

## Physician-based Tobacco Smoking Cessation Counseling in Belgrade, Serbia

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### *Abstract*

*This study examined physician attitudes and practices pertaining to patient counseling about smoking in Belgrade, Serbia. Data were collected using a cross-sectional survey of 86 physicians at multiple health care facilities. Approximately 74% of physicians agreed that they should routinely ask patients about their smoking habits and 79% agreed that physicians should routinely advise their smoking patients to quit smoking. However, only 35% of the physicians regularly counseled with their patients about smoking. Previous tobacco-cessation counseling training and being female both directly increased the likelihood of physicians regularly counseling patients about smoking, but age and smoking status did not significantly influence physician counseling about smoking. Physicians who received previous training were 3.3 (95% CI = 1.7-6.4) times more likely to regularly counsel their patients about smoking than those who had not received training; and female physicians were 6.8 (95% CI = 2.2-20.7) times more likely than male physicians to regularly counsel their patients about smoking. Previous tobacco-cessation counseling training was associated with a greater likelihood of feeling well-prepared to assist patients to quit smoking (49% vs. 20%;  $P < 0.0001$ ). In turn, the likelihood of regularly counseling their patients about smoking was 81% for those who felt well-prepared, 39% for those who felt somewhat prepared, and 2% for those who felt unprepared ( $P < 0.0001$ ). Hence, tobacco-cessation counseling training increases confidence, which, in turn, increases patient counseling about smoking.*

**Key Words:** *Counseling, Cessation, Serbia, Physicians, Prevention, Tobacco Smoking.*

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## Introduction

The risk and burden of tobacco smoking on illness (e.g., several cancers, chronic obstructive pulmonary disease, and cardiovascular diseases) and death is well established.<sup>1,2</sup> About five million people die from smoking-related illnesses each year, with over half of these deaths occurring in the age range 30 to 69 years.<sup>3</sup> Yet, studies have shown that physician counseling of patients can substantially reduce smoking rates.<sup>4-9</sup>

Physician counseling can have both a positive impact on a patient's desire to quit smoking, as well as on their follow-up commitment to remain tobacco free.<sup>10</sup> In a study among adults in Ontario, Canada, about two thirds viewed physicians as a very good source of advice on quitting smoking.<sup>11</sup> A Cochrane database system review found that brief advise intervention can increase smoking cessation by 3%, beyond an unassisted quit rate of 2 to 3%. Additional benefit, albeit small, occurred with follow-up visits.<sup>10</sup> In another review study, intensive smoking advise from physicians, bupropion, and nicotine replacement therapy were confirmed as effective smoking cessation interventions in adults.<sup>12</sup> In a U.S. study, patients who were prescribed nicotine replacement therapy and received smoking cessation advice and support from their physician were significantly more likely to quit smoking than those who only received nicotine replacement therapy.<sup>13</sup> Thus, increased involvement of physicians in counseling patients about smoking is an important strategy for lowering smoking-related illness and death.

Limited physician time is a major obstacle for providing counseling and follow-up in primary care.<sup>14</sup> In addition, health-care workers often feel inadequately trained and unequipped with the proper resources to effectively counsel patients about smoking.<sup>15-17</sup> In a prospective study involving outpatients in Switzerland, only 28% of the patients received information about the risk of smoking, and only 10% discussed cessation.<sup>18</sup> Further, physicians who smoke tend to be less likely to counsel their patients about smoking or initiate cessation interventions.<sup>19,20</sup>

Little is currently known about tobacco-cessation counseling provided by physicians in Serbia, and how this practice corresponds with the physicians' own training on counseling patients about smoking.

## Purpose of Study

This preliminary study will identify the percentage of physicians who regularly counsel their patients about smoking, the percentage of physicians trained in patient counseling, and how training corresponds to patient counseling. In addition, physician counseling of patients about smoking will be examined according to physician cessation training and physician smoking status.

## Methods

### Subjects

This preliminary study focused on practicing physicians in Belgrade, Serbia. Belgrade is the capital of the country with its own autonomous city government. It is the central economic hub of Serbia and the leader in Serbian culture, education, and science. Approximately 21% of the country's population lives in Belgrade.<sup>21,22</sup>

Analyses were based on a sample of 86 physicians, practicing in selected public and private health care facilities in Serbia. Key administrators in each hospital were contacted to obtain approval to administer the questionnaire. Public and private health care facilities and a large hospital in Belgrade were selected (Institut za Zdravstvenu Zaštitu Majke i Deteta Srbije and Klinički Urgentni Centar Srbije; Dom Zdravlja, Novi Beograd). These facilities were conveniently selected, although believed to provide a good representation of physicians in Belgrade, Serbia. The administrators of each facility provided a verbal agreement of their willingness to participate. The numbers of physicians who completed questionnaires in the two sample groups were 50 and 36, respectively.

### Instruments and Procedures

The questionnaire consisted of four sections. The first section contained three demographic questions (sex, age, years practicing). The second section asked questions about cigarette smoking and whether they thought it was appropriate or not for a physician to smoke in front of patients. The third section asked questions, measured on a scale of 5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), and 1 (strongly disagree), that assessed attitudes about the health effects of smoking and about the physician's role in smoking prevention and control. Finally, the fourth section asked questions about perceived effectiveness of physician counseling with patients, training

received to help patients quit smoking, whether they had previously smoked in front of patients, and smoking policies in their workplace.

An informed consent form prefaced the survey, which stated that the purpose of the survey was to better understand physician-based tobacco smoking cessation counseling practices in Belgrade, Serbia. Participants were informed that their involvement was voluntary and that personal identifying information was not being collected. They were also told that their individual responses would not be seen by their supervisors; that their responses would be combined with others and reported using summary statistics.

### Validity and Reliability

The questionnaire is similar to another that was administered in Armenia and Jordan a year previous to this study. The questionnaire used in those studies drew upon items from an instrument developed by the WHO and the International Union against Tuberculosis and Lung Diseases, specifically made for healthcare workers. This instrument was selected because it was validated and used in the peer-reviewed literature.<sup>23-25</sup> Questions were intended to identify:

1. Smoking habits among physicians.
2. Attitudes concerning smoking and health practices and their responsibilities as role models for their patients.
3. Confidence in counseling patients on smoking prevention and cessation, according to personal smoking habits and training in counseling patients.

Face validity of the instrument was based on three health educators who were experienced in survey sampling as well as translators fluent in Serbian. The questionnaire was developed in English, translated to Serbian by a fluent Serbian speaker, then independently back-translated by two other native speakers. Only minor wording changes were made to the questions in order to improve clarity. A Serbian physician fluent in both Serbian and English compared the translated version of the questionnaire to the original English version. The content and meaning was felt to be maintained and no additional changes were made to the instrument.

### Data Collection

The surveys were given to the hospital administrators in the selected health facilities, who then assigned a

staff member to distribute and collect the surveys. Completed surveys were placed in a sealed envelope that was later returned to the authors of this study. All practicing physicians who met with patients on a regular basis were requested to complete the survey. Although participation in the study was strictly voluntary, unless a physician indicated they were not interested, they were reminded about the survey up to 4 times between September 1 and December 31, 2007, until it was completed and returned. Of 87 physicians who were initially contacted, only one refused to participate (99% response rate). Above 50% completed the survey within the first week of September.

Data were collected using paper-pencil surveys and entered into spreadsheets using double-data entry. Discrepancies were resolved by referring to the participant's questionnaire.

### Data Analysis

Frequency distributions were used to describe the data. Bivariate analyses were used to measure associations between selected variables. Statistical significance was based on the chi-square ( $\chi^2$ ) test for independence. The *t* test was used to evaluate differences between independent groups. Multiple regression analysis was used to evaluate the simultaneous effect of selected variables on perceived effectiveness of physician counseling. Two-sided tests of significance were based on the 0.05 level against a null hypothesis of no association, unless otherwise indicated. Analyses were performed using SAS version 9.1 (SAS Institute Inc., Cary, NC, USA, 2003).

## Results

Physician characteristics and smoking behaviors are presented according to sex in Table 1. Ages ranged from 27 to 66 years. A higher percentage of male physicians worked in the health care facilities, whereas a higher percentage of female physicians worked in the hospital. Years worked as a practicing physician was similar between men and women. Approximately 37% of both men and women are current smokers. A higher percentage of women compared with men thought it was wrong to smoke in front of patients. Feelings about quitting smoking, duration smoked, and number of cigarettes smoked was similar between men and women.

Physicians were asked their level of agreement with selected statements about their perceived

responsibility of being a role model as it pertains to tobacco smoking (Table 2). The highest level of agreement was with statements involving physicians being a role model and an example by not smoking, and that physicians should receive training on smoking cessation counseling. Moderate agreement was with statements that physicians should routinely advise smoking patients to quit, that physicians who smoke are less likely to advise patients about smoking, and that physicians should regularly ask patients about their smoking habits. The lowest level of agreement is with the statement that counseling patients about smoking increases their chance of quitting. Men were significantly more likely than women to agree that physicians should set a good example by not smoking and physicians should routinely advise their smoking patients to quit smoking. Smokers were significantly less likely to agree that physicians should serve as role models, that physicians who smoke are less likely to advise people to stop smoking, and that physicians should routinely ask about their patients' smoking habits.

About 35% of the physicians indicated that they regularly counseled their patients about smoking. This response did not significantly differ by age, years practiced, or smoking status, but was influenced by sex and tobacco-cessation counseling training. Physicians who received previous training were 3.3 (95% CI = 1.7-6.4) times more likely to regularly counsel their patients about smoking compared with those who had not received training. In addition, women were 6.8 (95% CI 2.2-20.7) times more likely than men to regularly counsel their patients about smoking (i.e., 55% vs. 8%).

Of those who had received tobacco-cessation counseling training, 49% felt well-prepared to assist patients to quit smoking. In contrast, only 20% felt well-prepared that had not received training ( $P < 0.0001$ ). In general, 32% of physicians felt well-prepared to assist patients to quit smoking, 21% felt somewhat prepared, and 47% felt unprepared. Sex, age, and smoking were not significantly associated with feeling prepared to assist patients to quit smoking. The percentage who regularly counseled their patients about smoking was 81% for those who felt well-prepared, 39% for those who felt somewhat prepared, and 2% for those who felt unprepared ( $P < 0.0001$ ). In a logistic regression model, the odds of regularly counseling patients about smoking was significantly associated with training ( $P = 0.005$ ). However, when the self-efficacy variable on patient counseling about smoking was added to the model, the training variable became insignificant. Both these models adjusted for age, sex, and years practiced.

Approximately 41% had received training to help patients stop or not start smoking, 27% in medical school, 2% in post-medical school education, and 12% at special conferences, symposia, or other meetings. Training was not significantly associated with age, years practiced, or smoking status, but was significantly associated with sex. Women were more likely than men to receive training (54% of women and 24% of men;  $P = 0.0056$ ). In addition, among the women who had received training, 42% occurred after medical school. On the other hand, among the men who had received training, only 11% occurred after medical school.

About 47% of current smokers indicated that they had previously smoked in front of patients. Receipt of tobacco-cessation counseling training significantly lowered the likelihood of having smoked in front of patients (19% versus 50%;  $P = 0.0031$ ). Beyond training, age, sex, years smoked, and number of cigarettes smoked per day did not significantly influence having smoked in front of patients.

Physicians were asked to rate on a scale from 5 (very) to 1 (not at all) on how effective they thought physician counseling was in helping patients to stop smoking. Mean level of agreement was 2.5 for those who had received prior training on counseling patients to quit smoking compared with 1.7 for those who had not received training ( $P = 0.001$ ), after adjusting for age, sex, and smoking status. Physicians were also asked to rate on the same scale how effective they thought physician counseling was in helping patients to not start smoking. Mean level of agreement was 2.9 for physicians who had received prior training on counseling patients to quit smoking and 1.7 for those who had not received training ( $P < 0.0001$ ), adjusting for age, sex, and smoking status.

Finally, physicians were asked whether they agreed with the statement that a patient's chances of quitting smoking are increased if a health professional advises him or her to do so. Approximately 56% of those who received training agreed whereas 26% of those who did not receive training agreed (Rate Ratio = 2.1, 95% CI = 1.2-3.7). After adjusting for age, sex, and smoking status, the rate ratio became 2.2 (95% CI = 1.2-4.2).

## Discussion

This study aimed to provide useful information for developing physician-based tobacco smoking prevention and cessation programs in Serbia. Current attitudes and practices among physicians in patient counseling about tobacco smoking were presented. The importance of physician tobacco-cessation counseling training for promoting greater perceived effectiveness and participation in patient counseling about smoking was observed.

On the basis of a survey that included 320 adults from Sombor, Novi Sad, and Belgrade, 59% of men and 44% of women smoke.<sup>26</sup> In a national effort to reduce smoking, beginning with health professionals, approximately 37% of doctors were identified as current smokers.<sup>7</sup> In a consistent manner, 37% of both male and female physicians in the current study identified themselves as being current smokers. Intervention programs often begin with health professionals, in the hope that their lead will influence others.<sup>7</sup>

In this context, physician training on counseling patients about smoking was associated with regular counseling of patients about smoking. This finding is consistent with other studies.<sup>27</sup> One study found that physicians significantly improved their smoking cessation counseling practices following a smoking cessation training intervention.<sup>28</sup> Improvements were observed in asking about smoking, advising to quit, providing counseling for cessation, giving self-help materials, and arranging follow-ups. Pediatric physicians who receive training in smoking cessation have improved attitudes and behaviors as a result of the training,<sup>29</sup> are more likely to ask caregivers about tobacco use, are more likely to advise caregivers to cut back or quit, and are more likely to assist with quitting.<sup>30</sup>

The association between receiving tobacco-cessation counseling training and regularly counseling patients about smoking appeared to be mediated by feeling “well-prepared” to assist patients to quit smoking. In other words, physician self-efficacy for counseling is influenced by training, which, in turn, increases the likelihood of counseling patients about smoking. The connections between physician self-efficacy for counseling and training has been observed in other settings as well.<sup>31-33</sup>

The Global Health Professional Survey Pilot Study of 10 countries in 2005 found that 96% of third-year medical students in Belgrade, Serbia, believed that health professionals should be trained in cessation techniques.<sup>34</sup> However only 33% of the students had

received formal cessation-counseling training. In the current study, 27% indicated receiving training during medical school, with another 14% receiving training sometime after medical school. The lower percentage receiving training while in medical school compared with that found in the 2005 survey is likely because tobacco cessation counseling in the distant past was not viewed as important as in more recent times. In the current study, female physicians were significantly more likely than male physicians to receive tobacco cessation counseling, especially in different settings after medical school. It is unclear why there was a difference in medical school training between men and women other than perhaps women tended to take more of a public health focus in their medical training. This may also apply to the difference in training observed after medical school.

Although nicotine replacement is an efficacious strategy in smoking cessation,<sup>12</sup> prescribed nicotine replacement therapy, smoking cessation advice, and support from a physician is the best approach in assisting patients.<sup>13</sup> However, preparations like Nicorette are not affordable for the majority of Serbians who want to stop or reduce smoking.<sup>35</sup> Limited economic means also makes follow-up tobacco-counseling visits infeasible for many.

According to a study performed in Greece, a contiguous country to Serbia, the proportion of 1,284 randomly selected Greek physicians who reported counseling patients (often or always) to stop smoking was lower among current smokers compared with those who never smoked or those who were former smokers (74.4% vs. 85.3% vs. 84.7%,  $P < 0.0001$ ).<sup>19</sup> In contrast, the current study did not find a significant association between smoking status and regularly counseling patients about smoking. However, smokers were significantly less likely to agree that physicians should routinely ask their patients about their smoking habits. In turn, those who did not agree with this statement were 66% less likely to regularly counsel patients about smoking.

Higher tobacco-cessation counseling training among females than male physicians does not fully explain the higher levels of female physicians who regularly counseled their patients about smoking compared with male physicians. This result is not consistent with a significantly higher level of agreement among male physicians than female physicians with the statement that physicians should routinely advise their smoking patients to quit smoking. This contradiction may indicate a more male dominant culture where it is believed that it is more appropriate for males than females to counsel patients, but that

male physicians are less likely to believe that their counsel would make a difference. In addition, male physicians may view their time as more limited, such that counseling all their patients about smoking is not practical.

In 1995, Serbia passed a law restricting smoking in public places, but the law is poorly enforced. Other efforts to reduce smoking in Serbia include a public information campaign urging smokers to quit; a national No Smoking Day; counseling services and information for smokers encouraging and supporting their efforts to quit; and health institutions making their premises smoke-free. Physicians may adopt the 5 A's method to help patients stop smoking (e.g., ASK, ADVISE, ASSESS, ASSIST, and ARRANGE).<sup>36</sup> Physicians are instructed to ask their patients at every visit about their smoking status; advise patients to stop smoking; assess whether the patient is willing to quit; assist the patient by setting a date when they should quit smoking, providing self-help materials, and recommending nicotine replacement therapy; and arranging follow-up visits. Yet, as mentioned above, economic challenges in Serbia may make it difficult for many patients to afford nicotine replacement therapy and follow-up visits.

Another useful theory that may be incorporated in smoking cessation efforts is the Stages of Change Model, developed in the late 1970's and early 1980's by James Prochaska and Carlo DiClemente when they were studying how smokers were able to give up their smoking habits.<sup>37</sup> The idea behind the model is that behavior change does not occur in one step, but rather people progress through different stages on their way to successful change. Counseling will have different effects at the different stages of change and physicians should tailor their messages accordingly. Perhaps a useful strategy, then, would be to not only inquire whether the patient smokes, but to determine their readiness to change (i.e., not ready to quit within next 6 months, thinking about quitting within 6 months, or ready to quit now) if the patient does smoke.

A few study limitations need to be mentioned here. Specifically, self-reported data on smoking behaviors and attitudes among physicians may have been biased. Physicians may believe it is socially less acceptable for them to smoke than the general population, thereby leading to an under reporting of their true smoking prevalence. The extent that this mechanism could have biased the responses, if any, is unknown. However, the fact that this was an anonymous survey likely limited such bias. In

addition, because such a large percentage of the physician population in Belgrade, Serbia smokes, feelings of social unacceptability of smoking may be uncommon. Further, the facilities were conveniently selected in Belgrade. Difference was found in smoking practices among the two samples. Yet it is believed that these groups are representative of all physicians in Belgrade, Serbia. Potential selection bias is not an issue given the very high response rate. Finally, although the participants were asked whether they regularly counsel their patients about smoking, they were not asked about the nature of that counseling. Yet, other research has found that asking patients about their smoking status is not typically accompanied by addressing tobacco-related health issues and offering cessation advice.<sup>38</sup>

## Conclusion

Tobacco-cessation counseling training significantly increased the perceived effectiveness and importance among physicians of their counseling of patients about smoking. It also lowered the likelihood that a physician who smoked would do so in front of patients. Training further increased feelings of preparedness for tobacco-cessation counseling, which, in turn, increased the likelihood of regularly counseling patients about smoking. Trained physicians had a 3.3 fold increased likelihood of counseling their patients about smoking. Greater opportunities should be made available to medical students and practicing physicians in Serbia to receive tobacco-cessation counseling training. Requiring participation in counseling training among medical students and providing incentives for participation in training among practicing physicians appears warranted. In addition, recruitment to tobacco-cessation counseling training should focus on groups of physicians less likely to participate, such as males and smokers.

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**Table 1.** Frequency distributions of selected demographic and smoking behavior variables by sex among 86 physicians in Serbia, 2007

| Variable  | Male<br>N = 37 |     | Female<br>N = 49 |      | Chi-square<br>P value  |
|---|----------------|-----|------------------|------|------------------------|
|   | No.            | %   | No.              | %    |                        |
| <b>Locations</b>  |                |     |                  |      |                        |
| Health Care Facilities (Institut za Zdravstvenu<br>Zaštitu Majke i Deteta Srbije and Klinički<br>Urgenti Centar Srbije) | 32             | 86  | 18               | 37   | < 0.0001               |
| Hospital (Dom Zdravlja, Novi Beograd)   | 5              | 14  | 31               | 63   |                        |
| <b>Smoking Behavior</b>   |                |     |                  |      |                        |
| Never   | 15             | 41  | 26               | 53   | 0.4423                 |
| Former  | 8              | 22  | 5                | 10   |                        |
| Current   | 14             | 37  | 18               | 37   |                        |
| <b>Think it is wrong to smoke in front of a patient</b>   |                |     |                  |      |                        |
| Yes   | 18             | 49  | 37               | 76   | 0.0102                 |
| No  | 19             | 51  | 12               | 24   |                        |
| <b>How smokers feel about quitting</b>  |                |     |                  |      |                        |
| Not considering quitting  | 6              | 50  | 5                | 29   | 0.3171                 |
| Thinking about quitting   | 3              | 25  | 9                | 53   |                        |
| Ready to quit   | 3              | 25  | 3                | 18   |                        |
|   | Mean           | SD  | Mean             | SD   | t-statistic<br>P value |
| Age   | 42.5           | 7.5 | 44.6             | 8.9  | 0.2633                 |
| Years worked as a practicing physician  | 17.6           | 7.4 | 18.0             | 9.3  | 0.8295                 |
| How long current smokers have smoked (years)  | 16.3           | 8.2 | 21.2             | 10.0 | 0.1590                 |
| Average number of cigarettes smoked/day<br>among smokers  | 19.1           | 7.4 | 15.5             | 7.6  | 0.1908                 |

**Table 2.** Percentage who agree with selected statements about physician roles in counseling patients about smoking for 86 physicians in Serbia, 2007

|  |     | Men         | Women      | Smokers    | Non-Smokers |
|--|-----|-------------|------------|------------|-------------|
| Physicians should serve as role models for their patients and the public.                        | 94% | 97%         | 92%        | <b>88%</b> | <b>98%</b>  |
| Physicians should get specific training on smoking cessation counseling techniques.              | 92% | 97%         | 86%        | 84%        | 94%         |
| Physicians should set a good example by not smoking.   | 91% | <b>100%</b> | <b>86%</b> | 88%        | 94%         |
| Physicians should routinely advise their smoking patients to quit smoking.                       | 79% | <b>89%</b>  | <b>65%</b> | 66%        | 81%         |
| Physicians who smoke are less likely to advise people to stop smoking.                           | 76% | 72%         | 84%        | <b>63%</b> | <b>89%</b>  |
| Physicians should routinely ask about their patients' smoking habits.                            | 74% | 73%         | 76%        | <b>59%</b> | <b>83%</b>  |
| Patients' chances of quitting are increased if a health professional advises him or her to quit. | 38% | 30%         | 45%        | 44%        | 35%         |

Note: Bolded numbers with larger font size were significantly different at the 0.05 level.