

ORIGINAL ARTICLE

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# Misleading Presentation of Breast Cancer in Popular Magazines

**CONTEXT.** Women commonly misunderstand their risk for breast cancer, overestimating both their risk for developing the disease at a young age and their lifetime risk.

**OBJECTIVE.** To determine whether age bias occurs in popular media coverage of breast cancer.

**SELECTION STRATEGY.** The search term *breast cancer* was used to identify 389 articles in U.S. magazines with a circulation of at least 500,000 published between January 1, 1993, and June 30, 1997.

**MAIN OUTCOME MEASURES.** Presence of age-related themes and age of patients with breast cancer who were described in vignettes.

**RESULTS.** Age-related themes included breast cancer as a cause of premature death, breast cancer in mothers of young children, and the impact of a breast cancer diagnosis on dating and marriage. Factual information about age as a risk factor for breast cancer was presented in only 14% of articles, and age was often included in vignettes describing a woman with breast cancer. Thirty-four percent of the articles included one or more breast cancer vignettes. These articles included 172 unique vignettes in which patient age was described. In 84% of the vignettes (144 of 172), women were diagnosed with breast cancer before 50 years of age; in 47% (80 of 172), women were diagnosed before 40 years of age. On the basis of the age-specific incidence of breast cancer in the United States, the expected percentages would be 16% and 3.6%, respectively.

**CONCLUSIONS.** Stories about breast cancer in popular U.S. magazines misrepresent the age distribution of the disease, emphasizing atypical cases of early-onset breast cancer and their social consequences. This presentation of breast cancer may contribute to women's fears of breast cancer and to overestimates of personal risk.

Women commonly misunderstand their risk for breast cancer, inflating their lifetime risk to a significant degree<sup>1-6</sup> and overestimating the proportion of deaths attributable to this disease.<sup>3,7</sup> For example, in one survey, women between 40 and 50 years of age overestimated their short-term risk for dying of breast cancer by 22-fold and their lifetime risk by 12-fold.<sup>3</sup> In addition, women often view breast cancer as a disease of younger women, mistakenly believing that their short-term risk diminishes as they get older.<sup>8-10</sup>

Breast cancer is a frequent topic in magazines that have a large female readership.<sup>11-13</sup> These magazines are known to be an important source of health information.<sup>14-17</sup> We therefore questioned whether messages about breast cancer in popular magazines were congruent with the overestimation of risk that was commonly observed. As an initial step, we reviewed a convenience sample of magazine articles about breast cancer, consisting of 40 articles in women's magazines obtained from newsstands in Seattle, Washington, in October 1995. These articles appeared to be

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skewed toward stories of women affected with breast cancer at atypically young ages. However, the small sample and the timing of the sampling during “breast cancer awareness month” made it difficult to generalize from these findings. We undertook the present study to determine whether an age bias existed in a larger and more representative sample of magazine articles about breast cancer.

## Methods

### Sample

Magazine articles were selected and analyzed according to the flow diagram in **Figure 1**. Articles were identified by using the Information Access Company Magazine Index Plus,<sup>18</sup> which indexes and abstracts more than 415 popular and general interest publications, including some newspapers and major scientific journals. Articles published in such magazines between January 1, 1993, and June 30, 1997, were identified by using the search term *breast cancer*. This time frame was chosen to bracket two National Institutes of Health consensus panels on mammographic screening held in December 1993 and January 1997. The search yielded 1285 articles. Articles from scientific journals, newspapers, magazines published only in Canada, and magazines with an annual circulation less than 500,000 were excluded, leaving 389 articles from 52 general interest and women’s magazines. Circulation figures were obtained from *Working Press of the Nation*.<sup>19</sup>

### Content Analysis of Age-Related Themes

We reviewed the articles in our sample for themes that related age to the diagnosis or psychosocial effects of breast cancer. An initial review by one investigator of a subset of articles that contained breast cancer vignettes identified four themes: 1) factual information about age as a risk factor for breast cancer; 2) breast cancer as a cause of premature death; 3) breast cancer affecting the mother of young children; and 4) the impact of a breast cancer diagnosis on dating and marriage. All 389 articles in the sample were then reviewed separately by two investigators to determine whether any of the themes were present. Disagreements in coding occurred for 25 articles (6.4% of the total sample) and were resolved by a third reviewer. Because the themes of premature death and breast cancer affecting mothers of young children were often addressed together, they were combined for analysis.

### Age Distribution in Vignettes

All articles were reviewed to determine whether they included vignettes. We defined a vignette as a description of the breast cancer experience of a specified person.

Indirect references to a person with breast cancer, such as references to affected relatives, were not considered vignettes. As shown in **Figure 1**, 131 articles (34%) contained 273 breast cancer vignettes. One hundred eighty-six vignettes provided information about the age of the affected person; 14 vignettes were duplicate reports. Because the age distribution was similar regardless of whether duplicate reports were included, we restricted our analysis of age distribution to the 172 unique vignettes.

Whenever possible, we used the age at diagnosis; otherwise, we used current age or age at death as a proxy for age of diagnosis. This method biases our results towards an older age at diagnosis and thus understates the hypothesized age bias. For the same reason, when age was expressed in terms of a decade (e.g., “in her thirties”), the oldest possible age (in this case, 39 years) was used.

To generate a population-based comparison, we used data reported by the National Cancer Institute on the cumulative risk for breast cancer among U.S. women.<sup>20</sup> The absolute number of women expected to receive a diagnosis of breast cancer in each age decade from 20 to 29 years to 60 to 69 years and women aged 70 years or older was derived from these data. The percentage of breast cancer diagnoses occurring in each age group was then calculated by using the overall number of breast cancer cases for each age group as the numerator and the total number of all breast cancer cases as the denominator.

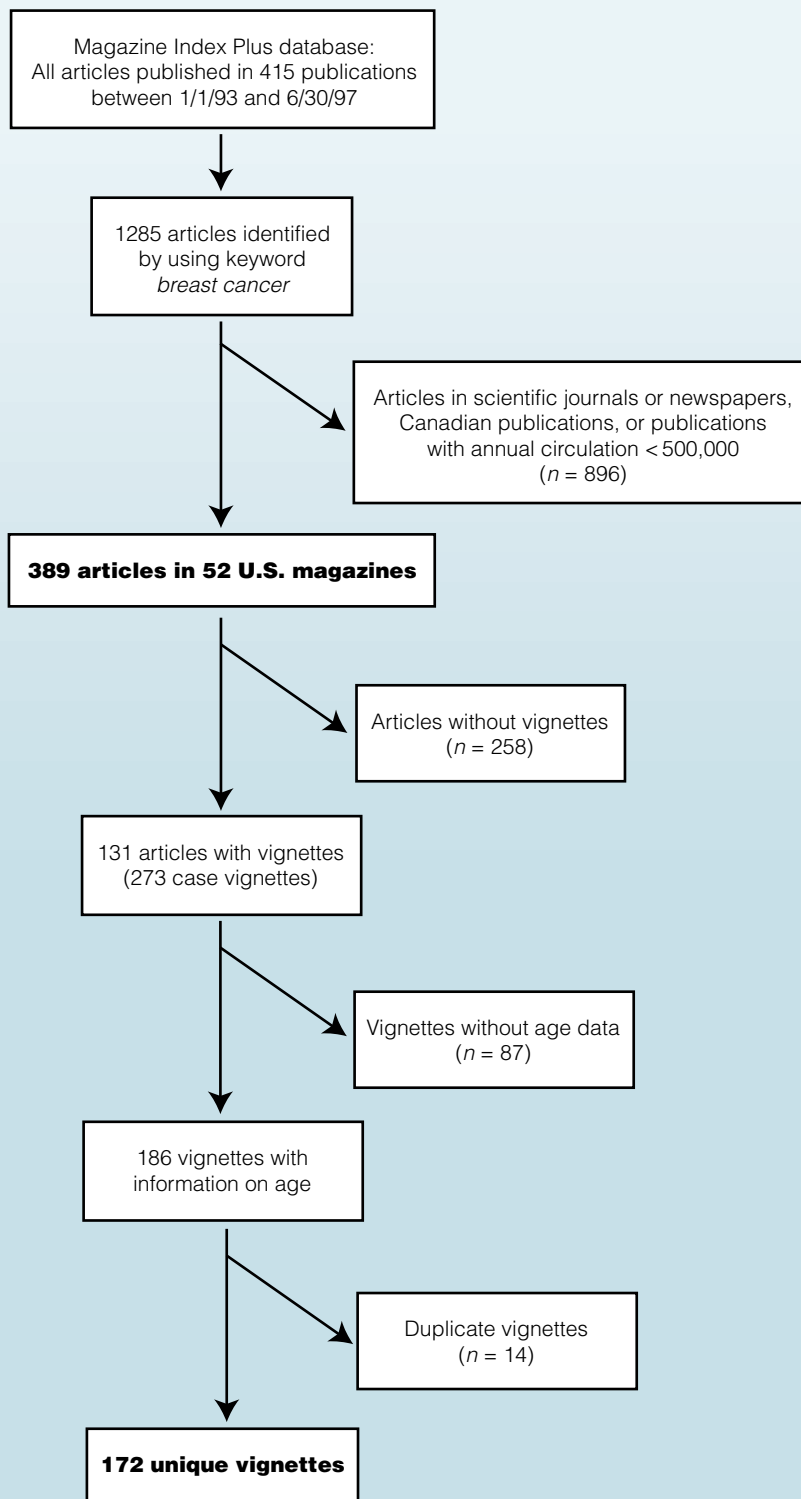
## Results

### Age-Related Themes

Explicit age-related themes were evident in many of the articles. **Table 1** provides the flavor of some of their content. The age themes fell into three categories: age as a risk factor, premature death, and the effect of a breast cancer diagnosis on dating and marriage.

#### **Age as a Risk Factor**

Age was noted as a risk factor for breast cancer in 54 (14%) of the 389 articles. References ranged from a brief mention of age in a list of risk factors to inclusion of population data showing the increasing incidence of breast cancer with age. However, these references often occurred in the context of stories about breast cancer in young women. For example, a 21-year-old woman with breast cancer was quoted as stating, “I was not included in anybody’s group of those with high risk-factors (over age 40, family history of breast cancer, early menstruation...)”.<sup>21</sup> A *U.S. News & World Report* article titled “The Breast Cancer Scare” carried the subheading “Women in their 30s and even 20s are increasingly fear-



**FIGURE 1.** Selection of magazine articles and vignettes.

ful. Most of them needn't be." The article summarized population data documenting the low risk for breast cancer in young women. However, the five vignettes of breast cancer reported in the article concerned women

affected with breast cancer at ages 18, 31, 32, 36, and 53 years.<sup>22</sup> In another article, a 23-year-old breast cancer survivor described the average risk of breast cancer as "1 in 9...perhaps your fiancée, your sister, your daugh-

**TABLE 1**  
**Examples of Vignettes Demonstrating Age-Related Themes**

SOURCE	TITLE OF ARTICLE	VIGNETTES
<i>U.S. News &amp; World Report</i> March 15, 1993	“The Breast Cancer Scare. Women in Their 30s and Even 20s Are Increasingly Fearful. Most of Them Needn’t Be.”	<p>“Six-year survivor: Alicia Lawrence’s cancer was diagnosed in 1987, when she was 32.”</p> <p>“Young fighter: Mecheal William’s breast cancer, diagnosed when she was a teenager, has spread. The 26-year-old is receiving chemotherapy.”</p>
<i>Ladies’ Home Journal</i> May 1994	“Fighting for Our Lives”	A woman describes her diagnosis of breast cancer at 40 years of age and 8 months pregnant: “How to describe the moment that divided my life into before and after? Part of me was stunned; another part was flooded with images, thoughts and feelings. When I could finally speak, I was sobbing. I wondered if I had given cancer to the baby. I wondered if I would need a maternity leave at all.”
<i>Ebony</i> March 1995	“Why Breast Cancer Kills More Black Women”	A woman describes her breast cancer diagnosis at age 44 years: “I lost complete control of myself. I didn’t just cry, I became hysterical. Part of it was fear and part of it was shock. I’d never given breast cancer a second thought.”
<i>Time</i> January 22, 1996	“The Soul of an HMO”	The article chronicles a now-deceased 32-year-old mother’s unsuccessful battle with her HMO to get a bone marrow transplant for metastatic breast cancer.
<i>The New York Times Magazine</i> June 29, 1997	“35 and Mortal: A Breast Cancer Diary”	A woman’s diary describes her cancer diagnosis and treatment. “Everyone has a friend about my age for me to call ‘who had this and is fine.’ Most of them scare the bejesus out of me. One had already got cancer again in her other breast and had a double mastectomy. Another now has ovarian cancer. The youngest are in the worst situations...”

ter...”<sup>23</sup> Her list did not include close relatives in older generations, such as mothers and grandmothers, with significantly higher risk in the near term.

**Premature Death/Breast Cancer in Mothers of Young Children**

Fifty-four of 389 articles (14%) discussed a woman dying of breast cancer before 50 years of age or a patient with breast cancer who was the mother of young children. Twenty-four articles (6%) addressed these two themes in combination. In these articles, fears related to abandoning young children were identified as an important concern for breast cancer survivors: “My greatest concern

when I learned I had cancer was for my daughter,”<sup>24</sup> and “Four years later she is still haunted by the thought of her son growing up without her.”<sup>25</sup>

**Dating and Marriage**

The effects of a breast cancer diagnosis on a woman’s marriage or dating relationships were explored in 38 of 389 articles (10%). These included references to supportive partners; for example, a 31-year-old woman in whom breast cancer was diagnosed 2 weeks before her second marriage said, “I told Flip we shouldn’t get married, that he ought to find someone else. He wouldn’t hear of it.”<sup>26</sup> Fears about the potential negative effect of

**TABLE 2**  
**Age Distribution in 172 Breast Cancer Vignettes**

AGE DECADE	PERCENTAGE OF VIGNETTES (n)	ACTUAL PROBABILITY OF DEVELOPING BREAST CANCER DURING THAT DECADE OF LIFE*
< 20 yr	0.6% (1)	0%
20–29 yr	8.1% (14)	0.05%
30–39 yr	37.8% (65)	0.40%
40–49 yr	37.2% (64)	1.49%
50–59 yr	14.0% (24)	2.75%
60–69 yr	2.3% (4)	3.49%
> 70 yr	0% (0)	Not available

\*Based on data from the National Cancer Institute.<sup>20</sup>

a cancer diagnosis were also expressed: “Breast cancer is a harsh disease for anyone. For a young woman hoping to marry or start a family it can be especially cruel.”<sup>27</sup>

### Age Distribution

The mean age of the women with breast cancer in the 172 vignettes was 41 years (range, 18 to 66 years). **Table 2** shows that the age distribution is skewed toward younger ages. In 84% of vignettes (144 of 172), women were diagnosed before 50 years of age; in 47% (80 of 172), women were diagnosed before 40 years of age. On the basis of the age-specific incidence of breast cancer in the United States, the expected percentages would be 16% and 3.6%, respectively.

The vignettes included 25 women who were reported on primarily because they were celebrities or otherwise newsworthy. For example, several articles discussed a group of breast cancer survivors who climbed Mount Aconcagua in South America in 1995.<sup>28–30</sup> The

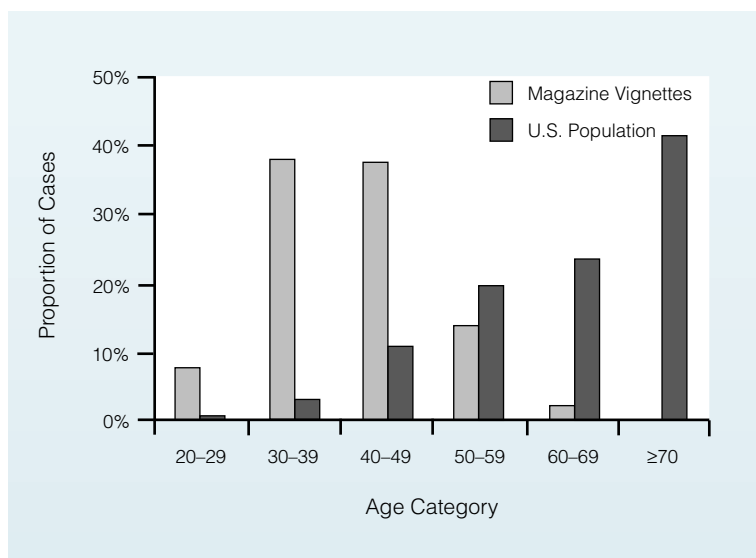
ages of women in the newsworthy vignettes ranged from 21 years (a former Miss Oklahoma<sup>31</sup>) to 66 years (Virginia Kelley, mother of former U.S. president Bill Clinton<sup>32</sup>), and the mean age did not significantly differ from that in the remaining vignettes (42 and 41 years, respectively).

**Figure 2** shows that compared with population data,<sup>20</sup> the media vignettes overrepresented breast cancer incidence among women 20 to 49 years of age and underrepresented it among women 50 years of age over. Only 2.3% of the vignettes (4 of 172) described women in their 60s, and none described women in their 70s or older. By contrast, population data demonstrate that most cases of breast cancer (65%) occur in women 60 years of age or older.

### Discussion

In our study, stories about breast cancer in popular magazines focused on women younger than 50 years of age and included reports of women affected as early as 18 years of age. References to women diagnosed with breast cancer in their 60s were rare, and no article mentioned a woman who was diagnosed in her 70s, even though most cases of breast cancer occur in women in these age groups. This misrepresentation of the age distribution of breast cancer parallels women’s own misunderstanding of breast cancer risk.<sup>3,8,9</sup>

Some articles in our sample provided further emphasis on breast cancer in young women by highlighting early death, abandonment of young children, and the potential effect of a breast cancer diagnosis on prospects for dating and marriage. Even when accurate information was presented about the increasing risk for breast cancer with age, it was often tied to stories of women who received a diagnosis at an early age, thus



**FIGURE 2.** Age distribution of the incidence of breast cancer in popular magazine articles and in the U.S. population.

contradicting the statistical data and potentially reinforcing the message about early risk.

Our findings are consistent with those of a smaller study by Marino and Gerlach of 46 articles on breast cancer from popular magazines,<sup>33</sup> but we observed an even greater overrepresentation of early breast cancer (84% of vignettes in our sample discussed cancer in women younger than 50 years of age compared with 59% in Marino and Gerlach's study). Other researchers have also noted distorted messages about cancer in popular magazines. A qualitative study of breast cancer articles from 27 popular magazines found that breast cancer was portrayed as a disease primarily affecting young, professional women.<sup>34</sup> A commentary in the *Journal of the National Cancer Institute* noted that the popular media frequently fail to compare risk for cancer with risks for other serious conditions, such as heart disease, or to distinguish between relative and absolute risks for developing cancer.<sup>35</sup>

Our study has important limitations. Our data do not permit us to determine whether media coverage has contributed to women's exaggerated estimates of early risk for breast cancer. Nor can we determine whether media coverage affects breast cancer screening behaviors. However, we have shown that popular magazines provide a body of anecdotal examples with an age distribution of breast cancer risk that contrasts markedly with reality. This presentation of breast cancer may help to perpetuate women's fears about developing breast cancer early in life. The perception of breast cancer as an immediate risk in young women may also contribute to women's overestimation of their absolute risk for breast cancer.

Exaggerated and inaccurate perceptions of breast cancer risk could have a variety of adverse effects on patients. For example, concerns about early risk might lead young women to overestimate the benefit of mammographic screening before 50 years of age<sup>3, 10</sup> or of chemoprevention with tamoxifen.<sup>36</sup> Failure to understand age as a risk factor could also reduce motivation among older women to undergo mammographic screening.<sup>8, 9</sup> In addition, magazine coverage of breast cancer might contribute to breast cancer-related worry, which in itself can be considered a morbid condition. To test these hypotheses, studies evaluating the association between women's sources of health information and their cancer-related beliefs and behaviors would need to be done.

Although we cannot be certain about the consequences of media misrepresentation of breast cancer risk, our data suggest that strategies used to capture readers' attention might result in an unacceptable loss of scientific accuracy. A life-threatening diagnosis such as

breast cancer is understandably more interesting when it occurs in a young woman. But the very qualities that make a story attention-grabbing may be those that make it atypical. When a magazine presents an article as a factual report, readers may reasonably expect that the larger message is as accurate as the details. The presentation of breast cancer as primarily a risk to young women creates a potential barrier to effective communication of an important health care message.

## Take-Home Points

- **To investigate why women overestimate their risk for developing breast cancer at a young age, we studied the presentation of breast cancer in popular magazines.**
- **The age distribution of breast cancer cases in popular magazines is skewed dramatically toward younger women.**
- **Themes related to breast cancer in young women were common, such as worry about a mother dying while her children are still young or fear that breast cancer will reduce a woman's chances of dating or marrying.**
- **The emphasis on early breast cancer found in popular magazines parallels women's misperceptions about risk and may contribute to them.**

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