Smoking Habits among Israeli Hospital Doctors: a Survey and Historical Review

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ABSTRACT: **Background:** Smoking is a serious health issue worldwide. Smoking trends among physicians predict similar trends in the general population. Little is known about current smoking rates among physicians.

Objectives: To investigate current smoking trends among Israeli physicians.

Methods: All practicing physicians at a tertiary university-affiliated medical center in central Israel were invited to complete a Web-based questionnaire on smoking habits and smoking-related issues via the institutional email. Findings were compared to those in the general population and between subgroups.

Results: Of the 90 responders (53 male, 88 Jewish), 54 (60%) had never smoked, 21 (23.3%) were past smokers, and 15 (16.7%) were current smokers. The rate of current smokers was lower than in the general population. The proportion of current smokers was higher among residents than attending physicians and among physicians in surgical compared to medical specialties. Past smokers accounted for 17.9% of the residents (average age at quitting 26.2 years) and 28.1% of the attending physicians (average age at quitting 33.0 years). Non-smokers more frequently supported harsh anti-smoking legislation.

Conclusions: The rate of smoking is lower in physicians than in the general population but has not changed over the last 15 years. Anti-smoking programs should particularly target physicians in surgical specialties.

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Smoking is a serious health issue worldwide. Each year 5 million people die as a result of smoking, with 1 of every 10 adult deaths attributed to smoking [1]. Despite considerable progress in the treatment of tobacco-related diseases, the best way to reduce one's risk is to stop smoking. Research has shown that medical interventions can be effective in helping patients quit smoking [2], and that physicians play a special role through guidance and counseling and as exemplars of healthy behavior.

Information about physicians' own smoking habits can provide insight into the success rates of smoking-prevention programs [3]. Physicians can best persuade patients to quit if they themselves do not smoke [4]. In addition, studies have shown that a decline in smoking rates among physicians often precedes a similar reduction in the general population [5,6]. It also sends an important message to the community about the dangers of tobacco use and the benefits of quitting.

In 2009, a population-based survey in Israel found that 22.8% of Israeli adults were smokers [7]. Sector analysis yielded smoking rates of 27.9% among Jewish males and 16.6% among Jewish females; corresponding rates among Arabs were 48.8% and 5.2%. In all subgroups except Arab males, smoking rates had declined over the last decade. Further studies have shown that the greatest change in smoking rates occurred in the academic Jewish population [8].

Although physicians are known to smoke less than the rest of the population [9], only a few studies have assessed the smoking habits of Israeli physicians. The most recent was conducted over 15 years ago by Samuels [10], who showed that 15.8% of hospital physicians were smokers, with similar rates for males and females. This constituted a considerable decrease from the 27% rate reported in 1971 [11]. It was also lower than reported for physicians in Denmark, Italy, France, Japan and China, but higher than reported for physicians in the United States, United Kingdom, Australia, and Finland [12]. On analysis by specialty, Samuels [10] found that 40% of radiologists, 25% of surgeons, 25% of anesthetists, 8% of internists, and 8% of pediatricians were smokers. Studies in other countries showed different relative rates [13]. For example, in China, where 15.7% of physicians were smokers, rates ranged from zero for obstetricians and gynecologists to 5.1% for internists, rising to 32.6% for surgeons. The purpose of the present study was to investigate current smoking habits and attitudes toward smoking among physicians in a major urban medical center in Israel.

SUBJECTS AND METHODS

A cross-sectional anonymous survey design was used. An invitation to complete a Web-based questionnaire (hosted on Google Docs: docs.google.com) was sent through the insti-

Table 1. Breakdown of smoking status according to professional status and specialty*

Physicians (%)	Non-smokers			Current smokers	Total
	Never smoked	Past smoker	Total		
Professional status					
Intern	5 (100%)	0	0	0	5
Resident	15 (53.6%)	5 (17.9%)	20 (71.4%)	8 (28.6%)	28
Attending physician	34 (59.6%)	16 (28.1%)	50 (87.7%)	7 (12.3%)	57
Medical specialty	24 (70.6%)	6 (17.6%)	30 (88.2%)	4 (11.8%)	34
Internal medicine	13 (72.2%)	4 (22.2%)	17 (94.4%)	1 (5.6%)	18
Pediatrics	8 (80%)	1 (10%)	9 (90%)	1 (10%)	10
Surgical specialty	13 (46.4%)	7 (25%)	20 (71.4%)	8 (28.6%)	28
Ear, Nose, Throat	5 (45.5%)	3 (27.3%)	8 (72.7%)	3 (27.3%)	11
Obstetrics/Gynecology	2 (40%)	1 (20%)	3 (60%)	2 (40%)	5
Anesthesiology	5 (83.3%)	1 (16.7%)	6 (100%)	0 (0%)	6

*Only specialties with five or more responders are shown

Table 2. Response of Israeli physicians to open questions by smoking status

	Non-smokers				
	Never smoked	Past smoker	Total	Current smokers	Total
Should cigarettes be restricted to adults above 18 years old?					
Yes	45 (83.3%)	17 (81%)	62 (82.7%)	13 (86.7%)	75 (83.3%)
No	7 (13%)	2 (9.5%)	9 (12%)	0 (0%)	9 (10%)
No opinion	2 (3.7%)	2 (9.5%)	4 (5.3%)	2 (13.3%)	6 (6.7%)
Should cigarette advertisements be banned?					
Yes, always	44 (81.5%)	14 (66.7%)	58 (77.3%)	10 (66.7%)	68 (75.6%)
Only when minors are exposed to them	0 (0%)	1 (4.8%)	1 (1.3%)	2 (13.3%)	3 (3.3%)
No	8 (14.8%)	4 (19%)	12 (16%)	2 (13.3%)	14 (15.6%)
No opinion	2 (3.7%)	2 (9.5%)	4 (5.3%)	1 (6.7%)	5 (5.6%)
Should smoking in public places be banned?					
Yes, always	46 (85.25)	20 (95.2%)	66 (88%)	7 (46.7%)	73 (81.1%)
Yes, except in pubs	7 (13%)	1 (4.8%)	8 (10.7%)	6 (40%)	14 (15.6%)
No	1 (1.9%)	0 (0%)	1 (1.3%)	2 (13.3%)	3 (3.3%)
Should a physician be a role model for smoking avoidance?					
Yes	51(94.4%)	15 (71.4%)	66 (88%)	12 (80%)	78 (86.7%)
No	1 (1.9%)	3 (14.3%)	4 (5.3%)	3 (20%)	7 (7.8%)
No opinion	2 (3.7%)	3 (14.3%)	5 (6.7%)	0 (0%)	5 (5.6%)
Does it bother you to see doctors smoking?					
Yes	47 (87%)	17 (81%)	64 (85.3%)	8 (53.3%)	72 (80%)
Only around patients	4 (7.4%)	1 (4.8%)	5 (6.7%)	4 (26.7%)	9 (10%)
No	3 (5.6%)	3 (14.3%)	6 (8%)	3 (20%)	9 (10%)
Do you advise your patients to quit smoking?					
Always/most of the time	50 (92.6%)	20 (95.2%)	70 (93.3%)	12 (80%)	82 (91.1%)
Rarely/Never	4 (7.4%)	1 (4.8%)	5 (6.7%)	3 (20%)	8 (8.9%)

tutional email system to all practicing physicians at Rabin Medical Center, a tertiary university-affiliated hospital in Israel. Items covered basic demographic and occupational data, smoking status (current smoker, past smoker, never smoked), and attitudes regarding advising patients about the benefits of quitting smoking, anti-smoking and smoking advertisement legislation, physicians who smoke, and the responsibilities of the physician as a role model. In addition, current smokers were questioned on the number of cigarettes smoked per day and past quitting attempts, and current and past smokers were asked at what age they started smoking.

Chi-square test was used to compare results of the survey to data on the general population published by the Israel Ministry of Health [7]. Subgroups of the study population were compared using Fisher's exact test. The limit for significance was 0.05 ($P < 0.05$). The study was approved by the Institutional Review Board.

RESULTS

Ninety physicians completed the survey, 53 (58.9%) male and 47 (41.1%) female. The average age was 44.9 years for all responders, 45 for non-smokers and 39 for current smokers. All but two of the physicians were Jewish. Fifty-four physicians (60%) had never smoked, 21 (23.3%) were past smokers, and 15 (16.7%) were current smokers. The difference in the rate of current smokers between the study sample and the general Israeli population (22%) [7] was statistically insignificant ($P = 0.22$). Among the male physicians 18.9% were current smokers, and among the female physicians 13.5% ($P = 0.36$). Table 1 shows a breakdown of the results by professional status (residents vs. attending physicians) and specialty. Rates of current smokers were 28.6% for residents and 12.3% for attending physicians ($P = 0.06$). Internists were less likely to be smokers than their peers in surgical specialties (11.8% vs. 28.6%), but the difference did not reach statistical significance ($P = 0.09$). Interestingly, none of the anesthesiologists were smokers, although the size of this subgroup was small (n=6). Eight of the 15 doctors who were current smokers had tried to quit in the past, usually several times.

The average age of quitting among past smokers was 31.4 years. Analysis by professional status showed that 5 residents (17.9%) and 16 attending doctors (28.1%) were past smokers, and their average age at quitting was 26.2 and 33 years, respectively. The reasons given by responders for quitting smoking fell into three main categories: a) health-related (e.g., pregnancy, general bad feeling, poor physical shape), b) social-related (spouses and friends who had stopped smoking), and c) profession-related (improper habit for a physician's image). Nine of the 36 physicians who were current or past smokers had begun smoking after starting medical school.

Table 2 presents the physicians' responses to the subjective items, by smoking status. Eight physicians reported that they never/rarely advised their patients to quit smoking, for several reasons (responders could give more than one reason): they themselves smoke (n=2), they felt uncomfortable doing so (n=2), they believed it would be useless (n=2), or they believed the issue was irrelevant in their specialty (n=3, including a pediatrician and an orthopedic surgeon; the spe-

cialty of the third physician was unknown). One physician believed that smoking adds to the quality of life.

DISCUSSION

Our study surveyed smoking habits among Israeli physicians practicing in a major hospital. Smoking rates among physicians were lower than in the general population, albeit insignificantly, possibly due to the small sample size. Although the lower rate of smoking relative to the general population was encouraging, it was disheartening to find that the rate of smoking has not changed since the last survey of Israel physicians performed 15 years ago. During this period, the smoking rate in the general population dropped from 32% to 22% [7]. Given that trends of smoking rates among physicians predict smoking rates in the general population, our findings raise concern regarding a reversal of the above mentioned downward shift [5,6]. Also noteworthy is the higher rate of smokers among residents than among attending physicians. This finding might be explained by the lower average age of quitting among the residents. The average age of residents in our survey was 35 years. By this age, eight of the attending physicians had just quit or were still smoking. Thus, the rate of smoking among physicians who quit at an older age (≥ 35 years) or not at all was 26.3% for attending physicians compared to 28.6% for residents.

As in the study by Samuels [10], smoking rates were lower among physicians in medical than surgical specialties. This information is useful in defining target populations for campaigns to lower smoking rates among physicians.

In response to the items on public policy issues, a greater percentage of non-smokers than smokers supported harsher anti-smoking measures, particularly banning smoking in public places. The non-smokers were also more bothered when they saw other physicians smoking [Table 2].

Our study had several limitations. First, our survey was limited to physicians at a single medical center in central Israel. Rates of smoking among physicians working in other parts of the country, especially rural areas, may be different. Second, all but two of the participants in our survey were Jewish. In Israel, the Arab population has a higher rate of smoking than the Jewish population [7]. Therefore, we would expect Arab physicians to have a higher rate of smoking than Jewish physicians. Third, the small sample size restricted comparisons with the general population and among subgroups.

In conclusion, the present study describes the results of a survey designed to assess the smoking habits of physicians in a major Israeli hospital. We found that the rate of smoking among physicians is lower than in the general population, but it has not changed in the 15 years since the last survey. These data are worrying in view of earlier findings showing that trends in physicians' smoking habits predict those of the general population. Our study stresses the need for a renewed effort to promote smoking cessation among doctors, especially surgical specialists, to ensure both their health and the health of the rest of the population.

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"In science it often happens that scientists say, "You know that's a really good argument; my position is mistaken," and then they would actually change their minds and you never hear that old view from them again. They really do it. It doesn't happen as often as it should, because scientists are human and change is sometimes painful. But it happens every day. I cannot recall the last time something like that happened in politics or religion"

Carl Sagan (1934-1996), American astronomer, astrophysicist, cosmologist, author, science popularizer and science communicator in astronomy and natural sciences. He spent most of his career as a professor of astronomy at Cornell University where he directed the Laboratory for Planetary Studies