Published in final edited form as:

Cancer. 2012 April 15; 118(8): 2157–2162. doi:10.1002/cncr.26499.

Is Public Communication about End-of-Life Care Helping to Inform All?: Cancer News Coverage in African American vs. Mainstream Media

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Abstract

Background—Because cancers are a leading cause of death, these diseases receive a great deal of news attention. However, because news media frequently target specific racial or ethnic audiences, some populations may receive different information, and it is unknown whether reporting equally informs all about options for care at the end of life. This study of US news reporting compares “mainstream” (general market) media to African American media, which serves the largest minority group. The specific goal of this study was to determine whether these news media communicate differently about cure-directed cancer treatment and end-of-life alternatives.

Methods—This content analysis includes 660 cancer news stories from online and print media that target either African American or mainstream audiences. The main outcome measures include whether reporting discussed: adverse events of cancer treatment; cancer treatment failure; cancer death/dying; and end-of-life palliative or hospice care.

Results—Unadjusted and adjusted analyses indicate that the news stories in the African American media are less likely than those in mainstream media to discuss each of the topics studied. Comparing the proportions of news stories in mainstream vs. African American media, 31.6% vs. 13.6% discussed adverse events (OR 2.92; 95% CI 1.51-5.66; $P=0.001$); 14.1% vs. 4.2% mentioned treatment failure (OR, 3.79; 95% CI 1.45-9.88; $P=0.006$); and 11.9% vs. 3.8%

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Contributors' roles: JF was the lead applicant for grant funding, was responsible for the overall design of the study and measurement protocols, and organized data collection tasks. JF is also the guarantor. DC provided important intellectual contributions to the overall study design and manuscript preparation. TTH provided important scientific contributions to the statistical analyses and provided input on drafts of this paper. Both DC and TTH are collaborators on the grant.

Conflicts of Interest Disclosures: The authors report having no conflicts of interest or financial disclosures.

Ethics approval: There were no study participants and ethics approval was not required.

focused on death/dying (OR, 3.42; 95% CI 1.39-8.38; $P=.007$). Lastly, although very few news stories discussed end-of-life hospice or palliative care, all were found in mainstream media (7/396 vs. 0/264).

Conclusion—The African American news media sampled are less likely than mainstream news media to portray negative cancer outcomes and end-of-life care. Given media's segmented audiences, these findings raise concerns that not all audiences are being informed equally well. Because media content is modifiable, there may be opportunities to improve public cancer communication.

Keywords

disparities; decision making; preferences; communication; psycho oncology; hospice; palliative care; end-of-life; quality of life; behavior; ethics; public health

Introduction

The Institute of Medicine (IOM) has emphasized that all should be informed about options for care at the end of life.[1,2] Because cancer is a leading cause of death, the IOM has specifically stressed the need to inform all about the potential risks and benefits of pursuing cure-directed cancer treatments versus alternatives, such as hospice care, that focus on comfort rather than cures.[1,2] Citing ethical principles, these arguments have highlighted the need to provide everyone with access to this important health information.

Health information is disseminated not only by health care providers but also public information sources. In particular, US news frequently and prominently report on cancer, and this coverage has become an easily accessible and commonly-used source of cancer information.[3] Moreover, health information can influence health care decisions: news coverage has been shown to influence cancer treatment decisions, as well as other highly personal health behaviors.[4-10]

Because many news media target specific racial or ethnic audiences,[11] some populations may receive different information about end of life care. The goal of this study was to determine whether African American news media, which serves the largest US racial minority group, and “mainstream” (i.e., general market) news media communicate differently about cure-directed cancer treatment and end-of-life alternatives. This is the first known comparative study and differences in media messages might help to explain the greater preference for cure-directed therapies in the face of poor prognosis among African Americans compared to Caucasians.[12-16] Importantly, if different media messages lead to different preferences, communication may play a role in decision making. Decisions based on inadequate or biased communication may not reflect true preferences and thereby contribute to health disparities.

Methods

Study Design and Data Collection

We conducted a content analysis of news stories in African American and mainstream online and print media. To ensure reliable coding, we created, pre-tested, and piloted a coding instrument to determine the presence or absence of four specific variables in each news story. News stories were coded to determine if they reported on 1) adverse events of cancer treatment, defined as mentioning any unintended, negative consequences attributed to cancer treatments, such as long-term and short-term side effects like neuropathy, pain, hair loss, and nausea; 2) cancer treatment failure, defined as mentioning that cancer treatment can fail to extend the life of the patient or prevent re-occurrence, or that disease (e.g., late stage) can be incurable or untreatable; 3) cancer death/dying, defined as focusing on one or more individuals dead from cancer, dying from cancer, or given a terminal diagnosis; and 4) end-of-life palliative or hospice care, defined as using the term “palliative” or “hospice” or mentioning related symptom management, or pain management.

We also wanted to determine whether differences in reporting might be attributable to characteristics of the African American or mainstream news media. For this reason, we measured whether each targeted female or high income audiences, as reported by industry demographic audience data. Because each of the news media studied targets adult audiences within a similar age span, we did not include audience age as a potential confounder. However, we did measure staff size, because literature suggests that this can influence the quality of scientific reporting and African American media companies may have smaller staff.[22] In addition, we measured characteristics of the news story, including the number of words, the type of cancers discussed, and whether reporting focused on a cancer diagnosis that the National Cancer Institute has classified as having a survival rates less than 50%. [23]

For all study variables, coders were trained to use the instrument's decision rules reliably. Reliability in coding was tested in a random 10% sample double-coded to ensure quality. [24] Inter-rater reliability between coders for all study variables was high[25] whereby Krippendorff's alpha for each variable exceeded 0.70.

Data Sources

We specifically analyzed content available online and in print from magazines and newspapers because African Americans are more likely to use and rate these media as a trusted source of health information than other news sources, such as radio or television. [17-18] For example, according to surveys, between 82% and 90% of African-American households report regularly using African American newspapers and magazines for health information.[17]

We sampled 4 newspapers with the largest African American audience (Chicago's *Chicago Crusader*, Los Angeles' *Herald Dispatch*, New York City's *Daily Challenge*, and Philadelphia's *Philadelphia Tribune*) and 8 mainstream newspapers with large audiences in the same geographic areas (*Chicago Tribune*, *Chicago Sun-Times*, *Los Angeles Times*, *New York Times*, *New York Daily News*, *New York Post*, *Philadelphia Inquirer*, and *Philadelphia Daily News*). In addition, to sample national magazines, we included four African American

magazines with a large audience (*Ebony*, *Jet*, *Essence*, and *Heart & Soul*) and four mainstream magazines with a large audience (*Time*, *Family Circle*, *Redbook*, and *People*). The media classified as African American is explicitly self-defined as such and, according to industry demographic data, has an audience that is 90% or greater African American. All newspapers and magazines were available online and in print.

Selection of News Stories

Using methods similar to those used in other content analyses of reporting,[19,20] we randomly selected news stories accessible through electronic databases including Lexis-Nexis, ProQuest, EBSCO, and Factiva. Using a computer-automated process and programmed, validated search terms[21] we identified 1889 cancer-focused news stories that were at least 200 words. (Because we did not exclude certain types of reporting, the reporting included coverage of research findings, patient profiles, and other types of news stories.) We then created a random sample (35%) of news stories by selecting 33 news stories from each publication (appearing 2004-2010), while manually confirming they met these inclusion criteria.

Analysis

We calculated and compared the proportion of news stories in the African American and mainstream media containing each study variable, and considered $p < 0.05$ significant. Inference was based on unadjusted and adjusted odds ratios obtained with logistic regression[26]. Tests and estimates of bivariate associations between media type (i.e., African American or mainstream media) and reporting content were based on the odds ratio with approximate 95% confidence intervals and a chi-square test (2-tailed, significance level of 0.05) that the odds ratio equals one. Adjusted odds ratios are computed similarly, with the exception that the model includes additional variables that could explain the reporting differences. These covariates were determined by a stepwise regression approach. For each reporting content variable, a pool of covariates was screened one by one using logistic regression. Those that achieved marginal significance at a moderate level ($p < 0.25$) were included. The final model for the adjusted analyses included only covariates that provide a difference in the media-type odds ratio greater than 10%.[26]

In all analyses, to control for the potential effect of clustering due to multiple news stories from the same periodical, we adjusted the standard errors of the associations and tests under the logistic regressions for such clustering. This adjustment uses the generalized estimating equation (GEE) approach of Zeger and Liang[27] and is available in SAS PROC GENMOD®. The odds ratio confidence intervals and Wald test statistics were computed using the sandwich estimator of variance.

Results

We analyzed a sample of 660 cancer-focused news stories, which includes 264 from African American media and 396 from mainstream media. Additional characteristics of the sample are reported in the Table. The below findings report whether the African American news media are significantly less likely than the mainstream news media to report on each of the

topics studied: adverse events of cancer treatment; cancer treatment failure; cancer death/dying; and end-of-life palliative and hospice care.

Reporting on Adverse Events

Overall, 161/660 (24.4%) news stories about cancer mentioned adverse events of cancer treatment. Among the mainstream media, 125/396 (31.6%) of the news stories discussed adverse events, whereas just 36/264 (13.6%) stories in African American news media did (OR 2.92; 95% CI 1.51-5.66; $P=0.001$). In the final adjusted analysis, the mainstream news media remained significantly more likely to mention adverse events (AOR, 3.86; 95% CI 1.56-9.56; $P=0.004$). The final adjusted analysis included any of the following covariates that changed the unadjusted odds ratio by more than 10% or acted as independent predictors: whether the media targets a female audience, whether it's a magazine or newspaper, and its staff size.

Reporting on Cancer Treatment Failure

Among all news stories about cancer, 67/660 (10.2%) mentioned that aggressive cancer treatments can fail to cure or extend life, or that certain cancers (such as late-stage disease) can be incurable. Among the mainstream news media, 56/396 (14.1%) of the news stories mentioned (possible or actual) treatment failure, whereas only 11/264 (4.2%) of news stories from the African American news media did so (OR, 3.79; 95% CI 1.45-9.88; $P=0.006$). In the final adjusted analysis, the mainstream media remained significantly more likely than the African American media to mention treatment failure (AOR, 3.47; 95% CI 1.61-7.51; $P=.002$). The final adjusted analysis included the following covariates: whether targeting a female audience and whether the news story reports on a cancer diagnosis with low survival rates.

Reporting on Death and Dying

Among the entire sample of news stories, 57/660 (8.6%) focused on individuals dead or dying from cancer. Among the mainstream news media, 47/396 (11.9%) of the articles focused on death/dying, whereas only 10/264 (3.8%) of news stories in the African American news media did so (OR, 3.42; 95% CI 1.39-8.38; $P=.007$). In the final adjusted analysis, the mainstream news media remained significantly more likely than the African American media to focus on death/dying (AOR, 3.28; 95% CI 1.42-7.59; $P=.005$). The final adjusted analysis included the following covariates: whether the news story reports on a cancer diagnosis with low survival rates, and whether it was provided by a magazine or newspaper.

Reporting on End-of-Life Cancer Care

Among all news stories in our sample, only 7/660 (1.1%) discussed end-of-life hospice or palliative care and all were found in mainstream media. This difference appeared to be significant (7/396 vs. 0/264). Because of the small number of news stories, the analysis above could not be applied. No adjusted analyses were conducted due to the lack of reporting on end-of-life care by the African American news media.

As reported above, unadjusted as well as adjusted analyses indicate that the probability of a randomly chosen news story discussing each of the reporting topics is significantly less if published by the African American news media. In addition, because some of the mainstream media but none of the African American media reported high income audiences, we repeated the above analyses, excluding high income periodicals from the analysis and obtained similar results (not shown).

Discussion

This is the first study, to our knowledge, which systematically examines racial differences in news media health coverage to investigate how differences may influence end-of-life care preferences. In our sample, we found that the news stories in African American news media are significantly less likely than those in the mainstream news media to report on each of the topics studied: adverse events; treatment failure; death/dying; and end-of-life palliative and hospice care. This conclusion is based on the unadjusted and adjusted analyses, given that the adjusted odds ratios were about the same or stronger than the unadjusted odds ratios, and cannot be attributed to differences in the characteristics measured.

It is unclear why these African American and mainstream news media appear to report differently, and this determination was not an objective of the current study. It is possible that patterns in reporting reflect culturally different beliefs about cancer treatment and outcomes. Alternatively, it is possible that African American journalists and editors perceive their professional role to be different from mainstream media [28], and may thus prefer to generate more “positive” messages.

It is also unknown how the different media messages affect populations. The lack of reporting by the African American news media may give audiences unrealistic expectations since these outcomes are in fact common. For instance, although the African American news media rarely focuses on patients dead or dying from cancer, half of all U.S. patients diagnosed with cancer will not survive and cancer-related mortality rates for African Americans are substantially higher than those for other US racial groups.[29]

Previous studies have documented that African American cancer patients are more likely than Caucasians to prefer aggressive care at the end of life and less likely to use hospice care.[12-16] Reflecting on these findings, some have hypothesized, but never empirically tested, that African American media and culture encourages the denial of death and even of terminal cancer.[30, 2] Our findings could be interpreted as consistent with this possibility because, in our sample, the African American news media are less likely than the mainstream counterpart to discuss end-of-life care and less likely to focus on patients dead or dying from cancer. News stories from the African American media are even less likely than those from the mainstream media to mention treatment failure and adverse events. It has also been hypothesized that fears of being denied treatment create greater aggressive treatment preferences among African Americans. However, it is not clear exactly how this could explain the news reporting patterns, or how the patterns documented would instill fears of being denied treatment.

It should also be noted that reporting specifically on end-of-life care was rare in both the African American and mainstream media. However, hospice and palliative care offer numerous, well-documented benefits for patients and families and are professionally recognized as an important part of comprehensive cancer care.[1,2, 31-33] Such information can be communicated by a variety of sources, including interpersonal and mass mediated ones, and cross-sectional surveys have previously shown correlations between exposure to information about hospice and preferences for hospice, suggesting that information about this option may influence patient decision making.[34, 35] If mass media increase the availability of information about hospice and palliative care, this communication may increase awareness of these options and change beliefs about their value. Indeed, when media bring increased attention to specific topics, they frequently enjoy greater individual, community, and political support.[4, 10]

Limitations of our study include the fact that we did not measure exposure or effects, and future investigation is warranted. Future studies could identify when news coverage generates realistic expectations, unrealistically optimistic expectations, or fatalism. Because African Americans are often exposed to African American and mainstream news, the effects of this exposure may depend in part on the relative and absolute amount of exposure individuals have to each.

Since we studied magazines and newspapers with large audiences, the findings may not be generalizable to those with smaller audiences. In addition, because this study examines reporting available online and in print from newspapers and magazines, the results may not be generalizable to other news media targeting racially segmented audiences. For instance, radio stations also target racially segmented audiences, although African Americans are less likely to rely on them as sources of trusted health information.[17,18] News media have also successfully targeted Hispanic/Latino, and multiple Asian populations, among others, on the basis of ethnicity and language and the content of such reporting also warrants investigation. It may also be useful for future studies to qualitatively analyze how the same stories are covered differently for distinct audiences. Furthermore, sources of health information include entertainment media [36] and non-media sources, such as clinicians, who may also influence end-of-life decisions, even though previous work has also characterized them as reluctant to discuss end-of-life care.[37, 38]

Because media content is modifiable, there are opportunities to improve health communication. The goal of improving public communication is valuable because, as previously noted, media messages influence health behaviors, including highly personal health care decisions.[4-10] Given that media frequently target specific racial and ethnic audiences, resulting in substantial audience segmentation[11] it is also important to compare the content provided. For these reasons, other studies have compared the health messages in media targeting minority and general audiences and raised concerns over the differences uncovered.[39-41]

In conclusion, our findings suggest that the African American news media may be less likely than mainstream news media to realistically portray cancer treatments and outcomes and less likely to discuss end-of-life options. Ideally, patients make end-of-life decisions that

realistically reflect the trade-offs between pursuing aggressive care and alternatives such as hospice care. Given media's segmented audiences, these findings raise concerns that not all audiences are being informed equally well.

Acknowledgments

The authors would like to thank Kathleen Propert, Jens Praestgaard, Jeffrey Munson, Greg Bisson, Jo Ellen Stryker, Robert Hornik, and anonymous reviewers for their thoughtful contributions.

Funding: This study was supported in part by research funds awarded to Fishman through the EPIC Center of Excellence in Cancer Communication Research (PI: Hornik, grant number 5P50CA095856-05 from the National Cancer Institute, www.cancer.gov) and the American Cancer Society grant MRSRG-08-013-01-CPPB (www.cancer.org) awarded to Fishman. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript. The contents are solely the responsibility of the authors and do not necessarily represent the official views of the National Cancer Institute or the American Cancer Society.

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Table
Characteristics of African American and mainstream media and news stories

	No. (%) African American News (n=264)	No. (%) Mainstream News (n=396)	<i>p</i> -value
Main outcomes			
Hospice/Palliative care mentioned	0 (0)	7 (1.77)	0.05
Focus on dead/dying patients	10 (3.78)	47 (11.87)	<.001
Treatment failure mentioned	11 (4.16)	56 (14.14)	<.001
Adverse events mentioned	36 (13.64)	125 (31.57)	<.001
Covariates: News story characteristics			
Words (median)	472	587	<.001
Focus on breast cancer	91 (34.47)	141 (35.61)	.765
Focus on prostate cancer	59 (22.35)	28 (7.07)	<.001
Focus on cancer (not specified)	61 (23.11)	64 (16.16)	.026
Low survival rate cancers discussed	15 (5.68)	62 (15.66)	<.001
Covariates: Media characteristics			
Female audience	66 (25.00)	66 (16.67)	0.01
High income audience	0 (0)	132 (33.33)	<.001
Staff size (large)	66 (25.00)	264 (66.67)	<.001