A review of the opinions and practices to oral cancer and the Dental Oncology Newsletter among the dental professionals in Texas

Case Report submitted in partial fulfillment of the Residency

in Dental Public Health

By

Kishore Shetty, BDS, DDPH, MSc

Department of Community Dentistry

University of Texas Health Science Center at San Antonio

San Antonio, Texas 78284-7917

August 1997

Abstract

Oral Cancer affects over 30,000 people each year and is responsible for 8000 deaths annually making it the cancer with the 5th lowest survival rate of all major cancers. The mortality may be attributed to lack of effective oral examination by dental and other health professionals. Regular and thorough oral examinations from dentists and hygienists provide possibly the best way to detect and treat oral cancer in its early stages. Because tobacco and alcohol are important risk factors for oral cancer, dentists and hygienists can be an excellent resource by which patients can receive information and support in eliminating their use of tobacco products and alcohol. Our purpose in this study was to twofold. Firstly to review the knowledge, opinions and practices of the dentists, hygienists in Texas to oral cancer. Secondly to identify and evaluate uptake of Information Resources on Oral Cancer available through Texas Cancer Council (Oral Cancer newsletter and the continuing education courses) among the dental professionals. A total of 770 respondents completed the questionnaire which was mailed to all the dental professionals in Texas. Dentists performed more oral cancer screenings, head and neck examinations than hygienists. Hygienists were more likely to discuss risk factors of oral cancer and inform patients of the associated health risks of tobacco and urge them to quit. Hygienists had also attended more CE courses organized by DOEP and were more likely to attend the same in future than the dentists. The oral cancer newsletter published annually by the DOEP was critically appreciated by both the dentists and hygienists and more than half of the respondents wanted it to be published more frequently i.e. quarterly.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGMENTS

The author wishes to express sincere appreciation to Dr. Daniel Jones whose familiarity with the needs and ideas of the topic was helpful during the entire phase of this project. In addition special thanks to Dr. John Brown (Residency Director), Dr. Elaine Neenan and Dr. Benjamin Bradshaw who were members of the residency Committee. Thanks also to Texas Cancer Council for their support in funding this project.

A. NAME OF PROJECT

A review of the opinions and practices to oral cancer and the Dental Oncology Newsletter among the dental professionals in Texas

By

Kishore Shetty, BDS, DDPH, MSc

B. APPLICANT'S ROLE IN PROJECT

The applicant was a co-investigator in planning, implementation, analyzing, interpreting and reporting this study.

C. STATEMENT OF PURPOSE

Purpose of the Study:

- A review of the dentists, hygienists and other health professional's knowledge, opinions and practices to oral cancer.
- Evaluation of the newsletter (Oral Disease Update) and the continuing education courses run by Dental Oncology Education Program, Texas Cancer Council.

D. BACKGROUND AND REVIEW OF LITERATURE

More than 30,000 people in the United States are diagnosed with oral and pharyngeal cancer each year. Oral Cancer alone is responsible for more than 8,000 deaths each year, more than cervical cancer or malignant melanoma [1,2]. The number of deaths may be even higher, as oral cancer is often masked by other, more conspicuous comorbid conditions [3]. If detected early, the prognosis for survival of oral cancer is better than most cancers [4]. The percentage of people surviving five years after diagnosis corresponds to the stage of the cancer at the time of diagnosis. The five year survival rate is 75% for those with localized disease at diagnosis, compared to only 16 percent for those with metastasis [2]. Of the 13 major cancer sites, oral cancer has the fifth lowest five-year survival rate [2].

Oral cancer is a disease with known high-risk factors, an asymptomatic phase with identifiable clinical features, an available and efficient screening modality and effective non-deforming treatment for early lesions [5,6,7]. Most oral cancer lesions are not diagnosed however until they are in an advanced stage.

The main risk factors are known-tobacco and alcohol for most internal oral and pharyngeal cancer sites and solar radiation for lip cancer. The majority of oral and pharyngeal precancerous and cancerous lesions are particularly amenable to early diagnosis because the sites of involvement are accessible by clinical examination, a well-accepted noninvasive procedure. It takes several years for an oral cancer to reach its full-blown invasive potential, making it possible to prevent it or interfere with its progression at an early stage. According to the US Preventive Services Task Force "there is evidence that persons with early-stage oral cancer have a better prognosis than those diagnosed with more advanced disease." [8,9] Both dentists and hygienists have a unique opportunity to detect a malignant oral neoplasia while it is asymptomatic, innocuous and unsuspected. In contrast to many other regions of the body, the oral cavity is easily accessible. The examination requires no specialized instruments and poses neither discomfort nor embarrassment for the patient. Oral Cancer screening may also identify those at high risk for upper aerodigestive and lung cancers.

In a general practice with 1000 to 2000 people, 40 to 50 people may have red and white patches on the lining mucosae of their oral cavity. Based on definitions and criteria laid down by World Health Organization, some of these can be grouped under the term oral precancer. Among these high-risk subjects presenting with potentially malignant lesions and conditions, approximately 5% may develop an oral malignancy over a period of 10-20 years[10].

Oral cancer is self induced and is largely a preventable disease. Those who are most likely to be at risk are consumers of tobacco (either smoked or chewed) and those who indulge in alcohol misuse. The US. Preventive Services Task Force advises that "it may be prudent for clinicians to perform careful examinations of the oral cavity in patients who use tobacco or excessive amounts of alcohol, as well as those with suspicious symptoms or lesions which are detected through self-examination." [8,9] In

spite of clear potential for prevention and availability of substantial knowledge of the causes of oral cancer and precancer, prevention has not made progress. Dental practitioners, unfortunately have not been advocates for prevention of cancer and it is evident that the road to prevention is not a glamorous one, particularly because economic incentives are lacking and there is some confusion on appropriate strategies and what works.

Although high-risk patients visit physicians more frequently than dentists, studies report that physicians do not routinely inspect their patients to identify early, suspicious oral lesions. Studies have also found dentists to be remiss in the early diagnosis of and referral for oral cancer. Many studies have suggested that physicians and dentists do not adequately detect oral lesions in the early stages because of the practitioners attitudes and knowledge.

Although practitioners' knowledge, opinions, and practices for many types of cancers have been investigated, none of these studies addressed oral cancers. A review of the several studies assessing oral cancer knowledge, opinions, and practices of health care physicians suggests that many physicians and dentists do not detect oral lesions in their early stages because of inappropriate attitudes or lack of knowledge [11-16]. For example physicians in Great Britain believed dentists were primarily responsible for detecting oral cancer. In the United States, Crissman et al. found that physicians delayed oral cancer diagnosis because they confused oral cancers with traumatic, inflammatory, or infectious lesions [17]. However a recent pilot survey of physicians and dentists' knowledge, opinions and practices related to oral cancers found that 34 percent of dentists' and 37 percent of physicians did not recognize the importance of early detection as a mean of reducing morbidity and mortality from these diseases [18].

Studies report that dentists do not routinely inspect their patients to identify early, suspicious oral lesions [13,19,20,21]. Schnetler found dentists to be less adept at diagnosis and early referral than physicians. Maguire and Roberts reported that only 14 percent of dentists performed all aspects of an intra oral examination. In an older report from Scotland, Pogrel noted that dentists missed approximately twice as many asymptomatic oral cancer cases as they found. Coffin reported that dentists failed to recognize oral cancer in 69 percent of the cases presented to them.

Though these reports span three decades, the results are basically unchanged. Although practitioners knowledge of, opinions about and practices for many cancers have been investigated, there have been no comprehensive surveys of dentists and hygienists that assess and compare their oral cancer knowledge, attitudes and practices. In fact there have been few studies concerning hygienists and other health care professionals' practices and opinions on oral cancer.

The Texas Cancer Council (TCC) is a state agency that seeks to enhance the role of health professionals in cancer prevention through professional education programs. In the spring of 1992, the Council included the dental profession in its efforts with the creation of the Dental Oncology Educational Program (DOEP), which joined the existing Physician and Nursing Oncology Education Programs.

Initially in 1992, the DOEP was asked to assess the attitudes, practices and educational interests of Texas dentists regarding oral cancer, and to use this data to develop effective educational programs and policies. A survey on oral cancer knowledge and practices was mailed to 1000 general dentists randomly selected from the Texas State Board of Dental Examiners' list of licensed dentists. The survey pointed out the need for further education in the area of oral cancer prevention [22]. The DOEP was created with this in mind and subsequently tried to address this issue with a variety of projects including CE for dentists, hygienists and other health care professionals. The DOEP is also responsible for the publication and distribution of the newsletter Oral Disease Update.

Our purpose in this study was to twofold. Firstly to review the knowledge, opinions and practices of the dentists, hygienists and other oral health professionals to oral cancer. Secondly to identify and evaluate uptake of Information Resources on Oral Cancer available through Texas Cancer Council (Oral Cancer newsletter and the continuing education courses) among the dental professionals

Method and Materials

We constructed a 13 item questionnaire which dealt with two themes. The first one included questions to obtain key baseline data on the experience of the oral health professional dealing with oral cancer and precancer, the usual management and referral strategy and their belief in

the efficacy of screening. The second part dealt with questions related to their opinions on the usefulness of the newsletter and CE courses run by the Texas Cancer Council.

We pretested the questionnaire in Department of Community Dentistry in early February when 10 dentists completed them. The pretested questionnaire was evaluated and modified for interpretability, time needed for completion and reliability.

Questionnaire was included in the April/May 1997 issue of the DOEP newsletter (*Oral Disease Update*) with a mention of the survey in the same explaining the study and requesting participation (Appendix A). The questionnaire was in the form of a prepaid reply post card and was mailed to all dentists, dental hygienists and other oral health professionals in the state of Texas (the regular recipients of the newsletter).

After about six weeks after the mailings around 800 completed surveys were received (a response rate of 7-8%). It was planned to follow up with a phone survey to increase the response rate and target especially on the hygienists. However the telephone follow-ups met with some problems. It was found that the area codes to most of the counties in Texas had been changed recently and this was not corrected in the list available. Many of the hygienists had entered their residence telephone numbers and it was difficult to contact them personally. To add to this many individuals had answering machines for call screening. Hence because the time and cost-effectiveness of the entire procedure were doubtful the telephone survey was canceled.

Data Analysis

Data was entered into a microcomputer using the Microsoft Fox Pro Version 2.5b program. A random ten percent of all data were verified for coding accuracy and the error rate was found to be very minimal. Statistical analysis was carried out using SPSS (Statistical Package for Social Science) Version 6.1.4. Descriptive statistics was used to compute frequency of response for all demographic items and all questions about beliefs, knowledge, and practices. Data was further analyzed by the Chi Square Statistic to see if the variables correlate with the binary response variable.

RESULTS

Of the 770 respondents, 77.4 % (n= 596) were dentists and 22.6%(n=174) were hygienists. About 63% of the respondents were males and 90% of the total respondents were private dental practitioners. Approximately 10 percent had been in practice less than 5 years, 50 percent from 6-20 years and 40 percent for 21 or more years.

	Dentists	Hygienists	Total
Sex			
Male	482(80.9)	1(0.6)	483(62.7)
Female	114(19.1)	171(98.3)	285(37.0)
Years in Practice			
1-5 years	46(7.8)	27(15.5)	73(9.5)
6-10 years	67(11.3)	35(20.1)	102(13.2)
11-20 years	218(36.8)	66(37.9)	284(36.9)
21-30 years	135(22.8)	39(22.4)	174(22.6)
More than 30 years	127(21.4)	7(4.0)	134(17.4)
Practice Setting			
Faculty	20(3.4)	9(5.2)	29(3.8)
Government	17(2.9)	------	17(2.2)
Military	15(2.5)	------	15(1.9)
Private	531(89.1)	165(94.8)	696(90.4)
Resident	13(2.2)	------	13(1.7)
Age			
Less than 35	58(9.7%)	54(31%)	112(14.5%)
35-44	199(33.4%)	75(43.1%)	274(35.6%)
45-52	152(25.5%)	187(20.1%)	187(24.3%)
53-61	100(16.8%)	9(5.2%)	109(14.2%)
62-70	69(11.6%)	---------	69(9.0%)
71 and over	18(3.0%)	1(0.6%)	19(2.5%)

Table 1: Demographic Characteristics of Survey Participants

SPECIALITY TRAINING	All respondents
General Dentistry	470[61.03]
Hygienists	172[22.33]
Periodontics	25[3.24]
OMS	24[3.11]
Orthodontics	16[2.07]
Pediatric Dentistry	11[1.42]
Prosthodontics	6 [.78]
Endodontics	6[.78]
Public Health	5[.65]
Oral Pathology	1[.13]
Not known	32[4.15]

Table 2: Percent Distribution of all respondents by specialty

Review of the knowledge, opinions and practices of the dentists and hygienists to oral cancer.

Where did you obtain most of your current knowledge concerning oral cancer

	Dentists	**Hygienists**
Dental/ Dental Hygiene School	556(91.3)	124(71.3)** **[p<.01]**
Postdoctoral training	186(31.2)	0* **[p<.001]**
Literature	396(66.4)	92(52.9)* **[p<.001]**
CE Courses	366(61.4)	102(58.6)
American Cancer Society	174(29.2)	44(25.3)
Dental Oncology Program	121(20.3)	38(21.8)

Table 3: Source of Current Knowledge on Oral Cancer

Do you think your current knowledge on oral cancer is adequate

	Dentist	**Hygienist**
Prevention of oral cancer	473(79.4)	136(78.2)
Early detection of cancer	407(68.3)	113(64.9)
Biopsy procedures	209(35.1)	27(15.5)* **[p<.001]**
Treatment Early Cancer	131(22.0)	35(20.1)
Treatment Advanced Cancer	81(13.6)	20(11.5)
Management of oral sequelae of cancer therapy	173(29.0)	28(16.1)* **[p<.001]**

Table 4: Perceptions on Current knowledge on oral cancer

Type of routine oral cancer services provided in the practice

	New Patient	**Routine check-up**	**Neither**
Screenings for oral cancer	228(29.6)	636(82.6)	23(3.0)
Complete head/neck exams	234(30.4)	329(42.7)	170(22.1)
Teach patients self-examination for oral cancer	50(6.5)	125(16.2)	462(60.0)
Inform patients about oral cancer warning signs and risk factors	117(15.2)	474(61.6)	139(18.1)
Increase the frequency of recall for patients at high risk for oral cancer	35(4.5)	269(34.9)	368(47.8)

Table5: Type of oral cancer services provided in the practice

Type of routine oral cancer services provided in the practice (dentists vs. hygienists)

	New Patient		Routine check-up		Neither	
	Dentist	Hygienist	Dentist	Hygienist	Dentist	Hygienist
Screenings for oral cancer	186 (31.6)	42 (24.1)	501 (84.1)	135 (77.6)	14 (2.3)	9 (5.2)
Complete head/neck exams	191 (32.0)	43 (24.7)	267 (44.8)	62 (35.6)	116 (19.5)	54 (31.0) **[p<.001]**
Teach patient's self-examination	41 (6.9)	9 (5.2)	93 (15.6)	32 (18.4)	359 (60.2)	103 (59.2)
Inform about warning signs and risk factors	99 (16.6)	18 (10.3)	354 (59.4)	120 (69.0)	112 (18.8)	27 (15.5)
Increase the frequency recall for patients	31 (5.2)	4 (2.3)	216 (36.2)	53 (30.5)	273 (45.8)	95 (54.6)

Table 6: Type of routine oral cancer services provided (dentists vs. hygienists)

Oral cancer diagnosis/ referral services provided in the practice

	All respondents
Referred a patient with oral cancer	341(44.3)
Performed biopsy procedures for potentially malignant lesions	187(24.3)
Refer outside for Biopsy	529(68.7)
Diagnosed a patient with oral cancer	150(19.5)
Provided dental treatment to a patient undergoing radiation therapy	437(56.8)
Provided dental treatment to a patient undergoing chemotherapy	489(63.5)

Table 7: Oral cancer diagnosis/referral services provided in the practice

	Dentists	Hygienists
Referred a patient with oral cancer	280(47.0)	61(35.1)** **[p<.01]**
Performed biopsy procedures for potentially malignant lesions	155(26)	32(18.4)
Refer outside for Biopsy	421(70.6)	108(62.1)
Diagnosed a patient with oral cancer	130(21.8)	20(11.5)** **[p<.01]**
Provided dental treatment to a patient undergoing radiation therapy for cancer	339(56.9)	98(56.3)
Provided dental treatment to a patient undergoing chemotherapy for cancer	375(62.9)	114(65.5)

Table8: Oral cancer diagnosis/referral services provided (dentists vs. hygienists)

Oral Cancer Cases seen in the last year

Oral Cancer cases seen in past year	**All respondents**
No cases	622(80.8)
one case	60(7.8)
2-5 cases	76(9.9)
6-9cases	7(0.9)
9-14 cases	3(0.4)
15-25 cases	2(0.3)

Table 9: Number of oral cancer cases seen in the past year.

Oral Cancer Cases seen in the last year by specialty

	Cases
Hygienists	17(11.5)
Gen Dent	97(65.5)
OMS	22(14.9)
Orthodon	1(0.7)
Period.	10(6.8)
Prosthodo	1(0.7)

Table 10: Number of oral cancer cases seen in the past year (by specialty).

Oral Cancer Cases seen in the last year by years in practice

	Number of Oral Cancer cases seen in the last one year					
Yr. in Prac	**1**	**2-5**	**6-9**	**10-14**	**15-25**	**Total**
1-5	4	6	------	----	------	10(6.8)
6-10	9	5	1	------	------	15(10.2)
11-20	25	33	4	------	-----	62(42.2)
21-30	12	18	1	-----	2	33(22.4)
30+	10	13	1	3	------	27(18.4)

Table 11: Number of oral cancer cases seen in the past year (by specialty).

Services provided for patients who use tobacco

	All respondents
Inform them of the associated health risks	677(87.9)
Urge them to quit	618(80.3)
Provide information on tobacco cessation programs	241(31.3)
Provide counseling on tobacco cessation	130(16.9)
Refer to staff member for tobacco cessation counseling	24(3.1)
Refer to outside your office	116(15.1)
Recommend polacrilex (Nicorette tablets) or nicotine patches	399(51.8)

Table12: Preventive Services provided to patients who use tobacco

Services provided for patients who use tobacco (dentists vs. hygienists)

	Dentists	Hygienists
Inform them of the associated health risks	517(86.7)	160(92.0)
Urge them to quit	470(78.9)	148(85.1)
Provide information on tobacco cessation programs	201(33.7)	40(23.0)** **[p<.01]**
Provide counseling on tobacco cessation	101(16.9)	29(16.7)
Refer to staff member for tobacco cessation counseling	20(3.4)	4(2.3)
Refer to outside your office	94(15.9)	22(12.6)
Recommend polacrilex (Nicorette tablets) or nicotine patches	295(49.5)	104(59.8)

Table 13: Preventive Services provided to patients who use tobacco

Services provided to patients who use alcohol

	All respondents
Inform them of the associated health risks	411(53.4)
Urge them to quit	248(32.2)
Provide information on alcohol cessation programs	72(9.4)
Provide counseling on alcohol cessation	30(3.9)
Refer to staff member for alcohol cessation counseling	14(1.8)
Refer outside your office for cessation	99(12.9)

Table14: Preventive Services provided to patients who use alcohol

Services provided to patients who use alcohol(dentists vs. hygienists)

	Dentists	Hygienists
Inform them of the associated health risks	335(56.2)	76(43.7)** **[p<.01]**
Urge them to quit	197(33.1)	51(29.3)
Provide information on alcohol cessation programs	57(9.6)	15(8.6)
Provide counseling on alcohol cessation	24(4.0)	6(3.4)
Refer to staff member for alcohol cessation counseling	11(1.8)	3(1.7)
Refer outside your office for cessation	80(13.4)	19(10.9)

Table15: Preventive Services provided to patients who use alcohol

Evaluation of the uptake of Information Resources on Oral Cancer available through Texas Cancer Council

Have you attended any Continuing Education Program conducted by the DOEP

	Dentist	Hygienist
Yes	70(11.7)	46(26.4)* **[p<.001]**
No	519(87.1)	128(73.6)

Table 16: Attendance at CE courses run by DOEP

Are you interested in attending continuing dental education courses on oral cancer

	Dentist	Hygienist
Yes	522(87.6)	167(96.0)** **[p<.01]**
No	57(9.6)	5(2.9)

Table 17: Interest in attending future CE courses run by DOEP

How do you rate the following information provided in this newsletter?

Information	Ratings			
	Excellent	Good	Fair	Poor
Early detection of oral cancer	301(39.1)	320(41.6)	24(3.1)	------
Prevention of oral cancer	275(35.7)	323(41.9)	30(3.9)	4(0.5)
Management of oral sequelae	186(24.2)	320(41.6)	103(13.4)	8(1.0)
Tobacco cessation for dental patients	188(24.4)	330(42.9)	76(9.9)	15(1.9)
Tobacco cessation for professionals	184(23.9)	326(42.3)	78(10.1)	13(1.7)
Cancer Educational materials - patients	179(23.2)	312(40.5)	96(12.5)	12(1.6)
Educational materials - professionals	201(26.1)	334(43.4)	64(8.3)	6(0.8)
Continuing Dental Education opportunities	200(26.0)	315(40.9)	97(12.6)	7(0.9)
Announcements and other events	174(22.6)	333(43.2)	91(11.8)	8(1.0)

Table 18: Rating of the current information provided in the DOEP newsletter

How do you rate the information provided in this newsletter (dentists vs. hygienists)

	Excellent		**Good**		**Fair**		**Poor**	
	Dentist	Hygienist	Dentist	Hygienist	Dentist	Hygienist	Dentist	Hygienist
Early detection of oral cancer	233 (39.1)	68 (39.1)	249 (41.8)	71 (40.8)	16 (2.7)	8 (4.6)	---------- -	---------
Prevention of oral cancer	206 (34.6)	69 (39.7)	255 (42.8)	68 (39.1)	26 (4.4)	4 (2.3)	2 (0.3)	2 (1.1)
Management of oral sequelae.	143 (24)	43 (24.7)	244 (40.9)	76 (43.7)	82 (13.8)	21 (12.1)	6 (1.0)	2 (1.1)
Tobacco cessat. For patients	143 (24.0)	45 (25.9)	255 (42.8)	75 (43.1)	57 (9.6)	19 (10.9)	14 (2.3)	1 (0.6)
Tobacco cessat. For profession.	141 (23.7)	43 (24.7)	253 (42.4)	73 (42.0)	60 (10.1)	18 (10.3)	11 (1.8)	2 (1.1)
Educational mat. patients	140 (23.5)	39 (224)	240 (40.3)	72 (41.4)	72 (12.1)	24 (13.8)	10 (1.7)	2 (1.1)
Educational mat.profession.	159 (26.7)	42 (24.1)	255 (42.8)	79 (45.4)	47 (7.9)	17 (9.8)	6 (1.0)	------
Continuing Den. Education	155 (26.0)	45 (25.9)	245 (41.1)	70 (40.2)	69 (11.6)	28 (16.1)	7 (1.2)	------
Announcement other events	133 (22.3)	41 (23.6)	266 (44.6)	67 (38.5)	59 (9.9)	32 (18.4)	7 (1.2)	1 (0.6)

Table 19: Rating of the information in the newsletter(dentists vs. hygienists)

Frequency or future publications of the newsletter

	Total Number of Respondents
Once a year	18(2.3)
Twice a year	136(17.7)
Quarterly	450(58.4)
Monthly	124(16.1)

Table 20: Frequency for future publications of the newsletter

Frequency or future publications of the newsletter (dentists vs. hygienists)

	Dentists	Hygienists
Once a year	17(2.9)	1(0.6)
Twice a year	117(19.6)	19(10.9)
Quarterly	341(57.2)	109(62.6)
Monthly	88(14.8)	36(20.7)

Table 21: Frequency for publications of the newsletter

What kind of articles would you like to see in the future issues of the newsletter

	All respondents
Early detection of oral cancer	554(71.9)
Management of oral sequelae	492(63.9)
Treatment Early and Advanced Cancer	391(50.8)
Rehabilitative and Supportive Care	412(53.5)
Tobacco cessation for patients	384(49.9)
Cancer Educational mat.- patients	505(65.6)
Educational materials professionals	409(53.1)
Continuing Dental Education opportunities	503(65.3)

Table 22: Articles respondents wish to see in the future issues of the newsletter

Other Articles respondent wish to see in the future issues (dentist vs. hygienist)

	Dentists	Hygienists
Early detection of oral cancer	425(71.3)	129(74.1)
Management of oral sequelae	387(64.9)	105(60.3)
Treatment Early and Advanced Cancer	294(49.3)	97(55.7)
Rehabilitative and Supportive Care	308(51.7)	104(59.8)
Tobacco cessation for patients	280(47.0)	104(59.8)* **[p<.001]**
Cancer Educational materials - patients	372(62.4)	133(76.4)* **[p<.001]**
Educational materials professionals	290(48.7)	119(68.4)* **[p<.001]**
Continuing Dental Education opportunities	365(61.2)	138(79.3)* **[p<.001]**

Table 23: Articles respondents wish to see in the future (dentists vs. hygienist)

The respondents also expressed their desire to see the following articles in the future issues

- Clinical photographs of lesions
- Demographic and statistics on oral cancer in Texas
- Referral Centers for Alcohol and Tobacco Cessation
- Biopsy techniques
- Studies/ Case Reports of Smoking Cessation programs
- Salivary Gland Tumors
- Chewing tobacco and its risks
- Cancers in general and their oral manifestations/effects on oral mucosa
- Maxillofacial Reconstruction and Prosthetics
- Videos for dentists and patients on oral cancer
- Oral Cancer Diagnostic Aids
- Aids and Hepatitis
- Information of DOEP on Internet

Discussion:

This survey had a low response rate and one needs to be careful in interpreting the findings of this study to the general dental professionals in Texas. Despite the limitations in extrapolating the results to the general population, a number of findings are significant.

On geographical mapping of the survey responses, we found that this sample did not differ or rather was very similar to the general distribution of dentists in the state of Texas. [Figure I, II, III, IV]. Hence it may be assumed that this is a representative sample of the dentists and hygienists in Texas.

In a survey conducted by American Dental Association in 1995 [26], the majority of dentists (75.6%) saw at least one patient in the past year who presented with an oral cancer lesion. In this survey 68.79 % of the dentists had seen a patient who presented with an oral cancer lesion which was diagnosed or referred.

Among those who had seen at least one case of oral cancer in the past year, most (73.6%) saw only one or two patients as compared to 36.3 % of dentists in the ADA Survey. This is shown in the table below:

	Texas Survey	National ADA Survey
1-2 patients	73.6	36.3
3-5 patients	18.2	32.7
6-10 patients	6.1	18.8
11-20 patients	1.4	8.2
over 20 patients	0.7	4.0

Table 24: Number of Patients seen in the past year who presented with lesions

The ADA survey found that dentists who saw a large number of patients with lesions were more likely to practice certain specialties. General Dentists ranked fourth in the list. Our survey found out that general dentists saw a large number of patients with lesions and then followed by the specialists. As may be expected because of the nature of their practice, oral and maxillofacial surgeons received the most patients who had lesions. Because the incidence of oral cancer is lower among children than among older adults, pedodontists & orthodontists saw fewer oral cancer cases.

Dentists vs. Hygienists Current Knowledge related to oral cancer

"I feel my current knowledge in the prevention of oral cancer is inadequate"		
	Dentist	Hygienist
Prevention of oral cancer	110(18.5)	34(19.5)
"I feel my current knowledge in the early detection of oral cancer is inadequate"		
	Dentist	Hygienist
Early detection of cancer	172(28.9)	58(33.3)
"I feel my current knowledge in the biopsy procedures related to oral cancer is inadequate"		
	Dentist	Hygienist
Biopsy procedures	363(60.9)	133(76.4)* **[p<.001]**
"I feel my current knowledge in the treatment of early stage of oral cancers is inadequate"		
	Dentist	Hygienist
Treatment Early Cancer	433(72.7)	125(71.8)
"I feel my current knowledge in the treatment of advanced oral cancers is inadequate"		
	Dentist	Hygienist
Treatment Advanced Cancer	482(80.9)	143(82.2)
I feel my current knowledge in the management of oral sequelae of cancer therapy is inadequate"		
	Dentist	Hygienist
Management of pt. with cancer	393(65.9)	133(76.4)*[p<0.001]

Table 25: Dentists vs. Hygienists Current Knowledge related to oral cancer

Almost two thirds of the total respondents mentioned that their current knowledge on biopsy procedures was inadequate. Not unexpectedly, hygienists differ significantly from dentist in not knowing more about biopsy procedures for oral cancer. Over 70 % of the dentists and hygienists said that their current knowledge in the treatment of early stage oral cancers was not adequate. Almost 30% of the respondents said that their current knowledge on early detection of oral cancer is inadequate. Hygienists not surprisingly expressed lower current knowledge on treatment of late stage oral cancers and the management of oral sequelae of cancer patients than the dentists. These results do point out some alarming statistics which need immediate attention

Dentists vs. Hygienists Current Practices related to oral cancer (as Table 6)

	New Patient		Routine check-up		Neither	
	Dentist	Hygienist	Dentist	Hygienist	Dentist	Hygienist
Oral Screening	186 31.6	42 24.1	501 84.1	135 77.6	14 2.3	9 5.2

	New Patient		Routine check-up		Neither	
	Dentist	Hygienist	Dentist	Hygienist	Dentist	Hygienist
Head neck exams	191 32.0	43 24.7	267 44.8	62 35.6	116 19.5	54 31.0 **[p<.001]**

	New Patient		Routine check-up		Neither	
	Dentist	Hygienist	Dentist	Hygienist	Dentist	Hygienist
mouth self exam.	41 6.9	9 5.2	93 15.6	32 18.4	359 60.2	103 59.2

	New Patient		Routine check-up		Neither	
	Dentist	Hygienist	Dentist	Hygienist	Dentist	Hygienist
Signs and risk factors	99 16.6	18 10.3	354 59.4	120 69.0	112 18.8	27 15.5

	New Patient		Routine check-up		Neither	
	Dentist	Hygienist	Dentist	Hygienist	Dentist	Hygienist
Increase frequency	31 5.2	4 2.3	216 36.2	53 30.5	273 45.8	95 54.6

When asked if they provide oral cancer screenings, 82.6% responded that they did so for regular patients but only 29.6% did so for the new patients. However one point worth noting here is that in the last DOEP survey (1992) only 7% of the respondents had mentioned providing oral cancer screening for their new patients. Hence there has been a four times increase in the number since. Dentists performed more oral cancer screenings and head and neck examinations than the dentists. However hygienists were more likely to discuss signs and risk factors for oral cancer with their regular patients than dentists. These results do point out the need for increased awareness about the need for oral cancer screenings especially among the hygienists.

1992 and 1997 Survey Comparisons

The following tables give a brief summary of the comparisons between the survey done by DOEP in 1992 and the Current Survey.

	1992 Survey	1997 Survey Dentist	1997 SurveyTotal
Sex			
Male	88	80.9	62.7
Female	12	19.1	37.0
Years in Practice			
1-5 years	14	7.8	9.5
6-10 years	25	11.3	13.2
11-20 years	29	36.8	36.9
21-30 years	18	22.8	22.6
More than 30 years	12	21.4	17.4
Age			
20-34	24	9.7	14.5
35-44	36	33.4	35.6
45-52	20	25.5	24.3
53-61	13	16.8	14.2
62-70	5	11.6	9.0
71 and over	2	3.0	2.5

Table 26: Demographics Comparison between the 1992 and 1997 survey

The following Table shows that Dental/Dental Hygiene Schools are still the most common sources for the current knowledge on oral cancer. More Dentists also mentioned CE Courses and post doctoral training as their sources when compared to the 1992 survey. The DOEP came into existence in the spring of 1992 and almost 20 percent of the dentists mentioned this as a useful source for current information on oral cancer.

	1992 Survey	1997 Survey-Dentist	1997 Survey Total
Dental/ Dental Hygiene School	**80**	**91.3**	**88.3**
Post doctoral training	**16**	**31.2**	**24.2**
Literature	**65**	**66.4**	**63.4**
CE Courses	**39**	**61.4**	**60.8**
American Cancer Society	**19**	**29.2**	**28.3**
DOEP	**-------**	**20.3**	**20.6**

Table27:Comparison bet. the 92 & 97 survey: Source of Knowledge on Oral Cancer

	1992 Survey	1997 Survey Dentists	1997 Survey Total
Diagnosed a patient with oral cancer	62	68.79	63.76
Performed Biopsies in the practice	15	26	24.3
Refer Biopsies outside the dental practice	79	70.6	68.7
Screenings for oral cancer - all patients	86	84.1	70.4
Screenings for oral cancer - new patients	7	31.6	29.6
Screenings for oral cancer - none	4	2.3	3
Complete head & neck exams- all patient	43	44.8	42.7
Complete head & neck exams- new patient	25	32	30.4
Complete head & neck exams- none	28	19.5	22.1
Self examination - all patients	15	15.6	16.2
Discuss risk signs and factors with patients	70	59.4	61.6
Increase frequency for high risk patients	33	36.2	34.9
Inform them of the health risks of tobacco	86	86.7	87.9
Urge them to quit tobacco	81	78.9	80.3
Provide inf. on tobacco cessation programs	39	33.7	31.3
Provide counseling on tobacco cessation	18	16.9	16.9
Refer to staff for tobacco cessation counseling	6	3.4	3.1
Recommend Nicotine tablets or patches	39	49.5	51.8
Inform them of the health risks of alcohol	41	56.2	53.4
Urge them to quit alcohol	31	33.1	32.2
Provide inf. on alcohol cessation programs	12	9.6	9.4
Provide counseling on alcohol cessation	4	4.0	3.9
Refer to staff for alcohol cessation counseling	3	1.8	1.8

Table 28: 1992 and Present Survey (Oral Cancer Related Services provided)

The present survey results are optimistic There has been an increase in the diagnostic services for oral cancer since 1992. There has been a four fold increase in the number of new patients who are screened for oral cancer. However according to the present survey results, not much has changed since 1992 regarding the dental professionals preventive services to patients using tobacco and alcohol use.

Conclusion

Oral cancer is responsible for 2% of all cancer deaths in the US [1]. An average of between three and four people are newly diagnosed with oral cancer every hour, and another person dies from the disease [1]. Oral cancer is the only fatal disease which dentists have to deal with on a regular basis. Further, more deaths occur annually as a result of oral cancer than as a result of cervical cancer. The available information on oral cancers leaves a number of questions unanswered. Two of the most important public issues are (a) the modest decrease in the incidence of oral cancers(6.4%) between 1973 and 1992 compared with the impressive decrease for cervical cancer(38.1%) in the same time period [1]; (b)The advanced stage at which more than one half of oral cancer cases are diagnosed. These issues suggest that, despite the advantages of known risk factors, anatomical accessibility, and periodic or occasional visits of patients and at-risk persons to physicians and dentists, there has not been appropriate or sufficient primary or secondary prevention. Martin et al. and Horowitz and Nourjah present national evidence of the small amount of screening by health care workers' [23-25]. Only 8.7% of the adults reported having had an examination for oral by a dentist or hygienist and 2.7 percent by a physician during the three years prior to the NHIS. Less than one out of every four adult patients who smoke reported having received smoking cessation counseling from dentists and just over one-half from physicians.

The perception of insufficient preventive activity directed toward oral cancers is easily corroborated by the everyday observation that oral cancers usually are not central to mass media cancer prevention campaigns, nor are they a visible component of preventive programs for tobacco- and alcohol-related diseases. It is no surprise hat there has not been a more substantial decrease in the development of new cases, that many preneoplastic lesions are missed before they become frankly invasive, and that the majority of cases are detected only when they have reached a regional or metastatic stage. According to Mashberg there is a tendency for clinicians to focus on symptomatology with little effective effort to early detection [5]. Generally, head and neck diagnosis is still predominantly predicted on patients symptoms.

Research shows that a simple word of advice from a health professional can increase the annual quit rate by as much as 50 percent. But dentists

and other health care workers aren't fully aware of how meaningful that advice can be, according to Dr. Robert E. Mecklengburg, dental coordinator, smoking and tobacco control program, National Cancer Institute.

Studies have identified some common barriers that may explain the underutilization of these powerful weapons in the fight against cancer. These barriers include uncertainty about screening guidelines, inadequate training in counseling and educating patients(particularly on strategies for life-style modifications), difficulty in obtaining provider reimbursement, pessimism about cost-benefit and/or the scientific basis of prevention and screening options, additional costs to patients, and logistical problems in the office setting (i.e., time constraints, staff, or referral sources). Furthermore, many doctors entertain pessimism regarding patients abilities to change their health life-styles. Some of this pessimism could stem from the physician's reliance on relatively ineffective educational techniques. Most of these health professionals routinely advise their patients to change their health related behaviors, but this is not enough. More than risk education and advice to change behavior is needed. Patients need access to skills and guidance to make effective behavioral changes. How the health professional can provide such assistance is a topic seldom covered in dental/hygiene school curricula. Early and comprehensive exposure to cancer prevention methods for undergraduate dental and dental hygiene students is necessary to predispose them to providing oral cancer examinations effectively and routinely. These students must be shown to know how to accomplish health education and risk-reduction counseling and how and when to perform screening. However, the emphasis on prevention has never equaled the emphasis on treatment in most US dental and medical schools.

NCI data collected in the early 1980s show that nearly 90 percent of dentists and physicians thought advice to stop smoking would fall on deaf ears. But patients disagreed. More than half the smokers surveyed in the same communities said they would try to stop smoking if their dentists or physicians told them to. Dentists sometimes undervalue the worth of the their advice. The patients wants to believe that the dentist will intervene if they are at risk of disease They expect oral health related messages when they come into the dental practice.

Major Conclusions

- *Dentists performed more oral cancer screenings, head and neck examinations than the hygienists.*

- *Hygienists were more likely to discuss risk factors of oral cancer & inform patients of the associated health risks of tobacco and urge them to quit.*

- *Dental Hygienists had attended more Continuing Education Courses organized by DOEP and were more likely to attend the same in future than the dentists*

- *The oral cancer newsletter published annually by the DOEP (Oral Disease Update) was critically appreciated by both the dentists and hygienists and more than half of the respondents wanted it to be published more frequently (Quarterly)*

Suggested changes if project were repeated

Overall the study progressed in an acceptable manner. However, there was a low response to the study which could not be boosted by follow-up telephone surveys. The problems faced during the telephone surveys have been already discussed before. A higher response rate might have been achieved if reminder questionnaires/cards were sent about two weeks after the first mailings. Previous surveys done by Texas Dental Association have shown a low response rate from its own members and this is self-explanatory of the difficulty in conducting such studies.

Further questions could have been included on the survey instrument. To increase the response rate not many investigative questions were asked as previous experiences had shown that such questions lowered the response rates. Secondly a higher response rate could have been achieved if the survey would have been anonymous not identifying the professional. However this would have meant asking more questions related to demographics. This survey methodology suffers from the increasingly intrusive marketing methods employed generally. The updated methods of marketing experts grow in cost and not always possible in public health. Nevertheless, much can be learned from the survey and customer satisfaction reports.

BIBLIOGRAPHY

1. Boring CC, Squies TS, Tong T, Montgomery S. Cancer statistics, 1994. CA Cancer J Clin 1994; 44: 7-26

2. National Cancer Institute. Cancer statistics review 1973-1987. Washington, D.C; Government Printing Office, 1989; Department of Health and Human Services, Public Health Service, National Institute of Health. NIH publication no. 88-2789.

3. Stalpers LJA, Van Vierzen PBJ, Bruns JJA, et al. The role of yearly chest radiography in the early detection of lung cancer following oral cancer. Int. J Oral Maxillofac Surg 1989; 18:99-103.

4. Mashberg A, Samit AM. Early detection, diagnosis, and management of oral and oropharyngeal cancer. Int. J Oral Maxillofac Surg 1989; 18:99-103.

5. Mashberg A, Samit A. Early diagnosis of asymptomatic oral and oropharyngeal squamous cancers. CA Cancer J Clin 1995; 45: 328-51..

6. Blot WJ, McLaughlin JK, Winn DM, et al. Smoking and Drinking in relation to oral and pharyngeal cancer. Cancer Res. 1988; 48: 3282-7.

7. Moore C. Education and oral cancer. In: Oral cancer interprofessional symposium. Washington, DC: Government Printing Office 83-92, 1966; Public Health Service publication no.1806..

8. Department of Health and Human Services. Healthy people 2000: national health promotion and disease prevention objectives. Washington, DC: Government Printing Office, 1990; DHHS publication no. (PHS) 91-50212.

9. Woolf SH, Kamerow DB, Lawrence RS, Medalie JH, Estes EH. The periodic health examination of older adults: recommendations of the US Preventive Services Task Force. J Am Geriatric Soc. 1990; 38: 933-42.

10. World Health Organization. Definition of leukoplakia and related lesions: an aid to studies on oral precancer. Oral Surg 1978: 46; s18-539.

11. Prout MN, Morris SJ, Witsburg RA, Hurley C, Chatterjee. S. A multidisciplinary educational program to promote head and neck cancer screening. Journal of Cancer Education. 1992 7:139-46.

12. Pommerenke FA, Weed DL . Physician compliance: improving skills in preventive medicine practices. Am Fam Physician. 1991; 43:560-8.

13. Schnetler JFC Oral Cancer diagnosis and delays in referral. British Journal Oral Maxillofacial Surgery, 1992; 30: 210-13..

14. Shafer WG Initial mismanagement and delay in diagnosis of oral cancer. J Am Dent Association. 1975; 90: 1262-4.

15. Sadowsky D, Kunzel C, Phelan J Dentists' knowledge, case finding behavior, and confirmed diagnosis of oral cancer. Journal Cancer Education. 1988; 3: 127-34.

16. Guggenheimer J, Verbin RS, Johnson JT, Horkowitz CA, Myers EN Factors delaying the diagnosis of oral and oro-pharyngeal carcinomas. Cancer. 1989; 64: 932-5.

17. Crissman JD, Gluckman J, Whiteley J, Quenelle D. Squamous-cell carcinoma of the floor of the mouth. Head Neck Surg 1980; 3:2-7.

18. Yellowitz, J.A. and Goodman, H.S. Assessing Physicians and Dentists' Oral Cancer Knowledge, Opinions and Practices. Journal of the American Dental Association 1995 126, 53-59.

19. Maguire BT, Roberts EE. Dentists' examination of the oral mucosa to detect oral cancer [Abstract]. J Pubic Health Dent 1994. 54:115

20. Pogrel MA. The dentist and oral cancer in the northeast of Scotland. Br. Dent J. 1974; 137: 15-20.

21. Coffin F. Cancer and the dental surgeon. Br Dent Jour 1964; 161: 191-202..

22. Dodds AP, Rankin kV, Jones DL, Seal RR What are you doing about oral cancer? Report of a survey of Texas Dentists. Texas Dental Journal.1994; 5:39-41.

23. Horowitz, A.M., Nourjah,P., and Gift, HC. US Adult Knowledge of Risk Factors and Signs of Oral Cancers: 1990. Journal of the American Dental Association.1995;126, 39-45.

24. Martin LM, Bouquot JE, Wingo PA, Heath CW Jr. Cancer prevention in the dental practice: oral cancer screening and tobacco cessation advice. J Public Health Dent 1996;56: 336-40.

25. Horowitz AM, Nourjah PA. Factors associated with having oral cancer examinations among US adults 40 years of age or older. J Public Health Dent 1996; 56: 331-5.

26. Survey of Current Issues in Dentistry. Oral Cancer Detection in the Dental Office.1997; American Dental Association

GLOSSARY

TCC: Texas Cancer Council

DOEP: Dental Oncology Education Program

OMS: Oral and Maxillofacial Surgery

CE: Continuing Dental Education Courses

ADA: American Dental Association

FIGURE - I

Dental Professionals in Survey by percentage

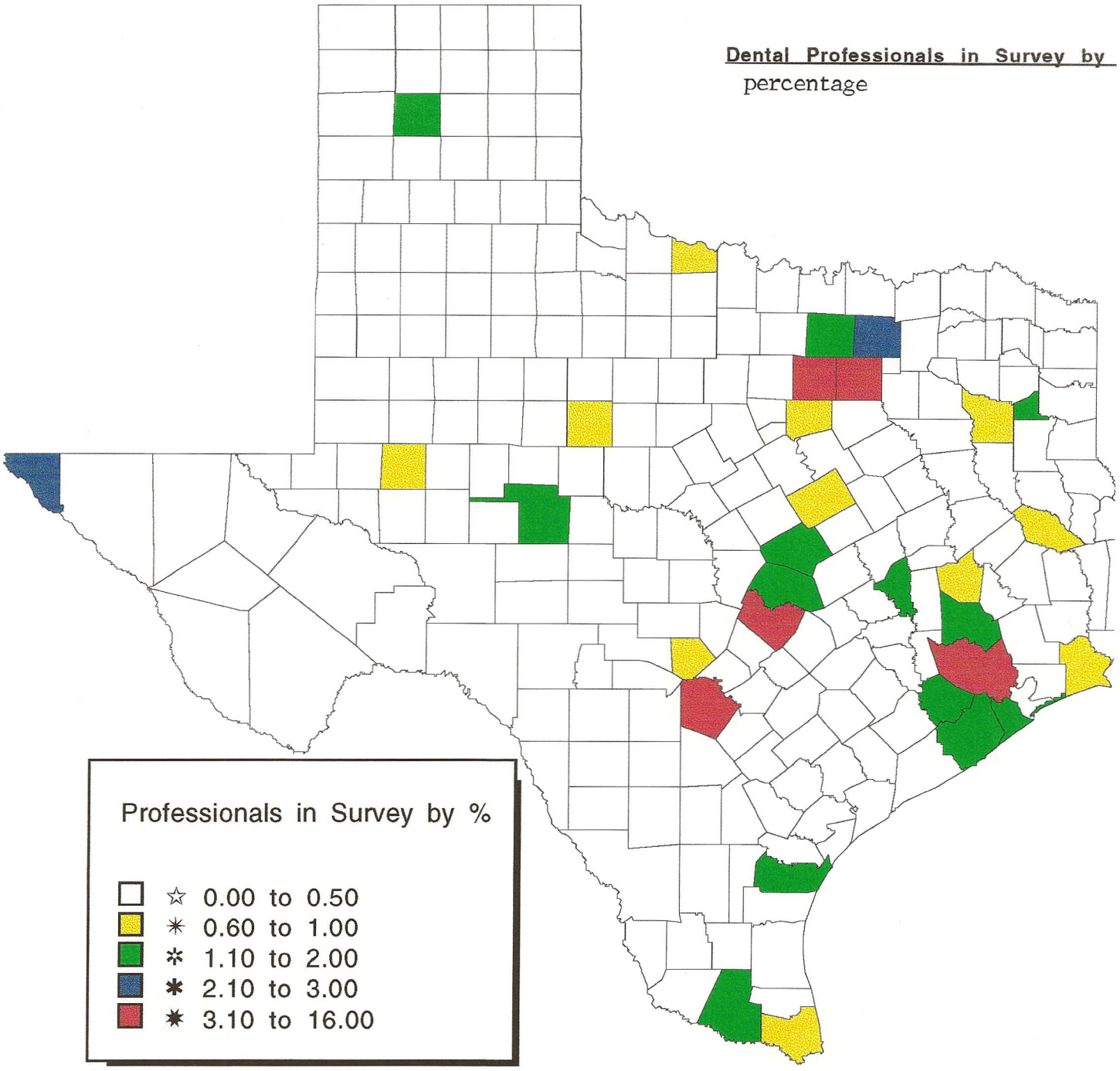


FIGURE- II

Dentists & Hygienists in Texas by %

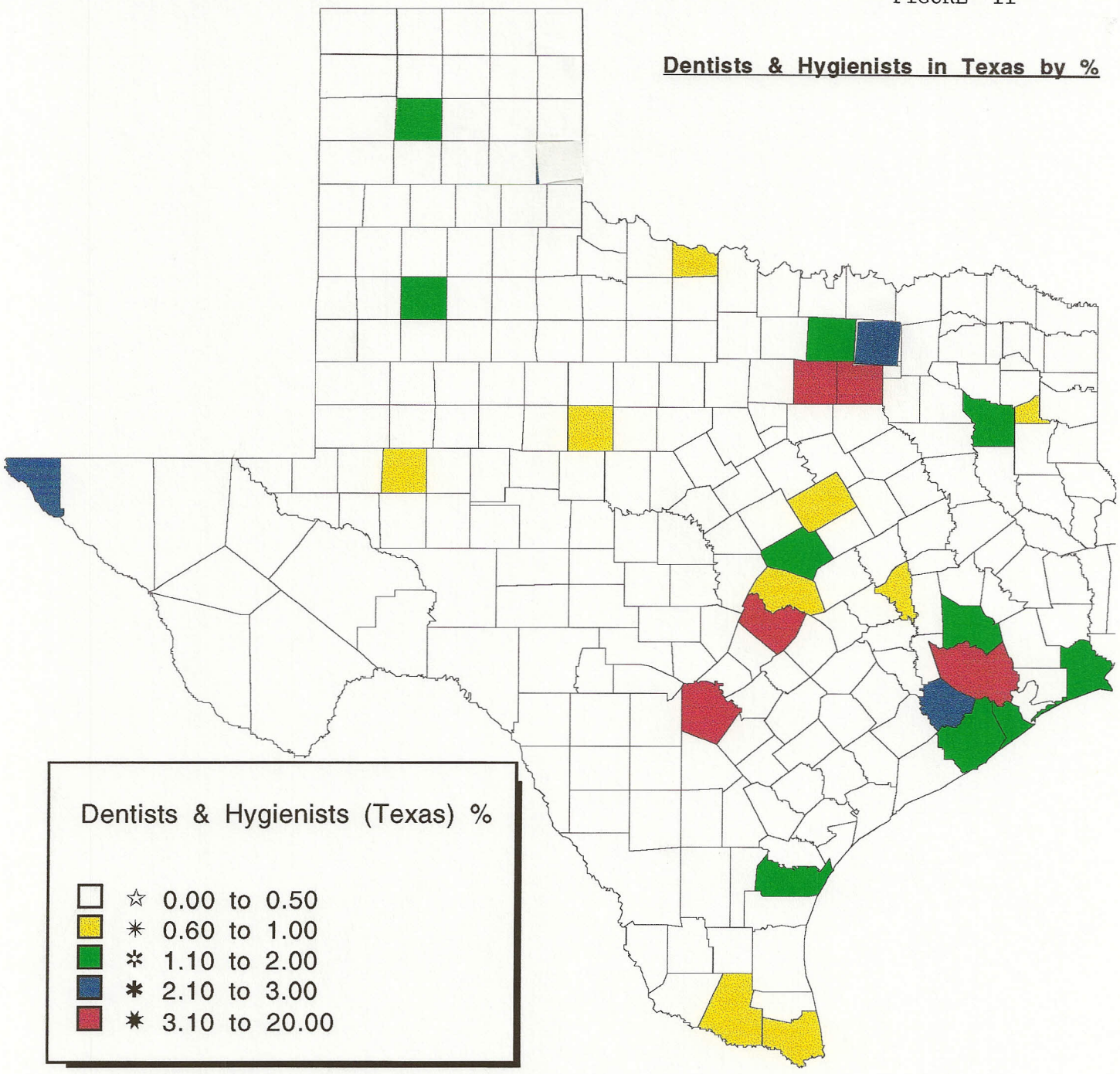


FIGURE - III

Nos. of Dental professionals in the Study
by number

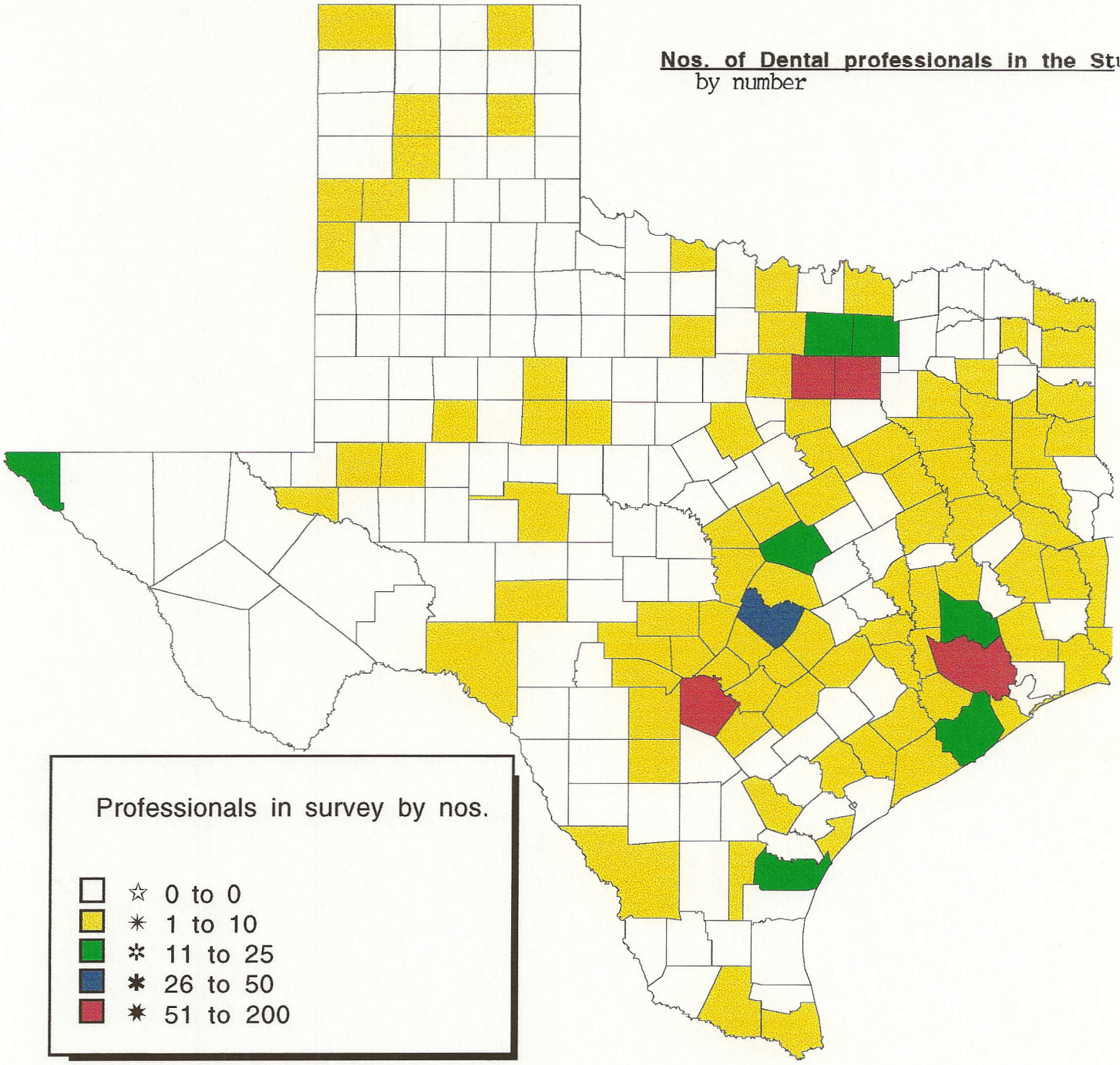
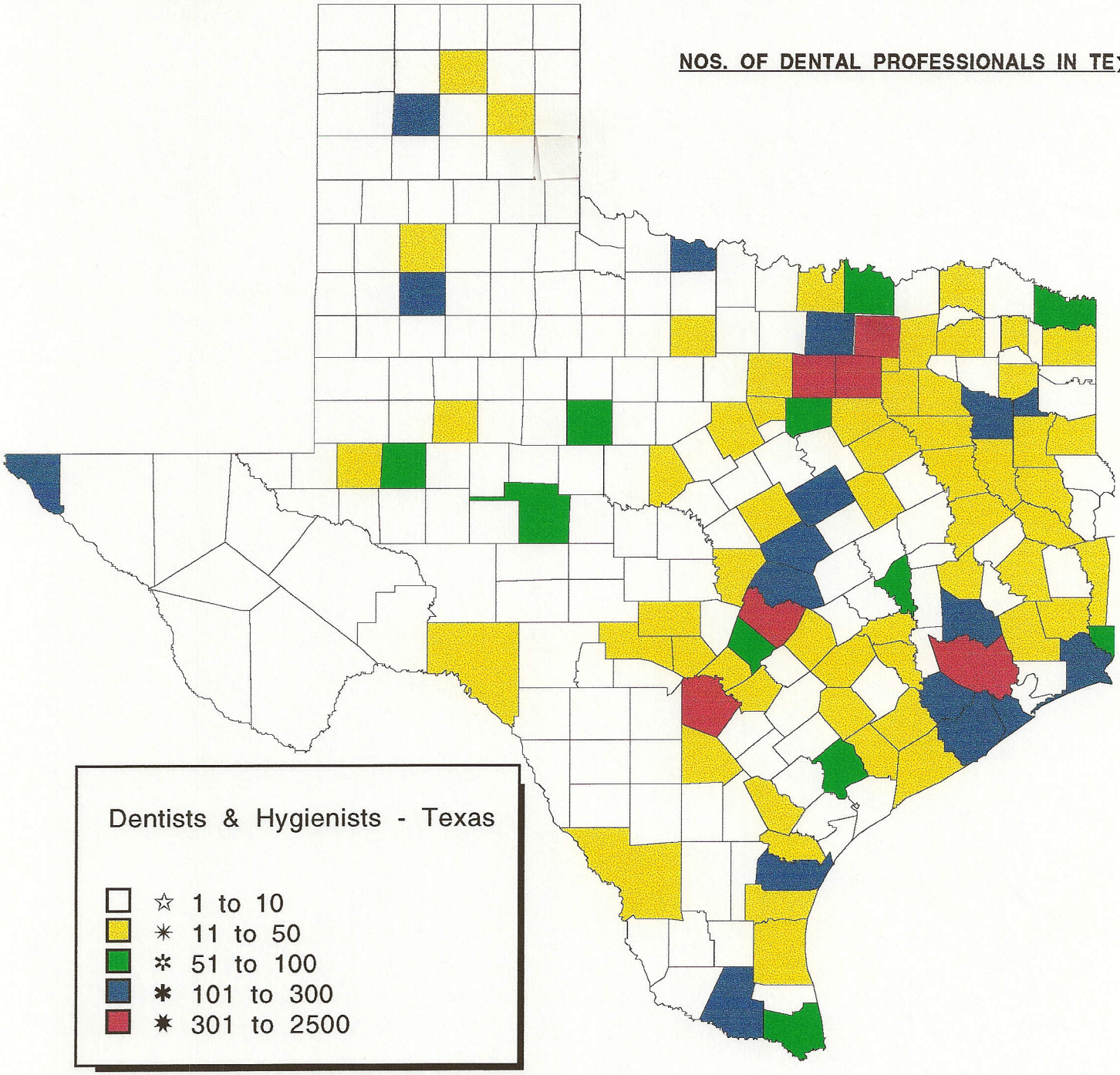
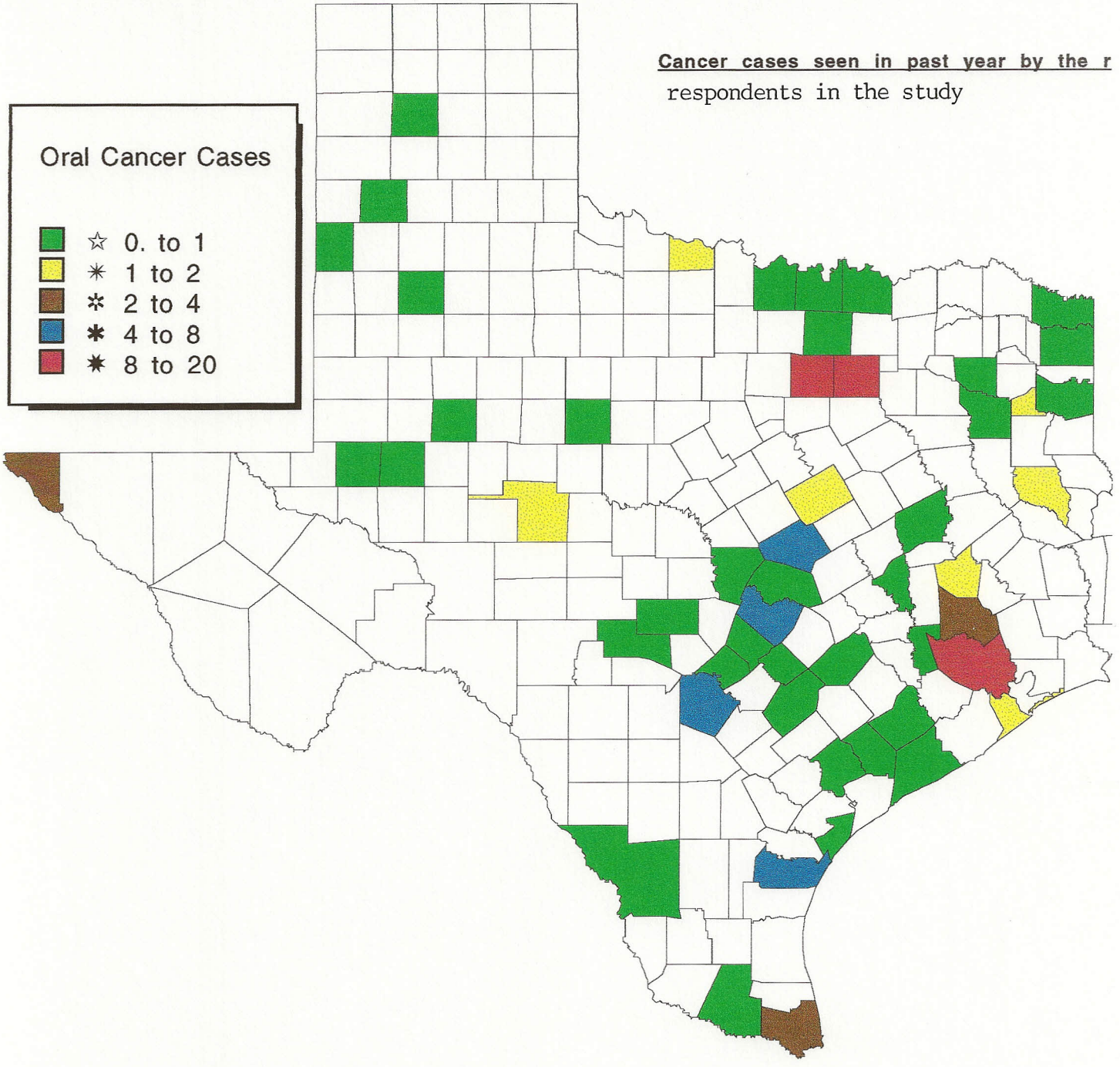


FIGURE - IV

NOS. OF DENTAL PROFESSIONALS IN TEXAS



Cancer cases seen in past year by the r
respondents in the study



APPENDIX A: QUESTIONNAIRE

WE NEED YOUR HELP!

The Dental Oncology Education Program has been asked by the Texas Cancer Council, our funding agency, to provide them with information about the readership of the *Oral Disease Update.* Please take time to answer the questions below and mail the postage-paid form back to us. All responses will be held in the strictest confidence, and will not be released in any form which would allow for individual identification.

1. Where did/do you obtain your knowledge concerning oral cancer? (please check all that apply)

Dental School	☐
Postdoctoral training	☐
Literature	☐
CE Courses	☐
American Cancer Society	☐
Dental Oncology Education Program	☐

Others (please specify)_____

2. Do you think your current knowledge of the following topics is adequate? (please check all that apply)

	Yes	No
Prevention of oral cancer	☐	☐
Early detection of oral cancer	☐	☐
Biopsy procedures	☐	☐
Treatment of early stage oral cancers	☐	☐
Treatment of advanced oral cancers	☐	☐
Management of oral sequelae of cancer therapy	☐	☐

3. Have you attended a CDE program conducted by the Dental Oncology Education Program or other Texas Cancer Council program?

☐ Yes ☐ No

4. Are you interested in attending continuing dental education courses on oral cancer?

☐ Yes ☐ No

5. Please rate the information in this and previous issues of the newsletter:

	Excellent	Good	Fair	Poor
Early detection of oral cancer	☐	☐	☐	☐
Prevention of oral cancer	☐	☐	☐	☐
Managing oral sequelae of cancer therapy	☐	☐	☐	☐
Tobacco cessation materials for patients	☐	☐	☐	☐
Tobacco cessation materials for professionals	☐	☐	☐	☐
Educational materials for patients	☐	☐	☐	☐
Educational materials for dental professionals	☐	☐	☐	☐
Continuing Dental Education opportunities	☐	☐	☐	☐
Announcements and other events	☐	☐	☐	☐

6. What information would be most useful to you in future issues of this newsletter? (Please check all that apply)

Early detection and prevention of oral cancer	☐
Management of oral sequelae of cancer therapy	☐
Treatment of early stage and advanced oral cancers	☐
Rehabilitative/supportive care for cancer patients	☐
Tobacco cessation for dental patients	☐
Oral cancer educational materials for patients	☐
Oral cancer educational materials for dental professionals	☐
CDE opportunities, announcements and other events	☐

Nonprofit Organization
U.S. Postage
PAID
Permit No. 1941
San Antonio, Texas

8. Which of the following oral cancer services/procedures do you provide in your practice? (please check all that apply)

	Now Patient	All patients	Neither
Screenings for oral cancer	☐	☐	☐
Complete head/neck exams	☐	☐	☐
Teach patients self-examination	☐	☐	☐
Discuss warning signs and risk factors	☐	☐	☐
Increase the frequency of recall for patients at high risk for oral cancer	☐	☐	☐

9. In the past year, have you: (please check all that apply)

Referred a patient with oral cancer	☐
Biopsied a potentially malignant lesion	☐
Referred for biopsy of a suspicious lesion	☐
Diagnosed a patient with oral cancer	☐
(Number of cases _____)	
Treated a patient undergoing radiation therapy	☐
Treated a patient undergoing chemotherapy	☐

10. For your patients who use tobacco, do you typically: (please check all that apply)

Inform them of the associated health risks	☐
Urge them to quit	☐
Provide information on tobacco cessation programs	☐
Provide counseling on tobacco cessation	☐
Refer to staff member for cessation counseling	☐
Refer to outside your office for cessation counseling	☐
Recommend nicotine tablets or patches	☐

11. For your patients who use alcohol, do you: (please check all that apply)

Inform them of the associated health risks	☐
Urge them to quit	☐
Provide information on alcohol cessation programs	☐
Provide counseling on alcohol cessation	☐
Refer to staff member for cessation counseling	☐
Refer to outside your office for cessation counseling	☐

12. Do you think this newsletter should be published:

☐ Yearly ☐ Twice yearly ☐ Quarterly ☐ Monthly

13. What other kinds of articles would you like to see in the future issues of this newsletter ?

_____

_____

_____

_____

_____

THANK YOU FOR YOUR TIME AND INTEREST.

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 5291 SAN ANTONIO TX

POSTAGE WILL BE PAID BY ADDRESSEE

DEPARTMENT OF COMMUNITY DENTISTRY
UTHSCSA
7703 FLOYD CURL DR
SAN ANTONIO TX 78284-9969

FOLD HERE FOR MAILING

DO NOT STAPLE - PLEASE TAPE HERE