

Tobacco coverage in print media: the use of timing and themes by tobacco control supporters and opposition before a failed tobacco tax initiative

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ABSTRACT

Objective Tobacco control policies gained ground nationwide in 2006, with voters in nine states approving legislation to strengthen clean indoor air policies and increase tobacco excise taxes. Despite having the second lowest cigarette tax rate in the nation, Missouri was unsuccessful in passing its 2006 ballot initiative to raise the tax. An important way to encourage health-related policy change such as increasing tobacco taxes is through media coverage of tobacco issues. We examined how tobacco issues were presented in Missouri's print media leading up to the 2006 election.

Methods This study analysed 1263 articles with tobacco content published in 187 Missouri newspapers in the year before the election. Articles were coded for general and tobacco-related characteristics including article type (news story, editorial, letter to the editor), tobacco control position (pro, neutral, anti) and article theme (economic, health, political).

Results Most articles were news stories (73.6%) and pro-tobacco control (63.8%). The proportion of anti-tobacco control articles increased significantly ($\chi^2=104.9$, $p<0.001$) the month before the election, driven by an increase in economically themed articles. Economic articles were published more often in counties with less voter support for the tax ($F=5.68$, $p<0.01$). Finally, tobacco control position varied significantly across article types ($\chi^2=148.3$, $p<0.01$), with letters to the editor being anti-tobacco control most often.

Conclusion The media have a critical role in promoting public health goals and presenting health issues which influences formation of health policies. Tobacco control advocates must consider public opinion, opposition pressure, timing and themes in tobacco-related media coverage when promoting policy change.

INTRODUCTION

Tobacco control policies gained ground nationwide during the 2006 election cycle, with voters in nine states—Arizona, Arkansas, Colorado, Hawaii, Louisiana, Nevada, New Jersey, Ohio and Utah, as well as the District of Columbia and Puerto Rico—approving legislation to strengthen clean indoor air policies and increase tobacco excise taxes. These state policy strategies have been shown to be among the most effective ways to reduce tobacco use—the leading cause of preventable death in the USA¹—and follow the 20-year trend in state tobacco control strategies which increasingly target the social environment.^{2–6} Since 1988, 22 statewide ballot initiatives to raise the cigarette/tobacco tax have been sent to the voters of nine states.⁷ Eight of

these initiatives have failed, including two introduced in 2006.⁷ Despite having one of the lowest cigarette tax rates in the nation, Missouri was one of the two unsuccessful states in 2006.

Garnering support for tobacco control policy is an important public health objective in states like Missouri, where 24.6% of adults,⁸ 23.8% of high school students⁹ and 18.3% of pregnant women¹⁰ are current smokers. While Missouri is not a tobacco-growing state, it has the fourth highest adult smoking rate⁸ and the sixth highest lung and bronchus cancer incidence rate¹¹ in the country. As of 2006, Missouri's cigarette excise tax ranked second lowest in the USA at \$0.17 per pack,¹ and less than 1% of Missouri's population was covered by clean indoor air legislation.¹² Currently, Missouri is still behind the curve in strengthening tobacco control policy with no change in the cigarette excise tax since 1993¹³ and just 13.3% of workers protected by smoke-free workplace policies.¹⁴

Media coverage of public health issues is an important way to encourage health-related policy change.^{15–16} Media advocacy plays a critical part in promoting public health goals^{17–18} and is an important component of comprehensive tobacco control programmes.^{15–19–20} Furthermore, framing of health-related issues has a central role in successful public health policy advocacy,¹⁷ in particular in the formation of tobacco control policies.¹⁸

As tobacco control efforts increasingly emphasise policy-based strategies, it is important to understand how tobacco issues are presented in the media and how such presentation can influence policy outcomes.^{15–18} Studies have shown that the American public is interested in health-related news topics, especially those related to tobacco.²¹ Also, coverage of tobacco in news media tends to emphasise successes, lending support to tobacco control.¹⁵ For example, one study of tobacco coverage in rural Kentucky found that articles about tobacco control were more prominent in communities where clean indoor air policy was being promoted.²² While media coverage can sometimes hinder the successful adoption of tobacco policies,²³ it has played a part in the success of clean indoor air ordinances nationwide²⁴ and in enacting international smoking control legislation.^{25–26} Previous studies have examined coverage of tobacco control issues in the media throughout Australia,¹⁹ Mexico²⁷ and the USA,^{15–18–20–21} including print media coverage of the smoke-free bar law in California²⁸; the effects of a clean indoor air campaign on media coverage of tobacco in Kentucky²²; and the effects of a media campaign on tobacco use in

Texas.²⁹ However, other than the Kentucky study, no studies have analysed the print media coverage of, and framing of, tobacco issues in a state such as Missouri, with its challenging tobacco control environment.

This study analyses the coverage of tobacco issues in Missouri's print media during the year leading up to the 2006 general election. This election included a ballot issue to increase the tobacco excise tax by 80 cents per pack of cigarettes and 20% on other tobacco products. Had the tax passed it would have increased Missouri's tax to be in line with the average state cigarette tax in the USA at the time. Specifically, we examine: (1) the overall position of the news articles, editorials and letters to the editor (ie, pro, anti or neutral to tobacco control), (2) themes related to how tobacco messages were presented in the print media (using health, economic and political arguments), (3) how article position and themes changed over time, and (4) how article position and themes were associated with voter support for the tax increase. The results of this study provide important information relating to the timing, placement and themes of tobacco coverage in media. This information will aid tobacco control professionals in effectively planning to use media to combat anti-tobacco influences, advance tobacco control efforts and promote policy change.

METHODS

Print media data collection

In 2004 the Missouri Foundation for Health funded a 9-year initiative aimed at reducing tobacco use in Missouri. In partnership with other regional and national tobacco control organisations, organisers developed 'Show Me Health: Clearing the Air About Tobacco'. One of the 'Show Me Health' strategies was to develop and implement an educational campaign regarding the impact of tobacco use in Missouri. Although the campaign did not directly advocate for a tobacco tax increase, increased awareness of tobacco's toll in Missouri was expected to bolster support for the ballot initiative. As part of the 'Show Me Health' evaluation, the Center for Tobacco Policy Research (CTPR) worked with Metropolitan News Clips Service, Inc, to monitor the coverage of tobacco issues in all 446 daily and weekly Missouri newspapers published in 90 counties during the year leading up to the 2006 general election. These papers included major city dailies with circulation over 100k (eg, the *St Louis Post-Dispatch*) and smaller suburban and rural newspapers (eg, the *Boone County Journal*).

Measures and analysis

To analyse the tobacco-related content of these articles, CTPR developed a 24-item codebook based on similar public health content analysis studies.^{18 20 28 30} Each article was coded for general information about the newspaper and story (eg, county of publication, date of publication, name of newspaper), for the article type (ie, news story, editorial or letter to the editor), for tobacco related topic(s) mentioned in the article (ie, youth prevention, adult cessation, smoke-free policies, tobacco taxes and tobacco science), and for the overall position of the article (ie, anti-tobacco control, neutral or pro-tobacco control).

An article was coded as pro-tobacco control or anti-tobacco control if the text included information that supported or opposed tobacco cessation and prevention efforts, respectively. For example, one news story coded as anti-tobacco control stated, "Attorney General Jay Nixon opposes a ballot initiative that would raise taxes on cigarettes and devote money to health care providers and anti-smoking efforts" (Nixon opposes proposal

to raise cigarette tax, *St Louis Post-Dispatch*, 4/16/06). In contrast, a pro-tobacco control news story stated, "A judge ruled Monday that supporters of a state tobacco tax had gathered enough signatures to place the measure on the November ballot. Cole County Circuit Judge Thomas Brown overturned a decision more than a month ago that the amendment had fallen nearly 300 names shy of the required mark in the Kansas City Area" (Judge orders tobacco tax on Missouri's November Ballot, *Cape Girardeau Southeast Missourian*, 9/12/06). If the information in the article was balanced in the amount of information presented for and against tobacco control, or if an article presented no opinion regarding tobacco control, it was coded as neutral.

Articles were also coded for the dominant theme by identifying specific arguments about tobacco control and about a tobacco tax increase. The 24 arguments fell into three categories: health, economic and political (table 1). Health arguments were those that conveyed general health consequences of tobacco use, the addictive nature of tobacco or the behavioural effect of a tobacco tax increase on tobacco use. Economic arguments conveyed monetary reasons for or against a tobacco tax increase, particularly at the societal level. Political arguments conveyed ideological reasons for or against a tobacco tax increase. Each article may have been coded for numerous arguments; the dominant theme of the article was the category (health, economic or political) represented by the most arguments in each article (eg, an article with four health arguments and one economic argument has a dominant health theme). Several arguments identified in this study have been seen in other statewide campaigns.⁷ For example, the health argument, "The tax will increase prevention/cessation among youth" was used by proponents of cigarette tax increases in more than half of the 22 statewide initiatives since 1988. The political argument, "It's a regressive tax" was used by tobacco control opposition in 15 campaigns and the economic argument, "The revenue from the tax will not be enough to cover the promised services" was used by the opposition in seven campaigns.

After removing 18 articles from the dataset that were either incomplete, from an out-of-state newspaper or contained no tobacco content, three trained coders coded a total of 1263 articles. To ensure reliability of the coding process, each article was coded by two of the three coders. We calculated percentage agreement and Brennan and Prediger's κ ³¹ to determine the reliability of the coding process. Variables had the following percentage agreement and κ scores: article type (93.7%; $\kappa=0.91$); article position (62.7%; $\kappa=0.44$); tobacco topics (91.4%–98.5%; $\kappa=0.83$ –0.97); arguments (78.6%–99.8%; $\kappa=0.57$ –0.99) (see table 1). According to standard interpretations of κ , most of the coding resulted in *substantial* ($\kappa=0.61$ –0.80) or *nearly perfect* agreement ($\kappa>0.80$) between coders. When a pair's codes differed, a fourth trained coder resolved the disagreement.

In addition to the media data, voting outcome data from the Missouri Secretary of State Election Result Archives (<http://www.sos.mo.gov/enrweb/electionselect.asp?eid=203>) were also used. We employed standard descriptive and inferential statistics to explain basic characteristics of the print media, examine associations among article characteristics (eg, position, dominant theme) and determine whether there was an association between voting patterns and media content. We used χ^2 to determine associations between categorical variables. Where there were significant associations we examined a contingency table including standardised residuals to determine what was driving the significant result. Standardised residuals convert the difference between the observed value and expected value into a z-score. Standardised residuals larger than two, therefore, indicate

Table 1 Tobacco control theme categories and arguments

Dominant theme	Argument	Number of arguments	% arguments by theme	Brennan and Prediger's κ	
Economic	Tax will pay for other health-related programmes	501	29%	0.83	
	The tax will pay for tobacco prevention and cessation programmes	478	28%	0.84	
	The tax will raise general revenue for the state	357	21%	0.82	
	States don't spend enough money on tobacco control and prevention; there needs to be an increase in dollars for tobacco control and prevention	79	5%	0.86	
	The tax will recover medical expenses associated with tobacco-related disease	76	4%	0.88	
	The tax money may not go where its intended (eg, MSA funding misappropriation)	74	4%	0.90	
	The revenue from the tax will not be enough to cover the promised services (unfunded mandate)	67	4%	0.92	
	A smoking ban hurts/will hurt businesses	52	3%	0.93	
	The tax will hurt businesses	48	3%	0.97	
	Should tax those who smoke	44	3%	0.91	
	Health	Tobacco use leads to negative health consequences	383	33%	0.57
		Concerned about secondhand smoke	235	20%	0.69
		Increasing the cigarette tax is a way to decrease tobacco use	173	15%	0.82
		The tax will increase prevention/cessation among youth	138	12%	0.86
Tobacco use by individual or family member/friend		118	10%	0.82	
Tobacco use is addictive; people cannot help it		96	8%	0.85	
Raising taxes will have no effect on tobacco use		24	2%	0.95	
Political		Tobacco use is a personal choice/freedom	103	27%	0.89
	The tobacco industry deceived us	66	18%	0.91	
	It's not fair to tax a certain group of people	65	17%	0.91	
	Taxes are high enough; taxes in general should not be increased	57	15%	0.90	
	It's a regressive tax	45	12%	0.97	
	There are problems that need to be addressed other than tobacco use	20	5%	0.96	
	Tobacco use is legal	16	4%	0.97	
	Should not punish people who are addicted to tobacco	4	1%	0.99	

large differences between observed values and expected values that drive a significant χ^2 result. Finally, we used ANOVA to compare the mean percentage of people in favour of the tax across categories including publication month, dominant theme and article position.

RESULTS

Characteristics of tobacco coverage in the print media before Missouri's 2006 tobacco tax initiative election

The 1263 tobacco-related articles identified by the clipping service were published between 1 September 2005 and 6 December 2006 in 187 (42%) of Missouri's 446 newspapers. There were 930 news stories (73.6%), 191 letters to the editor (15.1%) and 142 editorials (11.2%). Most articles were about tobacco tax policies (54.8%) and took a pro-tobacco control position (63.8%). The number of articles published increased significantly over time ($r=0.67$; $p<0.01$), with 215 (17%) being published in October 2006, the final month before the election.

Article positions regarding tobacco control

Articles were classified as anti-tobacco control (12.6%), neutral (23.6%) or pro-tobacco control (63.8%). There was a significant difference in the article position across the three article types ($\chi^2=148.3$, $df=4$, $p<0.01$). We conducted residual analysis to identify what was driving this significant result. Letters to the editor and editorials were more likely than expected to be anti-tobacco control, while news stories were less likely than expected to be anti-tobacco control. Additionally, observed frequencies were lower than expected for neutral letters to the editor and higher than expected for news stories. (figure 1).

The number of tobacco-related articles increased sharply the month preceding the general election (ie, October 2006). Concurrent with the increase in the number of articles was a shift in the mix of pro-tobacco control, neutral and anti-tobacco control articles. Specifically, the proportion of articles taking a neutral or anti-tobacco control position increased in the month before the election while the proportion of articles taking a pro-tobacco control position decreased during this time (figure 2a). A χ^2 analysis

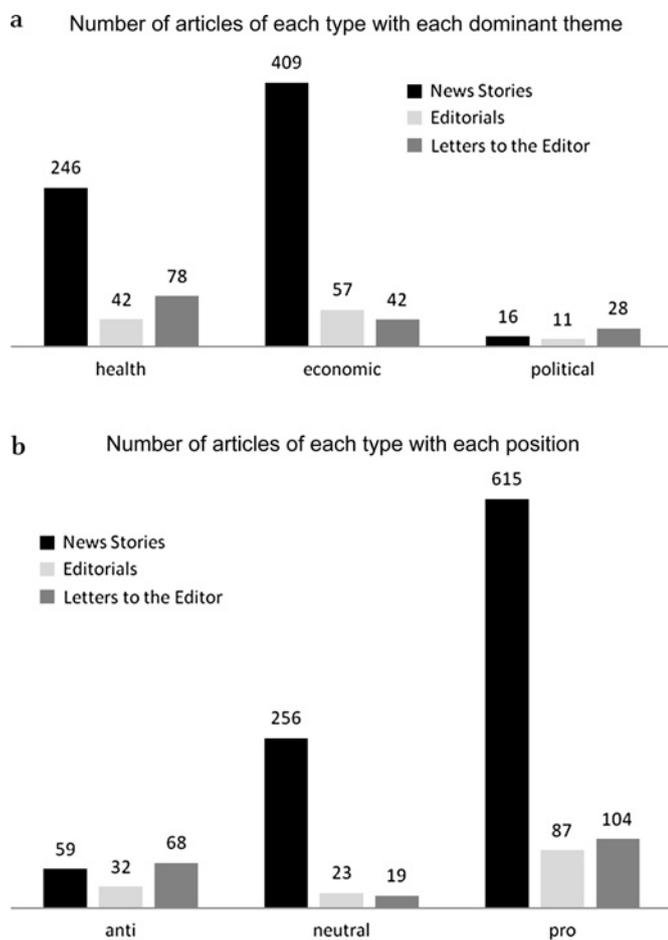


Figure 1 Dominant theme and position of letters to the editor, news stories and editorials.

of publication month and article position identified a significant association ($\chi^2=104.9$, $df=30$, $p<0.001$). Standardised residuals showed the decrease in pro-tobacco control articles and the increase in anti-tobacco control articles in October and November 2006 drove the significant χ^2 results.

Article themes

Overall, the 1263 articles contained 1724 economic arguments, 1167 health arguments and 326 political arguments, for a total of 3267 occurrences of the 24 arguments (table 1). Twenty-nine per cent of articles ($n=366$) had a dominant health theme, 40.2% ($n=508$) had a dominant economic theme and 4.4% ($n=55$) had a dominant political theme. Over a quarter (27%; $n=334$) of articles had no dominant theme; most of these were articles that did not include one of the 24 arguments ($n=239$), while some had equal numbers of arguments in more than one category ($n=95$).

Dominant theme and article type

We found a significant association between dominant article theme and article type ($\chi^2=91.2$, $df=4$, $p<0.01$). Residual analysis indicated the significant χ^2 results were driven by letters to the editor and news stories. Letters to the editor were more likely than expected to have a dominant political or health theme and less likely to have an economic theme. News stories, on the other hand, were more likely than expected to have a dominant economic theme and less likely to have a political theme.

Article themes and timing

While the number of tobacco-related articles increased overall during the few months preceding the general election

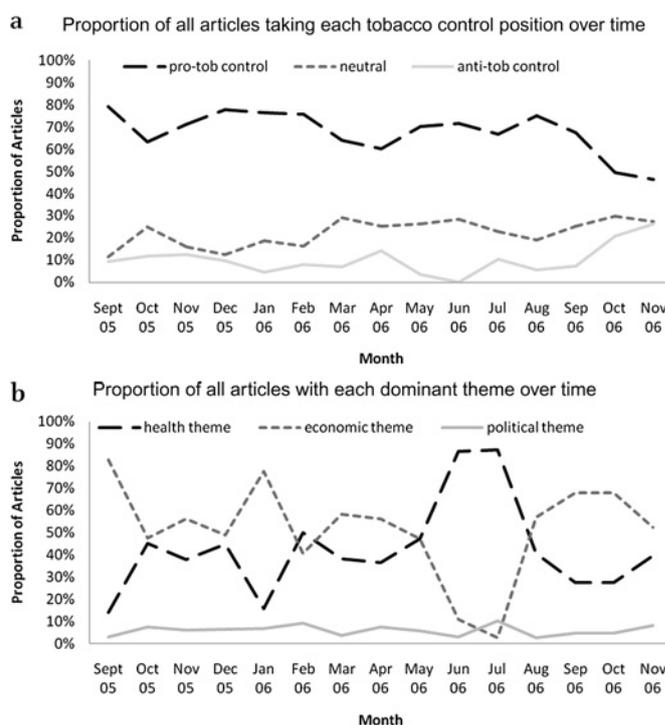


Figure 2 Trends in article position and dominant theme before the November 2006 election.

(ie, May 2006 through October 2006), the number of articles with a dominant economic theme increased more than the number of articles with political or health themes (sixfold compared to fivefold and threefold, respectively). Figure 2b shows the proportion of articles with each dominant theme over time. χ^2 analyses found significant differences ($p<0.05$) in the proportion of articles with each of the three dominant themes at different times throughout the year. While the proportion of articles with a dominant political theme stayed relatively consistent over time, residuals indicated a greater proportion of articles than expected with dominant health themes in summer 2006 and a smaller than expected proportion of articles with a dominant health theme in autumn 2006, closer to the election. In addition, there were fewer than expected economic articles in summer 2006, but economic coverage was higher in the autumn of 2006, just before the election.

Relations between dominant article theme, position and timing

We found that there was a significant association between dominant theme and article positions ($\chi^2=262.9$, $df=4$, $p<0.01$). Standardised residuals indicated that there were more pro-tobacco control articles with a dominant health theme and anti-tobacco control articles with a dominant political theme than expected. Observed frequencies were lower than expected for neutral and anti-tobacco control health articles, neutral economic articles and pro-tobacco control political articles.

In order to determine whether articles with specific dominant themes and positions were published closer to the election, we conducted a 3-by-3 factorial ANOVA with dominant theme and position as independent variables and month of publication as the dependent variable. We found significant differences ($F=7.20$, $df=8$, $p<0.01$) in the average month of publication for articles with each position and theme. While there were no significant main effects for theme ($F=1.84$, $df=2$, $p=0.16$) or position ($F=2.84$, $df=2$, $p=0.06$) the interaction term theme-by-position was significant ($F=2.55$, $df=4$, $p=0.04$). Figure 3 sheds

light on the issue of timing, showing a distinct increase in neutral and anti-tobacco control economic articles in the month before the election.

Voting patterns and coverage of tobacco issues in the print media

The percentage of voters who voted in favour of the tax ranged from a low of 30.5% in two counties in southeast Missouri (Washington, Reynolds) to a high of 56.6% in St Louis County, with overall support of 48% of Missourians who voted. Of the 115 areas, eight counties, including the two densely populated urban areas of St Louis City and Jackson County, approved the tobacco tax initiative with over 50% of votes in support.

We conducted a 3-by-3 factorial ANOVA to determine whether voter support for the tax was associated with dominant article theme and position. Voter support was the dependent variable and position and theme were the independent variables in this model. We found significant differences ($F=5.68$, $df=8$, $p<0.01$) in mean percentage of voter support (figure 4). Specifically, articles with economic themes were published in counties with the lowest percentages of the vote in favour of the tax ($m=46-48%$) regardless of whether the article was pro-tobacco control, neutral or anti-tobacco control. Articles with health and political themes, on the other hand, were published in counties with higher average voter support ($m=48-54%$) for the tobacco tax. Interestingly, articles with anti-tobacco control

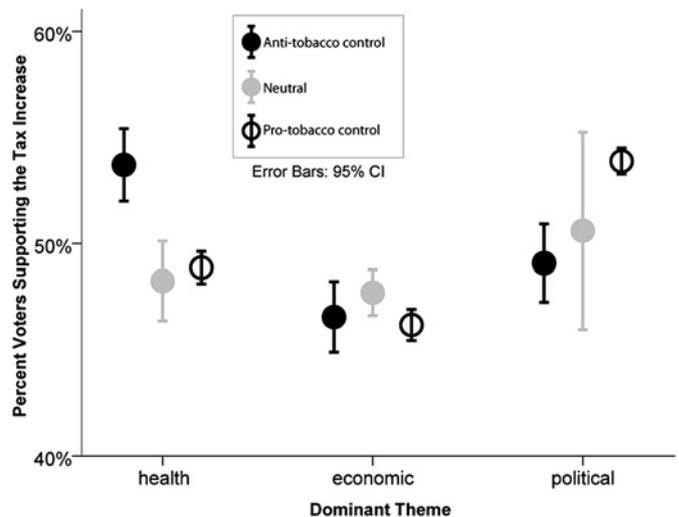


Figure 4 Mean percent of voters supporting the tax by article theme and position in the county where the article was published.

positions and dominant health themes were published in counties with higher voter support for the tax than other articles with dominant health themes. This may point to some strategic opposition in counties with greater support for the tax.

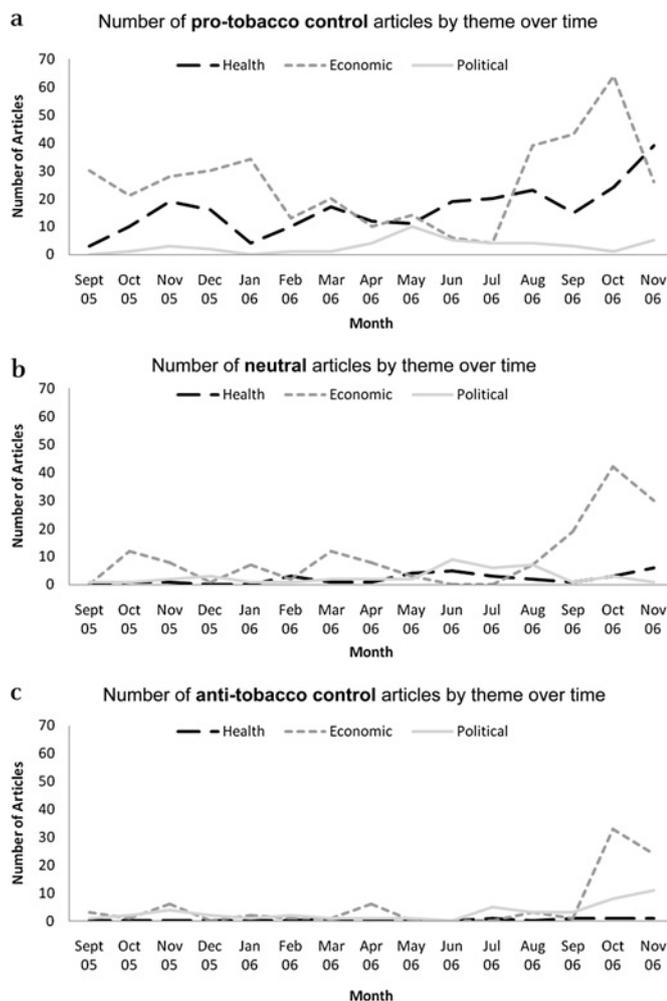


Figure 3 Neutral and anti-tobacco control economic articles surged just prior to the November 2006 election.

DISCUSSION

As our analysis suggests, there are important lessons to be learnt by examining media coverage of health topics around health policy campaigns. We conducted an analysis of 1263 tobacco-related articles published in 187 newspapers across 90 Missouri county areas in the year leading up to the 2006 statewide election in Missouri. This election was important for tobacco control in Missouri owing to a cigarette excise tax increase of 80 cents on the ballot. Had this initiative passed, it would have been the first increase since 1993 in the Missouri state cigarette tax, which ranks second to the lowest in the country. Our findings point to a number of hurdles faced by the pro-tobacco control movement during this year. First, while a majority of articles were pro-tobacco control throughout the year, there was a significant increase in the proportion of articles that took an anti-tobacco control position in the month preceding the election. Second, the increase in neutral and anti-tobacco control articles in the month preceding the election was driven by an increase in economically themed articles. Finally, compared to articles with dominant health or political themes, articles with economic themes were published more often in counties with less voter support for the tax initiative.

Secondary findings indicated that the public may have held different beliefs than the press about the tobacco tax and tobacco control. Specifically, there were significantly more letters to the editor taking an anti-tobacco control position than there were editorials or news stories taking an anti-tobacco control position. In addition, letters to the editor were more likely to have a dominant political theme and less likely to use an economic or health theme than other types of articles.

A number of these findings are consistent with past research. For example, a 2001 study by Durant and colleagues³² found that tobacco issues become more newsworthy at certain times and in certain places. Another study found that tobacco stories covered in the media are generally pro-tobacco control.³³ Also, Harwood *et al* found that media attention to public health issues can decrease policy adoption.²³ While the Harwood *et al* study

What is already known about this topic

Media coverage of public health issues is an important way to encourage health-related policy change. The public is interested in health-related news topics, especially those related to tobacco, and the coverage of tobacco in news media tends to emphasise successes and to lend support to tobacco control. Media coverage has played a part in the success of clean indoor air ordinances nationwide and in enacting international smoking control legislation.

focused on legislative processes of policy adoption, our study findings are similar in that increased media coverage of a particular theme (economic) led to decreased voter support.

In addition to confirming previous studies, our findings point to the strategic use of *timing* and *themes* by those in opposition to the tobacco tax initiative. Backed by the tobacco industry, two main groups, the Missouri Petroleum Marketers and Convenience Stores Association and Missourians Against Tax Abuse, took advantage of the inability of pro-tax advocates to develop and widely disseminate a clear and consistent pro-tobacco control message.³⁴ While there are certainly many factors contributing to the voting patterns, the last-minute increase in opposition using primarily economic themes was an effective tool in countering the tax initiative. In the final evaluation report of the 'Show Me Health' initiative,³⁵ CTPR identified evidence of economic messaging being used by opposition to the tax increase. Specifically, one 'Show Me Health' message disseminated during the campaign, "For the past six years, Missouri has spent \$0 in state funds for a comprehensive tobacco use prevention and cessation programme, ranking us last in the country, although it has received over \$1 billion in Master Settlement payments" was repeatedly used by the opposition.

Also important was the finding related to the difference between the Missouri public and the press. In this study, letters to the editor appear different from editorials and news stories in several ways including taking a more anti-tobacco control position and using political arguments. News stories and editorials are most often written by newspaper staff, while letters to the editor are written by the general public (and selected by newspaper staff) and are thought to be an indicator of community sentiment.³³ These differences indicate a disparity between Missouri citizens and media when it comes to tobacco issues.

There were several limitations of this study. First, our analysis is limited to print media coverage of tobacco issues. Print media are only one of many types of media that might affect public opinion. Second, a large percentage (44.7%) of the articles collected and analysed were from the St Louis and Kansas City areas, the two most densely populated Missouri urban counties. While these counties were supportive of the tobacco control policies, when we explored the data we found no significant differences in the proportion of articles with pro-tobacco, neutral or anti-tobacco control positions in these areas compared with the rest of the state ($\chi^2=0.04$, $df=2$, $p=0.98$). Finally, our findings represent only a snapshot of how print media covered tobacco-related issues over the course of 1 year. Because adoption of tobacco control policies including clean air legislation and excise tax increases in Missouri is still met with strong resistance, it is important to examine media coverage over an extended period of time to measure its influence as part of comprehensive tobacco control efforts.

What this study adds

This study demonstrates the use of timing and themes related to tobacco issues in the print media by tobacco control proponents and opposition before a failed ballot initiative to increase a state tobacco tax. Tobacco control opposition use of economic arguments and an increase in anti-tobacco control articles in the month before the election, along with a notable difference between media coverage and citizen opinion seen in letters to the editor, confirm the need for tobacco control advocates to revisit media strategies when working to promote policy change.

Conclusion and recommendations

Strengthening tobacco policy, including raising state tobacco taxes, remains one of the best ways to reduce tobacco use.^{1–6} While ballot initiatives to raise tobacco taxes have been successful in several states, other states, including Missouri, have failed.⁷ The media have a critical role in promoting public health goals and presenting health issues which influence the formation of tobacco control policies including raising state tobacco taxes. It is therefore essential for tobacco control professionals to understand how tobacco issues are presented in the media. In this study we identified several important characteristics of media coverage of tobacco in Missouri in the year leading up to the failed 2006 tobacco tax initiative. The following lessons learnt may be useful for tobacco control practitioners working to promote tobacco control policy: (1) prepare for significant increases of opposition in the final weeks before a policy event, (2) carefully consider how economic arguments may be interpreted by the public, and (3) track community sentiment expressed in letters to the editor, as this may be a better indicator of the level of support for tobacco control than news articles or editorials. More generally, it is important for tobacco control advocates to consider public opinion, opposition pressure, timing and themes in tobacco-related media coverage when promoting tobacco tax increases and other tobacco policy change in a challenging tobacco control climate.

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