n=11) %
Marital status									
Married	83	88	90	84	73	67	83	78	87
Unmarried	17	12	10	16	27	33	17	22	13
Education**									
<10 yr	20	31	27	6	32	20	15	32	26
10–12 yr	65	48	56	73	46	60	68	47	57
≥12 yr	15	21	17	21	22	20	17	21	17
Country of origin									
Israel	27	9	12	46	9	0	34	9	10
Europe/S. Africa	23	19	26	15	20	54	20	20	30
North Africa	30	40	42	34	39	33	31	39	41
Russia	20	32	20	5	32	13	15	32	19

* $P < 0.05$ for marital status

** $P < 0.05$ for males, $P < 0.001$ for females, $P < 0.001$ for total.

Table 3. Smoking habits of smokers and quitters

	Males		Females	
	Smokers (n=152) No. (%)	Quitters (n=96) No. (%)	Smokers (n=85) No. (%)	Quitters (n=15) No. (%)
Age at starting to smoke (yr)				
<17	68 (44.7)	44 (45.8)	27 (31.8)	6 (40)
≥17	84 (55.3)	52 (54.2)	58 (68.2)	9 (60)
Mean age (SD)	18.0 (4.6)	18.7 (8.7)	20 (6.6)	23 (11.7)
Duration of smoking (yr)				
1–19	46 (30.3)	28 (29.2)	39 (45.9)	7 (46.7)
20–39	74 (48.7)	52 (54.2)	33 (38.8)	6 (40.0)
40–59	28 (18.4)	13 (13.5)	13 (15.3)	2 (13.3)
≥60	4 (2.6)	3 (3.1)	0	0
Mean (SD)	26.7 (14.1)	27.8 (12.6)	23.1 (12.6)	21.3 (13.4)
Cigarettes/day*				
<25	92 (60.5)	41 (42.7)	63 (74.1)	11 (73.3)
≥25	60 (39.5)	55 (57.3)	22 (25.9)	4 (26.7)
Mean (SD)	25.9 (15.5)	31.8 (17.4)	18.3 (13.4)	21.3 (20.1)

* $P < 0.01$ for male smokers vs. quitters

smoked per day, and age at starting to smoke, the most significant factors explaining 68% of the variance in smoking and quitting status were gender ($P < 0.001$) and the number of cigarettes smoked per day ($P < 0.05$).

Table 4 presents the patients' reasons for quitting. The most common reason was the appearance of a new sign of illness or the development of a new chronic disease, followed by a physician's recommendation to stop smoking.

Discussion

This study found an overall smoking prevalence of 31.8% among males and 13.8% among females, while smoking cessation rates reached 20% among males and 2.4% among females. A 1990 report found the smoking prevalence to be 31–55% among males of Israeli origin and 20–31% among females, while the quitting rate was 22.9% among males and 9.5% among females [8–11]. In addition, the Israeli CORDIS Study indicated that the prevalence of smoking ≥10 cigarettes/day in 1992 reached 34.9% among males aged 20–44 years and 23.4% in those aged 45–64 years, and 12.0% among females aged 20–44 years and 8.1% in those aged 45–64 [14]. In the United States, 1993 smoking rates reached 27.7% among men and 22.5% among women [15]. In Australia in 1992, 28.8% of men and 23.8% of women were current smokers.

Although direct comparisons cannot be made between the present study and those carried out previously, it seems that the general trend indicates a decline in smoking prevalence among males and females over 20 years. Meanwhile, rates of smoking cessation declined in females, although there was no significant change in males.

In this study, similar to the findings of other reports [16], smoking rates declined with age. Also, there was no significant association between marital status and smoking

Table 4. Reasons for smoking cessation among 111 ex-smokers

Reasons (n=132)	No. (%)*
Diseases: total	80 (60.6)
Acute respiratory symptom**	45 (34.1)
Acute myocardial infarction***	6 (4.6)
Stroke***	4 (3.0)
Asthma***	4 (3.0)
Cancer***	5 (3.8)
Operation, any reason	5 (3.8)
Other diseases or symptoms****	11 (8.3)
Doctor's advice	19 (14.4)
Family/friend pressure	8 (6.1)
Media influence	5 (3.8)
Pride	13 (9.8)
Psychological, traumatic event	5 (3.8)
No money for cigarettes	2 (1.5)

* One reason – 90 (81.1%), two reasons – 21 (18.9%) for smoking cessation.

** Acute respiratory symptom including cough, shortness of breath, sore throat.

*** A new diagnosis.

**** A new symptom or diagnosis of hypertension, diabetes, nephrolithiasis, headache, chest pain, vision disturbances.

or stopping, either for males or females, but this association was significant for both genders together. Previous surveys found the highest smoking rates and lowest quitting rates among both divorced and separated subjects [8].

We found an association between level of education and smoking: subjects with 10–12 years of education were more likely to smoke than those with less or with more education. In the United States the prevalence of smokers with ≤8 years of education was significantly lower than that of smokers with 9–15 years of education; however, among subjects with ≥9 years of education, prevalence varied inversely with the educational level. For all groups, the prevalence of smoking was highest among males who dropped out of high school [15]. Education was also inversely related to smoking in Australia [3].

The present study found that the proportion of smokers was highest among males of North African origin and females of Israeli origin. Further inquiry into this issue was difficult since more information was needed to examine smoking habits in relation to immigration status. In a previous survey carried out in 1990, the smoking rate was found to be highest among subjects of Israeli origin, lower among those of Asian-African origin, and lowest among those of European origin [11]. In the United States, smoking prevalence was highest among American Indians/Alaskan Natives and lowest among Asians/Pacific Islanders [15].

The present study found that male quitters smoked significantly more cigarettes per day than both female quitters and current male and female smokers. Thus, it appears that heavy male smokers were more likely to quit than light male and female smokers. In contrast to our findings, Garvey et al. [17] concluded that smoking cessation was progressively lower at higher cigarette consumption

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