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Increase in cigarette smoking and decline of anti-smoking counselling among Chinese physicians: 1987–1996*

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SUMMARY

Four hundred and ninety-three Chinese physicians were surveyed in 1996 on their cigarette smoking patterns, frequency and methods of anti-smoking counselling in Wuhan, capital city of Hubei Province, People's Republic of China. It was found that 61.3% of the male and 12.2% of the female physicians were current cigarette smokers, an increase of 20.4% for males and 149.0% for females in comparison with findings among physicians in the same city in 1987. Also, about one-third (30.2%) of the smokers reported a daily consumption of 20 cigarettes or more, showing a 23% increase. In addition, two-thirds (68.6%) of the physicians counselled their patients about cigarette smoking in the past year, representing a 25% decrease. In the 1987 sample, physicians' age and cigarette smoking status predicted the frequency of their anti-smoking counselling. In the present sample, these two variables are no longer associated with physicians' counselling frequency. Unchanged over the 9 years are the strong associations between physicians' counselling frequency and whether they perceived themselves as the most influential people in helping patients quit smoking, and whether they perceived their past counselling experiences as successful. In conclusion, the findings of the present study have provided valuable information on Chinese physicians' cigarette smoking patterns and their anti-smoking counselling practices. The dramatic increase in cigarette smokers among Chinese physicians, especially female physicians, in the past 9 years is alarming. The trend seems to be that more physicians are cigarette smokers now than 9 years ago, and fewer care to counsel their patients about cigarette smoking. These critical changes have raised new themes regarding future anti-smoking strategies in China.

Key words: Chinese physician smoking; patient education

INTRODUCTION

Zhao Jun of central Sichuan province expires from a ruptured intestine as he eats his eighth bowl of gruel trying to win a bet for a carton of cigarettes.

The Globe and Mail, 6 July 1996

Cigarette smoking has been a way of life for most adult Chinese males for centuries. Systematic research, however, was not conducted until 1984 (Chen, 1985), when a national survey revealed a smoking rate of 61% for males and 7% for females. Since then, smoking prevalence has been found to be steadily on the rise (Chen *et al*., 1991). In several large-sample surveys in various parts of China in the 1990s, researchers found that 70–87% of adult males were current cigarette smokers (Gao *et al*., 1991; Lubin *et al*., 1992; Qun and Dobson, 1992), a 10% jump from rates in the 1980s.

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As the number of cigarette smokers increases in China, so does the risk of tobacco-induced diseases. In a number of recent case-control studies in southern and northern China, cigarette smoking has been found to be the number one contributing factor to lung cancer (Liu, 1992; Lubin *et al*., 1992; Liu *et al*., 1993), cardiovascular diseases (Tao *et al*., 1992), and bladder cancer (Gao *et al*., 1991).

Are the Chinese aware of the health hazards of cigarette smoking? According to a recent study in rural China, only 30% were aware that smoking was harmful, and 10–20% thought that smoking would improve their health (as cited in Brooks, 1995). Among a random sample of 1856 petrochemical complex workers in urban Shanghai, Qun and Dobson (1992) found that 53% of the smokers and 76% of the non-smokers believed that smoking was harmful to health, but 'knowledge of which disease was associated with smoking' was poor.

What resources are available to educate the Chinese about 'the growing health crisis of tobacco-induced diseases' (Yu *et al*., 1995) and help smokers to quit? Yu *et al*. (1995) proposed that physicians should be in the forefront. A number of studies in the West have shown that physicians' efforts proved to be effective in reducing smoking among patients (Russel *et al*., 1979; Demers *et al*., 1990; Orleans *et al*., 1990; Ockene *et al*., 1994). In a 1987 study of 480 Chinese physicians in Wuhan, capital city of Hubei province, Li and Rosenblood (1996) found that 59% of the physicians had regularly counselled their patients about cigarette smoking. They also found that non-smoking and older physicians engaged in more anti-smoking activities than smoking and younger physicians. Physicians who perceived their past counselling experiences as successful undertook more counselling than those who thought otherwise. No gender difference was found with regard to physicians' counselling frequency, although a large gender difference was found in terms of their smoking status. Only 4.8% of female compared to 50.9% of male physicians were current cigarette smokers.

The purpose of the present study was to examine the trend of smoking prevalence among Chinese physicians as well as changes, if any, in the variables associated with their anti-smoking counselling practices from 1987 to 1996. The nature of the current study is a direct comparison to the results of a similar study conducted by Li and Rosenblood in 1987. Therefore, we explored the relationships between physicians' anti-smoking frequency and five variables, which were also examined in the 1987 research: physicians' own smoking status; age; gender; whether they perceived themselves as the most influential people in helping patients to quit smoking; and whether they thought that they were successful in their past counselling practices. In the following sections, Li and Rosenblood's 1987 study is referred to as 'the 1987 study'.

METHOD

Participants

All 598 physicians in a provincial hospital in Wuhan, capital city of Hubei province, the People's Republic of China were given the questionnaire with instructions that they should fill out the questionnaire individually. Of the 598 physicians, 493 (82.4%) returned the completed questionnaires. Among the 493 physicians, 66.9% were male and 33.1% were female. The majority (76.3%) of the participants were in the age groups of 20–29 and 30–39, with 2.9% over the age of 60. On average, the physicians had practised medicine for 11.1 years at the time of the survey. A large number of the participants were internal medicine doctors (43.6%) and surgeons (34.7%). The remaining 21.7% were specialists, e.g. gynaecologists (8.7%), dentists (2.6%), radiologists (1.8%) and acupuncturists (0.8%). Over half of the physicians were married (57.3%) and 38.6% were single.

Procedures

Two Chinese physicians from the same hospital distributed and collected the completed questionnaires between late February and early March 1996. Data were mailed to Canada in April 1996 and analysed using SPSS V7.0. Chi-square tests were used because the data were categorical.

Questionnaire and coding

The questionnaire used in this study was identical to the one employed in Li and Rosenblood's 1987 study, mainly a derivation of previous empirical studies (Kenney *et al*., 1988; Stretcher *et al*., 1991). In the present study, only the Chinese version of the questionnaire was utilized.

All the scales and coding systems employed in the present study were identical to those in Li

and Rosenblood's 1987 study. A physician was defined as a smoker if he or she reported that he or she 'occasionally', 'sometimes' or 'often' smoked, and non-smoking status was decided when a physician reported that he or she 'never' smoked.

RESULTS

Cigarette smoking habits of Chinese physicians in 1996 and 1987

Among the physicians who reported their smoking status in 1996, 44.8% were current cigarette smokers and 55.2% were non-smokers. In the 1987 sample, which included 480 physicians, 30.2% smoked and 69.8% were non-smokers. There is an increase in both male (61.3% versus 50.9%) and female smokers (12.2% versus 4.8%). Table 1 presents detailed comparisons between the samples of 1996 and 1987 regarding physicians' self-reported number of cigarettes consumed per day, attitudes towards quitting, past quitting experiences, as well as age at which they began to smoke.

As indicated in Table 1, most categories show obvious indications of change. In 1987, 7.7% (36/469) of physicians 'often' smoked, whereas in 1996, 13% (63/484) did. In 1987, 24.6% (35/142) reported that their daily consumption was more than 20 cigarettes. In 1996, 30.2% (64/212) reported a similar daily dosage. Only 1.7% (2/117) of the physicians in the 1987 sample wanted to smoke more. In contrast, 8.9% (19/214) of the physicians in the 1996 sample indicated an inclination to smoke more in future. In terms of age at which they began to smoke, 10.3% (10/97) in the 1987 sample reported that they began smoking before the age of 16 versus 22.9% (48/210) in the 1996 sample.

Cigarette smoking patterns and physicians' characteristics in the 1996 sample

Gender

Table 2 includes detailed information regarding physicians' smoking status and their characteristics. As shown in Table 2, cigarette smoking rate was significantly higher among male physicians (61.3%) than female physicians. However, male physicians did not smoke more heavily than

Table 1: Cigarette smoking patterns of Chinese physicians

	1987		1996	
	%	*n*	%	*n*
Physicians' smoking status				
Non-smokers	69.7	327/469	55.2	267/484
Seldom	14.7	69/469	22.1	107/484
Sometimes	7.9	37/469	9.7	47/484
Often	7.7	36/469	13.0	63/484
Self-reported number of cigarettes consumed per day				
<5	42.3	60/142	45.3	96/212
~5	17.6	25/142	11.3	24/212
~10	15.5	22/142	13.2	28/212
~20	21.1	30/142	19.8	42/212
>20	3.5	5/142	10.4	22/212
Attitudes towards quitting				
Want to quit	25.6	30/117	34.1	73/214
Want to decrease	42.7	50/117	45.3	97/214
The same amount	29.9	35/117	11.7	25/214
Want to increase	1.7	2/117	8.9	19/214
Past quitting experiences				
Tried to quit	52.6	69/131	46.4	97/209
Never tried	47.3	62/131	53.6	112/209
Age of starting smoking				
<16	10.3	10/97	22.9	48/210
16–20	57.7	56/97	51.4	108/210
21–25	16.5	16/97	16.2	34/210
>26	15.4	15/97	9.5	20/210

The values of *n* were based on the number of subjects responding to each question.

Table 2: Characteristics, cigarette smoking status and frequency of counselling by gender and age

	1987				1996			
	Smoking status 'cigarette smokers'		Frequency of counselling 'often or always'		Smoking status 'cigarette smokers'		Frequency of counselling 'often or always'	
	%	*n*	%	*n*	%	*n*	%	*n*
Gender								
Male	50.9	132/259	56.0	122/219	61.3	192/313	53.6	120/224
Female	4.8	10/208	63.0	121/191	12.2	19/156	66.4	81/122
Age								
20–29	33.6	36/107	45.0	39/87	36.3	85/234	57.2	99/173
30–39	34.0	46/137	54.0	67/124	51.5	68/132	58.6	58/99
40–49	19.1	19/99	66.0	56/85	59.2	29/49	47.2	17/36
50–59	20.5	16/78	73.0	51/70	54.9	28/51	61.1	22/36
60–69	40.9	9/22	68.2	15/22	28.6	4/14	66.7	6/9

The values of *n* were based on the number of subjects responding to each question.

female physicians. Twenty-nine percent of males compared to 31.6% of females reported a daily consumption of 20 cigarettes or more.

Males

Among males, the highest smoking rate was found in the 30–39 age group (72.1%) and lowest in the 60–69 age group (40.0%). The youngest age group (20–29) had the second lowest smoking rate (53.2%), followed by the 40–49 age group (66.7%) and the 50–59 age group (65.8%). Although the 30–39 age group had the highest smoking rate, the 40–49 age group produced the heaviest smokers. The majority (58.3%) of physicians aged 40–49 reported a daily consumption of 20 cigarettes or more, in comparison with 40.0% in the 60–69 age group, 37.5% in the 50–59 age group, 31.7% in the 30–39 age group and 14.1% in the 20–29 age group.

Females

Among females, the highest smoking rate was found in the 40–49 age group (33.3%) and lowest in the 60–69 age group (0%). The remaining three age groups (30–39, 20–29 and 50–59) had the following smoking rates, respectively, 11.6%, 10.9% and 11.1%. Although more female physicians in their 40s than other age groups were cigarette smokers, those in their 20s smoked the heaviest. Forty percent of those aged 20–29 reported a daily consumption of 20 cigarettes or more, in comparison with 33.3% in the 40–49 age group and 20.0% in the 30–39 age group. None of the female smokers aged 50 or above was a heavy smoker.

Age

As shown in Table 2, cigarette smoking rates varied from one age group to another, with the highest in the 40–49 age group (59.2%) and the lowest in the 60–69 age group (28.6%). Moreover, physicians aged 40–49 smoked most heavily. Over half (55.6%) reported a daily consumption of 20 cigarettes or more, in comparison with 40.0% in the 60–69 age group, 32.8% in the 30–39 age group, 32.1% in the 50–59 age group and 17.1% in the 20–29 age group.

Speciality

Physicians' speciality seems to have a strong association with their smoking status. Surgeons had the highest smoking prevalence (60.2%, 100/166). Thirty-five percent (75/214) of the internal medicine doctors smoked and 39.6% (40/101) of the specialists smoked. Although more surgeons smoked, they did not consume more cigarettes per day than physicians of other specialities.

Onset of smoking

The earlier a physician began cigarette smoking, the more likely he or she would become a heavy smoker. The percentage of heavy smokers, defined as a daily consumption of 20 cigarettes or more, was highest (51.1%) among those who began smoking before the age of 16, followed by those between the ages of 16 and 20 (29.9%).

Among those who started smoking between the ages of 21 and 25, and 25 or older, 12.5% and 10.5%, respectively, turned out to be heavy smokers.

Parental smoking status

About two-thirds (61.5%) of the physicians reported that either one or both parents were current smokers, and 38% had non-smoking parents. Twenty-four percent of the physicians said that their spouses were current cigarette smokers.

Comparisons of anti-smoking counselling practices between the 1996 and 1987 samples

When asked whether they had counselled their patients about cigarette smoking in the past year, 68.6% (335/488) in the 1996 sample answered affirmatively, whereas 85.6% (411/480) responded so in the 1987 sample. Among those who counselled their patients about cigarette smoking, it appeared that more physicians in 1996 than in 1987 thought that their anti-smoking efforts were successful. In the 1996 sample, 9.2% (33/358) felt that they were 'very successful' and 28.8% (103/358) 'somewhat successful', whereas in the 1987 sample, 2.9% (12/419) and 23.2% (97/418) categorized their endeavours as 'very successful' and 'somewhat successful', respectively.

The methods physicians used to counsel their patients about cigarette smoking seemed unchanged from 1987 to 1996. Eighty-four percent of the physicians in the 1996 sample versus 89% in the 1987 sample reported that their most frequently used methods were 'relating patients' illness with cigarette smoking' and 'warning patients about the hazard of cigarette smoking to health'.

Frequency of counselling and its correlates in 1996 and 1987

The relationship between physicians' counselling frequency and five variables: physicians' own smoking status; age; gender; perceived influence; and perceived success; which were explored in the 1987 sample were also examined in the 1996 sample.

Smoking status, age and gender

In the 1987 sample, physicians' own smoking status was highly correlated with their anti-smoking practices. Non-smoking physicians were more likely than smoking physicians to engage in anti-smoking counselling. However, in the 1996 sample, physicians' own smoking status was not associated with their counselling frequency ($p > 0.05$). Similarly, in the 1987 sample, physicians' age predicted the frequency of their efforts to advise patients about cigarette smoking. Older physicians were more likely than younger physicians to engage in anti-smoking practices. Nevertheless, in the 1996 sample, no relationship was found between physicians' age and their counselling frequency ($p > 0.05$). A significant difference regarding counselling frequency was found between male and female physicians [χ^2 (1, 346) = 5.3, $p < 0.05$] in the 1996 sample which was not present in the 1987 sample. In the 1996 sample, more female (66.4%, 81/122) than male physicians (53.6%, 120/224) 'often' or 'always' advised patients about cigarette smoking in the past year. Table 2 presents detailed information regarding physicians' counselling frequency and their cigarette smoking status, gender and age in both the 1996 and 1987 samples.

Perceived influence

In both the 1996 and 1987 samples, physicians were affected in their anti-smoking frequency by whether they perceived themselves as the most influential people to help patients quit smoking. Physicians who were more confident about their role in helping patients quit smoking engaged in significantly more anti-smoking counselling than those who were less so. Reported below are details regarding perceived influence in the 1996 sample. When physicians were asked who were the most influential people in helping patients quit smoking, only one-third (36.9%, 181/490) said 'physicians'; 36.7% (180/490) said 'wives'; 12.7% (62/490) 'friends', 3.1% (15/490) 'working unit leaders', 2.4% (12/490) said 'parents', and 2.4% (12/490) 'colleagues'. Nevertheless, physicians who perceived themselves as the most influential people in assisting patients to quit smoking tended to carry out more anti-smoking counselling than those who thought otherwise, and the difference was statistically significant [χ^2 (3, 355) = 32.1, $p < 0.0001$]. Among those who perceived physicians as the most influential, 71.1% (101/142) 'often' or 'always' counselled patients about cigarette smoking. On the other hand, those who perceived 'others' (e.g. wives

or working unit leaders) as the most influential, 47.9% (102/213) 'often' or 'always' advised patients about cigarette smoking. Zero-order correlation between perceived influence and physicians' anti-smoking counselling frequency was statistically significant ($r = 0.30$, $n = 355$, $p < 0.0001$).

Perceived success

In both the 1996 and 1987 samples, physicians who perceived their past anti-smoking practices as successful were inclined to undertake more counselling than physicians who perceived otherwise. Specifics regarding perceived success of the 1996 sample are reported below. Over two-thirds (69.8%, 95/136) of the physicians who felt their past counselling practices to be 'somewhat successful' or 'very successful', 'often' or 'always' carried out anti-smoking counselling. Less than half (49.3%, 107/217) of the physicians who felt their past counselling experience to be 'somewhat unsuccessful' or 'very unsuccessful', 'often' or 'always' performed anti-smoking counselling. The difference was statistically significant [χ^2 (9, 353) = 36.9, $p < 0.0001$]. Zero-order correlation between perceived success and physicians' anti-smoking counselling frequency, although small, was statistically significant ($r = 0.21$, $n = 353$, $p < 0.0001$).

In addition to the examination of the relationship between physicians' anti-smoking frequency and the above five variables, two more variables were explored in the 1996 sample: perceived exemplary role and perceived responsibility.

Perceived exemplary role

Did Chinese physicians think that they should set examples for their patients by not smoking? The majority (84.5%, 415/491) thought so and 15.0% (76/491) did not. The former carried out significantly more anti-smoking counselling than the latter [χ^2 (9, 308) = 87.9, $p < 0.0001$]. Sixty-two percent (197/317) of those who thought that physicians should set examples for their patients by not smoking 'often' or 'always' advised patients about cigarette smoking in the past year. In contrast, among physicians who thought otherwise, only 15.8% (6/38) 'often' or 'always' discussed cigarette smoking with patients in the past year. Zero-order correlation between anti-smoking counselling frequency and perceived exemplary role was statistically significant ($r = 0.43$, $n = 355$, $p < 0.0001$).

Perceived responsibility

When asked whether it was their responsibility to counsel patients about cigarette smoking, 84.7% (414/489) of the physicians agreed, whereas 15.3% (75/489) disagreed. Physicians who perceived it their responsibility to help patients quit smoking performed significantly more anti-smoking counselling than those who perceived otherwise [χ^2 (9, 353) = 89.8, $p < 0.0001$]. Of those who believed it was their responsibility to help patients quit smoking, 61.3% (192/313) 'often' or 'always' counselled their patients about cigarette smoking. In contrast, among those who did not consider it their responsibility to help patients quit smoking, only 25.0% (10/40) 'often' or 'always' engaged in anti-smoking counselling. Zero-order correlation between anti-smoking counselling frequency and perceived responsibility was statistically significant ($r = 0.44$, $n = 353$, $p < 0.0001$).

Perceived patients' smoking patterns and reasons for quitting in 1996

When asked about patients' smoking trends in the past year, over one-third (34.4%, 169/491) thought that it was on the rise, 35.2% (173/491) answered 'unchanged', and 30.3% (149/491) perceived a decreasing tendency. In terms of daily dosage of cigarettes consumed, over two-thirds (69.4%, 318/458) of physicians thought that most of their patients smoked 10–20 cigarettes daily, 11.3% (52/458) estimated 25 cigarettes or more, and 19.2% estimated nine cigarettes or less. According to these physicians, most Chinese smokers were moderate to heavy smokers. When Chinese physicians were asked 'so what would be the main reason for a Chinese patient to quit smoking', the majority (62.1%, 305/491) rated 'health', 17.9% (88/491) 'financial', 11.6% (57/491) 'family pressure' and 5.9% (29/491) 'social pressure'. Apparently social pressure was almost non-existent.

Suggested measures to limit smoking in the 1996 sample

The vast majority (93.4%, 456/488) of physicians thought that cigarette smoking was a universally accepted phenomenon in China. To reduce cigarette smoking, 95.1% (463/487) of them thought that there should be more regulations to limit smoking in public. Nonetheless, it was felt that smokers had ultimate control over their own

behaviour. If smokers did not make an effort to quit, 65.4% (310/474) of the physicians thought that no one or any anti-smoking rule would be able to help them.

DISCUSSION

Results of the 1996 sample indicate that 61.3% of male and 12.2% of female physicians were current cigarette smokers, a 20.4% increase for males and 149.0% for females in comparison with findings in the same city 9 years ago (Li and Rosenblood, 1996). In Li and Rosenblood's 1987 study, 50.9% of male physicians and *only* 4.8% of female physicians were cigarette smokers.

The rising tendency of cigarette smoking among physicians found in this study seems to be consistent with reports by the Chinese Academy of Preventive Medicine in a recent survey of physicians and nurses in five Beijing hospitals (as cited in Brooks, 1995). Furthermore, the smoking prevalence of 61.3% among male physicians in the present study seems to be in line with Geng's findings (Geng, 1995 as cited in Yu *et al*., 1995). In the Second National Smoking Survey carried out in the 1990s, Geng reported that 63% of the physicians were cigarette smokers.

In comparison with findings among Wuhan physicians in 1987, the percentage of heavy smokers has increased by 25% in the 1996 sample. In the 1987 sample, 24.6% of the physicians surveyed reported that their daily dosage was 20 cigarettes or more, whereas in the 1996 sample, 30.2% reported a similar dosage.

Another important finding of the present study is the significant inverse association between the age of onset of smoking and daily cigarette consumption. The younger a person was when they started smoking, the heavier he or she smoked. This finding bears a significant implication for prevention among teenagers. To reduce the number of heavy smokers in China, health education and prevention programs should target teens before they reach the age of 16.

Differing from the findings of the 1987 study were some predictors of the frequency of counselling practices by physicians. In the 1987 study, physicians' smoking status and age were significantly associated with counselling frequency, whereas in the 1996 study these two variables no longer predicted physicians' counselling frequency.

Similar to the results of the 1987 study, the present study found that physicians' counselling frequency was predicted by physicians' perceived success in past counselling activities and perceived influence in helping patients to quit smoking. In addition, the present study found that physicians' counselling frequency was predicted by their perceived responsibility and exemplary role in helping patients quit smoking. In the present study, the percentage of physicians who counselled their patients about cigarette smoking in the past year has dropped by 25% (68.6% versus 85.6%) in comparison with Li and Rosenblood's study (1996).

According to most physicians in the 1996 study, cigarette smoking is a 'universal phenomenon' in China and social pressure for smokers to quit is low. Indeed, there has never been *any* social pressure for cigarette smokers to quit. On the contrary, 'smoking is deeply entrenched in Chinese society' (Yu *et al*., 1995) due to the numerous roles cigarettes play on various occasions. For instance, passing out cigarettes among colleagues in work places is a way to show friendliness (sharing). Presenting and lighting a cigarette of a known brand to a working unit leader can serve important purposes, e.g. relaxing an existing tense relationship or smoothing the way for a promotion. To buy a carton of expensive cigarettes for one's male parent at festival times is highly appreciated and a common practice. In recent years, as Western cigarettes have poured into China, more and more Chinese, especially the young and newly rich, use cigarettes to serve another purpose: to show that they are fashionably westernized.

The dramatic increase in the number of female smokers found in this study is alarming. In Li and Rosenblood's 1987 study, only 4.8% of the female physicians were cigarette smokers, whereas in the present study, 12.2% of the females smoked. While male smoking has been widespread, female smoking is a new phenomenon in China. Due to the low smoking rate among females in the past, the consequences of expectant mothers' smoking on foetuses have never been an issue and are not well known in China. In a case-control study of 213 Chinese women who smoked during pregnancy, the incidence of low birth-weight was twice as high as that in the control group (Lam *et al*., 1992).

In summary, this research has found an increase in prevalence of cigarette smoking and a decline in anti-smoking counselling practices among Chinese physicians from 1987 to 1996. The findings of the study point out three important

implications for future anti-smoking strategies in China. First, anti-smoking campaigns should start in grade schools to prevent teenagers from starting cigarette smoking. Second, efforts should be made to raise awareness of the health consequences of cigarette smoking in the general population, thus exerting social pressure for smokers to quit. Lastly, physicians should be encouraged to increase anti-smoking counselling. In designing anti-smoking training brochures involving physicians' efforts, the following messages should be highlighted: (i) physicians are an important source for providing health information to patients; (ii) physicians have a responsibility to help patients quit smoking; (iii) physicians should set good examples by not smoking in front of patients; and (iv) physicians' advice is an important influencing factor in changing patients' cigarette smoking behaviours.

One apparent limitation of the 1996 study was the inability to study the same physicians who participated in the 1987 study. In addition, a response rate of 82.4% meant that 17.6% of the physicians did not return their questionnaires, and they may exhibit different patterns regarding their cigarette smoking habits as well their anti-smoking practices from those who returned the questionnaires. Therefore, generalization of the results should be cautious.

To conclude, the findings of the present study have provided valuable information on Chinese physicians' cigarette smoking patterns and their anti-smoking counselling practices. The dramatic increase in cigarette smokers among Chinese physicians, especially female physicians, in the past 9 years is alarming. The trend seems to be that more physicians are cigarette smokers now than 9 years ago, and fewer care to counsel their patients about cigarette smoking. These critical changes have raised new themes regarding future anti-smoking strategies in China.

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