Cancer Coverage in General-Audience and Black Newspapers

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This article presents findings from the first study of cancer news coverage in a national sample of Black and general-audience newspapers. We compared 2,439 health news stories from 23 weekly Black newspapers to 2,767 health news stories from a constructed weekly sample of 12 daily general-audience newspapers, both collected between April 1, 2004, and March 31, 2005. Analyses examined differences in the amount and nature of cancer coverage, specifically cancer sites, disparities, localization, and personally mobilizing health information for readers. Cancer was the main topic in a higher proportion of health stories in Black newspapers than in general-audience newspapers (13.6% vs. 9.6%; \( p = .001 \)). Among cancer stories, those in Black newspapers had more localization \((p = .004)\), disparity information \((p = .001)\), and personal mobilization information \((p = .001)\) than those in general-audience newspapers. In neither type of newspaper did the distribution of stories by cancer site accurately reflect the impact of different cancers on population mortality.

Cancer is a leading cause of death among U.S. adults. The burden of cancer in the United States is particularly troubling when considering that mortality rates for lung, breast, and prostate cancers are considerably higher among African Americans than the general population (American Cancer Society, 2005). Reducing the disparate burden of cancer on African American populations is possible (Department of Health and Human Services & National Cancer Institute, 2003). Health communication specialists can contribute by promoting cancer screening (e.g., use of mammography) and preventive behaviors (e.g., not smoking; Latimer, Katulak, Mowad, & Salovey, 2005; Meissner, Potosky, & Convissor, 1992; Yanovitzky & Bennett, 1999; Yanovitzky & Blitz, 2000). In particular, health communication that is perceived as personally relevant to an individual or group can motivate cancer prevention and early detection behavior (Kreuter & Haughton, 2006; Kreuter, Strecher, & Glassman, 1999; Latimer et al., 2005).

Recent research has focused on identifying effective channels for delivering cancer information, and the extent to which cancer information-seeking behavior may be...
explained by individuals’ media preferences and the environments in which they reside. For example, Black newspapers have traditionally served as an important alternative to general-audience newspapers (Pride & Wilson 1997; Wolseley, 1989). In 77 U.S. cities with populations of more than 200,000, 55 (71%) have at least one Black newspaper (Gebbie, 2000; U.S. Bureau of the Census, 1990). Adelman and Verbrugge (2000) argue that newspapers provide “an accessible, nontransient form of media. They are inexpensive, have broad public use, and can be read and reread. By contrast, periodicals often cost more, websites have narrower access, and broadcast news evaporates” (p. 347). The fact that most Black newspapers are locally operated suggests that these newspapers may be more attentive and responsive to local issues (Convissor, Vollinger, & Wilbur 1990; Oliver, & Maney, 2000; Wolseley, 1989), and creditibly serve in a capacity that media scholars call “public journalism” (see Hertog, Finnegan, & Kahn, 1994; Stein, 1994).

Research suggests that Black newspapers are equipped to address issues of personal and community relevance to African Americans that general-audience media do not address (Domke, 1994; Jones-Webb, Baranowski, Ran, Finnegan, & Wagenaar, 1997; Sylvester, 1994). Moreover, data show that African Americans think Black newspapers cover health issues related to African Americans more than general-audience newspapers (Brodie, Jellson, Hoff, & Parker, 1999). Although Black newspapers have the potential to provide health information that is more personally relevant to their African American readers (e.g., the disparity between cancer incidence rates in the African American compared to the general population), there is little research evaluating the quantity and quality of health coverage in Black newspapers.

More generally considered, there have been a variety of recent news media studies of cancer news coverage (e.g., Anhang, Stryker, Wright, & Goldie, 2004; Calloway, Jorgensen, Saraiya, & Tsu, 2006; Clarke, 1992, 1999; Corbett & Mori, 1999; Freimuth, Greenberg, DeWitt, & Romano, 1984; Greenberg, Freimuth, & Bratic, 1979; Ogata Jones, Denham, & Springston, 2006; Stryker, Solky, & Emmons, 2005), with very few attending to cancer coverage in minority news media. For example, although NCI’s Office of Cancer Communication previously conducted a baseline assessment of newspaper coverage (in 1977 and 1980), these government studies were limited in scope to large-scale commercial general-audience newspapers and found that cancer was rarely a story’s primary focus (Freimuth et al., 1984; Greenberg et al., 1979). Recent work has taken a more focused approach to studying specific types of cancer and the ways in which they are storied in more purposive samples. Calloway et al. (2006) utilized a purposive sample of 25 Lexis-Nexis articles about the human papillomavirus vaccine from major United States newspapers to show that stories that focused on the vaccine as a scientific advance often failed to provide a detailed description of the linkage between human papillomavirus and cervical cancer. More broadly, Stryker et al. (2005) examined skin cancer news coverage from 1979 to 2002, utilizing the Associated Press as a representation of the national news environment. Other studies have taken a longitudinal approach but have examined limited cancer coverage from selected major commercial newspapers and television outlets (e.g., Anhang et al., 2004). Such research presents important reasons to focus on the storytelling practices of large-scale commercial media given that wire services and, in turn, large-scale commercial media, set the national press agenda and influence public opinion (Fan, 1988).

However, research also indicates that studying a nationally representative sample of minority and general-audience newspapers can better account for the nuances of public health reporting addressing both general and more targeted audiences. Little research has evaluated whether Black or general-audience newspapers are likely to include localized, personally mobilizing information in their cancer coverage. Research evaluating Canadian magazines (Hoffman-Goetz, 1999) and Canadian ethnic minority and general-audience newspapers’ cancer coverage (Hoffman-Goetz & Friedman, 2005; D. MacDonald & Hoffman-Goetz, 2001; M. MacDonald & Hoffman-Goetz, 2002) supports the conclusion that few newspaper stories on cancer in these media contain mobilizing information to help the reader take some action to reduce his or her risk. Whether or not U.S. health news coverage in general, and cancer coverage specifically, is more localized in Black newspapers than in general-audience newspapers is an empirical question that has not been tested by health or communication scholars.

There is little evidence to suggest that ethnically targeted media, and particularly Black newspapers, rely on Associated Press (or wire service) stories to guide their coverage of topics relevant to their audience. Additional research is needed to comparatively examine the nature of health and cancer news coverage in Black and general-audience newspapers, and the extent to which Black newspapers tailor news stories to their audience in a distinctive manner. A nationally representative sample of such newspapers in a study that examines the corpus of their health news coverage affords researchers the opportunity to describe in greater detail the types of stories covered by targeted media and to consider this coverage in light of the unique health and cancer burdens confronting their readership (e.g., African Americans, in the case of Black newspapers). Thus, this is the first study to examine the content of a national sample of Black and general-audience newspapers with regard to their focus on cancer, and to do so in a manner that allows for comparing newspapers’ cancer coverage in light of the cancer burden among all Americans compared with that of the African American population in the United States (see Table 1).

Enriching the health information environment for minority populations is an important part of efforts to eliminate cancer disparities. Any effective strategy to enhance
newspaper coverage of cancer should be grounded in current newspaper practice. Understanding what cancer information is currently available and how it is presented is a first step, from a theoretical perspective, toward understanding the framing process.

Communication research has established that despite prevailing journalistic norms of balance or impartiality, framing is inherent to media artifacts (Bennett 1993; Gandy, Kopp, Hands, Frazer, & Phillips, 1997; Hall 1980). Entman (1993) argues that frames provide definitions for public issues and diagnosis of public problems as well as their attending solutions or prescriptions. Perhaps more important from a public health and media perspective, frames help shape public thoughts about what and how to think about an issue (Bennett 1993; Dearing & Rogers, 1996; Gamson, 1992; Gamson & Modigliani, 1989; Nelson & Kinder, 1996) and frame manipulations can draw attention to certain aspects of an issue while minimizing others (Nelson & Oxley, 1999; Scheufele, 1999).

Consistent with this line of research, Dorfman (2003) presents the case that a content-analytic approach to understanding news coverage of public health issues may bridge the gap between theoretical models of agenda setting and framing, and indicate what types of public health knowledge need better dissemination from a public health perspective. Media advocacy theory (Dorfman, 2003; Dorfman, Wallack, & Woodruff, 2005; Wallack & Dorfman, 1996) argues that content-analysis of media framing devices is a necessary precursor to establishing how public health professionals may work with media to establish frames to help the public understand health risks, including disease risks such as cancer. Thus, this study takes a content-analytic approach toward understanding how media frame cancer and cancer risks for general and Black newspaper audiences.

The objective of this study is to present the first descriptive analysis of cancer news coverage in a national sample of Black and general-audience newspapers. Given the differences in cancer incidence and mortality rates between African Americans and other U.S. populations (American Cancer Society, 2005), there also may be differences between Black and general-audience newspapers’ cancer coverage. Thus, we present the following general research questions to guide this study:

RQ1a: How frequently is cancer the primary topic of health stories in Black and general-audience newspapers?
RQ1b: Is there a difference between Black and general-audience newspapers with respect to their coverage of cancer?
RQ2a: What cancer sites are reported on most frequently in Black and general-audience cancer stories?
RQ2b: Are there differences between Black and general-audience newspapers with respect to their site-specific cancer news coverage?

### TABLE 1

<table>
<thead>
<tr>
<th>Primary cancer site</th>
<th>% Cancer Stories in Black Newspapers (n = 332)</th>
<th>Incidence Rate Among African Americansa</th>
<th>Mortality Rate Among African Americansa</th>
<th>% Cancer Stories in General-Audience Newspapers (n = 261)</th>
<th>Incidence Rate Among All Americansa</th>
<th>Mortality Rate Among All Americansa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>28.9</td>
<td>67.9</td>
<td>20.4</td>
<td>21.1</td>
<td>70.4</td>
<td>14.6</td>
</tr>
<tr>
<td>Prostate</td>
<td>20.2</td>
<td>106.6</td>
<td>22.4</td>
<td>10.0</td>
<td>74.8</td>
<td>10.7</td>
</tr>
<tr>
<td>Colon and rectum</td>
<td>5.1</td>
<td>62.8</td>
<td>27.3</td>
<td>6.1</td>
<td>52.4</td>
<td>19.8</td>
</tr>
<tr>
<td>Leukemia</td>
<td>3.9</td>
<td>10.1</td>
<td>6.7</td>
<td>2.3</td>
<td>12.2</td>
<td>7.5</td>
</tr>
<tr>
<td>Other</td>
<td>3.6</td>
<td>N/A</td>
<td>N/A</td>
<td>4.2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Lung and bronchus</td>
<td>1.8</td>
<td>76.9</td>
<td>62.5</td>
<td>4.6</td>
<td>64.8</td>
<td>55.1</td>
</tr>
<tr>
<td>Uterus</td>
<td>1.5</td>
<td>0.6</td>
<td>2.4</td>
<td>0.8</td>
<td>0.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Brain</td>
<td>1.2</td>
<td>3.7</td>
<td>—</td>
<td>2.3</td>
<td>6.0</td>
<td>—</td>
</tr>
<tr>
<td>Non-Hodgkin lymphoma</td>
<td>1.2</td>
<td>14.3</td>
<td>5.3</td>
<td>1.1</td>
<td>19.1</td>
<td>7.7</td>
</tr>
<tr>
<td>Cervix</td>
<td>1.2</td>
<td>6.4</td>
<td>2.9</td>
<td>1.5</td>
<td>4.6</td>
<td>9.4</td>
</tr>
<tr>
<td>Thyroid</td>
<td>1.2</td>
<td>5.0</td>
<td>0.5</td>
<td>1.9</td>
<td>8.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Esophagus</td>
<td>0.9</td>
<td>6.4</td>
<td>6.1</td>
<td>0.4</td>
<td>4.5</td>
<td>4.4</td>
</tr>
<tr>
<td>Oral cavity</td>
<td>0.9</td>
<td>11.1</td>
<td>3.9</td>
<td>0.4</td>
<td>10.5</td>
<td>2.7</td>
</tr>
<tr>
<td>Melanoma</td>
<td>0.9</td>
<td>1.0</td>
<td>0.4</td>
<td>2.7</td>
<td>18.2</td>
<td>2.6</td>
</tr>
<tr>
<td>Ovary</td>
<td>0.6</td>
<td>5.8</td>
<td>4.4</td>
<td>1.5</td>
<td>7.4</td>
<td>5.1</td>
</tr>
<tr>
<td>Pancreas</td>
<td>0.3</td>
<td>14.9</td>
<td>13.8</td>
<td>1.1</td>
<td>11.3</td>
<td>10.5</td>
</tr>
<tr>
<td>Liver</td>
<td>0.3</td>
<td>6.8</td>
<td>5.4</td>
<td>2.3</td>
<td>5.4</td>
<td>3.8</td>
</tr>
<tr>
<td>Kidney</td>
<td>0.3</td>
<td>14.1</td>
<td>4.1</td>
<td>0.4</td>
<td>12.6</td>
<td>4.2</td>
</tr>
<tr>
<td>Testis</td>
<td>0.3</td>
<td>0.7</td>
<td>0.1</td>
<td>0.8</td>
<td>2.7</td>
<td>0.1</td>
</tr>
<tr>
<td>Urinary bladder</td>
<td>0.3</td>
<td>12.4</td>
<td>3.8</td>
<td>0.4</td>
<td>20.9</td>
<td>4.3</td>
</tr>
<tr>
<td>Bone</td>
<td>0.0</td>
<td>0.7</td>
<td>0.4</td>
<td>1.5</td>
<td>0.9</td>
<td>0.4</td>
</tr>
<tr>
<td>No site mentioned</td>
<td>25.6</td>
<td>N/A</td>
<td>N/A</td>
<td>32.6</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Note. N/A = not applicable; —, rate could not be calculated due to having <16 cases in time interval.

Following prior research that suggests that newspapers tailor health stories to their audiences (e.g., African American or general) and integrate information that is localized and personally relevant to their readers (Hoffman-Goetz & Friedman, 2005; MacDonald & Hoffman-Goetz, 2001; MacDonald & Hoffman-Goetz, 2002), we also ask:

RQ3: Is there a difference between Black and general-audience newspapers with respect to how frequently cancer stories report on disparities?

RQ4: Is there a difference between Black and general-audience newspapers with respect to how frequently cancer stories include localized information?

RQ5: Is there a difference between Black and general-audience newspapers with respect to how frequently cancer stories include personally mobilizing information?

METHOD

Newspaper Sample

Newspapers were drawn from U.S. cities and standard metropolitan areas (SMAs). Cities were eligible if they satisfied the following criteria: (a) having a total population greater than 200,000 (n = 77); (b) having a total Black population greater than 100,000 (n = 30 of 77); (c) having a local Black newspaper (n = 28 of 30); and (d) having cancer mortality rates for Black men or women that were greater than or equal to U.S. rates for the same populations (n = 24 of 28). For SMAs, eligibility criteria included: (a) having no geographic overlap with any city in the sampling frame for U.S. cities (n = 196); (b) having a total population greater than 600,000 (n = 133 of 196); (c) having a local Black newspaper (n = 30 of 133); and, (d) having cancer mortality rates for Black men or women that were greater than U.S. rates for the same populations (n = 16 of 27). Eligible cities and SMAs were rank-ordered by circulation of the local Black newspaper, and the top 12 cities and 12 SMAs were selected for inclusion in the study.1 In all cases where cities had more than one Black newspaper, the one with the largest circulation determined rank order.

To compare news coverage in Black newspapers to coverage in general-audience newspapers, the largest general-audience newspaper from 12 of the 24 cities was also included. These 12 cities were selected at random and included 6 large cities and 6 SMAs. A total of 23 Black newspapers and 12 general-audience newspapers from 23 cities were included in the final content analysis. One Black newspaper that did not reliably send issues to the researchers was dropped from the study.2

In all cases, paper copies of newspapers were retrieved directly from the newspaper publisher, allowing for accurate retrieval of relevant information (see Stryker, Wray, Hornik, & Yanovitzky, 2006, for a discussion of paper vs. electronic database retrieval strategy). The national sample reported in this analysis includes all newspaper stories from weekly Black newspapers published between April 1, 2004, and March 31, 2005. For general-audience daily newspapers, a constructed-week sampling approach (Riffe, Aust, & Lacy, 1993) was followed in which sample dates were stratified by day of the week.

Prior research has established that a constructed-week sampling of daily newspapers can account for systematic news variation due to day of the week (Jones & Carter, 1959; Stempel, 1989), wherein the final sample represents all seven weekdays. Moreover, a monthly constructed-week sample taken over an extended time period can produce an accurate and valid estimation of a newspaper census in comparison to simply random sampling in which “particularly large newsholes (e.g., Sundays) could be by chance over or under-represented” (Riffe, Aust, & Lacy, 1993, p. 134). Following Riffe et al.’s (1993) logic, the principal advantages of using such a sampling method include being able to account for cyclic variation of news content and to efficiently allocate resources in content analyses. Riffe et al. (1993) found that, consistent with prior research (Davis & Turner, 1951; Jones & Carter, 1959), constructed-week sampling was superior in terms of efficiency to simple random sampling and consecutive-day sampling—measured by comparing the number of standard deviations separating the sample means and their population means. Moreover, our prior research (Luke, Caburnay, & Cohen, 2008) has validated this approach using Monte Carlo bootstrap sampling to determine the number of constructed weeks necessary to accurately estimate 1- and 5-year population. Consistent with these findings, here we employ the constructed-week sampling frame:

1To avoid biases in the sample, two cities were removed from the sampling frame: (a) a city with a daily Black newspaper unsuited for comparison to weekly newspapers in the other markets, and (b) the city in which the researchers resided.

2The authors acknowledge the tensions recently documented by Long, Slater, Boiarsky, Stapel, and Keef (2005) between the goals of purposive sampling (see Riffe, Lacy, & Fico, 1998) and the advantages of constructing a nationally representative sample of local news media outlets, particularly those media outlets for which audience information is either not reliable or not readily available. These data are part of a multiyear NCI-funded Center for Excellence in Cancer Communication Research examining the nature and extent of news coverage in 24 weekly Black and 12 daily, commercial newspapers in small and major metropolitan market areas. Newspaper issues were first identified for articles for permissible inclusion in the dataset. Given the number of issues from these papers over the span of 1 year, and the large number of stories in the collection, the study represents with confidence 95% of the universe of issues under consideration. Although the error of missing issues produces numerous overlooked stories beyond random inclusion error at the story level, given the power of these existing data, such error will not influence the effects reported here or descriptions of the average number of stories in an issue on a variety of health topics.
sampling approach for 12 months of daily general-audience newspapers to efficiently establish a means to generalize from the sample to the general-audience newspaper universe. No sampling procedure was applied to the population of weekly Black newspapers included in the study.

Coding Instrument
Coding was conducted in two phases for each newspaper issue included in the samples: each newspaper issue in a constructed-week by month for general-audience newspapers over a period of 1 year and all weekly issues of Black newspapers. First, newspapers were reviewed for story inclusion by a team of coders identifying newspaper-level information (e.g., newspaper, issue, date) and story-level information (e.g., headline, writer, general health topic, general cancer topics). Each Black or general-audience newspaper issue was read in its entirety to identify health-related stories, and these stories were then coded on criteria of interest in the study. To be identified as a health-related story, an article had to convey information that pertained to health promotion, wellness, disease prevention, well-being, lifestyle, or the mental, physical, and spiritual aspects of health for individuals or populations. All stories containing health-related information were included for subsequent analysis and reviewed by trained coders who applied the coding instrument; any story in which cancer was mentioned in the headline or first two paragraphs was coded on additional cancer-relevant content analysis variables.

Training for Identification of Stories
A total of nine graduate research assistants from a Midwestern school of public health were trained to identify health and cancer stories by reviewing the inclusion criteria, reading sample newspapers, and working with already-trained research assistants. Once they felt comfortable with the criteria, they underwent an initial reliability test with 40 different stories to determine whether a particular story was health-related or not. Responses were compared to those of past research assistants who had achieved intercoder reliability. If the calculated reliability for a particular research assistant was unacceptable (κ < .85), the coder was retrained. The coder would then be given another reliability test with 40 new stories until κ > .85. Intercoder reliability for health story identification was high (mean κ = .87).

In the second phase of coding, trained coders took newspapers containing health stories and identified a list of primary health topics, including cancer, included in the first three paragraphs of these stories (Krippendorff’s α = .81). Cancer stories were selected for further analysis with alpha values for other subvariables operationalized following ranging from .72 to .93 (M = .85) using a final sample of 190 cancer stories evaluated by multiple coders to establish reliability after coder training. The final Krippendorff’s alpha value for each coded variable is reported following. These values are within the acceptable range Krippendorff (2003) recommends.

Outcome Measures

Black or general newspaper stories. Newspaper stories were coded for whether or not they were part of the general-audience (n = 12) or Black newspaper (n = 23) sample. A total of 2,767 stories from 736 general-audience newspaper issues contained health information, as did 2,439 stories from 810 Black newspaper issues.

Cancer stories. For the purpose of this analysis, we limit our discussion to stories with a primary health topic (Krippendorff’s α = .81) coded as cancer (valid N = 593). Stories that used the word “cancer” or related keywords such as tumor, lump, malignant, carcinogen, oncology, neoplasm, or other derivatives of these words in the headline or first two paragraphs were classified as “cancer stories.”

Primary cancer site. The primary cancer site discussed in the first two paragraphs (valid N = 593, Krippendorff’s α = .92) was identified in cancer stories. Initial coding included a list of cancer sites and “other” and “not-applicable” categories. Following initial coding, the “other” category was recoded and the coding was refined to include the following categories of cancer sites: (1) breast, (2) colon and rectum, (3) esophagus, (4) kidney, (5) leukemia, (6) lung and bronchus, (7) melanoma, (8) non-Hodgkin lymphoma, (9) oral cavity, (10) ovary, (11) pancreas, (12) prostate, (13) thyroid, (14) urinary/bladder, (15) uterine corpus, (16) bone, (17) liver, (18) brain, (19) cervical, (20) testicular, (21) other (a single cancer or cancer site must be specified), and (22) general cancer (unspecified site). Stories that did not mention the specific location of cancer but utilized adjectives associated with cancer (e.g., “juvenile cancer” or “cancer medicine”) were coded or recoded into the general cancer category.

Communicating disparities. Within cancer stories, coders determined whether health disparities were communicated by examining the first two paragraphs to see if they included language describing differences in the incidence, prevalence, mortality, or burden of diseases and other adverse health conditions that exist among specific population groups in the United States (Krippendorff’s α = .93). For purposes of this analysis, any type of evidence of disparity (e.g., statistical or narrative) counted as meeting the definition.

Localized information. Coders evaluated whether or not the cancer story included details, facts, or information that made the story relevant to the newspaper’s local audience—regardless of the story’s locale (valid N = 372;
Krippendorff’s $\alpha = .83$). For instance, a story about cancer services for individuals in Milwaukee and that appears in the Milwaukee Community Journal would be coded as containing localized information.

**Personal behavioral mobilization.** Coders ruled whether or not cancer stories explicitly described actions readers could take to reduce their own health risks or prevent themselves from being affected by or getting a disease, or to change their behavior related to the cancer topic. Stories were coded for the presence or absence of a personal behavioral mobilization cue (valid $N = 588$, Krippendorff’s $\alpha = .72$).

### Analytic Approach

We used descriptive and inferential statistical analyses (Pearson’s chi-square) to identify relationships between newspaper story characteristics in Black and general-audience newspapers. First, we examined all health stories in the sample for their cancer coverage. Among cancer stories, we noted the cancer sites mentioned in the stories and analyzed additional story qualities of interest in the study (health disparity focus, personal mobilization, and localization). We followed each descriptive analysis by examining the qualities of the cancer stories by newspaper type using nonparametric statistics. Given that the health section of general-audience newspapers often appears once per week, a constructed-week sample may yield a lower “dose” of issues with a health section as compared to issues with health articles in weekly Black newspapers. Thus, analyses explored differences within the sample of health stories drawn from each newspaper type to examine differences using as the unit of analysis a newspaper issue containing a health story. Findings are presented in the order of the research questions previously introduced.

## RESULTS

Between April 1, 2004, and March 31, 2005, there were 736 issues containing health stories in our general newspaper sample and 810 issues containing health stories in our Black newspaper sample.

### Amount of Coverage

RQ1a asked: How frequently is cancer the primary topic of health stories in Black and general-audience newspapers? Of the 2,439 general health topic stories in Black newspapers, 332 (13.6%) were cancer stories. In comparison, of the 2,767 general health topic stories in general-audience newspapers, 261 (9.6%) had a cancer focus. Cancer stories, compared to all other health stories, were more likely to appear in Black newspapers than in general-audience newspapers, where $\chi^2(1, N = 5,206) = 22.4, p = .001$ (for RQ1b, see Table 2).

### Site-Specific Cancer

The second set of research questions addressed how cancer sites are reported on in Black and general-audience newspaper cancer stories. Among cancer stories, significant differences were found in site-specific cancer reporting by newspaper type (general-audience and Black), where $\chi^2(21, N = 593) = 42.1, p = .004$ (see also Table 2). For both general-audience and Black newspapers, breast was the most often reported cancer site ($N_{\text{General}} = 55$, or 21.0% of all cancer stories; $N_{\text{Black}} = 96$, or 28.9%). On average, Black newspapers reported $M = .12$ breast cancer stories per health issue, as compared to general-audience newspapers, where $M = .075$. Prostate ($N_{\text{General}} = 26$, or 10.0% of all cancer stories; $N_{\text{Black}} = 68$, or 19.8%).

<table>
<thead>
<tr>
<th>Site-specific cancer stories</th>
<th>All Stories</th>
<th>Black</th>
<th>General-Audience</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Stories</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Cancer stories$^a$</td>
<td>593</td>
<td>11.4</td>
<td>332</td>
</tr>
<tr>
<td>Disparities$^b$</td>
<td>139</td>
<td>23.6</td>
<td>108</td>
</tr>
<tr>
<td>Localization$^c$</td>
<td>120</td>
<td>22.6</td>
<td>72</td>
</tr>
<tr>
<td>Personal mobilization$^d$</td>
<td>189</td>
<td>32.1</td>
<td>146</td>
</tr>
<tr>
<td>Breast</td>
<td>151</td>
<td>25.5</td>
<td>96</td>
</tr>
<tr>
<td>Prostate</td>
<td>93</td>
<td>15.7</td>
<td>67</td>
</tr>
<tr>
<td>Colorectal</td>
<td>33</td>
<td>5.6</td>
<td>16</td>
</tr>
</tbody>
</table>

Note. $^a$, significantly higher frequencies based on standardized residual (≥2 or ≤-2); $^b$, significantly lower frequencies based on standardized residual (≥2 or ≤-2). $^c$Relationship of newspaper to cancer stories: $\chi^2(1, N = 5,206) = 22.4, p = .001$. $^d$Relationship of newspaper to health disparities: $\chi^2(1, N = 589) = 34.2, p = .001$. $^e$Relationship of newspaper to localization: $\chi^2(1, N = 372) = 8.2, p = .004$. $^f$Relationship of newspaper to personal mobilization: $\chi^2(1, N = 588) = 49.7, p = .001$. $^g$Relationship of newspaper to site-specific cancer topic: $\chi^2(1, N = 593) = 42.1, p = .004$.
stories; \(N_{\text{Black}} = 67\), or 20.2% of cancer stories) and colorectal sites (\(N_{\text{General}} = 16\), or 6.1% of all cancer stories; \(N_{\text{Black}} = 17\), or 5.1% of cancer stories) were covered less frequently. On average, Black newspapers reported \(M = .021\) colorectal stories and \(M = .083\) prostate stories per health issue, compared with general newspapers that reported \(M = .022\) colorectal stories and \(M = .035\) prostate stories per issue. Overall, few stories in Black and general newspapers focused on lung cancer (\(N_{\text{General}} = 12\), or 4.6% of all cancer stories; \(N_{\text{Black}} = 6\), or 1.8% of cancer stories).

Cancer Disparities

Cancer stories in Black newspapers were more likely to contain health disparity framing than those in general newspapers (RQ3, see Table 2). Although the majority of cancer news stories in general-audience (\(n = 227\), 88.0%) and Black (\(n = 223\), 67.4%) newspapers did not present health disparity framing, more did so in the Black newspapers than expected (\(n_{\text{Black}} = 108\) vs. expected \(n_{\text{Black}} = 78.1\)). In comparison, there was less health disparity coverage in general newspapers than expected (\(n_{\text{General}} = 31\) vs. expected \(n_{\text{General}} = 60.9\)). This difference between Black and general-audience newspapers was significant, where \(\chi^2(1, N = 589) = 34.2, p = .001\).

Localization

As shown in Table 2, cancer stories in Black newspapers were more likely to include localized information (\(n_{\text{Black}} = 77\) vs. expected \(n_{\text{Black}} = 59.0\)) than were cancer stories in general-audience newspapers (\(n_{\text{General}} = 50\) vs. expected \(n_{\text{General}} = 63.0\)). This difference was significant, \(\chi^2(1, N = 372) = 9.213; p = .004\). By looking further into the distribution of cancer newspaper stories containing localized information by cancer site, these data show that 32.8% were in stories discussing breast cancer (\(n = 40\) vs. expected \(n = 31.2\)), followed by prostate (11.5%, \(n = 14\) vs. expected \(n = 17.4\)), colorectal cancer (3.3%, \(n = 4\) vs. expected \(n = 7.2\)), among others. However, overall these numbers indicate that most cancer stories in both samples did not contain localized information.

Personal Mobilization

We also assessed whether cancer news stories (\(N = 588\)) contained personal behavior mobilization information (RQ5, see Table 2). Cancer stories in Black newspapers were more likely to include personal behavior mobilization information (\(n_{\text{Black}} = 146\) vs. expected \(n_{\text{Black}} = 106\), or \(M = .198\) per issue) compared to cancer stories in general-audience newspapers (\(n_{\text{General}} = 43\) vs. expected \(n_{\text{General}} = 82.6\), or \(M = .053\) per issue). This difference was significant, \(\chi^2(1, N = 588) = 49.7; p = .001\). Of all of the cancer stories with personal behavior mobilizing arguments, the largest number of them (39.2%) were in cancer stories discussing breast (\(n = 74\) vs. expected \(n = 48.5\)), followed by prostate (18%, \(n = 34\) vs. expected \(n = 29.6\)), colon and rectum sites (9%, \(n = 17\) vs. expected \(n = 10.6\)), among others.

DISCUSSION

This study found significant differences between Black and general-audience newspapers in the amount and nature of cancer coverage. In addition, in both types of newspapers, the frequency of coverage for site-specific cancers did not accurately reflect current U.S. cancer mortality rates, which has implications for how researchers should consider newspaper framing of cancer risks in the United States.

Overall, the findings of this study show differences in the ways that general-audience and Black newspapers present cancer information. A small minority of cancer stories included locally relevant and personally mobilizing information. However, cancer stories in Black newspapers were on average more likely to include locally relevant information than were stories in general-audience newspapers. Stories in Black newspapers were also more likely to include personally mobilizing information in their cancer story coverage—a crucial cue to action. These findings confirm research suggesting that Black newspapers tailor their newswriting to give readers more personally relevant and local information (Brodie et al., 1999; Domke, 1994; Jones-Webb et al., 1997; Sylvester, 1994). Evidence also suggests that personally relevant and local information is more likely to appear in breast cancer news stories than in stories about other cancer topics. Future research should explore the characteristics of such stories, and whether they can be replicated for other cancer sites with effective detection methods.

Second, when a health news story was primarily about cancer, more than a third of the Black news stories utilized a health disparity frame. These data suggest a felt concern by Black newspaper editors and writers about the burden of health disparities among their readership. However, these data also indicate that the majority of cancer news stories in both Black and general-audience newspapers did not mention the disproportionate burden of cancer among diverse populations.

Third, although cancer reporting in Black and general-audience newspapers did mirror some cancer site incidence rates, anomalies can be seen in the underreporting of the lung, pancreas, kidney, and bladder as cancer sites (see Table 1). In neither type of newspaper did the coverage of cancer sites accurately reflect the impact of different cancers on population mortality. Lung cancer is the leading cause of cancer death in the United States, with prostate and breast cancers following as the two leading causes of sex-specific cancer mortality (American Cancer Society, 2005).
mortality rates) on breast cancer and underreported on lung, colon, and prostate cancers. Moreover, we found underreporting on cancers for which there are proven screening tests available (e.g., colorectal and cervical), in comparison to cancers with no universally recommended tests (e.g., prostate cancer). Although the quality of site-specific cancer reporting was not the focus of this analysis and is one limitation of this study, future research may consider the ways certain cancer sites are reported in terms of attention to topics related to cancer diagnosis, prevention, and treatment.

Breast cancer was the most commonly reported on cancer in both Black and general newspapers. Similar findings have been reported in previous studies of cancer coverage in Canadian newspapers and in Canadian and U.S. magazines (Hoffman-Goetz & Friedman, 2005). The greater attention paid to sex-specific cancers (breast and prostate) in Black newspapers compared to general-audience newspapers could reflect the disparities characterizing these cancers. Although African American women have lower breast cancer incidence rates than do White women, their mortality rates are higher. For prostate cancer, the difference in mortality rates between African American and White men is the largest of any cancer disparity. Perhaps unsurprisingly, more cancer stories with a disparity frame focused on prostate (10.6%) or breast (9.7%) than any other cancer site.

There are limitations to the generalizability of findings from this study. First, the stories analyzed here might be different from those presented in other media channels or those newspapers with more targeted audiences. Such media may present different health or cancer communication than would be found in our national sample of general-audience and Black newspapers. Second, the data presented here represent only 1 year of health and cancer news coverage. We would expect that additional stories regarding scientific breakthroughs or cancer discoveries will shape cancer news coverage over time. Further, this study assessed news stories for the presence or absence of cancer information, but did not assess the quality of the information. To explore these phenomena further, future research should consider whether or not these newspapers offer complete coverage regarding cancer prevention and detection methods, and whether or not they accurately describe cancer risk. Future empirical investigations can also examine the ways in which the "newshole" for health stories varies by newspaper, and the ways in which the support for health reporting (e.g., number of health reporters) in the paper bears on the quality of cancer coverage and the ways in which health stories are framed.

From a media relations perspective, these data show that there is room to work with editors and writers of both general-audience and Black newspapers to frame through newspaper coverage the leading causes of cancer death in the United States. Future media interventions may work to increase newspaper reporting of personal behavior mobilizing actions for preventing cancer and reducing mortality risks, and to identify localized cancer information that is tailored to newspaper audiences. Furthermore, these data suggest as a first step toward eliminating cancer and cancer disparities in health communication that researchers and practitioners pursue a balanced intervention focused on increasing cancer news coverage in print media, and tailoring media relations to provide more personalized and locally relevant information. Future research will include follow-up content analysis evaluating the quality of cancer information over time in both general and Black media to bolster the findings of this study.

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