Oral Cancer Prevention and Early Detection Knowledge and Practices of Illinois Dentists – A Brief Communication

Charles W. LeHew, PhD; Linda M. Kaste, DDS, PhD

Abstract

Objectives: *The purpose of the study was to assess Illinois dentists' self-reported knowledge and practices concerning oral cancer prevention, early detection, and management as a baseline prior to conducting interventions designed to increase dentists' capacity to detect and manage oral cancers and counsel their patients about risk reduction.* ***Methods:*** *A weighted sample to represent licensed dentists in 19 counties yielded 518 dentists who responded to a 38-item mailed survey in 2004.* ***Results:*** *Over 92 percent of the dentists reported providing oral cancer exams. However, many are not doing them properly or at frequent intervals. Over two-thirds had oral cancer continuing education, but 40 percent had it more than 2 years prior to the survey. Training in risk counseling was rare.* ***Conclusions:*** *Interventions are needed to assure appropriate skill and knowledge levels for oral cancer early detection, management, and risk counseling by Illinois dentists.*

Key Words: dentist's practice patterns, dental education, continuing education, prevention and control, oral cancer screening, mouth neoplasms, oropharyngeal cancers, Illinois.

Introduction

As reflected in Healthy People 2010 Objectives 21–6 and 21–7, there is concern about the low levels of screening for and early detection of oral cancer in the United States (1). Illinois has oral cancer incidence rates (www.idph.state.il.us/cancer/statistics.htm) that are about equal to those at the national level (www.seer.cancer.gov), and for African-American males the rates are higher.

Because of their intimate knowledge of the oral cavity, dentists are uniquely positioned to examine their patients for indications of developing oral cancer, and also to counsel their patients about the oral health consequences of tobacco and alcohol use, the leading risk factors for oral cancer in the United States (2). Little is known about precisely what dental providers are doing to prevent and detect oral cancers in their patients, but prior studies have shown the need for improvement (3-8). The purpose of this study was to assess Illinois dentists' knowledge and practices concerning oral cancer prevention and early detection.

Methods

Illinois licensed dentists, from a list provided by the Illinois Department of Financial and Professional Regulation, were stratified to the county associated with their address. They were given a sampling probability associated with the density of dentists in their county. A sample of 860 dentists was drawn from the 19 counties involved in planning for interventions.

A 38-item questionnaire, based on the work of Horowitz and colleagues (3-5), was sent to each sample dentist, along with an informed consent document describing the study, associated risks and benefits of participation, and the right to decline participation. A $5.00 cash incentive, an addressed and stamped return envelope, and a letter from the state's dental director were included to encourage participation. One week after the initial mailing, a postcard reminder/thank you was sent to each dentist. Two weeks later a second packet was mailed to all sample dentists who had not responded. After a few weeks more, trained interviewers attempted to call each nonrespondent to talk with the dentist and request completion of the survey. Data collection was conducted from August through December 2004. This study was approved by the University of Illinois at Chicago Institutional Review Board, protocol number 2004-0126.

A total of 561 responses were received. Of those, several were ineligible because the respondent was no longer in practice. The final, usable sample was 518, for a response rate of 66.6 percent of eligible dentists from the initial sample.

Results

The dentists were primarily in private practice (n = 488, 94.2 percent), with a few from public clinics (6.2 percent), and one Naval Reservist practicing in both settings. The preponderance (63.7 percent) was midcareer, having graduated from dental school 10 to 30 years ago (1974 to 1993). Young dentists (10

Send correspondence to Charles W. LeHew, Institute for Health Research and Policy, University of Illinois at Chicago, 1747 W. Roosevelt Road, Suite 500, Chicago, IL 60608. Tel.: 312-355-4479; Fax: 312-996-0065; e-mail: lehew@uic.edu. Charles W. LeHew is with the University of Illinois at Chicago Institute for Health Research and Policy. Linda M. Kaste is with the University of Illinois at Chicago College of Dentistry. Reprints will not be available from the authors. **Sources of funding:** This project was partially supported by NIDCR R21DE/CA14404, NCI R25CA57699, and the Illinois Department of Public Health. Manuscript received: 10/8/06; accepted for publication: 12/28/06.

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years or fewer since graduation, 1994 to 2003) and mature dentists (over 30 years since graduation, 1948 to 1973) were almost equally represented at 17.5 percent and 18.7 percent, respectively.

Dentists' detection practices were inconsistent (Table 1). Nearly all respondents indicated that they perform oral cancer examinations on asymptomatic patients and palpate lymph nodes. However, among those who palpate, less than half do so every time. Most had detected at least one suspicious lesion within the past year, but only a third knew where to refer uninsured patients if biopsy was indicated.

Dentists' knowledge about oral cancer showed deficiencies (Table 1). Most dentists correctly identified the tongue and floor of the mouth as the two most common sites for oral cancer, excluding lip cancer; however, many offered incorrect sites or no site at all. The majority answered correctly that most oral cancers are squamous cell carcinomas, but several incorrect answers, predominantly basal cell carcinoma, were also given (data not shown).

Dentists lacked knowledge needed for risk assessment. When asked which of the several factors would be the *least* important, the most frequent answer was "age" instead of "family history," and some incorrectly identified tobacco or alcohol as the least important risk factor. That early oral cancer tends to be asymptomatic was generally known. However, poor understanding of the significance of age was further indicated, with only 20 percent knowing that the most common age at diagnosis is over 60 years.

Dentists' knowledge of what to look for and where was varied. They appeared to recognize a need for a thorough assessment of the tongue, and that to know leukoplakias and erythroplakias are significant. Otherwise, identification of suspicious lesion and lymph node characteristics was not uniform.

Most of the dentists said they had received continuing education (CE) about oral cancer. However, 40 percent of those had received that education more than 2 years prior to the survey. An encouraging 74.5 percent said they were interested in receiving CE.

The dentists' self-reported oral cancer prevention practices were focused on patients' use of tobacco and alcohol (Table 2), with tobacco use assessment given greater priority than alcohol assessment. Patients' history of tobacco and alcohol use was not as frequently ascertained as current use, and the amount and type of substances used were rarely determined.

Counseling patients appears challenging for dentists. Although dentists reported that they do counsel at least some of their smoking patients some of the time, about half reported not providing patients tobacco cessation materials to help them in their efforts to quit. Two-thirds did not refer any patients who smoke to cessation programs in the past year. Notably, most indicated that they lack sufficient time to counsel their patients about tobacco cessation, although they think that at least some of their patients would try to quit if advised.

Few are even aware of programs to which they can refer patients who would like to try to quit smoking. Most have little confidence in their counseling skills. Training in tobacco cessation counseling was rarely reported. Although they shared a belief that dentists should receive training in tobacco cessation counseling, few indicated personal interest in receiving such training. Expectations on alcohol counseling by dentists were even lower on every measure.

Discussion

These findings are consistent with other dentist surveys, either from the national (3-4) or state-specific (5-8) perspective, in showing deficiencies. The current study broadens the existing literature with a focus on Midwest dentists, and provides data collected 2 to 9 years more recent than prior studies as a baseline for interventions in Illinois.

The greatest limitation of this study is that the sample of dentists is not representative of the entire state. The findings cannot be generalized beyond the counties where the dentists practice. The response rate of 66.6 percent further suggests that the data may not reflect the knowledge and practice of dentists who did not respond and who may be different from those who did participate. It may be noted, however, that this rate is substantially higher than that achieved in previous studies (3-8), with the extensive efforts made by the interviewers to secure cooperation. The consistency of the findings with earlier surveys suggests that the findings have implications beyond the counties, and also that practice has not improved appreciably over the past decade despite well-publicized efforts to improve it (9).

Another limitation is the descriptive nature of the statistical analysis. These data were intended to establish a baseline for follow-up, postintervention data analysis. A review of basic bivariate analysis did not demonstrate any striking findings, but these issues will be revisited with results from interventions.

Most dentists report performing oral cancer examinations on nearly every patient at least some of the time, but still there remain dentists who report never providing the service. Furthermore, most do not take every opportunity to screen for oral cancer, and when given, the examinations are frequently not thorough. Given less than complete understanding of the nature of premalignant lesions and of proper examination techniques, it cannot be concluded that dentists in Illinois are doing all they should be doing to detect oral cancers in their patients. There is a clear need for additional training and for greater vigilance.

Risk counseling for dental patients in Illinois appears underprovided. The data from this survey suggest that dentists do not fully understand the reasons for the assessment in patient histories, or perhaps the potential value of such

Table 1
Dentists' Knowledge and Early Detection Practices, from 19 Illinois Counties in 2004

Responses	%
Oral cancer early detection practice	
Perform oral cancer examinations on asymptomatic patients	
Yes	92.3
Among those who perform oral cancer examinations on asymptomatic patients, frequency of examinations:	
At least annually	40.6
Less than annually	44.8
Palpate lymph nodes in neck during exam	
Yes	71.5
Among those who palpate lymph nodes, frequency of palpating:	
Always	42.4
Usually	25.4
Sometimes	20.8
Rarely	5.8
Never	27.6
Suspicious lesion detection	
No suspicious lesions detected past year	11.2
1-5 suspicious lesions detected past year	54.8
>5 suspicious lesions detected past year	30.7
Have place to refer uninsured for biopsy	
Yes	33.3
Oral cancer knowledge	
Most common sites for oral cancer, excluding lip cancer:	
Tongue	77.4
Floor of mouth	72.0
Buccal mucosa	26.3
Other/No answer	14.7
Squamous cell carcinoma most common form of oral cancer	
Yes	74.7
Risk factor least associated with oral cancer:	
Tobacco	1.2
Alcohol	8.1
Age	47.9
Family history	31.3
Early oral cancer asymptomatic	
Yes	79.9
Most common patient age when diagnosed:	
<40 years	6.4
40-59 years	54.1
≥60 years	20.1
Suspicious lesion characteristics	
Diseased lymph nodes hard, painless, fixed, or mobile	64.3
Early lesions painless and red	31.5
Early lesions painless and white	53.9
All sides and posterior tongue should be examined	
Yes	82.0
Conditions most associated with early oral cancer:	
Leukoplakia	83.6
Erythroplakia	72.0
Other	16.8
Don't know/No answer	9.1
Ever had oral cancer continuing education	
Yes	67.4
Among those who ever had oral cancer continuing education (CE), time since CE:	
During past year	20.9
1-2 years ago	33.0
Over 2 years ago	40.4
Interested in oral cancer CE	
Yes	74.5

Percentages are calculated on $n = 518$, except for follow-up questions based on the number of valid responses.

Table 2
Dentists' Oral Cancer Prevention/Risk Reduction Practices, from 19 Illinois Counties in 2004

Practice	%
Take tobacco history	
Assess current tobacco use	84.9
Assess former tobacco use	67.4
Quantity and type of tobacco used	63.5
Take alcohol history	
Assess current alcohol use	55.7
Assess former alcohol use	39.1
Quantity and type of alcohol used	28.8
Counseling frequency	
Counseled no smoking patients about cessation past 12 months	19.3
Counseled 1-25% of smoking patients about cessation past 12 months	30.1
Counseled 26-50% of smoking patients about cessation past 12 months	12.7
Counseled 51-75% of smoking patients about cessation past 12 months	9.5
Counseled 76-100% of smoking patients about cessation past 12 months	21.6
Share self-help materials	
Gave no smoking patients self-help materials past 12 months	50.1
Gave 1-25% of smoking patients self-help materials past 12 months	23.2
Gave 26-50% of smoking patients self-help materials past 12 months	6.2
Gave 51-75% of smoking patients self-help materials past 12 months	5.0
Gave 76-100% of smoking patients self-help materials past 12 months	6.8
Refer to tobacco cessation programs	
Referred no tobacco-using patients to cessation programs past 12 months	67.5
Referred 1-25% of smoking patients to cessation programs past 12 months	15.3
Referred 26-50% of smoking patients to cessation programs past 12 months	4.3
Referred 51-75% of smoking patients to cessation programs past 12 months	1.2
Referred 76-100% of smoking patients to cessation programs past 12 months	2.5
Thoughts about tobacco counseling	
Sufficient time to counsel patients about tobacco	33.8
No patients would try to quit if advised	14.1
1-25% of patients would try to quit if advised	69.7
Aware of programs to which can refer	32.2
Confidence in counseling skills	
Very confident	9.1
Somewhat confident	35.1
Not too confident	37.1
Not at all confident	13.3
Thoughts on receipt of training	
Had training in tobacco cessation counseling	11.2
Dentists should be trained to counsel patients about tobacco cessation	58.9
Interested in receiving tobacco training in tobacco cessation counseling	37.3
Dentists should be trained to counsel patients about alcohol use	45.5

Percentages based on $n = 518$.

information. Former use of tobacco and alcohol may indicate continuing patient risk, but frequently is not ascertained. Similarly, not determining the amount and type of tobacco and alcohol products used misses information needed to provide tailored counseling. Moreover, alcohol is given considerably less priority than tobacco as a risk factor. The responses suggest that dentists fail to understand concerns about the synergy of alcohol and tobacco as related to oral cancer risk (2).

Illinois dentists face many barriers to providing early detection and risk counseling services to their patients. Lack of proper training and adequate time appear to be chief among them. Training should be made available and policies should be developed to mandate such training and encourage inclusion in patient care. Oral cancer examinations and substance counseling for dental patients are not fully embraced as standards of practice. Clear clinical practice guidelines that hold dentists responsible for routine and thorough oral cancer examinations and for patient-tailored counseling for tobacco use and alcohol abuse are needed. Early detection examinations and proper risk counseling could be encouraged through setting professional practice standards and with insurance cover-

age for these procedures. Oral cancer prevention and early detection, as well as related health provider education, are significant public health concerns that require increased and sustained attention in both the health care and policy systems.

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