Tobacco cessation drug therapy among Canada’s Aboriginal people

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The smoking rate among Aboriginal people is more than double the rate of the rest of the Canadian population, and smoking is a major source of morbidity and mortality within this population. Tobacco cessation drug therapy use among Aboriginal smokers is very low. We administered a cross-sectional questionnaire to Aboriginal and non-Aboriginal smokers or recent ex-smokers in 12 First Nations communities in two Canadian provinces from September to December 2004. Participants were asked about smoking cessation advice and perceptions of three drug therapy agents. The overall response rate was 82% (407 Aboriginal and 102 non-Aboriginal smokers or ex-smokers). A substantial proportion reported tobacco cessation or reduction in the previous year (Aboriginal 46% vs. non-Aboriginal 32%). Aboriginal participants were less likely to seek physician services (prevalence OR [p] = 0.45, 95% CI = 0.27–0.74, p = .001) and less willing to use nicotine patch (pOR = 0.6, 95% CI = 0.38–0.96, p = .03) or bupropion (pOR = 0.50, 95% CI = 0.29–0.84, p = .008). Among First Nations participants, who receive a drug therapy subsidy, lack of awareness of the subsidy were associated with less willingness to use drug therapy; further, the requirement for a physician prescription was perceived as a barrier. Among all participants, utilization of physician services (pOR = 2.2, 95% CI = 1.50–3.20, p < .001) and receiving drug therapy advice from a physician (pOR = 7.7, 95% CI = 4.17–14.3, p < .001) was associated with willingness to use drug therapy. In conclusion, many Aboriginal smokers are interested in and attempt cessation, but underutilization of physician services and low willingness to use drug therapy may explain their lower use of drug therapy. Physicians need to provide advice on drug therapy, and policy makers should eliminate the need for a physician prescription. Future studies can explore cultural attitudes toward cessation drug therapy and physician services.

Introduction

Canada’s Aboriginal peoples comprise several groups, including First Nations/Status Indians, Metis (mix of French and Aboriginal ancestry), non-Status Indians, and the Inuit. Within Canada, over 1.3 million people identified themselves as having at least some Aboriginal ancestry, representing approximately 4.4% of the total population (Statistics Canada, 1993). Status Indians have signed treaties with the federal government that accord them certain privileges to be compensated for having relinquished certain land rights; these privileges include a prescription medication subsidy (i.e., for tobacco cessation drug therapy). Status Indians may live on or off reserve, where “reserve” refers to a tract of land set apart for the use and benefit of a band of Status Indians. The First Nations and Inuit Health Branch, a branch within the Canadian federal government, supports the delivery of public health and health promotion services on reserve and in Inuit communities. It also provides drug, dental, and ancillary health services to First Nations and Inuit people regardless of residence. The branch also provides primary care services on reserve in remote and isolated areas, where no provincial services are readily available (Health Canada, 2005a).

Smoking among Aboriginal persons is a major public health concern; smoking rates are alarmingly high in Aboriginals compared with other Canadians (almost 60% of on-reserve First Nations people were smokers vs. 22% of the general population; First Nations Centre, 2005; Health Canada, 2002).
Smoking is a major source of morbidity and mortality in this population. First Nations population adjusted smoking-attributable mortality rates are almost 1.5 times those of the general population and are responsible for almost one in every fifth adult death (Wardman & Khan, 2004a). Clinical practice guidelines for treatment of nicotine dependence state that tobacco cessation drug therapy increases long-term smoking abstinence (Fiore et al., 2000). Further, the nicotine patch has shown potential effectiveness among an Aboriginal population (Hensel et al., 1995). However, only 3.8% of First Nations smokers use any tobacco cessation drug therapy (Wardman & Khan, 2004b). Possible reasons for this low usage include poor utilization of health care resources (British Columbia Provincial Health Officer, 2002), lack of cessation counseling from health care workers, and Aboriginal cultural perceptions toward tobacco cessation drug therapy. To explore potential reasons for underutilization of drug therapy, we undertook a survey of Aboriginal and non-Aboriginal smokers and recent ex-smokers (i.e., who had stopped smoking less than 12 months earlier). These findings may help guide the medical community and decision makers to improve tobacco cessation rates among Aboriginal smokers.

Method

Survey development and administration

The survey contained questions on patient demographics, smoking behaviors, physician counseling on smoking cessation, and perceptions about drug therapy. Questions used in this survey were derived from questions raised by the British Columbia First Nations Tobacco Control community coalition, tobacco policy makers from Health Canada, and the Canadian Tobacco Use Monitoring Survey, a national survey that examines smoking cessation and reduction in Canada (Health Canada, 2002). The questionnaire was pretested by four Aboriginal health programmers involved with tobacco control, who were employed by an Aboriginal agency that worked with many of the participating communities. Modifications were made based on feedback from the testers.

Participants

To gauge the attitudes of Aboriginal smokers, we surveyed adults in 12 rural First Nations communities, each having an average of 250 residents, in Northern British Columbia and Saskatchewan, Canada, from September to December 2004. All of the communities surveyed have access to physician services and pharmacies within 60 km. An Aboriginal research assistant approached potential participants at on-reserve community gatherings and health centers to provide a brief introduction to the project and determine eligibility. Non-Aboriginal participants with an affiliation who had the reserve community or who had participated in an on-reserve community event were included. Participants were excluded if they had never smoked or had stopped smoking more than 12 months earlier. To assure anonymity of responses, the questionnaire was self-administered, and respondents sealed their completed questionnaires in a secured, opaque envelope prior to returning them to the research assistant. This study was approved by the Behavioral Research Ethics Board at the University of British Columbia and by the local Saskatchewan Health Authority.

Data analyses

Descriptive statistics were used to analyze the demographic data and to estimate proportions. Chi-square testing was used to compare prevalence of relevant variables across Aboriginal and non-Aboriginal respondents. Prevalence odds ratios (pOR) and their 95% confidence intervals (CI) also were determined. Multiple logistic regression was used to determine the independent association of willingness to use drug therapy after adjusting for clinically relevant confounders. Logistic regression models were assessed for the assumptions of logistic regression. The analysis was performed using Stata version 7.

Results

Included in this survey were 407 Aboriginal and 102 non-Aboriginal smokers or ex-smokers (overall response rate =82%). Aboriginal respondents were younger and more likely to be female (45% were aged 35 years or older; 64% were female), compared with the non-Aboriginal group (57% were aged 35 years or older; 20% were female). Among Aboriginal participants, 87.2% (n=355) identified themselves as Status Indians.

As discerned from Table 1, a large proportion of respondents reported attempting to stop or reduce their tobacco usage in the previous year (Aboriginal 46% vs. non-Aboriginal 32%, p=.055). Aboriginal persons were much less likely to report accessing physician services in the past 12 months compared with non-Aboriginal persons. Of those who did seek medical care, the majority discussed smoking cessation with their physicians. However, 40% of both Aboriginal and non-Aboriginal participants who did discuss smoking cessation did not report receiving advice on drug therapy.
Fewer Aboriginals indicated they were willing to use bupropion or the nicotine patch, compared with non-Aboriginal respondents. Occasional smokers also were less willing to use drug therapy compared with daily smokers or ex-smokers (17% of occasional smokers were willing to use, versus 51% of daily smokers and 36% of ex-smokers).

We explored several potential factors associated with willingness to use drug therapy in Aboriginal and non-Aboriginal participants. From univariate analysis, we found that seeking care from a physician was associated with increased willingness to use drug therapy (pOR=2.2, 95% CI=1.50–3.20, p<.001), and specific advice on drug therapy from a physician was strongly associated with willingness to use drug therapy (pOR=7.7, 95% CI=4.17–14.3, p<.001). Willingness to participate in behavioral strategies was significantly associated with willingness to use drug therapy for smoking cessation among Aboriginal respondents (pOR=1.87, 95% CI=0.53–2.18, p=.029) but not among non-Aboriginal respondents. Sex and age were not associated with willingness to use drug therapy in either group. From the multivariate analysis, when we adjusted for differences in accessing physician care, receiving advice on drug therapy from a physician, occasional smoker versus ex-smoker or daily smoker use, and willingness to use behavioral cessation strategies, we found that Aboriginal race was no longer significantly associated with a low willingness to use either bupropion or patch therapy.

Among First Nations participants, a subgroup of Aboriginal persons who have complete subsidization of cessation drug therapy, awareness of this subsidy was significantly associated with increased willingness to use drug therapy (pOR=2.2, 95% CI=1.43–3.48, p<.001). Requirement for a physician prescription, however, was significantly associated with being less willing to use drug therapy (pOR=0.35, 95% CI=0.22–0.56, p<.001).

The majority of Aboriginal (82.6%) and non-Aboriginal (77.5%) respondents indicated that they would be willing to use behavioral cessation strategies. They reported that they would participate in the following strategies to aid in tobacco cessation: Reduce smoking amount (Aboriginal: 35.9%; non-Aboriginal: 32.4%), stop with family and friends (Aboriginal: 23.6%; non-Aboriginal: 19.6%), stay away from smokers (Aboriginal: 20.1%; non-Aboriginal: 23.5%), and use of traditional methods (Aboriginal: 12.0%; non-Aboriginal: 11.8%).

### Discussion

Although tobacco cessation drug therapy has been proven to be effective among an Aboriginal population (Hensel et al., 1995), these drugs are underused among Aboriginal smokers. No studies have examined reasons for underutilization of this best-practice strategy among an Aboriginal population. To our knowledge, the present study is the first to explore these issues among a large population of Aboriginal smokers or recent ex-smokers. Although a high proportion of Aboriginals smokers were interested in smoking cessation, Aboriginal participants were less likely than non-Aboriginal participants to access physician services and were less willing to use nicotine patch or bupropion.

Differences in willingness to use drug therapy in Aboriginal and non-Aboriginal participants are important to better our understanding of lower drug utilization rates among Aboriginal smokers. These differences cannot be attributed, based on our study results, to a differential concern for medication adverse effects. Although Aboriginal people were

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**Table 1. Smoking cessation behaviors and attitudes toward cessation drug therapy.**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Aboriginal (%)</th>
<th>Non-Aboriginal (%)</th>
<th>pOR</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>260 (63.8)</td>
<td>53 (52.0)</td>
<td>1.60</td>
<td>1.02–2.46</td>
<td>.043</td>
</tr>
<tr>
<td>Daily smoker</td>
<td>211 (51.8)</td>
<td>58 (56.9)</td>
<td>0.82</td>
<td>0.53–1.26</td>
<td>.36</td>
</tr>
<tr>
<td>Occasional smoker</td>
<td>122 (30.0)</td>
<td>9 (8.8)</td>
<td>4.42</td>
<td>2.16–9.05</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Ex-smoker</td>
<td>70 (17.1)</td>
<td>35 (34.3)</td>
<td>0.40</td>
<td>0.25–0.64</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Saw a physician in past year [a]</td>
<td>135 (35.1)</td>
<td>48 (54.6)</td>
<td>0.45</td>
<td>0.27–0.74</td>
<td>.001</td>
</tr>
<tr>
<td>Received cessation advice from physician [b]</td>
<td>94 (22.8)</td>
<td>28 (52.8)</td>
<td>1.64</td>
<td>0.77–3.41</td>
<td>.16</td>
</tr>
<tr>
<td>If discussed cessation, received drug therapy advice from physician</td>
<td>56 (57.7)</td>
<td>17 (60.7)</td>
<td>0.88</td>
<td>0.37–2.09</td>
<td>.78</td>
</tr>
<tr>
<td>Attempted to stop or reduce</td>
<td>189 (47.9)</td>
<td>33 (37.7)</td>
<td>1.59</td>
<td>0.99–2.5</td>
<td>.055</td>
</tr>
<tr>
<td>Willing to use at least one agent</td>
<td>162 (39.8)</td>
<td>51 (50.0)</td>
<td>0.66</td>
<td>0.4–1.0</td>
<td>.06</td>
</tr>
<tr>
<td>Willing to use nicotine patch</td>
<td>114 (30.9)</td>
<td>40 (42.9)</td>
<td>0.6</td>
<td>0.38–0.96</td>
<td>.03</td>
</tr>
<tr>
<td>Willing to use nicotine gum</td>
<td>98 (27.5)</td>
<td>28 (29.8)</td>
<td>0.88</td>
<td>0.5–1.4</td>
<td>.1</td>
</tr>
<tr>
<td>Willing to use bupropion</td>
<td>60 (16.9)</td>
<td>27 (29.0)</td>
<td>0.50</td>
<td>0.29–0.84</td>
<td>.008</td>
</tr>
</tbody>
</table>

**Note.** [a] Denominator adjusted for missing data: 5% Aboriginal; 14% non-Aboriginal. [b] Based on number of respondents who had seen a physician in the previous year (should be those who had stopped smoking in the past year or had received advice from their physician).
less likely to see a physician, those who did seek physician care were much more willing to use drug therapy. Lack of physical access to physician services may partly explain these results, but all reserve communities studied had access to physician services and pharmacies within 60 km.

Our findings also suggest that Aboriginal people may be less likely to use cessation drug therapy possibly because of broader systemic issues relating to underutilization of western health services, including racism and the provision of health services that are not congruent with their cultural values. The Aboriginal belief system is built around balance—a person is made up of physical, emotional, mental, and spiritual equal parts and each must be nourished to live a healthy, happy, productive life (Royal Commission on Aboriginal People, 1996; Scott, 1994). From an Aboriginal perspective, all medicine involves a spiritual element, and only those deemed to have appropriate knowledge or connection with spirit can effectively administer the treatment (Morse, Young, & Swartz, 1991; Reynolds Turton, 1997). Nevertheless, a minority of Aboriginal smokers appear to access western physician services for cessation drug therapy in a fashion that fits their needs. If the preceding explanation is correct, utilization of a traditional healer may be an ideal avenue to increase uptake of drug therapy by Aboriginal smokers because of their ability to deliver more culturally appropriate care.

Among First Nations participants, the requirement for a physician prescription was a potential barrier to drug therapy. These barriers do not apply to non-First Nations smokers, given that cessation drug therapies are largely available over the counter. Policy makers may need to reevaluate this practice, given that over-the-counter availability and nurse-prescribing have led to an increase in use of nicotine patch and gum among non-Aboriginal populations (Latter & Courtenay, 2004; Reed, Anderson, Vaughn, & Burns, 2005).

Our results are consistent with and extend findings from previous investigations of national rates of tobacco cessation and drug therapy utilization in the general population. For example, in the Canadian Tobacco Use Monitoring Survey (CTUMS), 45% of respondents attempted cessation or reduction and respondents demonstrated greater use of behavioral cessation strategies over drug therapy (Health Canada, 2005b). Furthermore, consistent with the present findings, of those smokers in the general population who had seen a physician, 53% received cessation advice. However, our findings extend the results from CTUMS by evaluating an Aboriginal population and factors explaining underutilization of drug therapy.

The present study has several limitations. Respondents who were smokers may have underestimated cessation efforts compared with those who have successfully stopped smoking and thus may underestimate the true proportion. Nevertheless, our estimate is conservative and demonstrates that a large proportion of Aboriginal smokers received cessation advice from physicians. Given that our non-Aboriginal control group was identified in Aboriginal communities, this group may have had different responses than would non-Aboriginal persons who do not interface with the Aboriginal community. Thus the differences between Aboriginal and non-Aboriginal persons may be underestimated. However, the findings within the non-Aboriginal population surveyed were similar to those reported from the general population in CTUMS. Although we identified several potential factors associated with willingness to use drug therapy, we were unable to infer causality given the cross-sectional nature of surveys. As a caveat, given that our study group was comprised primarily of First Nations people dwelling on reserve within Canada, one may need to be cautious in extrapolating these findings to the entire Aboriginal population in Canada and non-Canadian indigenous populations. Interestingly though, a national survey of First Nations persons demonstrated smoking patterns and ages of smokers that were similar to our study cohort (First Nations Centre, 2005). We were not able to identify published studies that examined the gender of Canadian Aboriginal smokers.

In conclusion, many Aboriginal smokers are interested in quitting and attempt to do so. Underutilization of physician services and low willingness to use drug therapy may explain the low rate of smoking cessation through the use of drug therapy in Aboriginal persons. Physician advice on drug therapy was associated with increased willingness to use drug therapy in both Aboriginal and non-Aboriginal persons. To improve willingness to use drug therapy among First Nations persons, policy makers may need to address the requirement of a physician prescription. Future studies need to explore cultural reasons for discrepancies in Aboriginal attitudes toward use of cessation drug therapy and underlying reasons for underutilization of physician services among Aboriginals.

Acknowledgments
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References


