Coverage and Quality of Oral Cancer Information in the Popular Press: 1987–98

Maria T. Canto, MS, DDS, MPH; Yoko Kawaguchi, DDS, PhD; Alice M. Horowitz, PhD

Abstract

Objectives: *National data show a lack of knowledge and misinformation about oral cancer and its early detection among the general public. A major source of health information is the popular press. For that reason this study reviewed coverage and quality of news items on the topic of oral cancer in the popular press. In addition, the number and types of tobacco advertisements in women and men's magazines were recorded for a one-year period.* ***Methods:*** *Articles from magazines and newspapers were retrieved from the* Magazine Index *(1987 to April 1998),* Newspaper Abstract *(1989 to April 1998) and the* Health & Wellness *(1987 to April 1998) databases. The articles were analyzed both for adequacy of content and information.* ***Results:*** *A total of 50 articles and news items including oral cancer were identified and analyzed, 18 from newspapers and 32 from magazines. Ninety-four percent of the articles mentioned at least one risk factor for oral cancer. More than half of the articles (56%) identified spit tobacco (chewing tobacco or snuff) as the major risk factor for oral cancer, while far fewer mentioned either cigarettes (32%) or cigars (12%). Over 50 percent of the articles did not mention warning signs for oral cancers. Fourteen percent suggested clinical oral cancer examinations by a health professional; only 8 percent advised the use of self-examination. A total of 417 tobacco advertisements (482 pages) were found among 22 magazines for the one-year period. They included 410 cigarette ads, seven cigar ads, and no spit tobacco ads.* ***Conclusions:*** *This study demonstrates the lack of coverage about oral cancer in the popular press in the past decade and provides a partial explanation of the public's lack of knowledge and misinformation about oral cancers. [J Public Health Dent 1998;58(3):241-7]*

Key Words: oral cancer, prevention, public, knowledge, magazines, newspapers.

Oral cancers, which generally include the lip, tongue, pharynx, and oral cavity, are responsible for 2–3 percent of all cancer deaths in the United States (1). These neoplasms are among the most debilitating and disfiguring of all cancers and remain the sixth most common type among US white men, the fourth most common among black males, and the 12th most common among women (2). Overall, five-year survival is 52 percent and has not changed in the past 40 years (1). Healthy People 2000 has as one of its objectives to reduce mortality from these cancers (3).

The major risk factors for oral cancers in the United States are the use of cigarettes, other tobacco products, and alcohol. Users of both products have a higher risk for developing these cancers than do individuals who use only tobacco (1,4). Thus, primary prevention of oral cancer includes avoiding use of tobacco products and decreasing use of alcoholic beverages. Further, increasing consumption of fruits and vegetables has protective effects (5), and for lip cancer the use of lip-screen and protection from the sun are essential preventive measures. In addition, early detection is important to improve survival rates and quality of life.

Results of two US studies have demonstrated that the public lacks knowledge about the signs of, and symptoms for, oral cancers (6,7). Further, the 1992 National Center for Health Statistics (NCHS) Cancer Supplement Survey found that only 14 percent of the public had ever been examined for oral cancer (7). Of these, only 7 percent of persons 40 years of age or older had had the exam during the previous year (7). Among Maryland adults surveyed by phone in the summer of 1996, 85 percent had heard about oral cancer, but only 28 percent reported having had an oral cancer examination (8).

Legitimate questions to ask include: why is there a deficiency in knowledge and awareness of risk factors for, and signs and symptoms of, oral cancer? Why is the public unaware of oral cancer examinations when the American Cancer Society recommends annual oral cancer examinations for persons 40 years of age or older (9)? The use of health promotion, which includes health education, is pivotal to raise the public's knowledge and awareness about oral cancer prevention and early detection (10,11).

Health promotion is defined as "any planned combination of educational, political, regulatory, and organizational supports for actions and conditions of living conducive to the health of individuals, groups, or communities" (12). A major component in the health promotion process is the acquisition of accurate health information. For example, sources of health information include intrapersonal, interpersonal, and mass media (13). Intrapersonal sources consist of all previous knowledge, beliefs, and attitudes about health developed from lifetime experiences. Interpersonal sources might include health care professionals, relatives, and friends. The third source is mass media. Mass media coverage of health topics can influence the public's awareness, opinions, knowledge and, in some instances, behaviors by its coverage and reinforcement of messages (13). Numerous studies have concluded that health

Send correspondence and reprint requests to Dr. Canto, 1528 Ingram Terrace, Silver Spring, MD 20906. E-mail:cmayte@erols.com. Drs. Canto and Kawaguchi are special volunteers at the National Institute of Dental Research, National Institutes of Health. Dr. Horowitz is a senior scientist at the National Institute of Dental Research, National Institutes of Health. Manuscript received: 7/8/98; accepted for publication: 8/18/98.

TABLE 1
Number of Advertisements for Tobacco and Tobacco Cessation Aids by Magazine, April 1997 to March 1998

Magazine	Circulation	Number of Tobacco Ads			Ads for Tobacco Cessation Aids
		Cigarette	Cigar	Total	
Emerge	NA	7	0	7	6
Ebony	1,813,000	28	0	28	0
Essence	1,091,000	30	0	30	0
Jet	950,000	48	0	48	8
Better Homes and Gardens	7,574,000	37	0	37	0
Cosmopolitan	2,399,000	37	0	37	0
Good Housekeeping	4,496,000	0	0	0	0
Harper's Bazaar	697,000	5	0	5	0
Ladies' Home Journal	4,504,000	22	0	22	0
Mademoiselle	4,980,000	35	0	35	0
McCall's	4,304,000	38	0	38	0
Redbook	2,859,000	23	1	24	0
Vogue	1,010,000	31	0	31	0
Woman's Day	4,274,000	26	0	26	5
Working Woman	638,000	5	0	5	0
Esquire	683,000	11	4	15	0
Forbes	796,000	0	2	2	0
Men's Health	1,492,000	0	0	0	1
Prevention	3,313,000	0	0	0	2
Reader's Digest	15,515,000	0	0	0	1
Newsweek	3,251,000	6	0	6	2
Time	4,335,000	21	0	21	5
Total		410	7	417	30

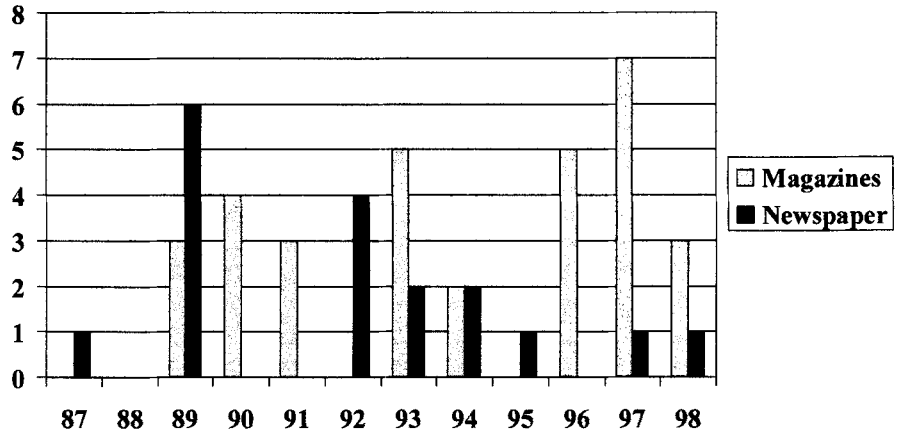
care providers (interpersonal sources) are perceived as important sources of information (14-18); however, one study found that individuals using the print media (e.g., newspaper and magazines) were more likely to have heard of early detection (16).

Most studies about magazine coverage of health issues have focused on women's health such as cancer and menopause (19-22). Gerlack et al. (19) found that the malignancies discussed most commonly in four women's magazines were ones affecting the breast and skin. Interestingly, the amount of coverage of the different types of cancer was not related to their mortality or incidence rates. Rather, the rationale provided by the authors for coverage of breast and skin cancers was twofold: (1) the strong involvement of advocacy groups; (2) the fact that the treatment for these cancers could be cosmetically disfiguring to the patient. Treatment of oral cancer not only can cause irreversible and extensive disfigurement, but also can impede proper nutrition.

To our knowledge, no reports have been published on the information provided about oral cancer in newspapers and magazines. The purposes of this study were to assess the extent to which the popular press has covered the topic of oral cancer and to determine the quantity and quality of the articles on this topic. Although oral cancers occur twice as often in men as in women, magazines for both sexes were searched because women's magazines frequently include articles on health issues for the entire family.

Previous studies have suggested a conflict of interest for magazines that include tobacco advertisements, because it may influence the type of arti-

FIGURE 1
Number of Oral Cancer Articles in the Popular Press 1987–98



cles published (23). Because of this possible conflict of interest, a third purpose of the study was to determine the number and type of tobacco advertisements appearing in women and men's magazines in a one-year period (April 1997 to March 1998).

Methods

To assess the amount of coverage by the popular press on the topic of oral cancer, three library databases were used. The *Magazine Index,* available at public libraries, contains current indexing for over 400 popular and general interest magazines starting from 1987. The *Newspaper Abstract* at the public library provides indexing (1989 to present) to the *Atlanta Constitution and Journal, Boston Globe, Chicago Tribune, Christian Science Monitor, Los Angeles Times, New York Times, Wall Street Journal,* and *Washington Post.* In addition, searches were conducted on magazine and newspaper articles from 1987 to April 1998 using the IAC[SM] Health & Wellness Database[SM]. In all searches the words used were "tobacco," "health," "mouth," "oral," and "cancer." Also, the magazines searched for tobacco ads were reviewed for articles on oral cancer. Based on these searches all articles related to oral cancer were obtained for the period of 1987 to April 1998.

To determine the quality of the oral cancer information, articles were analyzed by determining coverage of the following topics and subtopics: (1) risk factors (tobacco, alcohol, sun, lack of fruit and vegetables, virus); (2) early warning signs (no pain, ulcer/sore, thickening/swelling, red/white patch); (3) location (lip, tongue, cheek, palate, gums, floor of the mouth, and throat); (4) symptoms (numbness, burning/altered taste, discomfort with dentures, discomfort in the throat, lump,); (5) prevention (diet, tobacco cessation, decrease alcohol use, sun protection); and (6) oral cancer examination (clinical, self, use of toluidine blue). The following adequacy scale was used to score each topic: 0 (not mentioned), 1 (mentioned one subtopic), 2 (mentioned two or more subtopics), and 3 (mentioned all subtopics). Other information identified from articles included morbidity/mortality statistics, treatment for oral cancers, and referral sources for the reader.

To determine the quality of the content of each item based on current scientific literature, the following scale was used: 0=inaccurate or misleading, does not reflect current scientific evidence; 1=mix of accurate and inaccurate information; and 2=accurate, reflects current scientific evidence).

A form was developed to record the score for subtopics and quality of the popular press pieces. The form was pilot tested and revised by the investigators. To standardize the process, all three investigators independently reviewed 10 randomly selected articles and news items. If the investigators' scores were different, the scores were discussed and reconciled for future content analysis. Subsequently, each of the remaining 40 items were read and scored by two investigators independently and then compared. Investigators were in complete agreement on whether the subtopics were covered and disagreed on the accuracy score of three of the 40 items reviewed.

In addition, the number of tobacco advertisements in 22 magazines (Table 1) were determined for a period of one year (April 1997 to March 1998). Information recorded included type of tobacco advertisement, brand, and number of pages. Magazines selected needed to be available at a public library. Also, these magazines are in the most widely circulated magazine list according to "The World Almanac" and "Book of Facts 1995" (17), and have been used in previous research about cancer coverage in the popular press (19,22) or about tobacco advertisement (24). Four magazines are read predominantly by African-Americans, three are men's magazines, three are news magazines, and 11 are general women's magazines.

Results

The search of the three databases resulted in 50 articles and news items (articles were two or more pages, news items were one page or shorter) covering oral cancer for the period 1987 to April 1998. Eighteen articles were published in newspapers and 32 in magazines. Figure 1 shows the distribution of articles by year; peaks are observed for the years 1989, 1993, and 1997.

A summary of the coverage of different topics and subtopics is provided in Table 2. Figure 2 shows results of the adequacy scale for the articles based on the coverage of the subtopics.

Risk Factors. Ninety-four percent of the articles mentioned at least one of the risk factors for oral cancer. Of those, 86 percent identified tobacco and 26 percent mentioned alcohol. More than half of the articles (56%) cited spit tobacco (chewing tobacco or snuff) as a risk factor, while far fewer mentioned cigarettes (32%), cigars (12%), or pipes (6%) as risk factors.

Warning Signs. Over 50 percent of the articles did not mention warning signs for these cancers, while 26 percent of the articles mentioned only one warning sign (Figure 2). The two most common warning signs mentioned were a red or white patch (32%) and an ulcer or sore (28%) (Table 2). Only 6 percent of the articles provided information about the lack of pain associated with early oral cancer lesions.

Location of Lesions. Information about the location of oral cancer lesions included tongue (26%), lip (20%), cheek (16%), gums (14%), palate (10%), floor of the mouth (6%), and throat (20%). Additionally, symptoms associated with these cancers were described in 22 percent of the articles.

Prevention. Preventive measures for oral cancer were discussed in less than half of the articles reviewed. Only 42 percent of the articles included one or two preventive measures. One-third (32%) recommended tobacco use cessation. None of the articles advised readers to consume alcoholic beverages only in moderation. The topic of consumption of fruit and vegetables as protective factors was scarce (10%) and only one article recommended the use of lipscreen for lip cancer prevention.

Examinations for Early Detection. Early detection of oral cancers by a clinician or self-examination was mentioned only rarely. Fourteen percent of the items suggested the need for clinical oral cancer examinations by a health professional and only 8 percent advised the use of self-examinations as a method of early detection. Three articles described the use of toluidine blue as an adjunct to a clinical examination.

Accuracy of Information Presented. None of the articles or news items received an accuracy score of 0. Ten had a score of 1; 40, a score of 2. Articles scoring 1 included both accurate and inaccurate information. For example, one article stated that the most accurate method to detect oral

TABLE 2
Number and Percent of News Items about Oral Cancer in the Popular Press by Topic and Subtopic, 1987–98

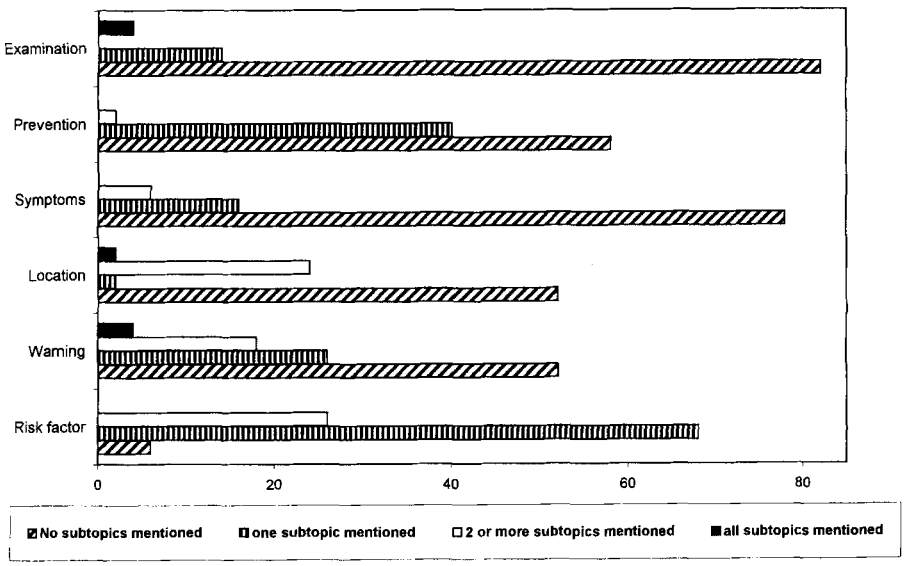
		Newspaper (18)		Magazine (32)		Both (50)	
Topics	Subtopics	Number	%	Number	%	Number	%
Risk factor	Tobacco	18	100	25	78	43	86
	Alcohol	5	28	8	25	13	26
	Sun	0	0	1	3	1	2
	Lack F & V	0	0	2	6	2	4
	Virus	0	0	1	3	1	2
Tobacco type	Cigarette	7	39	9	28	16	32
	Pipe	1	6	2	6	3	6
	Cigar	2	11	4	13	6	12
	Chewing	15	83	13	41	28	56
	Snuff	16	89	12	38	28	56
Warning sign	No pain	2	11	1	3	3	6
	Ulcer/sore	8	44	6	19	14	28
	Thick/swell	3	17	3	9	6	12
	White/red	7	39	9	28	16	32
Location	Lip	4	22	6	19	10	20
	Tongue	6	33	7	22	13	26
	Cheek	5	28	3	9	8	16
	Palate	3	17	2	6	5	10
	Gums	4	22	3	9	7	14
	Floor of mouth	2	11	1	3	3	6
	Throat	5	28	5	16	10	20
Symptom	Numbness	0	0	0	0	0	0
	Burning/alt	4	22	2	6	6	12
	Discom dent	0	0	0	0	0	0
	Discom throat	1	6	1	3	2	4
	Lump	3	17	3	9	6	12
Prevention	Tobacco cess	2	11	14	44	16	32
	Alcohol reduce	0	0	0	0	0	0
	Sun protection	0	0	1	3	1	2
	Diet	0	0	5	16	5	10
Examination	Clinical	3	17	4	13	7	14
	Self	2	11	2	6	4	8
	Toluidine blue	2	11	1	3	3	6
Morbidity/mortality		9	50	5	16	14	28
Treatment		3	17	10	31	13	26
Referral		2	11	3	9	5	10

cancer is when a dentist provides an oral examination using toluidine blue (OraTest®). In addition, one article explained that smoking is a risk factor for lung cancer, but failed to mention that it also is a risk factor for oral cancer. The same article only indicated that alcohol use was a risk factor for oral cancer. Other inaccurate statements are shown in Table 3. Several news items focused on the use of spit tobacco as the major risk factor for oral cancer, while cigarette use was ignored.

Health Status Outcomes and Objectives. Articles or news items also presented information about morbidity and mortality for oral cancers (28%), but there was no mention of Healthy People 2000 objectives. Over one-quarter of the articles explained various treatments for oral cancers (namely, surgery, radiation or chemotherapy); only five provided referral to institutions or associations for more information.

Tobacco Advertisements. A total of 417 tobacco advertisements (482 pages) were found in the 22 magazines for the one-year period (Table 1). Of these, 410 were for cigarettes and seven were for cigars. Four magazines (*Good Housekeeping, Men's Health, Prevention,* and *Reader's Digest*) had no tobacco advertisements. In the other 18 magazines, the number of tobacco advertisements ranged from 2 to 48 ads in this one year. The three brands of tobacco most advertised were Vir-

FIGURE 2
Percent Distribution of Popular Press News Items by Topic and Adequacy Score, 1997–98



ginia Slims®, Benson & Hedges®, and Marlboro®. Several brands—Doral®, Merit®, Marlboro®, Winston®, Basic®, and Parliament®—did not advertise for the one-year period in magazines read primarily by African-Americans; however, Newport® and Kool® did advertise in these magazines. Only one advertisement for cigars appeared in a magazine for women. In addition, there were 30 ads for tobacco cessation aids (Nicorette®, Nicoderm CQ®, and Zyban®), 26 of which were contained in magazines with tobacco advertisements.

Discussion

This study assessed the quantity and quality of oral cancer information provided by newspapers and magazines to their readers during the April 1987 to March 1998 period. Overall, the coverage of oral cancer in the popular press was disproportionately low considering the explosion of health information available in newspapers and magazines in the past decade. For example, on the *Magazine Index* alone, 10,066 items were related to cancer, but only 32 focused on or mentioned oral cancer. Further, cervical cancer was covered in 46 articles for the period of 1987 to 1995, as indicated by two separate studies that looked at seven women's magazines (16,19). The incidence of oral cancer is greater than that for cervical cancer, yet only 50 articles were found on this topic in a 10-year period. Further, the lack of comprehensive and accurate information about oral cancers was equally unimpressive. The finding that one out of five items contained inaccurate information is disturbing and requires corrective action by appropriate individuals and agencies.

Results from the NCHS 1990 national survey found that the US adult public was ill- informed about risk factors for, and signs of, oral cancers (6). In that survey fewer people perceived smoking as a risk factor for oral cancer compared with other medical conditions and just 13 percent knew that regular alcohol use increases the risk for oral cancer. The articles reviewed in the present study contained information analogous to these survey data in that oral cancer was depicted as mainly associated with spit tobacco, while lung cancer was linked with smoking. Furthermore, one article mentioned cigarette use as a risk factor for lung cancer, but failed to mention that it is the major risk factor for oral cancer. In the same article, the only risk factor mentioned for oral cancer was alcohol. It is important to point out that articles containing both accurate and inaccurate information also can contribute to misinformation and cause confusion among the public.

The principal measure of early detection for oral cancers is a comprehensive oral examination. Yet, a 1992 national survey showed that only 14 percent of US adults reported ever having had such an exam (7). Because the public may not be aware of this examination, it is important to educate them about what constitutes a comprehensive oral cancer examination and that they should request one. One reason for this lack of awareness may be that dentists do not provide comprehensive oral cancer examinations on a routine basis. A pilot survey among US general practitioners found that 30 percent of dentists did not provide an oral cancer examination for individuals 40 years of age or older at the initial appointment. Further, 41 percent of dentists did not provide oral cancer examinations for these patients at recall visits, and 20 percent did not do so for edentulous patients (25). Only seven articles or news items (14%) mentioned the need for an oral cancer examination by a health professional as a measure of early detection. It is important to remember that the oral cavity provides relatively easy access for a provider to determine changes in the tissue.

Only four articles or news items (8%) addressed the importance of self-examination. Furthermore, fewer than half of them covered the early warning signs of oral cancer. The general public's awareness of these early warning signs could help with their self-examination and help prompt them to seek follow-up care by health professionals. In general, the articles and news items failed to address the evidence available to support oral cancer examinations as a tool for early detection of these cancers.

For self-protection the public should know that in most cases pain is not present with early stages of oral cancer and that the most common locations of these cancers include the tongue and floor of the mouth. The articles reviewed mentioned the floor of the mouth less frequently than gums, cheeks, and lips because users of spit tobacco place the tobacco in contact with the oral mucosa mainly in these areas and more than half of the articles implied that spit tobacco is the major risk factor for oral cancer.

The three years with a higher number of articles about oral cancer were 1989, 1993, and 1997. The articles for 1989 were triggered by results from oral examinations among baseball players in California during the spring of 1988. For the year 1993, articles were

TABLE 3
Inaccurate Statements Found in Review Items on Oral Cancer in the Popular Press 1987–98

Statement	Reference
"Byers also said that he did not believe snuff causes cancer and that he had no medical objections to his son using snuff"	*Washington Post*, Ruling in snuff case is appealed, March 1, 1997
"... it takes three to five decades for smokeless tobacco to produce cancer ..."	*New York Times*, Smokeless tobacco linked to oral lesions, January 17, 1989
" 'Not to worry,' say the athletes in O'Donnell's bedroom. 'That Sean guy was a long time ago,' says O'Donnell. By the time he would develop cancer, O'Donnel says, technology will improve. 'They could do laser surgery,' " he suggests."	*Washington Post*, Dangerous dips, fast ride down smokeless tobacco road, April 2, 1992
"Rodu and Cole wrote, because its major risk—oral cancer—is relatively rare and does not have a high fatality rate when compared to other cancers. They concluded that 'for smokers addicted to nicotine who would not otherwise stop, a permanent switch to smokeless tobacco could be an acceptable alternative to quitting.' "	*Washington Post*, Study casts new light on smokeless tobacco, August 16, 1994
"He said that 'nitrosamines found in smokeless tobacco haven't been found to cause cancer in humans.'"	*Wall Street Journal*, Snuff found to contain heavy doses of cancer-causing chemicals in study, December 20, 1995
"It is not known what caused the cancer, but Butler says people are jumping to conclusions to say it was caused by chewing tobacco ... If anything, his doctor says, his exposure to second-hand smoke might have caused the cancer (oral)."	*Sporting News*, Butler takes on cancer, like baseball, May 20, 1996
" ... hot button nature of the tobacco issue. The next day, Gadlage suggested Butler's cancer was caused by his parents' second-hand smoke ..."	*Mother Jones*, Dodger outfielder Brett Butler's severe case of throat cancer, July-August 1996
"Cigarette smokers, for example, are 10 times more likely to develop lung cancer than nonsmokers. Oral cancer and cancer ... occur most frequently among heavy alcohol drinkers"	Special Information Advertisement, America's Pharmaceutical Companies, *Reader's Digest*, 1997
"... The first oral-cancer detection system, called OraTest, will blaze into the marketplace to help reduce the 12,000 deaths a year in the US alone caused by oral cancer ... Also, by the time a health care provider can see what looks like an oral cancer lesion, it's often in the advanced stages of disease. Studies have shown OraTest to be nearly 100% accurate in detecting early signs of oral cancer."	*Prevention*, Oral cancer gets found out, March 1998
"Dental Health Checklist for Adults on the Go" — does not mention use of tobacco products and oral cancer for adults, only for teens.	*Good Housekeeping*, Healthy smiles: a family guide to good oral health, November 1993

published following commentaries in 1992 by Dr. Novello, US surgeon general, about an epidemic of oral cancer for the year 2000 because young people were using spit tobacco. The coverage in recent years probably is related to initiatives from the National Spit Tobacco Education Program (NSTP) that linked oral health experts, government agencies, and baseball personalities (National Spit Tobacco Education Program, Oral Health America, America's Fund for Dental Health, 211 East Chicago Ave., Chicago, IL). These announcements and campaigns, although extremely important, have put major emphasis on spit tobacco and diverted attention from the other major risk factors for oral cancer, use of cigarettes and alcohol.

The purpose of this study was not to determine an association between the coverage of oral cancer and the quantity of tobacco advertisements. It is interesting to point out, however, that for the year the advertisements were counted, 10 articles about oral cancer were published. Six of the articles were in magazines with no tobacco advertisements. The combination of tobacco advertisements and a lack of adequate information about oral cancer sends mixed messages to readers.

Although this study provides a comprehensive analysis of articles and news items about oral cancer in the popular press, it has limitations. One limitation is that the study relied on library databases to identify articles on the topic of oral cancer. Second, the public is exposed to other types of mass media not included in this study, such as television and radio. Therefore, this study is not a complete de-

scription of the information the public has been exposed to on the topic of oral cancer. Nevertheless, the results help explain the low level of knowledge and awareness of oral cancers among US adults. Also, it addresses one of the recommendations from the National Strategic Planning Conference for Prevention and Control of Oral and Pharyngeal Cancer (11).

In summary, this study demonstrates not only a lack of coverage of oral cancer in the popular press, but also inaccuracies. During the search, 14 additional articles were retrieved that should have included the topic of oral cancer; thus, they were classified as missed opportunities. The majority of the articles dealt with recommendations for the use of sunscreen; however, they failed to mention the use of lipscreen for prevention of lip cancer. Other articles covered the negative effects of cigarette use; however, when referring to the mouth, only gum disease and tooth loss were mentioned. As another example, one general article about cancer mentioned use of cigarettes and alcohol as risk factors for esophageal cancer, but did not address oral cancer.

Oral cancer is preventable and early diagnoses increase survival and quality of life after treatment. Steps to increase the general public's awareness about these cancers must include the provision of information by scientists, federal agencies, and other key organizations on these topics to writers of health-related issues in magazines and newspapers. The use of mass media is pivotal to inform the public about the availability of an oral cancer examination, and to accurately inform them on the early warning signs for, symptoms of, and risk factors for oral cancer.

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