

Original Contributions

Fluoridation advocacy in referenda where media coverage is balanced yet biased



Supplemental material
is available online.

John A. Curiel, MA; Anne E. Sanders, PhD; Thu-Mai L. Christian, MA, MSIS;
Sophia Lafferty-Hess, MPA, MSIS; Thomas M. Carsey, PhD; Lewis N. Lampiris, DDS, MPH;
Gary D. Slade, BDS, PhD

ABSTRACT

Background. Despite supporting scientific evidence, community water fluoridation (CWF) often fails in public referenda. To understand why, the authors quantitatively analyzed text from news media coverage of CWF referenda.

Methods. The authors analyzed text from 234 articles covering 11 CWF referenda conducted in 3 US cities from 1956 through 2013. The authors used cluster analysis to identify each article's core rhetoric and classified it according to sentiment and tone. The authors used multilevel count regression models to measure the use of positive and negative words regarding CWF.

Results. Media coverage more closely resembled core rhetoric used by fluoridation opponents than the rhetoric used by fluoridation proponents. Despite the scientific evidence, the media reports were balanced in tone and sentiment for and against CWF. However, in articles emphasizing children, greater negative sentiment was associated with CWF rejection.

Conclusions. Media coverage depicted an artificial balance of evidence and tone in favor of and against CWF. The focus on children was associated with more negative tone in cities where voters rejected CWF.

Practical Implications. When speaking to the media, advocates for CWF should emphasize benefits for children and use positive terms about dental health rather than negative terms about dental disease.

Key Words. Fluoridation; public health and community dentistry; drinking water; health promotion; public opinion.

JADA 2018; ■(■): ■-■

<https://doi.org/10.1016/j.adaj.2017.10.016>

The dental profession and the scientific community are united in their advocacy of community water fluoridation (CWF). The Centers for Disease Control and Prevention named CWF among the 10 great public health achievements of the 20th century.¹ Despite this widespread endorsement, the US general population has remained skeptical, frequently failing to support CWF in local municipal referenda.²

Supporters and opponents of CWF make opposing claims about the health benefits and safety of CWF. Whereas advocates, such as the American Dental Association (ADA), cite its safety and effectiveness in preventing caries, opponents, such as the Fluoride Action Network (FAN), cast fluoride as a dangerous chemical added to the water supply. For many people, their source of information about CWF is local media reports in the weeks preceding a referendum. Local media generally balance the arguments for and against government actions, known as the *balance bias* and *indexing*,³ in which opposing views about contentious and emotional topics are given equal standing, as opposed to interpreting the sides and reporting which is more credible. This leaves readers to decide credibility for themselves.

We performed a quantitative analysis of text to determine whether there is bias. Does media coverage about CWF convey bias toward 1 of the opposing sides of the debate? Furthermore, how does local media cover emotional topics, such as children's health, during CWF referenda?

In this study, we examined both historic and contemporary rhetoric concerning fluoridation that appeared before a CWF referendum. We did this for 3 cities: Portland, Oregon; Wichita,

Copyright © 2018
American Dental
Association. All rights
reserved.

Kansas; and San Antonio, Texas. We drew on text from newspaper coverage of CWF referenda conducted over 6 decades, from 1956 through 2013. We conducted clustered terms and sentiment analyses of news coverage by comparing media reports with text in documents produced by the ADA and FAN. A comparison of the clustered terms covered in the news relative to the ADA and FAN offers insight as to how the media frames CWF content relative to these opposing organizations. We used the sentiment analysis to determine what drives positive and negative coverage of CWF.

METHODS

We analyzed 234 documents from newspapers in wide circulation in San Antonio, Portland, and Wichita (articles and editorials) covering 11 CWF referenda appearing on ballots from 1956 through 2013 ([supplemental table](#), available online at the end of this article). There were 44 articles from the 2000 San Antonio referendum and 16 articles from the 1978 Portland referendum when CWF was supported ([supplemental table](#)). The remaining 174 articles were from referenda when CWF was rejected.

For the most recent elections (Portland, 2013; Wichita, 2012; San Antonio, 2000), we collected documents from news sources located through searches of Google, LexisNexis, and NewsBank databases by using the key word terms *fluoride* or *fluoridation* and the city's name and year of the election. For the elections that took place before 2000, we contacted local libraries to obtain newspaper documents. For the 1966 and 1985 San Antonio elections, the San Antonio Public Library sent scanned copies of newspaper articles from the *San Antonio Express-News*, *San Antonio Light*, and *San Antonio Register* that featured the topic of fluoride in the relevant election years. To obtain newspaper articles for the 1956, 1962, 1978, and 1980 Portland elections, we identified articles of interest published in *The Oregonian* and *Oregon Journal* from the online University of Oregon newspaper index by using the same search terms, and we requested copies. For the 1964 and 1978 Wichita elections, we received copies of *The Wichita Eagle* newspaper on nonindexed microfilm housed at Wichita State University Libraries. To collect newspaper articles, we manually examined the microfilm and scanned articles that mentioned water fluoridation in the months before and during the election and the month during which the referendum was added to the ballot.

We conducted 3 analyses to gauge the clustered terms, tone, and sentiment of news coverage in the 3 cities. We gauged the competing clustered terms that formed the core rhetoric in news coverage against the official positions of the ADA and FAN. Both organizations had news coverage and press releases about their activities and positions. The documents from both organizations reflected their unfiltered positions. We downloaded all 50 articles that the ADA⁴ posted, the 50 most recent articles from FAN,⁵ and the primary documents on both websites detailing their position on fluoridation.^{6,7}

We conducted a hierarchical cluster analysis of the text contents and depicted the results graphically by using dendrograms. The process involved calculating the scaled Euclidean distance between nonspaced and mostly stemmed words, grouping terms into the most parsimonious clusters according to similarity.⁸ Dendrograms depicted the core words from which other words were derived. Dendrograms also showed the extent of dissimilarity of the core clusters and their ordering in relation to one another. Clusters of words branched off from one another, with words higher in the diagram being more influential and dissimilar.

We likewise analyzed text from news coverage where CWF was rejected and where CWF passed. Although cluster analysis does not involve use of statistical significance tests for definitive conclusions,⁸ the more similar news coverage terms were to the ADA's terms or to FAN's terms, the more in favor the topic coverage was to that organization.

We then measured the general tone of news coverage by using generic positive and negative word dictionaries.⁹ The positive dictionary included 2,006 words, and the negative dictionary included 4,783 words. We also determined the sentiment of text through a manually created dictionary of pro-CWF and anti-CWF words derived from ADA and FAN publications, respectively. The process involved recording words that conveyed bias to 1 side over the other and then comparing the results with the dictionaries established in 2 previous fluoride sentiment studies.^{10,11} For example, profluoride words spoke of the benefits of fluoride in preventing decay, whereas antifuoride words spoke of fluoride's alleged adverse medical effects and costs. Our

ABBREVIATION KEY

- ADA:** American Dental Association.
CWF: Community water fluoridation.
FAN: Fluoride Action Network.

Download English Version:

<https://daneshyari.com/en/article/8698292>

Download Persian Version:

<https://daneshyari.com/article/8698292>

[Daneshyari.com](https://daneshyari.com)