Coverage and Quality of Oral Cancer Information in Selected Popular Press: May 1998 to July 2003

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Abstract

Objectives: *A 1998 study demonstrated a lack of coverage about oral cancer in the popular press between April 1987 and April 1997. Since that study, several oral cancer-related activities took place, many of which could have increased the media's attention to oral cancer. Therefore, this study analyzed coverage and quality of oral cancer information in selected popular press between May 1998 and July 2003.* ***Methods:*** *Articles from magazines and newspapers were retrieved from three databases and were analyzed by specific topics and subtopics for adequacy of content and accuracy of information. Articles were categorized as either "primarily oral cancer-related" or "primarily tobacco-related."* ***Results:*** *Sixty articles were identified, 39 of which were included in the analysis (14 magazines; 25 newspapers). Seventeen articles were "primarily oral cancer-related," and 22 were "primarily tobacco-related." Seventy-two percent of the articles mentioned at least one risk factor for oral cancer, the most common being tobacco use (69%). Far fewer articles noted alcohol (10%) or the combined use of tobacco and alcohol (5%) as risk factors. Only 8 percent of the articles recommended an oral cancer examination.* ***Conclusion:*** *Despite local and limited national efforts and activities aimed at increasing public awareness of oral cancer, the popular press coverage of those activities was minimal or nonexistent. [J Public Health Dent 2004;64(4):231-36]*

Key Words: oral cancer, popular press, prevention, public knowledge.

Oral cancers will be diagnosed in an estimated 27,000 people in 2003 (1). Although this incidence represents 3 percent of all cancers in the United States, oral cancer has a high mortality rate that has persisted for the past 4 decades (2). In 2003, oral cancer will claim an estimated 7,200 lives in the United States, more than from cervical cancer and Hodgkin's disease combined (1,3). Because most oral cancer diagnoses are made at advanced stages, the five-year survival rate is low: 58 percent for whites and 34 percent for African Americans. Individuals who do survive face a 10 percent to 30 percent chance of developing a new primary head or neck cancer (4). Furthermore, quality of life is significantly reduced due to increased morbidity resulting from aggressive treatments and accompanying cosmetic and psychological insults (4,5).

In the past decade, there has been an explosion of health information in the popular press. However, the coverage of oral cancer information has been disproportionately low as shown by the only published study addressing this issue (6). Studies of magazine and newspaper coverage of health issues also reveal this disparity, focusing mainly on breast cancer and menopause (7-13). Considering that relatively little media attention has been given to educating the public on oral cancer, it is not surprising that most US adults have little accurate knowledge about these cancers. In particular, the public lacks knowledge about the signs and symptoms of oral cancer and the need for oral cancer examinations (14-17). The 1998 National Health Interview Survey indicated that only 6 percent of Hispanics, 16 percent of white non-Hispanics, and 7 percent of black non-Hispanics had received an oral cancer examination in the past 12 months (18). Similarly, Healthy People 2010 underscored the severity of the problem by including three objectives related to oral cancer (Figure 1) (19). Further, in 2000, US Surgeon General David Satcher recognized an underlying cause of the public's lack of awareness of oral cancer: "There is a gap between research findings and the oral disease prevention and health promotion practices and knowledge of the public (and health professionals)" (20).

The purpose of this study was to assess the coverage and quality of oral cancer information in selected popular press during the period May 1998 to July 2003. Because several oral cancer-related activities during this period may have stimulated greater media attention to oral cancer, we hypothesized that there would be an increase in the coverage and quality of articles on oral cancer. Examples of oral cancer-related activities and their dates are listed in Table 1.

Methods

The selection criteria for articles from magazines and newspapers included publications in the United States between May 1998 and July 2003. The 2002 Magazine Publishers of America list of the 100 leading magazines (by average circulation) was used to select magazines. General Reference Center Gold and National Newspapers 9—both library databases—were searched for articles from magazines and newspapers, respectively. General Reference Center Gold is a general interest/business database that provides current indexing for over 19 million articles since 1980. National Newspapers 9 provides indexing (1974 to the present) for nine major

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newspapers: *New York Times, Washington Post, Wall Street Journal, Los Angeles Times, Christian Science Monitor, Atlanta Constitution/Journal, Boston Globe, Chicago Tribune,* and *USA Today.* In addition, the Health and Wellness Resource Center, a database containing health-related articles from 2,200 general interest publications, was searched. All searches used the words "oral cancer" and "mouth cancer."

FIGURE 1
Healthy People 2010 Oral Health-related Objectives

Objective 3.6:
To reduce the oropharyngeal cancer death rate

Objective 21.6:
To increase the proportion of oral cancers detected at the earliest stages

Objective 21.7:
To increase the proportion of adults who, in the past 12 months, received an oral cancer examination

To determine the coverage of oral cancer information, each article was analyzed for adequacy for the following topics: risk factors, warning signs, symptoms, components of an oral cancer clinical examination, prevention, and location of oral cancer lesions. Also assessed was the presence of recommendations for oral cancer examinations; mention of treatment for oral cancer, oral cancer data/statistics, *Healthy People 2000, Healthy People 2010, Oral Health in America: A Report of the Surgeon General,* or the *National Call to Action to Promote Oral Health;* and referrals to agencies for more information.

Each topic had a different number of subtopics. For example, the topic of warning signs had eight subtopics: red patch, white patch, no pain, ulcer or sore, thickening or swelling, difficulty swallowing or chewing, change in color, and sustained sign. Therefore, a percentage based on the number of subtopics mentioned divided by the total number of subtopics for a particular topic was calculated. The following adequacy scale was used to score each topic: 0=no subtopics mentioned; 1=mentioned one subtopic; 2=mentioned two subtopics; 3=mentioned three subtopics; 4=mentioned four or more subtopics; 5=mentioned all subtopics.

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

An analysis form modified from previous studies (6,21,22) was developed to record the adequacy and accu-

TABLE 1
Chronology of Oral Cancer-related Activities: May 1998 to July 2003

Date	Activity
August 1998	Release of *Preventing and Controlling Oral and Pharyngeal Cancer: Recommendations from a National Strategic Planning Conference in the Morbidity & Mortality Weekly Report*
January 1999	Establishment of the Oral Cancer Consortium by the dental schools at Columbia University, New York University, the State University of New York at Stony Brook, and the University of Medicine and Dentistry of New Jersey
April 1999	Commemoration of the Yul Brynner Head and Neck Cancer Foundation's second annual Oral, Head and Neck Cancer Awareness Week April 2000: 3rd week April 2001: 4th week April 2002: 5th week April 2003: 6th week
May 2000	Publication of *Oral Health in America: a Report of the Surgeon General*
November 2000	Publication of *Healthy People 2010*
January 2001	Launching of oral cancer public awareness campaign by Oral Health America's National Spit Tobacco Education Program, earning in excess $8 million in media coverage
September 2001	Funding of 5 grants (for the states of NY, IL, FL, NC, and MI), by the National Institute of Dental and Craniofacial Research for the development of state models (e.g., for the promotion of oral cancer prevention, early detection, and awareness)
September 2001	Launching of oral cancer billboard campaign by the ADA and Oral CDx Phases I and II: September 2001 to March 2002 Phase III: present (2003)
September 2001	Commemoration of Maryland's first-ever Oral Cancer Awareness Week June 2002: 2nd week June 2003: 3rd week
November 2001	Publication of the *Journal of the American Dental Association* Special Supplement, *Combatting oral cancer: The dentist's role in preventing, detecting a deadly disease*
April 2003	Appearance of press release announcing publication of the *National Call to Action to Promote Oral Health*
May 1998–July 2003	Publication of 158 research articles and abstracts on oral cancer

racy scores of each article. The form was pilot tested and revised in the following manner: 10 randomly selected articles were independently reviewed by the investigators as a check for standardization. The full-text version of each article was obtained from the database searches and analyzed for comprehensive information on oral cancer. Each article was independently read and assessed by each investigator, then reviewed as a group by all investigators. Differences in scoring were discussed and resolved. Articles were categorized as either "primarily oral cancer-related" or "primarily tobacco-related." Articles that fit neither of the two categories were deleted from the final analysis. Such articles mentioned oral or mouth cancer, but were irrelevant to the study purpose because they did not focus on oral or mouth cancer as a major theme.

Results

The search of the three databases resulted in 60 articles on oral cancer. Nineteen articles (32%) were published in magazines. Forty-one articles (68%) were published in newspapers. Figure 2 shows the number of oral cancer articles by year. More newspaper articles than magazine articles were published in 2001, and a similar number of newspaper and magazine articles was published in 2002. No magazine articles on oral cancer were published in 2000.

Of the 60 magazine and newspaper articles identified and analyzed, 21 were deleted from the analysis. Examples of deleted articles included obituaries, calendar announcements, personal profiles, and special features on issues such as health insurance, federal legislation, prescription drugs, and unethical treatment of participants in clinical trials. Of the 39 articles included in the final analysis, 17 articles (28%) were categorized as "primarily oral cancer-related." Twenty-two articles (37%) were categorized as "primarily tobacco-related." Figure 3 shows the number of oral cancer articles in the final analysis by article category and source.

Adequacy Score. Figure 4 shows results of the adequacy scale, in terms of distribution of articles, based on the coverage of the topics.

Risk Factors. The most risk factors mentioned were two, which occurred in only two articles (5%). Seventy-two percent of the articles mentioned at least one risk factor for oral cancer. The most common risk factor mentioned was use of tobacco products (69%). Of those, the three most common products mentioned were snuff (48%), chewing/spit tobacco (44%), and cigarettes (41%). Alcohol use was included in four articles; only two articles identified the combined effects of tobacco and alcohol use. Age and sex were

FIGURE 2
Number of Articles Mentioning Oral Cancer in Selected Popular Press: May 1998–July 2003 (*N*=60)

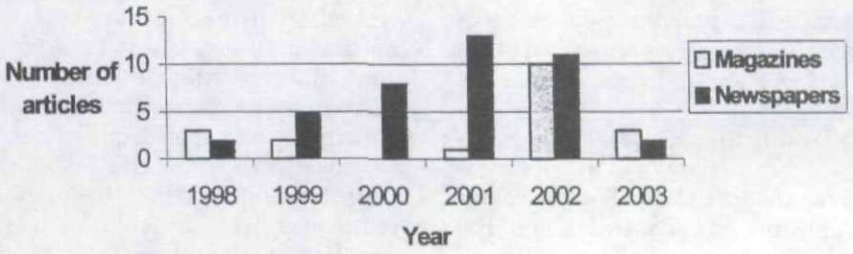


FIGURE 3
Number of Magazine and Newspaper Articles Included in Final Analysis by Category and Source (*N*=39)

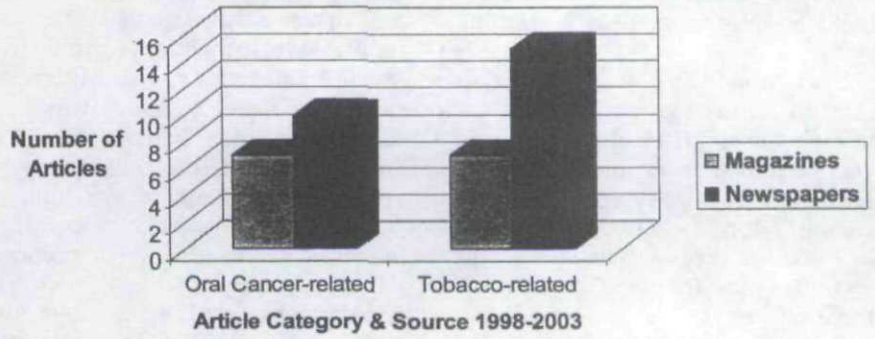
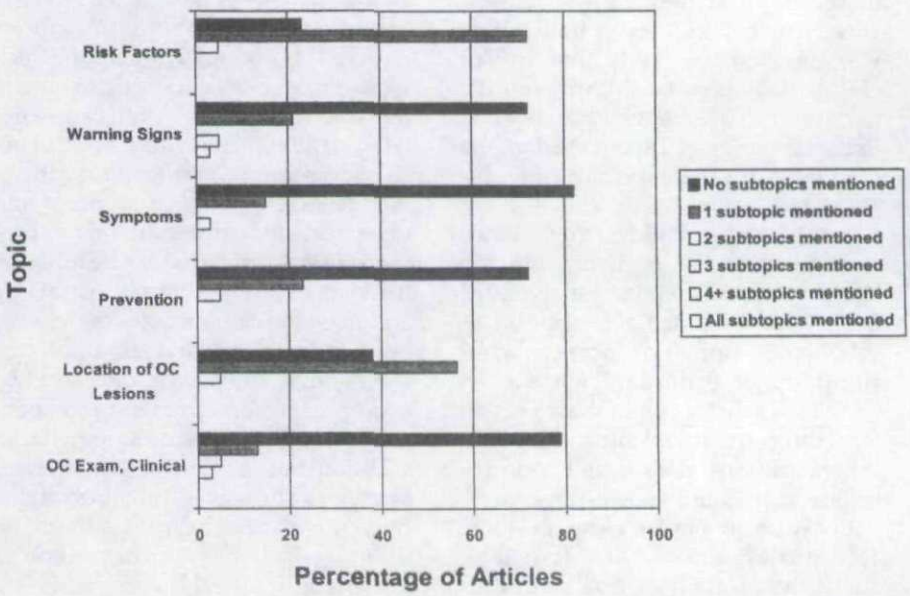


FIGURE 4
Distribution of Selected Popular Press Oral Cancer Articles by Topic and Adequacy Score (*N*=39)



mentioned as risk factors in only three articles each. Race and sun exposure were identified in two articles each. Only one article identified viruses/sexual practices, and none of the articles mentioned marijuana use or lack of fruits and vegetables as risk factors.

Warning Signs. Nearly three quarters of the articles (72%) did not mention warning signs and only eight articles mentioned one warning sign. The three most commonly mentioned signs were a white patch (13%), ulcer/sore (10%), and a sustained sign (13%). Only three articles provided information about difficulty swallowing or chewing and only two articles identified absence of pain as a warning sign.

Symptoms. The adequacy of information about symptoms was extremely limited. Each of the following was identified in no more than one article (3% each): asymptomatic, discomfort wearing dentures, discomfort in throat, and hoarseness. Pain was identified most frequently, but in only three articles.

Prevention. No articles mentioned more than three subtopics related to prevention. At least one preventive measure for oral cancer was discussed in fewer than half of the articles. Of these, the most frequently discussed was a prevention intervention, which was mentioned in only five articles (13%). Examples of this preventive measure included having a conversation with one's child about the dangers of tobacco use and exposing individuals at risk for oral cancer to fear appeals (such as graphic documentaries and cigarette labels displaying the health effects of tobacco use). None of the articles discussed a decrease in alcohol consumption or increased consumption of fruits and vegetables. Only four articles cited tobacco cessation, three articles cited smoking cessation, and one article cited sun protection as preventive measures.

Location of Oral Cancer Lesions. The greatest amount of information about the location of oral cancer lesions was provided for no more than one subtopic in a total of 22 articles (56%). The most frequently mentioned locations of oral cancer lesions included: mouth, 18 articles (46%); throat, eight articles, (21%); and tongue, seven articles (18%).

Oral Cancer Clinical Examinations. Nearly 80 percent of the articles failed to mention the components of an oral cancer exam. The greatest number of subtopics mentioned that were related to the components of oral cancer clinical exams was three, covered in only one article, followed by at least two subtopics mentioned in only two articles, and at least one subtopic mentioned in five articles (13%). Of those, the subtopics with the highest frequencies were incisional biopsy, identified in six articles (15%); brush biopsy in four articles (10%); and checking the tongue in three articles (8%).

Special Mentions. Only five articles recommended that readers have an oral cancer exam. Treatment for oral cancer was also mentioned in only five articles. Information regarding oral cancer data and statistics was provided in just under half of the articles, and coverage of oral health-related government initiatives was limited. "Oral Health in America: a Report of the Surgeon General" was mentioned more frequently than any health-related government initiative, but only in four articles (10%). Thirty-six articles (92%) failed to provide referrals to institutions or associations for more information on oral cancer.

Accuracy Score. Of the 39 articles analyzed, none of the articles received an accuracy score of 0. Eight articles received a score of 1, three of which were tobacco-related articles and 5 that were primarily oral cancer-related articles. Thirty-one articles received a score of 2. Among the articles that reflected a mix of accurate and inaccurate information, many provided information that can be misleading to readers. For example, one article endorsed the use of smokeless tobacco (as a safer alternative to smoking), stating that smokeless tobacco is 98 percent safer than smoking and about as safe as driving an automobile. In addition, one article noted medical researchers' support of the controversial preventive measure called harm reduction—a behavior that involves switching to a health risk that is less hazardous (such as smokeless tobacco) as opposed to completely quitting the risky habit.

Discussion

This study obtained 39 articles published in a five-year period compared to 50 articles in the 1998 study (6), which covered a 10-year period. Despite the explosion of health information in the popular press in the past decade and the promotion of several oral cancer-related activities during the period of interest, overall the coverage of oral cancer information was disappointingly low. Consistent with previous findings (6), about four times as many articles correctly identified cigarettes rather than alcohol as risk factors for oral cancer (41% vs 10%). Also, as in the 1998 study, approximately half of the articles incorrectly identified some form of smokeless tobacco as a primary risk factor, when in reality smoking is the major culprit of oral cancer in the United States.

The present study, like the 1998 study, indicated that over 50 percent of the articles did not mention warning signs for oral cancer, with the greatest number of exclusions being found in "primarily tobacco-related articles" (e.g., none of these articles mentioned red patch, absence of pain, thickening or swelling, or change in color as warning signs for oral cancer). Further, this study showed very low coverage of location of oral cancer lesions and preventive measures. In the 1998 study, the location of oral cancer lesions was mentioned in 26 percent of articles (tongue cancers) and in the present study, it was found in 46 percent of articles (in which mouth cancer in general was mentioned as opposed to the specific locations in which lesions are most commonly found). Because the tongue and the floor of the mouth are the two most likely locations of lesions, the fact that no articles in the present study mentioned the floor of the mouth and only seven mentioned the tongue is disturbing.

In the 1998 study, only 14 percent of articles suggested the need for clinical oral cancer examinations. This study found an almost equally unimpressive percentage—13 percent. If the dearth of information in the popular press about oral cancer risk factors, warning signs, location of lesions, and preventive measures persists, it is unlikely that public awareness of oral cancer will increase, and chances to achieve the objectives of Healthy People 2010 may be affected.

Given the lack of oral cancer information in the press, it is important that when such information *is* available, its content value or accuracy is high. While the majority of articles analyzed

in this study reflected current scientific evidence, many provided important data and statistics on oral cancer, yet at the cost of confusing readers about appropriate preventive actions to take. For example, three articles focusing on tobacco products as a risk factor provided misleading information about the risks of smokeless tobacco (e.g., chewing/spit tobacco, snuff, and betel nut). In general, these articles provided misinformation either by implying that most oral cancers are caused by using smokeless tobacco or by suggesting that it is a safe substitute for cigarettes and therefore reduces the risk of oral cancer. Unfortunately, although these articles mentioned oral cancer as a major consequence of using tobacco products, the articles were missed opportunities to educate the public about the existence of an oral cancer examination. These articles reflect the significance of accurate information, as it may impact people's risk-taking and screening behaviors (23,24).

Although it was hypothesized that oral cancer-related activities may have stimulated an increase in the coverage and quality of oral cancer information in the popular press, these activities were not covered in the articles reviewed. Of particular note is the fact that from May 1998 to July 2003, 158 scientific articles on oral cancer were published, yet very few were highlighted in printed mass media. Equally important is the failure of magazines and newspapers to capture the release of "Oral Health in America: a Report of the Surgeon General" in 2000 and its relevance to the prevention and control of oral cancer—another missed opportunity. Of the five articles that did mention the Surgeon General's report, these articles reflected the report's focus on the "silent epidemic" of oral disease affecting Americans, specifically poor children, the elderly, and members of racial and ethnic minority groups. Although clearly a crucial concern, these articles failed to provide substantial information about how this issue relates to oral cancer. Considering that age and race are risk factors for oral cancer, it is unfortunate that these articles did not seek to raise readers' awareness of oral cancer and its prevalence among the elderly and increased incidence in minority populations, particularly African-American males.

This study has several limitations. First, the study relied on databases available through a public library. Second, only nine newspapers could be searched through National Newspapers 9, thereby failing to capture articles from local and regional newspapers. For example, in Maryland, some of the local and regional activities in oral cancer were not reported in the major newspapers included in the study. Third, this study only included English magazines and newspapers, not the Spanish popular press available in major US cities such as New York and Miami. A recommendation for future studies is a search of databases that include all local, regional, and national popular press sources—including Spanish, where possible.

The use of media channels such as the popular press is pivotal to informing the public about oral cancer. Actions that can be taken to increase public knowledge and awareness of oral cancer must include collaborative efforts of mass media channels, researchers, public health workers, key health agencies and associations, as well as government officials and health policy makers. Of particular importance is the collaboration of these groups with health writers and columnists. More specifically, researchers and their institutions need to seek assistance aggressively from health writers and columnists regarding how to entice these individuals to become interested in oral cancer research, as well as oral health in general. Because health writers determine what health information appears in printed media and how adequately and accurately it is covered, targeting health writers and columnists first may prove a highly effective step toward increasing the coverage and quality of oral cancer information in the popular press and, ultimately, increasing public knowledge and awareness of this potentially fatal yet preventable disease.

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