Published in final edited form as:

Prev Med. 2012 June ; 54(6): 425–430. doi:10.1016/j.ypmed.2012.04.010.

Evaluating the *Ozioma* cancer news service: A community randomized trial in 24 U.S. cities

Charlene A. Caburnay^{a,b}, Douglas A. Luke^b, Glen T. Cameron^c, Elisia L. Cohen^d, Qiang Fu^e, Choi L. Lai^a, Jonathan Stemmler^f, Melissa Paulen^a, Lillie McDaniels-Jackson^a, and Matthew W. Kreuter^{a,b}

Charlene A. Caburnay: ccaburnay@wustl.edu; Douglas A. Luke: dluke@wustl.edu; Glen T. Cameron: camerong@missouri.edu; Elisia L. Cohen: Elisia.Cohen@uky.edu; Qiang Fu: qifu@slu.edu; Choi L. Lai: clai@wustl.edu; Jonathan Stemmler: stemmlerj@missouri.edu; Melissa Paulen: melissapaulen@gmail.com; Lillie McDaniels-Jackson: lmcDaniels.mph@gmail.com; Matthew W. Kreuter: mkreuter@wustl.edu

^aHealth Communication Research Laboratory, Washington University in St. Louis, Campus Box 1009, 700 Rosedale Ave., St. Louis, MO 63112-1408 USA

^bInstitute for Public Health, 600 S. Euclid, CB 8217, St. Louis, MO 63110

^cHealth Communication Research Center, Missouri School of Journalism, University of Missouri-Columbia, 140-E Walter Williams Hall, Columbia, MO 65211 USA

^dDepartment of Communication, University of Kentucky, 231 Grehan Bldg. Lexington, KY 40506-0042 USA

^eDepartment of Biostatistics, School of Public Health, Saint Louis University, 3545 Lafayette Ave., St. Louis, MO 63104 USA

^fHealth Communication Research Center, Missouri School of Journalism, University of Missouri-Columbia, 237 Walter Williams Hall, Columbia, MO 65211 USA

Abstract

Objective—This community randomized trial evaluated effects of the *Ozioma* News Service on the amount and quality of cancer coverage in Black weekly newspapers in 24 U.S. cities.

Method—We created and operated *Ozioma*, the first cancer information news service specifically for Black newspapers. Over 21 months, *Ozioma* developed community- and race-specific cancer news releases for each of 12 Black weekly newspapers in intervention communities. Cancer coverage in these papers was tracked before and during the intervention and compared to 12 Black newspapers in control communities.

Results—From 2004–2007, we coded 9,257 health and cancer stories from 3,178 newspaper issues. Intervention newspapers published approximately 4 times the expected number of cancer stories compared to control newspapers ($p_{12\&21mo}<.01$), and also saw an increase in graphics ($p_{12\&21mo}<.01$), local relevance ($p_{12mo}<.01$), and personal mobilization ($p_{12mo}<.10$). However,

© 2012 Elsevier Inc. All rights reserved.

Corresponding author: Charlene Caburnay, Health Communication Research Laboratory, Campus Box 1009, Washington University in St. Louis, 700 Rosedale Ave., St. Louis, MO 63112-1408 USA. ccaburnay@wustl.edu; Phone: 1-314-935-3703; Fax: 1-314-935-3757.

CONFLICT OF INTEREST STATEMENT

The authors declare that there are no conflicts of interest.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

this increased coverage supplanted other health topics and had smaller graphics (NS), had less community mobilization ($p_{21mo}=.01$), and less likely to be from a local source (NS).

Conclusion—Providing news releases with localized and race-specific features to minority-serving media outlets can increase the quantity of cancer coverage. Results are mixed for the journalistic and public health quality of this increased cancer coverage in Black newspapers.

Keywords

African Americans; cancer; mass media; minority health; newspapers

INTRODUCTION

Media coverage of health issues over time can influence long-term secular trends in disease prevention and early detection behaviors (Brown and Potosky, 1990; Viswanath et al., 2002; Yanovitzky and Blitz, 2000). Currently, health news coverage of cancers for which evidence-based prevention and early detection strategies are readily available is disproportionately low relative to their population impact (Cohen et al., 2008; Stryker et al., 2008; Slater et al., 2008).

Black newspapers address health issues of particular relevance to African Americans and local Black communities (Domke, 1994; Jones-Webb et al., 1997) and have wide readership (Bacon's Newspaper Directory 2008, 2007). During a time when large daily newspapers have seen a steady decline in readership, community newspapers have tripled in circulation (Davis, 1999; Hatcher, 2003; Sheppard, 1996). Black newspapers have lost revenue in the recent economic downturn, but less so than most general audience newspapers (The Pew Research Center's Project for Excellence in Journalism, 2010).

The relative success of Black newspapers has been attributed to targeting a specific audience and focusing on local news (Davis, 1999; Thomasch, 2006). These attributes also make Black newspapers attractive for delivering health information. Because increased media attention to an issue can influence public understanding and perceptions of the issue's importance (McCombs and Shaw, 1993; Rogers and Dearing, 1990; Southwell and Torres, 2006), greater coverage of cancer in Black newspapers could help reduce the disproportionate burden of cancer on African Americans (American Cancer Society, 2009).

Media relations and information subsidies like news releases can increase coverage of health issues (Kiernan, 2003; deSemir et al., 1998; Stryker, 2002; Centers for Disease Control and Prevention, 1997). Up to 90% of medical news originates from media relations efforts (Schwitzer, 1992). *Localization* enhances news release uptake (Centers for Disease Control and Prevention, 1997; Morton and Warren, 1992; Abbott and Brassfield, 1989) and is more common among newspapers with smaller staffs and circulations (Morton, 1986), like Black newspapers.

This paper reports findings from a community randomized trial evaluating the effectiveness of the *Ozioma* News Service, the first national cancer information news service for Black newspapers, and the first to use community- and race-specific information to localize cancer stories for different newspapers in different cities. To evaluate the reach and effectiveness of *Ozioma*, we ask: (RQ1) Does *Ozioma* increase the *amount* of cancer coverage in Black newspapers?; (RQ2) Does *Ozioma* improve the *quality* of cancer coverage in Black newspapers?; and (RQ3) What characteristics of *Ozioma* news releases predict greater uptake by Black newspapers?

MATERIALS AND METHODS

Study sample, randomization and baseline news coverage

The sampling frame for the study included large U.S. cities and standard metropolitan areas (SMAs) that had: (1) cancer mortality rates for African American men or women that exceeded U.S. rates for African Americans; and (2) a local Black weekly newspaper. Because Black newspapers' resources and circulation vary by market (Pride and Wilson, 1997; Wolseley, 1972) half the sample was drawn from large U.S. cities and half from SMAs. The final sample included 24 newspapers in 16 states, predominantly in the Southeast and Midwest. The sampling procedure is detailed elsewhere (Cohen et al., 2008; Caburnay et al., 2008).

Randomization was stratified by: (1) large cities vs. SMAs; (2) newspaper circulation (<40,000 vs. 40,000 for cities; <20,000 vs. 20,000 for SMAs (according to Gebbie Press, 2000); and (3) newspaper size (20 vs. >20 pages), determined by average page count in one month of issues (excluding advertisement inserts). We identified 12 cities and 12 SMAs and classified them by circulation and size, resulting in 4 cells each for cities and SMAs. In each cell, an equal number of newspapers was randomly assigned to either the intervention or control group, resulting in 12 newspapers (6 from cities, 6 from SMAs) in each group. Baseline news content for these 24 newspapers was established by analyzing all health and cancer-related stories published from April 1, 2004 through December 31, 2007.

Intervention development and distribution

Ozioma is an Igbo/Nigerian term meaning “good news” and accordingly *Ozioma* releases emphasize progress and opportunity. Progress framing like this elicits positive emotions, interest in cancer screening, and counteracts medical mistrust among African Americans (Nicholson et al., 2008).

From December 11, 2005 to September 7, 2007, the *Ozioma* News Service developed and sent 444 community-specific versions of 37 bi-weekly news releases to each of the 12 Black weekly newspapers in the intervention condition. Topics for news releases came from national news stories, NCI press releases, feature ideas of editors and commemorative themes, and addressed different cancers, cancer risk factors, new cancer science, celebrity survivors and more (see Figure 1). Every news release had three elements: at least one of six core cancer control messages, local- or state-level cancer-related data and resources, and an information graphic or photograph. The six core messages were: (1) Cancer is an important health issue for African Americans; (2) There are things you can do to prevent cancer; (3) Every African American should be screened for cancer according to recommended guidelines; (4) It is important to talk to family and friends about cancer prevention and screening; (5) Cancer is not a death sentence; and, (6) There are resources in your community to help in the fight against cancer. These messages address misconceptions about cancer and barriers to cancer prevention activities reported by African Americans (Demark-Wahnefried et al., 1995; Phillips et al., 1999; Powe, 1994). *Ozioma* releases were sent to intervention group newspapers by e-mail (n=11) or fax (n=1), per newspaper preference. Control group newspapers (n=12) did not receive releases.

Content analysis of stories and news releases

Issues from 24 Black newspapers published between April 1, 2004 and December 31, 2007 were read to identify health- and cancer-related stories. *Health-related* stories conveyed information anywhere in the story pertaining to health promotion, disease prevention, etc. *Cancer-related* stories were health stories that also contained cancer key words (e.g., malignant, carcinogen) anywhere in the story, or information about cancer risk factors,

incidence, screening, treatment, outcomes, or policy within the headline or first 2 paragraphs. Inter-coder reliability for identification of health- and cancer-related stories was high (mean kappa = 0.87).

All cancer-related stories and *Ozioma* news releases were coded on journalistic and health promotion criteria.

For newspaper stories, journalistic criteria included: *story size*, *headline size*, *story location* (above/below fold), *number and size of graphics*, *story locale* (community/other: the geographic area in which the story took place), *localized information* (yes/no: information relevant to the newspaper's local audience) and *story local source* (yes/no). For news releases, journalistic variables included *localized features* (yes/no for headline, body of the release, and data graphic). For each of these features, we also coded level of localization (community, state, racial group).

Health promotion criteria included: *personal* and *community mobilization* (yes/no: explicit recommendations of actions to improve one's own health or that of the community), *primary prevention* (yes/no), *referral to resources* (yes/no), *disparity information* (yes/no), *public health facts* (perspective: population impact, including statistics, numbers, and data about cancer, and consequences: outcome or impact of cancer prevention, treatment or screening), and having any *behavioral risk factor* (yes/no for diet/nutrition, physical activity, smoking, alcohol use, and overweight/obesity) or the risk factor of genetics/family history. News releases were coded on: *primary story focus* (yes/no for each: prevention, screening, risk factors, therapeutics, survivorship, and politics/policy), *core content* (yes/no for each of the six core messages), and *data* (yes/no for each: local community, state, and national).

Inter-coder reliability for story coding averaged a kappa of 0.80 (range: 0.62-0.93); news releases averaged 0.79 (range: 0.65 – 0.92).¹ These coding criteria were established by past content analyses of cancer and health stories (Caburnay et al., 2003, 2008; Cohen et al., 2008).

Identifying published *Ozioma* news releases

We identified cancer stories generated from *Ozioma* news releases by reviewing the story and news release for similar features, including headline, first two sentences, body of story, cancer topic, data, and graphic. In 79% of cases, a newspaper adopting an *Ozioma* release published the body of the story verbatim. An additional 18% of stories ran the body of the story verbatim with the exception of 1-2 paragraphs.

Statistical analysis

To determine whether *Ozioma* increased the amount of cancer coverage (RQ1), we compared the intervention and control groups over time on the *number of cancer stories* (outcome variable #1) in issues containing at least one health story (i.e., "issue-level analysis"). To determine whether *Ozioma* improved the quality of cancer coverage (RQ2), we compared cancer stories in intervention and control groups on *journalistic and health promotion criteria* (i.e., "story-level analysis"). Both types of analyses examined newspaper issues and stories at baseline and two endpoints: (1) the first 12 months of the intervention; and (2) the entire post-intervention period (21 months). We selected these two endpoints to account for the potential effects of novelty, the need to gain the trust of the newspapers receiving *Ozioma*, and improvements in *Ozioma* releases as the news service gained experience.

¹Krippendorff's alpha reliability data on each variable for story level and news release coding is available from the authors.

Because multiple issues from the same newspaper may be more similar in likelihood of publishing cancer stories than other issues from different newspapers, we investigated intraclass correlations (ICC) using the GENMOD procedure in SAS v. 9.3 [SAS Institute, Inc., 2011] with the exchangeable correlation matrix as the structure correlation matrix. We decided a priori that if the ICC was not considerable (i.e., $ICC < 0.3$ [Rosner, 2005]) for the issue-level analysis, we would use a zero-inflated negative binomial regression model to assess the difference in the number of cancer stories over time between the *Ozioma* and control groups. The intervention effect was examined by forming an interaction term of *group (intervention vs. control) by time (pre- vs. post-intervention)*. A statistically significant regression coefficient for the interaction term would indicate intervention success. If the ICC was considerable (i.e., $ICC > 0.3$), we would integrate the generalized estimating equation (GEE) method with the above regression analyses. Likewise, for story-level analyses, the same interaction term was tested in regression models. We used binary logistic regression, ordinal logistic regression, and zero-inflated negative binomial regression for dichotomous, ordinal, and count outcome variables, respectively, for story-level analyses.

To understand the *news release adoption* process (RQ3), we used binary and ordinal logistic regression to determine which journalistic and health characteristics predicted the probability of Black newspapers using *Ozioma* releases.

RESULTS

We reviewed 3,178 issues published April 1, 2004 through August 31, 2007 and identified 9,257 health stories (2.9 health stories/issue) from 23 newspapers included in the final analysis (one control group newspaper had a high correlation with other newspapers and was excluded from analysis). Of these, 1,428 were cancer stories (0.45 cancer stories/issue). April 1, 2004 through December 9, 2005 was the pre-intervention period (≈ 20 months; $n=1,408$ issues); December 10, 2005 through November 30, 2006 (≈ 12 months; $n=878$ issues) was the first 12-months post-intervention, and the period ending August 31, 2007 (≈ 21 months; $n=1,770$ issues) was the entire post-intervention period. In the first 12 months post-intervention, intervention newspapers received 1.8 releases per month. From 13 months post-intervention through the end of the study, 1.6 releases were delivered per month. Intervention delivery rates during the two follow-up periods were not statistically different ($p=0.34$). In total, 102 newspaper stories were published from 37 news releases to 12 Black newspapers (Figure 1).

RQ1: Amount of cancer coverage in Black newspapers

The ICC within issues was small (i.e., 0.04). We fitted a zero-inflated negative binomial model without the use of the GEE method to the data. Table 1 shows the beta coefficients estimated from the regression model. The interaction terms for both 12- and 21-month post-intervention analyses were statistically significant (both $p < .01$), which suggested that the effect of the *Ozioma* intervention on the expected number of cancer stories was different for the post-intervention period of time than it was for the pre-intervention period. Black newspapers in the *Ozioma* group published $e^{1.45} = 4.26$ times the expected number of cancer stories as those in the control group at 12 months post-intervention and $e^{1.38} = 3.97$ times as many at 21 months post-intervention (see Table 1).

The amount of overall health coverage by issue remained largely unchanged in the intervention and control groups across the pre- to 12-month post-intervention period ($p=0.38$) and was borderline for the 21-month post-intervention period ($p=0.06$). However, cancer coverage increased significantly in intervention group issues during this period. These findings indicate that during the first 12 and 21 months of the intervention period,

issues in newspapers receiving *Ozioma* releases allocated more of their weekly health coverage to cancer, in effect supplanting other health topics.

RQ2: Quality of cancer coverage in Black newspapers

While the amount of cancer coverage in Black newspapers significantly increased in the intervention group over the post intervention period, we did not find many measures of journalistic and public health quality that improved in the intervention group over the same time period. Tables 2 and 3 summarize story-level study group differences pre-intervention and 12 and 21 months post-intervention in quality of cancer coverage.

Journalistic criteria—There was a significant effect in favor of the intervention group for only two characteristics: number of graphics (at 12 and 21 months), and local community locale (at 12 months only) compared to stories published in control newspapers.

Story size, headline size, story location, graphic size, localized information and local source did not change significantly over time, with intervention group stories also less likely to be from a local source and have smaller graphics.

Health promotion criteria—There was a significant effect in favor of the intervention group for one health promotion characteristic: personal mobilization (at 12 months only).

An unfavorable effect for cancer stories in intervention newspapers was found for community mobilization, which decreased over time and was significantly less than the control group (at 21 months only). There were no significant interaction effects for primary prevention, referral to resources, disparity information, public health perspective and public health consequences; these increased in stories in the intervention groups, though similarly to the control group.

RQ3: Characteristics of cancer news releases that predict adoption by Black newspapers

Among intervention newspapers, *Ozioma* news releases were published more often when the release included any localized headline (average number of adoptions among 12 newspapers = 2.97 vs. 2.00 for releases without localized headlines, $p=0.05$), and especially localized headlines that were also race-specific to African Americans (3.08 vs. 2.00 adoptions, $p=0.01$). News releases focusing on cancer prevention were more likely to be published than those describing other aspects of cancer (3.17 vs. 2.37 adoptions, $p=0.05$). Localization in the body of the news release was not associated with higher publishing rates, nor did rates vary based on which of the study's core messages or cancer risk factors were addressed, or whether disparities were mentioned. An omnibus analysis with all of the individually significant release characteristics was significant ($p=0.01$), and explained 31% of the variance ($R^2=0.31$) in the adoption of news releases.

DISCUSSION

In answering RQ1, we found that providing Black weekly newspapers with locally relevant and race-specific cancer information through the *Ozioma* News Service increased their cancer coverage. Once *Ozioma* launched, intervention newspapers published more cancer stories per issue than did control newspapers. However, this increased cancer coverage resulted in displacing other health topics.

In these newspapers, the expected number of cancer stories in the intervention group increased by roughly four times compared to the control group during the intervention period, resulting in at least 16% of all health stories that were focused on cancer. Is 16% too

large or small a proportion to be devoted to cancer? One criterion for making this judgment is whether the relative proportion of coverage is commensurate to the population impact of the health problem. In one study examining newspaper cancer coverage, Adelman and Verbrugge (2000) found that cancer coverage mirrored rises in mortality. In 2007, cancer accounted for 23.2% of all deaths in the U.S. (Xu et al., 2010), suggesting that cancer coverage is underrepresented in this sample. One next step is to determine which health issues were supplanted by increasing cancer coverage in an unchanging newshole.

We found a mixed pattern of results related to RQ2 and a limited degree of success at increasing quality of cancer stories, particularly among the public health characteristics. We found that localization of cancer news was central to the *Ozioma* News Service's success (RQ3), and present in every news release. The strongest predictor of publishing an *Ozioma* story was having a localized headline. Accordingly, cancer stories in intervention newspapers after the launch of *Ozioma* were more locally situated (i.e., locale) than those in control newspapers. While not significant, the proportion of cancer stories having localized information is higher in intervention newspapers as is the difference between groups at 12 months (6.8%) and 21 months (4.3%) post-intervention versus pre-intervention (2.5%). Another localization measure – local source – appeared to decrease over time, which may be interpreted as an advantage for the control group. However, we argue that this can also be evidence for an intervention effect. This may be an artifact of the coding protocol because published *Ozioma* releases are coded or attributed as a *non-local source*. At 21 months, intervention group stories were significantly less likely to be authored by a local source, which could be attributed to these newspapers adopting *Ozioma* releases and other non-local sources of health news stories verbatim.

On the other hand, though *Ozioma* increased cancer coverage and localization predicted newspaper adoption, we did not find large, positive effects on other aspects of news coverage that may be important for health promotion, such as personal and community mobilization, risk factors, and prevention. We believe this may be because the news releases we developed did not specifically attempt to intend to increase the proportion of stories that discussed individual consequences of cancer or to provide community mobilization, though we anticipated that might happen if we increased the local relevance of our stories. Rather, they were developed to address at least one of the six core messages and topics that we could localize with data available at the state or local level. In addition, even if the overall number of cancer stories increased, if newspapers obtain the majority of their cancer stories from non-local sources, it would be more difficult to improve the stories' journalistic or public health characteristics with this type of media intervention. Further research in this area is warranted.

In this study, we sent a total of 444 news releases yielding a total of 102 newspaper stories. This represents a 23% "hit rate." Similar efforts with daily, general population newspapers from Australia and Great Britain range from hit rates of 33% to 45% (Chapman and Dominello, 2001; Mindell, 1997). However, there are limitations in comparing these past efforts' results to the current study; the *Ozioma* study targeted weekly, minority newspapers in the U.S.

We did not see a diminished effect with regard to quantity of cancer stories when examining the first 12 months post-intervention compared to the entire 21-month post-intervention period. Some of the coded criteria saw a diminished effect for the 21-month period, possibly partly due to the topics discussed during the last 9 months.

While the study's national scale and sample are strengths, our eligibility criteria specifically sought communities with higher than average cancer mortality rates for African Americans.

Newspapers serving communities with a greater cancer burden may have different cancer coverage than newspapers in other communities, or perhaps just a few newspapers' influence was driving the results. To address this possibility, we nested newspapers within the model (RQ1) and assessed the intraclass correlation coefficient (ICC). This result was considered small (ICC=0.04), thus we can assume the issues within each of the 23 newspapers are independent and the intracorrelation between issues can be ignored.

While the release characteristics and adoption rate analyses were likely underpowered due to having only n=37 releases (in 444 versions), we found that cancer news stories that focused on prevention and featured a race-specific, community-localized headline were more likely to be adopted by Black newspapers. These findings provide valuable, practical guidance for health-related organizations in that highlighting localized features in news releases requires effort, but may garner more attention from community media outlets.

Conclusions

This study is one of the first to show how a targeted health story source like the *Ozioma* News Service can increase the quantity of cancer news coverage. However, this increased coverage resulted in a displacement of broader health coverage and not necessarily increased overall quality with regard to public health content. Similar strategies should be developed and tested for print, broadcast and online media in a wider range of minority population subgroups. As strategies are developed to fill this need, more translational research will be needed to understand how use of news services varies based on organizational, political, community, and economic characteristics of media outlets. These characteristics and other external influences could also provide more complete explanations for the intervention effects found in this initial study.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

This study was approved by the Institutional Review Board at Saint Louis University (#12794), and was supported by a grant from the National Cancer Institute's Centers of Excellence in Cancer Communication Research program (P50-CA95815).

The authors would like to thank Shelly Rodgers, Paul Atkins, Petya Eckler, Nneka Ekunno, Mark Graves, Hans Meyer, Meghan Maskery, Santosh Vijaykumar, and Monica Wohlberg for their assistance in the review and coding of newspaper stories; to Sarah Castro and Aisha Langford for idea generation, data gathering, and identification of the cancer news releases; to Susie Rath and Bindu Kalesan for assistance in assessing inter-rater reliability; and to Crystal Lumpkins for identifying newspaper delivery preferences.

References

- Abbott E, Brassfield L. Comparing decisions on releases by TV and newspaper gatekeepers. *Journalism Quarterly*. 1989; 66:853–856.
- Adelman R, Verbrugge L. Death Makes News: The social impact of disease on newspaper coverage. *J Health Soc Behav*. 2000; 41:347–367. [PubMed: 11011509]
- American Cancer Society. Cancer Facts & Figures for African Americans 2009-2010. American Cancer Society; Atlanta: 2009.
- Bacon's Newspaper Directory 2008. Daily Newspapers, Community Newspapers, News Services, and Syndicates. Cision Publications; Chicago: 2007.
- Brown M, Potosky A. The presidential effect: The public health response to media coverage about Ronald Reagan's colon cancer episode. *Public Opin Q*. 1990; 54:317–329. [PubMed: 10109111]

- Caburnay CA, Kreuter MW, Luke DA, Logan RA, Jacobsen HA, Reddy VC, Vempaty AR, Zayed HR. The news on health behavior: Media coverage of diet, activity, and tobacco in local newspapers. *Health Educ Behav.* 2003; 30:709–722. [PubMed: 14655865]
- Caburnay CA, Kreuter MW, Cameron GT, Luke DA, Cohen EL, McDaniels LM, Wohlberg MT, Atkins P. Black newspapers as a tool for cancer education in African American communities. *Ethn Dis.* 2008; 18:488–495. [PubMed: 19157255]
- Centers for Disease Control and Prevention. Media dissemination of and public response to the ultraviolet index -- United States, 1994–1995. *MMWR.* 1997; 46:370–373. [PubMed: 9148141]
- Chapman S, Dominello A. A strategy for increasing news media coverage of tobacco and health in Australia. *Health Promot Int.* 2001; 16:137–143. [PubMed: 11356752]
- Cohen EL, Caburnay CA, Luke DA, Rodgers S, Cameron GT, Kreuter MW. Cancer coverage in general audience and Black newspapers. *Health Commun.* 2008; 23:427–435. [PubMed: 18850390]
- Davis NM. Ring around the metros. *Presstime.* 1999; 21:51.
- Demark-Wahnefried W, Strigo T, Catoe K, Conaway M, Brunetti M, Rimer BK, Robertson CN. Knowledge, beliefs, and prior screening behavior among blacks and whites reporting for prostate cancer screening. *Urology.* 1995; 46:346–351. [PubMed: 7660510]
- de Semir V, Ribas C, Revuelta G. Press releases of science journal articles and subsequent newspaper stories on the same topic. *JAMA.* 1998; 280:294–295. [PubMed: 9676688]
- Domke D. The black press in the “Nadir” of African Americans. *Journal Hist.* 1994; 20:131–138.
- Gebbie, A. *Gebbie Press all-in-one directory.* 29. Gebbie Press, Inc.; New York: 2000.
- Hatcher J. Passion for the ‘minor leagues’: Nurturing devotion in an increasingly corporate community press. *Columbia J Rev.* 2003; XLII:66.
- Jones-Webb R, Baranowski S, Ran D, Finnegan J, Wagenaar AC. Content analysis of coverage of alcohol control policy issues in Black-oriented and mainstream newspapers in the U.S. *J Public Health Policy.* 1997; 18:49–66. [PubMed: 9170788]
- Kiernan V. Embargoes and science news. *Journalism & Mass Communication Quarterly.* 2003; 80:903–920.
- McCombs M, Shaw D. The evolution of agenda-setting research: 25 years in the marketplace of ideas. *J Commun.* 1993; 43:58–68.
- Mindell J. An assessment of the feasibility of health authorities generating unpaid mass media publicity in the long term. *Health Education Journal.* 1997; 56:125–133.
- Morton L. How newspapers choose the releases they use. *Public Relations Review.* 1986; 12:22–27.
- Morton L, Warren J. Proximity: localization vs. distance in PR news releases. *Journalism Quarterly.* 1992; 69:1023–1029.
- Nicholson R, Kreuter M, Lapka C, Welborn R, Clark EM, Sanders-Thompson V, Jacobsen HM, Casey C. Unintended effects of emphasizing disparities in cancer communication to African Americans. *Cancer Epidemiol Biomarkers Prev.* 2008; 17:2946–2953. [PubMed: 18990735]
- The Pew Research Center’s Project for Excellence in Journalism. [October 13, 2010] The State of the News Media 10: An annual report on American journalism. http://www.stateofthemedias.org/2010/ethnic_african_american.php
- Phillips J, Cohen M, Moses G. Breast cancer screening for African American women: Fear, fatalism, and silence. *Oncol Nurs Forum.* 1999; 26:561–571. [PubMed: 10214597]
- Powe B. Perceptions of cancer fatalism among African Americans: The influence of education, income, and cancer knowledge. *J Natl Black Nurses Assoc.* 1994; 7:41–48. [PubMed: 9128532]
- Pride, A.; Wilson, C. *A history of the Black press.* Howard University Press; Washington, DC: 1997.
- Rogers, E.; Dearing, J. Agenda-setting research: Where has it been and where is it going?. In: Anderson, J., editor. *Communication Yearbook.* Sage Publications; Newbury Park, CA: 1990. p. 555–594.
- Rosner, B. *Fundamentals of biostatistics.* Duxbury Press; Belmont, CA: 2005.
- SAS Institute, Inc.. *SAS 9.3.* SAS Institute, Inc.; Cary, NC: 2011.
- Schwitzer G. The magical medical media tour. *JAMA.* 1992; 267:1969–1971. [PubMed: 1548832]
- Sheppard J. The strength of weeklies. *American Journalism Review.* 1996; 18:32–36.

- Slater M, Long M, Bettinghaus E, Reineke JB. News Coverage of Cancer in the United States: A National Sample of Newspapers, Television, and Magazines. *J Health Commun.* 2008; 13:523–537. [PubMed: 18726810]
- Southwell B, Torres A. Connecting interpersonal and mass communication: Science news exposure, perceived ability to understand science, and conversation. *Communication Monographs.* 2006; 73:334–350.
- Stryker J. Reporting medical information: Effects of press releases and newsworthiness on medical journal articles' visibility in the news media. *Prev Med.* 2002; 35:519–530. [PubMed: 12431901]
- Stryker JE, Moriarty CM, Jensen JD. Effects of newspaper coverage on public knowledge about modifiable cancer risks. *Health Commun.* 2008; 23:380–390. [PubMed: 18702002]
- Thomasch, P. Small towns are bright spots for US newspapers. Reuters; 2006 Jun 12.
- Viswanath, K.; Finnegan, J. Reflections on community health campaigns: Secular trends and the capacity to effect change. In: Hornik, R., editor. *Public health communication: Evidence for behavior change.* Lawrence Erlbaum Associates; Mahwah, NJ: 2002. p. 289-312.
- Wolseley, R. *The Black press, U S A.* The Iowa State University Press; Ames, IA: 1972.
- Xu, JQ.; Kochanek, KD.; Murphy, SL.; Tejada-Vera, B. National Center for Health Statistics, National Vital Statistics Reports. National Center for Health Statistics; Hyattsville, MD: 2010. Deaths: Final data for 2007.
- Yanovitzky I, Blitz C. Effect of media coverage and physician advice on utilization of breast cancer screening by women 40 years and older. *J Health Commun.* 2000; 5:117–134. [PubMed: 11010345]

Highlights

- We present and evaluate a cancer news service – *Ozioma* – for Black newspapers.
- Over 21 months, *Ozioma* increased the number of cancer stories in Black newspapers.
- This increased cancer coverage supplanted other health topics in Black newspapers.
- Results are mixed for *Ozioma*'s effects on the quality of cancer coverage.

Figure 1.
Number of published stories for each news release, United States, 2005-2007.

Table 1

Amount of cancer coverage in U.S. Black newspaper issues, by time (pre- vs. post-intervention) and group (*Ozioma* intervention vs. control), at 12 months and 21 months post-intervention, 2004-2007.^a

At 12 months post-intervention			
Parameter	Estimate^b	Standard Error^b	p-value
Group – Ozioma intervention	1.26	1.19	0.18
Time – post-intervention	0.84	1.12	0.13
Ozioma*post-intervention interaction	1.45	1.14	<0.01
Control or pre-intervention	ref		
At 21 months post-intervention			
Parameter	Estimate^b	Standard Error^b	p-value
Group – Ozioma intervention	1.42	1.16	0.02
Time – post-intervention	0.84	1.11	0.07
Ozioma*post-intervention interaction	1.38	1.12	<0.01
Control or pre-intervention	ref		

^a zero inflated negative binomial regression model

^b values after transferring from log function

Journalistic characteristics of cancer stories: Differences at pre-intervention, 12 months post-intervention, and 21 months post-intervention, United States, 2004-2007.

Table 2

Journalistic characteristic	Group ^a	Mean or %		Group × time interaction	
		Pre-interv.	12-mo post-interv.	21-mo post-interv.	P (12 months) P (21 months)
Story size (in ²)	I	28.1	31.0	30.5	0.80 ^d 0.60 ^d
	C	29.6	33.8	31.7	
Headline size (point)	I	28.3	29.8	29.5	0.62 ^d 0.58 ^d
	C	25.9	26.6	26.0	
Story location	I	71.2%	76.8%	77.2%	0.36 ^b 0.28 ^b
	C	81.3%	81.5%	81.6%	
Number of graphics	I	0.04	0.16	0.13	<0.01 ^c <0.01 ^c
	C	0.03	0.02	0.02	
Size of graphics (in ²)	I	14.7	10.9	10.5	0.45 ^d 0.99 ^d
	C	12.0	6.7	9.2	
Story locale: local community	I	41.7%	48.1%	48.9%	0.01 ^b 0.14 ^b
	C	47.6%	38.2%	46.6%	
Localized information	I	39.7%	41.3%	45.1%	0.50 ^b 0.77 ^b
	C	37.2%	34.5%	40.8%	
Story local source	I	17.2%	13.9%	14.1%	0.27 ^b 0.32 ^b
	C	9.7%	11.2%	10.6%	

^aI = *Oziona* intervention group; C = Control group

^bp-value from logistic regression

^cp-value from zero-inflated negative binomial regression

^dp-value from ordinal logistic model

Health promotion characteristics of cancer stories: Differences at pre-intervention, 12 months post-intervention, and 21 months post-intervention, United States, 2004-2007.

Table 3

Health promotion characteristic	Group ^a	Mean or %		Group × time interaction	
		Pre-interv.	12-mo post-interv.	21-mo post-interv.	<i>P</i> (12 months) <i>P</i> (21 months)
Personal mobilization	I	39.3%	42.0%	37.3%	0.09 ^b
	C	46.6%	38.8%	40.3%	0.45 ^b
Community mobilization	I	17.3%	07.5%	08.5%	0.19 ^b
	C	18.1%	12.4%	18.4%	0.01 ^b
Primary prevention	I	29.2%	44.4%	42.5%	0.95 ^b
	C	28.8%	44.4%	43.1%	0.86 ^b
Referral to resources	I	32.0%	48.5%	49.2%	0.35 ^b
	C	35.7%	46.6%	50.2%	0.57 ^b
Disparity information	I	31.2%	38.6%	33.3%	0.31 ^b
	C	27.6%	28.7%	23.7%	0.22 ^b
Number of public health facts: Perspective	I	2.2	3.9	3.2	0.29 ^c
	C	2.1	3.0	2.4	0.15 ^c
Number of public health facts: Consequences	I	1.6	2.3	1.8	0.10 ^c
	C	1.8	3.5	2.4	0.29 ^c
Any behavioral risk factor	I	24.5%	27.1%	24.2%	0.95 ^b
	C	17.8%	19.7%	17.7%	0.99 ^b
Risk factor: Genetics/family history	I	15.7%	17.6%	14.9%	0.07 ^b
	C	14.9%	26.4%	20.1%	0.15 ^b

^aI = *Oziona* intervention group; C = Control group

^b*p*-value from logistic regression

c p -value from zero inflated negative binomial regression

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript