

# Physician Smoking Status May Influence Cessation Counseling Practices

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## ABSTRACT

**Objective:** Smoking cessation counseling practices may differ between physicians who smoke and those who have quit or never smoked.

**Method:** Of 917 general practitioners (GP) in Montreal mailed self-report questionnaires in 2000 and 2004, 610 provided data on their smoking status and counseling practices.

**Results:** Seven percent were current smokers, 32% were former smokers, and 61% were never-smokers. Current smokers were more interested than never- or former smokers in learning about counseling methods (64%, 56%, 45%, respectively;  $p=0.018$ ). In multivariable analyses, current smokers were less likely than never-smokers to ascertain the smoking status of their patients (OR 0.6, 95% CI 0.2-1.6); to provide advice on how to quit (OR 0.6, 0.3-1.3); and to provide complete cessation counseling coverage (OR 0.5, 0.2-1.1). Former smokers were more likely to provide adjunct support (OR 1.5, 1.0-2.4).

**Conclusion:** GP smoking status was associated with the content of their cessation interventions with patients who smoke. Taking physician smoking status into consideration in the design of cessation training programs may improve cessation counseling interventions.

**Key words:** Physician smoking; cessation counseling; cross-sectional; mail questionnaire; logistic regression

La traduction du résumé se trouve à la fin de l'article.

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Primary care physicians have a unique opportunity to systematically deliver effective smoking cessation treatment to their patients who smoke,<sup>1,2</sup> and smoking cessation counseling by physicians is now considered to be an evidence-based practice. In the 2005 Canadian Tobacco Use Monitoring Survey (CTUMS), 73% of current smokers had visited a physician in the past year, but only 51% said they had received advice to quit or reduce smoking; and 57% were given information on smoking cessation aids.<sup>3</sup> Several physician-related characteristics are positively associated with favourable smoking cessation interventions, including: older age;<sup>4</sup> female gender;<sup>4,6</sup> working in urban areas<sup>4</sup> and in private settings;<sup>7</sup> positive beliefs and attitudes about the effectiveness of counseling;<sup>8-12</sup> favourable perceptions about patient responsiveness to advice;<sup>13,14</sup> perceived self-efficacy;<sup>7</sup> and having received training in smoking cessation.<sup>4,5</sup> A number of reports<sup>4,5,15-24</sup> suggest that physician smoking status relates to the quantity and quality of cessation counseling. In this analysis, we hypothesized that physicians who smoke have less favourable beliefs and attitudes and more perceived barriers to counseling than non-smoking physicians and would therefore be less likely to intervene with smokers.

## METHODS

Data were collected in two cross-sectional surveys of general practitioners (GPs) in Montreal. GPs were eligible to participate if: 1) their name was registered in the Quebec College of Physicians database, 2) they had an active license, and 3) they had provided patient care in Montreal in the year preceding the survey. English or French questionnaires were mailed to randomly selected GPs in April 2000 and May 2004. If questionnaires were not returned,

reminder postcards were mailed at three and five weeks after the initial mail-out. Non-respondents were then telephoned by one of the study investigators to encourage participation. Of 454 eligible participants in 2000, 316 returned a questionnaire; 302 of 463 eligible participants returned a questionnaire in 2004, for a total of 618 participants across years. Detailed information on the survey methods is available.<sup>8</sup>

## Study variables

Data were collected on the socio-demographic characteristics of GPs, their practice setting, smoking status, and psychosocial characteristics related to cessation counseling, including: knowledge, beliefs, and attitudes about counseling; self-efficacy to provide effective counseling; perceived barriers to counseling related to both the physician and patient; awareness of the "stages of change" model; interest in learning more about cessation methods and/or in updating skills; and past training in smoking cessation.

Cessation counseling practices in the past three months were measured through four indicators: 1) ascertainment of patient smoking status (8 items; Cronbach's  $\alpha=0.82$ ); 2) provision of advice

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**Table 1.** Socio-demographic Characteristics and Practice Profile of General Practitioners According to Smoking Status, Montreal, 2000/4

	Total (n=610) %	Never- smokers (n=370) %	Former Smokers (n=195) %	Current Smokers (n=45) %	p-value
Male	55	48	71	51	<0.001
Age, years					
<40	25	31	14	27	<0.001
40-54	52	50	54	60	
≥55	23	19	32	13	
Language					
French	76	73	80	89	0.021
English	24	27	20	11	
Year					
2000	51	51	48	67	0.072
2004	49	49	52	33	
Clinical setting*					
Solo	26	23	32	24	0.067
Group	48	48	46	56	0.500
Hospital	33	31	36	31	0.400
CLSC†	20	25	11	18	<0.001
Other	29	31	24	29	0.201

\* Categories are not mutually exclusive.

† Centre Local de Services Communautaires (community clinic).

on how to quit (6 items; Cronbach's  $\alpha=0.89$ ); 3) provision of adjunct support (4 items; Cronbach's  $\alpha=0.74$ ); and 4) provision of complete cessation counseling coverage (3 items; Cronbach's  $\alpha=0.70$ ). Scores for the first three indicators ranged between 1 and 6 (corresponding to whether or not the GPs provided counseling to all, almost all, more than half, less than half, a few, or none of their patients who smoke); we designated a score  $\leq 3$  (i.e., the GP provided counseling to all, almost all, or more than half of patients who smoke) as "favourable". Scores for the fourth indicator ranged between 1 and 5; again we designated a score  $\leq 3$  as "favourable" (i.e., the GP provided counseling for >2 minutes on each occasion, in at least 1 of 3 visits to more than half of smokers). Appendix 1 describes the items comprising each counseling practice.

### Data analysis

The association between GP smoking status and psychosocial characteristics was tested univariately. GP smoking status (never, former, current) was tested as an independent correlate of counseling practices in multivariable logistic regression analyses adjusting for study year, age, sex, language and clinical setting. Data from the two years (2000, 2004) were pooled together because the interaction between "year of study" and "smoking status" variables was not significant.

### RESULTS

A total of 618 (67% of 917 eligible) GPs returned a questionnaire. Data on smoking status were missing for 8 GPs, therefore the analytic sample included 610 GPs. Among these, 7% were current smokers (2% daily and 5% occasional), 32% were former smokers, and 61% were never-smokers. The proportion of current smokers declined from 10% in 2000 to 5% in 2004, while the proportion of former smokers was 31% in 2000 and 34% in 2004. Sex, age, language and clinical setting were significantly associated with GP smoking status (Table 1).

Overall, 91% of GPs ascertained the smoking status of their patients; 76% provided advice on how to quit, but only 26% provided adjunct support (i.e., offered written educational materials, follow-up visits, and referred to community resources). Eighty-two

**Table 2.** Odds Ratio (95% Confidence Interval) for GP Smoking Status for Selected Indicators of Smoking Cessation Counseling (n=610)

GP Smoking Status	OR <sub>crude</sub> (95% CI)	OR <sub>adj</sub> * (95% CI)*
Ascertains smoking status of patients		
Never	1.0	1.0
Former	0.8 (0.5-1.7)	1.0 (0.5-2.0)
Current	0.6 (0.2-1.4)	0.6 (0.2-1.6)
Provides advice on how to quit		
Never	1.0	1.0
Former	0.9 (0.6-1.4)	1.1 (0.7-1.7)
Current	0.6 (0.3-1.3)	0.6 (0.3-1.3)
Provides adjunct support		
Never	1.0	1.0
Former	1.1 (0.7-1.6)	1.5 (1.0-2.4)
Current	1.1 (0.6-2.3)	1.2 (0.6-2.5)
Provides complete cessation counseling coverage		
Never	1.0	1.0
Former	1.1 (0.7-1.7)	1.0 (0.6-1.7)
Current	0.6 (0.3-1.2)	0.5 (0.2-1.1)

\* Adjusted for year (2000, 2004), sex, age, language and type of clinical setting.

percent provided complete cessation counseling coverage within their practice.

Two thirds (69%) of current smokers had favourable beliefs and attitudes about cessation counseling compared to approximately 83% of former and never-smokers ( $p=0.08$ ). Smoking status was not associated with self-efficacy, physician or patient barriers, awareness of the "stages of change" model, or training in cessation counseling (data not shown). Current smokers were however more interested in learning about methods to support cessation attempts than GPs who had never smoked or who had quit (64%, 56%, and 45% respectively;  $p=0.018$ ).

GPs who smoked were markedly less likely than never-smokers to ascertain the smoking status of their patients (OR 0.6, 95% CI 0.2-1.6), to provide advice on how to quit (OR 0.6, 0.3-1.3), and to provide complete cessation counseling coverage (OR 0.5, 0.2-1.1) within their practices (Table 2). Former smokers were more likely than never-smokers to provide adjunct support (OR 1.5, 1.0-2.4).

### DISCUSSION

The proportion of current smokers among GPs in Montreal declined from 10% in 2000 to 5% in 2004. Steady declines in smoking among physicians have been reported in most developed countries, with the prevalence as low as 2% in the USA in 2000.<sup>25</sup> The prevalence reported herein is similar to the 3% reported in the 2008 Canadian Physician Health Survey,<sup>26</sup> but lower than the 22% reported for Canadian physicians in the international "Smoking: The Opinions of Physicians" (STOP) survey in 2006.<sup>24</sup>

In our analysis, smoking status was associated with several cessation counseling practices. Compared to non-smokers, GPs who smoke were less likely to ascertain the smoking status of their patients, to provide advice on how to quit, and to provide complete counseling coverage. While the confidence intervals on the estimates include unity (likely related to the small number of smokers), the ORs indicate very strong negative associations between smoking status and these three components of the counseling intervention.

While fewer current than never-smokers in this sample had favourable beliefs and attitudes about counseling, there was little difference between groups in the other psychosocial characteristics

## Appendix 1.

Ascertaining smoking status was measured by eight items (Cronbach  $\alpha=0.82$ ): (i) Do you use a system (such as a medical problem list, stamp or label,...) to identify patients who smoke? Responses were: always, usually, sometimes, rarely, never. In the past 3 months, for how many patients in each of the following patient groups did you ascertain the smoking status? (ii) new patients on the first visit, (iii) patients who were smokers at their last visit, (iv) recent ex-smokers, (v) adolescents (age 13-19), (vi) patients presenting with smoking-related symptoms or diseases, (vii) patients not presenting with smoking-related symptoms or diseases, and (viii) in the past 3 months, for how many of your new patients who smoke did you ascertain number of cigarettes smoked per day? Responses were: all, almost all, more than half, about half, less than half, and few/none. Scores 1 to 6 were assigned to each response choice. Their prorated sum was dichotomized into favourable outcome (i.e., score of 3 or less, which generally corresponded to responses "all; almost all; and, more than half") and unfavourable outcome (i.e., score of 4 or more, which generally corresponded to "about half; less than half; and, few/none").

Provision of advice on how to quit was measured by six items (Cronbach  $\alpha=0.89$ ): During the past 3 months, for how many of your patients who did not want to quit did you: (i) express concern about their continued smoking, (ii) recommend that they think about quitting; and during the past 3 months, for which patients who were preparing to quit smoking did you: (iii) discuss withdrawal symptoms, weight gain or other concerns, (iv) discuss strategies to quit smoking, (v) discuss setting a quit date, and (vi) recommend nicotine replacement therapy. Responses were: all, almost all, more than half, about half, less than half, and few/none. Scores 1 to 6 were assigned to each response choice. Their prorated sum was dichotomized into favourable outcome (i.e., score of 3 or less, which generally corresponded to responses "all; almost all; and, more than half") and unfavourable outcome (i.e., score of 4 or more, which generally corresponded to "about half; less than half; and, few/none").

Provision of adjunct support was measured by 4 items (Cronbach  $\alpha=0.74$ ): During the past 3 months, for how many of your patients who did not want to quit, did you: (i) offer written educational material on smoking or smoking cessation, and during the past 3 months, for which patients who were preparing to quit smoking did you: (ii) offer written educational material on smoking or smoking cessation, (iii) refer them to community resources, and (iv) offer a follow-up visit 1 to 2 weeks after the expected date of cessation. Responses were: all, almost all, more than half, about half, less than half, and few/none. Scores 1 to 6 were assigned to each response choice. Their prorated sum was dichotomized into favourable outcome (i.e., score of 3 or less, which generally corresponded to responses "all; almost all; and, more than half") and unfavourable outcome (i.e., score of 4 or more, which generally corresponded to "about half; less than half; and, few/none").

Counseling completeness was measured in three items (Cronbach  $\alpha=0.70$ ): (i) In the past 3 months, to how many of your patients who smoke did you offer advice or assistance for smoking cessation? Responses were: all, almost all, more than half, about half, less than half; (ii) How often do you offer smoking cessation counseling to patients who smoke? Responses were: every visit, 1 in 2 visits, 1 in 3 visits, 1 in 4 visits, and less than 1 in 4 visits; (iii) When you offer smoking cessation counseling during a patient visit, how many minutes on average do you devote to the counseling? Responses were: more than 10 minutes, 6 to 10 minutes, 2 to 5 minutes, less than 2 minutes, never offer smoking cessation counseling. Scores 1 to 5 were respectively assigned to each response choice. Their prorated sum was then dichotomized into favourable outcome (i.e., score of 3 or less, generally corresponding to responses "all, almost all, or more than half" in item (i); "1 in 3 or more visits" in item (ii), and, "2 minutes or more" in item (iii)) and unfavourable outcome (i.e., score of 4 or more).

investigated. The lower level of intervention among GPs who smoke may reflect that GPs who smoke are reluctant to advise patients on how to quit when they themselves smoke. If GPs are unable to quit themselves, they may feel that they are ill-equipped to help others quit.

Interestingly, GPs who had quit smoking were significantly more likely than current or never-smokers to provide adjunct support for cessation, possibly because they themselves had experienced difficulty quitting and were more aware of the need for concrete support to help smokers to quit.

Our findings are consistent with results from the recent STOP survey, wherein 80% of physicians who smoke compared to 85% of non-smoking physicians asked their patients how much they smoke; 85% compared to 90% advised patients to stop smoking; and 40% compared to 48% assisted patients in developing a plan to quit.<sup>24</sup> Similarly, both Ohida et al. (2001) and Underner et al.

(2006) reported that non-smoking physicians were more active in their smoking cessation practices than physicians who smoke.<sup>18,19</sup> Squier et al. (2006) reported that non-smoking physicians were more likely than physicians who smoked to record patients' tobacco use, but failed to show statistically significant differences in the provision of advice to quit.<sup>4</sup> A study among GPs in Finland also concluded that there was no difference in anti-smoking advice given to patients between GPs who smoke and those who do not, with the exception that, compared to their counterparts who smoke, non-smoking male GPs gave more smoking cessation advice to patients with tobacco-related diseases.<sup>5</sup>

Differences between reports may relate to the measure of smoking cessation counseling practices. While most studies<sup>15-17,19,24</sup> use single-item indicators, we used a composite indicator which incorporated several items to measure each component of cessation counseling. Single-item measures may not have the same threshold as composite measures in terms of capturing the underlying concept, which may result in discordant findings.<sup>27,28</sup> In addition to differences in the measurement of counseling practices, our study included former smokers as a separate category of exposure.

## Limitations

Study limitations include that the cross-sectional design does not permit causal inference. Self-reports of both smoking status and counseling practices may result in misclassification bias which could have attenuated the findings towards the null. Selection bias related to non-response may have limited external generalizability of the results.

## CONCLUSION

While very few physicians continue to smoke, our findings suggest that their smoking status is associated with the content of the counseling they provide for their patients who smoke. Taking physician smoking status into consideration in the design of cessation training programs may improve cessation counseling interventions.

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## RÉSUMÉ

**Objectif :** Déceler les différences éventuelles dans les pratiques de counseling en abandon du tabac des médecins qui fument et de ceux qui ont arrêté ou qui n'ont jamais fumé.

**Méthode :** Sur 917 omnipraticiens de Montréal à qui nous avons posté des questionnaires d'auto-évaluation en 2000 et en 2004, 610 ont fourni des données sur leur usage du tabac et leurs pratiques de counseling.

**Résultats :** Sept p. cent des répondants étaient des fumeurs actuels, 32 % étaient d'anciens fumeurs et 61 % n'avaient jamais fumé. Les fumeurs actuels étaient plus intéressés par l'apprentissage des méthodes de counseling que les répondants n'ayant jamais fumé ou ayant cessé de fumer (64 %, 56 % et 45 %, respectivement;  $p=0,018$ ). Selon une analyse multivariée, les fumeurs actuels étaient moins susceptibles que les répondants n'ayant jamais fumé de vérifier si leurs patients fumaient ou non ( $RC = 0,6$ , IC de 95 % = 0,2-1,6); de donner des conseils sur l'arrêt du tabac ( $RC = 0,6$ , 0,3-1,3); et de proposer des services complets de counseling en abandon du tabac ( $RC = 0,5$ , 0,2-1,1). Les anciens fumeurs étaient plus susceptibles de proposer des services complémentaires ( $RC = 1,5$ , 1,0-2,4).

**Conclusion :** L'usage du tabac par les omnipraticiens était associé à la nature de leurs interventions auprès des patients fumeurs. En tenant compte du tabagisme des médecins dans la conception des programmes de formation en abandon du tabac, il serait possible d'améliorer les interventions de counseling.

**Mots clés :** tabagisme des médecins; counseling en abandon du tabac; études transversales; questionnaire postal; analyse de régression logistique