

Cigarette Smoking among Health Care Workers at King Hussein Medical Center

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OBJECTIVE: The purpose of the study was to investigate the prevalence of smoking among health care workers (HCWs) at King Hussein Medical Center (KHMC), the biggest tertiary-care center in Jordan.

METHODS: Data were collected using a self-reported questionnaire on cigarette smoking distributed among 760 HCWs. Questions were designed to collect various demographic parameters and different aspects related to cigarette smoking.

RESULTS: Six hundred HCWs returned the completed questionnaire. Responders were divided into 3 groups; physicians, 260 (43%); nurses, 250 (42%); and other HCWs, 90 (13%). Mean age (\pm SD) for the whole sample was 35.3 ± 6.9 years. Men constituted 52%. The overall prevalence of smoking was 65%. Fifty-six percent of smokers smoked daily, with a mean consumption of 10 cigarettes per day. Smoking was more common among men (82%) than women (47%). The 31- to 40-year age group constituted nearly half the population studied; 58% of HCWs in this category were current smokers. In the physician group, the highest smoking rate was observed among family practitioners working in the emergency department (75%). Of the internists, 44% were current smokers. There was no statistical difference between the resident and specialist subgroups in this category ($P = .45$). All pulmonologists were nonsmokers, the second-lowest smoking rate was seen in the dermatologist subgroup (10%). The women in the nursing group had a smoking rate of 17% compared with the 49% of the men in the nursing group who smoked. In the other HCW group, 70% smoked cigarettes.

CONCLUSIONS: Our results showed a very high percentage of cigarette smoking among HCWs at KHMC. Smoking cessation programs should be introduced among Jordanian physicians. *Journal of Hospital Medicine* 2008;3:281-284. © 2008 Society of Hospital Medicine.

KEYWORDS: health care workers, smoking and prevalence.

Smoking represents the single most important cause of premature death and potentially lost years of life in the developing countries. Cigarette smoking causes more than 350,000 deaths each year in the United States and more than 4.9 million premature deaths worldwide.¹ Death as a consequence of smoking is by no means limited to the elderly. Tobacco is the largest single cause of premature death and accounts for 3 of 10 of all deaths that occur among smokers and nonsmokers between the ages 35 and 69.² Because most health professionals deal with different smoking-related health problems, they make up the sector with the greatest potential to influence reducing smoking among their patients if they can show a positive attitude toward smoking-cessation intervention.³ Tobacco smoking by health care workers has a negative influence on the general population.^{3,4} The World Health Organization (WHO) has advocated

TABLE 1
Smoking Status According to Sex

Smoking status	Men (n = 310)		Women (n = 290)		Total (n = 600)	
	n	%	n	%	n	%
Current smoker	238	77	96	33	334	56
Occasional smoker	17	5	40	14	57	9
Ex-smoker	12	4	30	10	42	7
Nonsmoker	43	14	124	43	167	28

that physicians should not smoke cigarettes, and surveys on this issue should be conducted among medical professionals.³⁻⁵ In Jordan, the prevalence of smoking is high and is increasing among women, but there are no data about the prevalence of smoking among physicians and other health care workers (HCWs).⁵ As members of an antismoking committee working at King Hussein Medical Center (KHMC) we realized that before applying any tobacco control strategy, it was important to understand the prevalence of smoking among HCWs at our center. To our knowledge, no representative survey of smoking among physicians in Jordan has been reported.

This study describes the prevalence of cigarettes smoking among HCWs in the largest tertiary-care hospital in Jordan.

METHODS

The study was approved by the local ethics committee at KHMC and was conducted between June 1999 and September 1999. The study involved 600 representative samples of HCWs at KHMC. Subjects were divided into 3 groups according to their professions (physicians, nurses, and other professions). Each subject was interviewed personally. Questions were designed to obtain various demographic data and cigarette smoking characteristics. All other forms of tobacco consumption were not included into the questionnaire. Questions addressed various factors such as the age at which smoking was started and its duration and the number of cigarettes smoked per day. We defined smoking status as current smoker, occasional smoker, past smoker, or never smoker, according to WHO's 1995 definitions.⁴ Current smokers were those who had smoked at least 100 cigarettes and who were currently smoking on a daily basis. Occasional smokers were those who did not

TABLE 2
Smoking Status According to Age Group

Smoking status	Age group					
	<30 Years		31-40 Years		>40 Years	
	n	%	n	%	n	%
Current smoker	92	54%	170	58%	72	52%
Occasional smoker	19	11%	22	8%	16	12%
Ex-smoker	10	6%	12	4%	20	14%
Nonsmoker	49	29%	88	30%	30	22%
Total	170		292		138	

smoke daily. Past (ex-)smokers were those nonsmokers who previously smoked every day for 6 months or more. The rate of cigarette smoking was calculated for each age group and for different medical specialties. Statistical analysis was performed with Statistical Package for Social Sciences 10.0 software (SPSS Inc., Chicago, IL). The χ^2 test was used to determine statistical significance. The 2-tailed significance level was set at 5% ($P < 0.05$).

RESULTS

Among the 600 respondents, there were 310 women (52%) and 290 men (48%), of whom 260 (43%) were physicians, 250 (42%) were nurses, and 90 (15%) were other HCWs. The total prevalence of smoking was 65%, ranging from 10% in the dermatologist group to 75% in the family practitioner group. We learned that 52% of smokers started before age 21 and that 78% started their habit during the first 2 years of college. The most common motive for starting smoking was "pleasure" encouraged by peer influence. Eighty-two percent of male HCWs smoked cigarettes compared with 47% of female HCWs. The prevalence of current smokers was 77% and 33% in men and women, respectively ($P = .002$). Forty-three percent of women did not smoke cigarettes, whereas only 14% of men did not smoke ($P = .002$; Table 1). Smoking prevalence did not significantly differ between age groups ($P = .38$; Table 2). The highest rate of smoking was among current smokers age 31-40 years (58%). Of the 260 physicians, 46% were smokers, (currently or occasionally), 29% were ex-smokers, and 25% were nonsmokers. Sixty-seven percent of physicians who were smokers smoked 11-20 cigarettes/day. There were fewer current smokers among physi-

cians than among other HCWs (46% versus 74%, respectively). The highest percentage of smokers in the physician group was observed among family practitioners working in the emergency room (75%). On the other hand, dermatologists had the lowest percentage (10%). Women in general had a lower prevalence than men in all categories. Of the female nurses, 17% were smokers, 13% were ex-smokers, and 70% were nonsmokers. The smoking rate of female nurses fell below their male counterparts (17% and 49%, respectively; $P = .002$). Seventy-eight percent of the nonsmoking physicians reported that they do ask their patients routinely about their smoking history and encourage them to discontinue this habit. Only 36% of the physicians who smoked provide such advice during their clinical practice.

DISCUSSION

Tobacco use, notably cigarette smoking, is the leading cause of an array of preventable diseases.¹⁻² It is estimated that approximately 30%–40% of the adult population worldwide smokes. The situation is particularly alarming in adolescents.^{5,6} The prevalence of smoking in developing countries now equals or exceeds the high smoking levels common in the United Kingdom 20 or 30 years ago.⁶ There is a significant difference in smoking prevalence between socioeconomic groups in the Western world. For professional people the prevalence is now 16%, whereas for unskilled manual workers the prevalence is 48%.⁷ HCWs are important opinion leaders in the community, and their behavior more than their words has a significant impact on the lifestyle of their patients.^{3,8-9} It is therefore discouraging to learn that so many doctors and nurses still smoke. The smoking habits of health staff members may influence their attitudes toward patients.⁸⁻¹⁰ Numerous international studies have addressed the issue of smoking among physicians and other HCWs.⁸⁻¹⁶ In a study conducted by Ohida et al.,⁸ the prevalence of smoking among Japanese physicians was 27.1% for men and 6.8% for women, about half the general population in Japan (male, 54.0%; female, 14.5%). The prevalence of smoking varied in other industrialized countries: in the United States, the prevalence was 3% of men and 10% of women⁹; in the United Kingdom, it was 4% of men and 5% of women¹⁰; in France, 33% of men and 24% of women;¹¹ and in the Netherlands, 41%

of men and 24% of women.¹² Approximately 40% of Italian general practitioners and approximately 45% of their Spanish colleagues also smoke.¹³ There are limited published data addressing the issue of cigarette smoking among physicians and other HCWs in various Arab countries. Our results showed a higher rate of cigarette smoking among Jordanian physicians compared with that in the surrounding Arab countries.¹⁴⁻¹⁶ Physicians at KHMC have a very high prevalence of cigarette smoking—far above the results reported in the above-noted countries. It is comparable with that of unskilled manual workers in the Western world.^{2,5} It has been reported that the highest smoking prevalence among young women in the East Mediterranean region occurs in Jordan.¹⁷ Our study showed that the smoking rate among women at KHMC, especially among nursing staff, is much lower than that of men, but this might change in the coming years if antismoking measures are not applied and directed toward younger generations. Smoking practice widely varies among the nonmedical KHMC staff and is reaching a very dangerous and worrisome level. This study was the first to be conducted to calculate the prevalence of smoking among HCWs at the largest tertiary-care hospital in Jordan. A limitation of our study was that the number of responders included in this study might not fully represent the smoking status among HCWs in the country. However, the results raise some important issues to be discussed and analyzed further on a national level concerning this growing health problem. Physicians play an important role in accelerating the process of smoking cessation. Physicians should play an active role in the control of smoking by participating in public debate regarding smoking, both individually and through medical organizations. Nonsmoking physicians at KHMC were more active in asking patients about smoking habits than were those who smoked. The physician smokers were less critical of smoking than were the physician nonsmokers. Jordanian physicians do not fully comply with the rules against tobacco smoking in hospital. Smoking doctors frequently smoke in the hospital and do not counsel patients about smoking.^{10,11,13} Special effort is needed in the educational field concerning the issue of tobacco smoking for Jordanian physicians, and a strong initiative toward smoke-free hospitals would help spread the message. To promote antismoking measures among doctors

and nurses, it will be necessary to scrutinize the smoking habits and behavior of medical and nursing students¹⁸ and to conduct effective antismoking and health education activities before they acquire the smoking habit.

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