

# Oral and Pharyngeal Cancer: Practices and Opinions of Dentists in British Columbia and Nova Scotia

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## A b s t r a c t

*Oral and pharyngeal cancers are associated with high mortality rates, a situation usually attributed to late-stage diagnosis. Dentists in British Columbia and Nova Scotia were surveyed regarding their practices and opinions related to oral and pharyngeal cancer. In February 1998 a pretested, 41-item survey was mailed to a random sample of dentists in British Columbia (n = 817) and the population of dentists in Nova Scotia (N = 423). A reminder postcard and one additional mailing were sent to nonrespondents. Of the 670 dentists supplying usable responses (response rate 55.2%), only 56.7% agreed that their knowledge of the subject was current. Of 8 health history items, dentists assessed 5 on average, with most (88.0%) asking about the patients' current use of tobacco. A total of 72.7% of the responding dentists performed an oral cancer examination for all edentulous patients at every appointment, but 10.9% never did so. Similarly, 70.7% of the dentists always provided an oral cancer examination at the initial appointment for patients 40 years of age and older, but 9.8% never did so. Undergraduate training related to oral cancer examination was reported as good by only 52.2% of the dentists. About three-quarters of all dentists (77.0%) were interested in taking continuing education courses on this subject. Differences between the 2 provinces were not statistically significant ( $p > 0.01$ ). Dentists in British Columbia and Nova Scotia could benefit from undergraduate and continuing education courses to increase their knowledge of health history assessment, examination for oral and pharyngeal cancers, and risk reduction strategies, such as counselling about tobacco cessation.*

**MeSH Key Words:** *Canada; dentist's practice patterns; mouth neoplasms*

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In 2000, the estimated number of deaths in Canada from oral cancers (those of the lip, tongue, salivary glands and other sites in the mouth)<sup>1,2</sup> and pharyngeal cancers (those affecting the nasopharynx, oropharynx and hypopharynx)<sup>1,2</sup> was 1,050, including 90 men and 45 women in British Columbia and 30 men and 15 women in Nova Scotia.<sup>1</sup> This total was greater than the number of deaths caused by each of malignant melanoma, uterine and cervical cancers, and Hodgkin's disease.<sup>1</sup> The relatively low survival rates associated with oral and pharyngeal cancer (referred to in this paper as simply oral cancer) are attributed to late diagnosis,<sup>3</sup> which occurs in more than half of cases.<sup>4,5</sup> The aggregate of new cases and deaths is an important measure of burden on the Canadian population and health care system.

The rationale for health care providers to perform routine oral cancer screening is persuasive.<sup>6,7</sup> The condition is treatable in its early stages, the screening examination is inexpensive and safe, and it offers health care providers an opportunity to identify and counsel patients about risk factors. Dentists can easily incorporate the procedure into their routine examinations.<sup>7-11</sup>

The examination for oral cancer includes a thorough history and physical examination.<sup>12</sup> The history should cover social and medical elements, as well as risk behaviours such as tobacco and alcohol use. Determination of risk is vital in determining the potential for oral cancer and the need for tobacco cessation counselling.<sup>6,13</sup> The physical examination involves digital palpation of the neck node regions, bimanual palpation of the floor of mouth and the

tongue, and inspection with palpation and observation of the oral and pharyngeal mucosa with an adequate light source and mouth mirror. The complete examination takes less than 2 minutes.<sup>14-16</sup>

The purposes of this study were to assess and describe Canadian dentists' practices related to oral cancer risk assessment and examination for patients at initial and recall appointments and to determine their opinions about their professional preparation for these activities.

### Methods

Dentists' opinions and practices related to oral cancer were determined by means of a pretested 41-item mail survey (in February 1998) of a probability sample in British Columbia ( $n = 817$ ) and the population of dentists in Nova Scotia ( $N = 423$ ) according to accepted survey methodology.<sup>17-19</sup> The specific methods are described in a companion publication.<sup>20</sup> Responses were analyzed with SPSS-PC software (SPSS Inc., Chicago, IL). Unweighted data were used in the bivariate analyses. The results were evaluated at a significance level of  $p < 0.01$ .

Analyses included the frequency of assessment of 8 risk factors for oral cancer and the percentage of patients in 2 age groups (18 to 39 years and 40 years and older) for whom oral cancer examinations were provided at both initial and recall appointments. A Likert scale was used to determine dentists' opinions regarding their education and training in oral cancer risk assessment and examination.

### Results

The results are based on 670 usable responses (response rate of 55.2%, 50.4% [401] for British Columbia and 64.4% [269] for Nova Scotia). In total, 82.1% of respondents were men, 55.4% owned solo practices, 57.1% had graduated between 1980 and 1997, and 56.5% had attended a continuing education course on oral cancer within the previous 5 years.<sup>20</sup>

### Health Assessment Practices

Most dentists (88.0%) reported asking about patients' current use of tobacco, 69.8% asked about past use, and 61.5% determined types and amounts of tobacco products used (Fig. 1). Regarding history of cancer, 90.8% asked about the patient's experience, and 67.5% asked about the patient's family. Only 42.8% of the dentists assessed current alcohol use, 31.5% assessed past use, and 20.0% assessed the type and amount of alcohol used. The dentists assessed on average 5 of the 8 health history items. Only 50.6% of the dentists assessed 5 or more of the items, whereas 68.5% assessed 4 or more items. However, 4.2% assessed none of the items. There were no statistically significant differences between dentists in the 2 provinces in terms of assessment practices.

### Oral Cancer Examination Practices

A total of 70.7% of the dentists reported performing an oral cancer examination at the initial appointment for all patients 40 years of age or older; 51.0% reported providing the examination to this group at recall appointments (Fig. 2). Ten percent of respondents never provided such exams for this cohort at the initial appointment. Fewer dentists reported performing oral cancer examinations for younger patients 18 to 39 years old: 65.9% at initial appointments and 47.2% at recall appointments all of the time. For edentulous patients, 72.7% reported providing an oral cancer examination all of the time, but 10.9% never did so. Only 26.9% of the practitioners reported palpating the lymph nodes of all patients 18 years of age or older, and 32.2% reported never palpating lymph nodes. Again, there were no statistically significant differences between dentists in British Columbia and those in Nova Scotia.

Of the respondents who were not providing oral cancer examinations, many felt that they were not trained to do so: 16.1% ( $n = 180$ ) for examinations of patients 18 to 39 years old and 19.2% ( $n = 151$ ) for examinations of those 40 and older. Nearly one-third of these dentists (30.6%) felt that

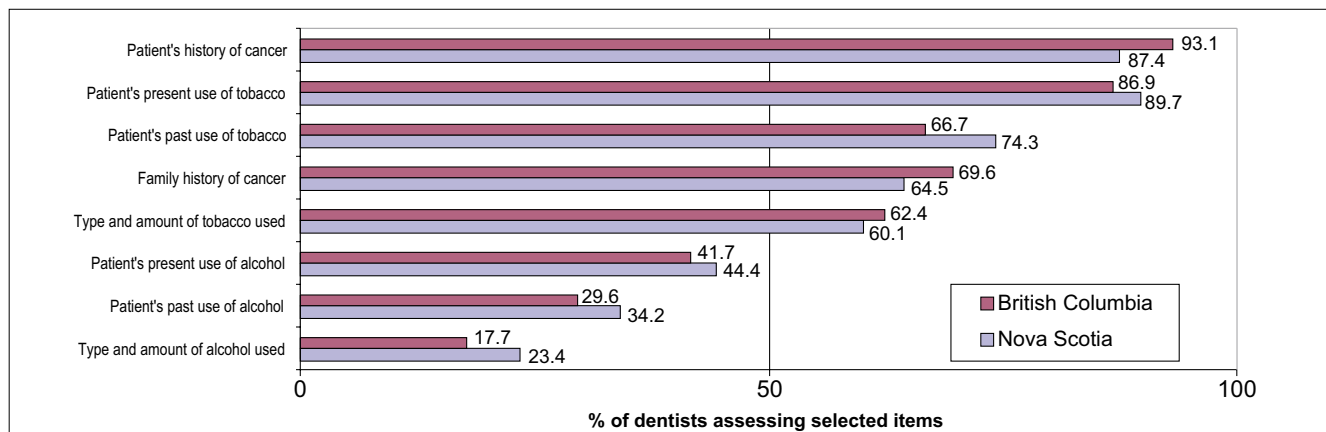


Figure 1: Percentage of dentists asking selected questions about health history

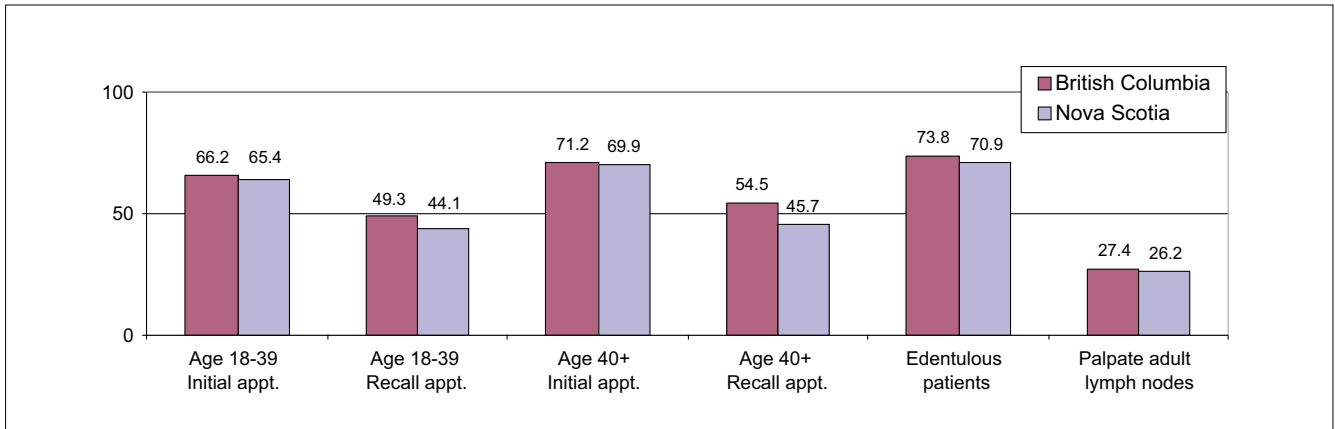


Figure 2: Percentage of dentists providing recommended oral cancer examinations

exams for patients 18 to 39 years of age were unnecessary, and 16.6% felt that exams for patients age 40 and older were unnecessary. Of other reasons given for not providing exams, the most frequent (cited by 12.2% of those not providing exams for the younger age group and 13.9% of those not providing exams for the older age group) was the view that oral cancer examination is part of the specialist's role.

There were some differences between the 2 provinces in reasons for not providing oral cancer examinations. Of the B.C. dentists, 11.3% who did not do examinations for the younger age group and 14.3% who did not do examinations for the older age group cited lack of training. A greater proportion of the N.S. dentists said they were not appropriately trained (23.0% of those not performing examinations for the younger age group and 25.4% of those not performing examinations for the older age group). A greater proportion of dentists in British Columbia (34.0%) than in Nova Scotia (25.7%) felt that such examination was unnecessary in patients 18 to 39 years of age. The same pattern held true for omission of this examination for older patients (17.9% in British Columbia and 14.9% in Nova Scotia gave this reason).

### Undergraduate Education Concerning Oral Cancer

Overall, 56.7% of respondents agreed that their knowledge of oral cancer was current. A large proportion (32.1% in British Columbia and 29.8% in Nova Scotia) disagreed that their knowledge was current. Very few dentists in either province strongly agreed that their knowledge was current, more respondents strongly disagreed that their knowledge was current.

Respondents' beliefs about the adequacy of several aspects of their oral cancer training are summarized in Fig. 3. Only 17.2% strongly agreed that they were adequately trained to provide an oral cancer examination and just 6.8% felt strongly that most dentists were adequately trained to do so. Only 72.6% agreed or strongly

agreed that they were trained to palpate lymph nodes. Less than 10% of the dentists agreed or strongly agreed that they were adequately trained to provide tobacco cessation education (9.9%) or alcohol cessation education (5.2%). Only 25.8% felt that their dental school had treated oral cancer examinations in a manner similar to other procedures. Only 16.2% rated their undergraduate training in oral cancer examinations as very good whereas 52.2% rated it as good. There were no statistically significant differences between dentists in the 2 provinces in terms of opinions about oral cancer training.

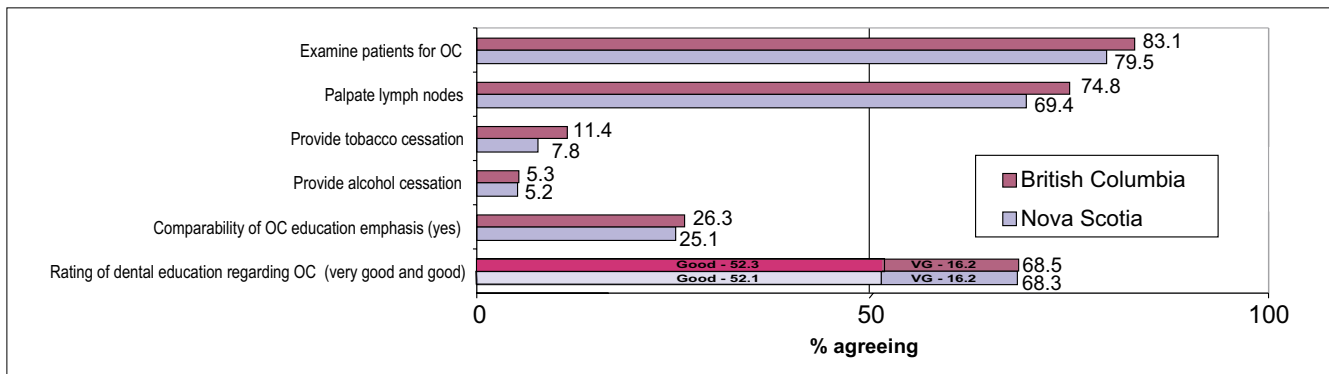
### Continuing Education for Oral Cancer

The majority of dentists (77.0%) expressed interest in continuing education courses about oral cancer. The most popular approaches were lectures (suggested by 56.7%), clinical demonstrations (52.6%), and audiovisual slides or videotapes (32.3%). Fewer dentists selected journals (16.2%), study clubs (14.5%) or booklets with self-test (12.0%). Less than 10% chose computer programs. More dentists in Nova Scotia than in British Columbia gave clinical demonstration as their first choice ( $p < 0.001$ ).

### Discussion

The response rate for this study (55%) was higher than those of a national U.S. study (50%)<sup>13</sup> and a Maryland study (54%)<sup>21</sup> and similar to that of other recent surveys of health practitioners.<sup>22</sup> Although the results, based on unweighted data, cannot be generalized to all dentists in British Columbia or to other provinces, the results for Nova Scotia represent the population of dentists in that province.

Assessing patients' current tobacco use was common. However, far fewer dentists determined previous tobacco use (which indicates ongoing risk) and types of tobacco used (which provides information about locations in the mouth to be examined with extra care). In addition to determining risk for oral cancer, dentists can provide tobacco intervention activities. Given that alcohol use is an important risk factor for oral cancer, it was surprising that



**Figure 3:** Opinions of dentists regarding adequacy of oral cancer training. "Percentage agreeing" includes both those who agreed and those who strongly agreed with the various statements. OC = oral cancer, VG = very good.

fewer than half of dentists reported assessment of current alcohol use. Our results concerning average number of risk factors assessed and pattern of assessment of tobacco use are similar to those reported previously,<sup>13,21</sup> but assessment of alcohol use was lower in our study.

There were gaps in the provision of oral cancer examinations, an important aspect in the early detection of oral cancer. Only 70.7% of dentists provided such examinations to all patients 40 years of age and older all of the time, a lower rate than observed in the United States (81%).<sup>13</sup> Much more favourable, however, was the larger proportion of dentists in this study than in the United States<sup>13</sup> (72.7% vs. 14%) who screened edentulous patients for oral cancer. Edentulous patients are likely to be at higher risk because of their age and because of past and current tobacco and alcohol use. Still, about 10% of all dentists did not provide oral cancer examination for any patients at the initial appointment, and slightly more did not provide such examination for any patients at recall appointments. Some of these practice gaps may be explained by lack of training, cited by nearly one-fifth of dentists; however, a large proportion of dentists felt that such examination is unnecessary, particularly for younger age groups, and some saw this as a specialist activity.

In this study, dentists' opinions about their training were inconsistent. Most rated their undergraduate education in prevention and early detection of oral cancer as good or very good, although most also reported that their school placed less emphasis on this topic than on other topics. Although 17.2% strongly agreed that they were adequately trained to provide oral cancer examination, only 6.8% believed that most other dentists were adequately trained. Overall, these ratings were slightly less positive than the U.S. findings.<sup>13</sup>

Although 56.7% of dentists agreed that their knowledge was current, nearly one-third disagreed, and more strongly disagreed than strongly agreed, which suggests that many dentists are aware of their lack of knowledge and are not confident about their knowledge and practices. These find-

ings concerning dentists' practices and opinions related to oral and pharyngeal cancer suggest strongly that educational interventions for practitioners and dental students are necessary.

Other researchers have suggested that survey respondents have a greater knowledge of and interest in the topic than nonrespondents.<sup>13,23</sup> Thus, the respondents to our survey probably had higher levels of oral cancer examination and health history assessment than nonrespondents, as well as higher levels of interest in continuing education courses. Furthermore, the reported oral cancer examination practices may not be effective, given the number of dentists who had inadequate knowledge of where to look and what to look for.<sup>20</sup>

Differences among guidelines relating to oral cancer screening may contribute to professional misunderstanding and underuse of simple and effective screening techniques.<sup>6</sup> Health Canada summarized 8 sources of oral cancer screening guidelines,<sup>24</sup> noting that only 4 recommended any form of oral cancer screening (e.g., periodic screening of tobacco users or annual examination). The obvious lack of consensus among the preventive guidelines developed by the U.S. Preventive Services Task Force, the Canadian Task Force on Preventive Health Care (formerly the Canadian Task Force on the Periodic Health Examination) and the American Cancer Society contributes to disagreement among practitioners and organizations regarding the value of oral cancer examinations and can serve as a rationale for not providing such screening.<sup>6</sup> The guidelines of the Canadian Task Force recommended annual examination only for people over 60 years of age with known risk factors.<sup>5</sup> The more comprehensive recommendations of the American Cancer Society (annual oral cancer examination for anyone 40 years of age and older and examination every 3 years for those over 20 years of age) suggest a need for regular examination of people younger than 60 years and those not at high risk.<sup>25</sup> A more recent Canadian analysis of oral cancer screening<sup>26</sup> supports the recommendation for routine oral cancer examination in the Canadian Task Force guidelines,<sup>24</sup>

but suggests that the problem is lack of evidence rather than lack of effectiveness.<sup>26</sup> This position reaffirms that absence of evidence of a benefit is not the same as evidence of no benefit. The guidelines, if not supportive of annual examination, certainly do not recommend against such measures: "Inasmuch as scientific and cost-effective parameters used to support preventive guidelines are still being defined, current guidelines should not deter the application of available and effective technologies."<sup>6</sup> The most current perspective is that dentists must consider all patients at risk<sup>12</sup> and that all patients should undergo regular and comprehensive oral cancer examination.<sup>2,15</sup>

## Conclusion

Current undergraduate curricula and continuing education for graduates could effectively address the gaps identified in these findings through a range of educational strategies. Practitioners must have current knowledge of risk factors for oral cancer, factors that have not been shown to pose any risk and diagnostic procedures to assess patient health; they should provide oral cancer examination (through both visual examination and palpation); and they should assist patients in reducing their risk through tobacco cessation counselling and other patient education. Related policies, such as requiring dental students to demonstrate exit competency in oral cancer examination and competency on the national certification exam (including appropriate health assessment and counselling regarding tobacco intervention), must also be considered. Interventions by dentists are critical to the reduction of morbidity and mortality caused by oral cancer. ♦

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