

beds were almost twice as likely to die at home. It is still the case that, relative to non-hospice patients, hospice patients have a much greater likelihood of dying at home. Further, the effect of hospice also seems to be to counteract factors such as age that reduce the likelihood of death at home.

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The Impact of Media Coverage of Nancy Reagan's Experience on Breast Cancer Screening

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Abstract: In surveys of random samples of women 50 years of age and older residing in two communities in Long Island, New York, both within-subject (cohort) and independent-sample comparisons were made before and after the media announcements of Nancy Reagan's breast cancer. Knowledge of lifetime risk of breast cancer increased significantly only in the cohort comparison, while self-perception of risk did not increase. Small proportions of women surveyed, however, reportedly were influenced to contact a health professional (6-8 percent) and to have their first mammogram (1.5-2 percent) which they attributed directly to Mrs. Reagan's experience with breast cancer. (*Am J Public Health* 1989; 79:1551-1552.)

Introduction

While the breast cancer experiences of public personalities could have an effect on awareness and use of cancer screening tests, no population-based studies have been published on the response to such media events. Black, *et al*,¹ found no evidence for improvement in stage distribution of breast lesions treated in two hospitals in New York City after the public announcements of breast cancer in the wives of the US President and Vice

President in 1974. On October 15, 1987, Nancy Reagan's breast cancer was announced and in October-November newspapers and both local and network television reported that the cancer had been detected at an early stage by mammography. We examined the short-term effect of the news about Nancy Reagan's breast cancer experience on the breast cancer awareness and screening practices of women on Long Island.

Methods

As part of a community-based study,² a random sample of 254 female licensed drivers 50 years of age and older residing in two non-adjacent townships on Long Island were mailed a survey in September-October 1987 (time-1), with a \$2 token prepayment. This survey included questions about past screening behavior (mammography, breast physicals, and self-examination), concerns about mammography, knowledge of breast cancer risk, and demographic characteristics. After three mailings (including certified mail) the final response rate to the time-1 survey was 68 percent (N = 183), excluding those who had died or moved out of the area. The 173 who had responded prior to the announcement of Mrs. Reagan's surgery in the media were sent a follow-up survey in November-December (time-2). The 142 women responding to both surveys comprise the cohort group. Surveys were also sent in November-December to an independent sample of women randomly selected from the same two Long Island communities (time-2), with a response rate of 71 percent (N = 205). To assess the changes in responses from time-1 to time-2, chi-square was used for the independent samples and a matched-pair or McNemar chi-square test was used for the cohort.

Results

There were no significant differences between these

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groups of women in age, education, or income (Table 1). The follow-up surveys at time-2 directly asked women whether they had heard about Nancy Reagan's experience with breast cancer and to what extent their screening behavior had been influenced by that experience. Some 85-88 percent of the women surveyed at time-2 had been exposed to the news of her breast cancer in the month after the event through both newspapers and TV coverage, and the majority of women (57-62 percent) also heard about it on the radio. About 8 percent of the cohort respondents and 6 percent of the independent sample (time-2) respondents reportedly contacted a doctor or other health professional as a result of Mrs. Reagan's experience; none contacted either the American Cancer Society or a hospital.

In the period between the two surveys, 17 of the 142 women in the cohort had mammograms, three of whom had never had a mammogram previously. Among these 17 women, 12 said that their decision was not influenced "at all" by Nancy Reagan's experience, three were "somewhat" influenced, and only one was influenced "a great deal." The latter four included the three women (or 2.1 percent of the 142) who had their first mammogram in this period.

Among the independent sample time-2 respondents, 17 women had a mammogram in the October to December period; five of these women had never had a mammogram previously. Of these 17 women, three who said that their decision was influenced by Mrs. Reagan's experience had never had a mammogram previously (3 of 205 or 1.5 percent).

Changes in proportions of correct responses to knowledge questions were slight but in the direction of improved knowledge. In the cohort at time-2, the proportion of correct responses to the question regarding lifetime risk of breast cancer had increased significantly (Table 2) but there was no increase in the proportion of cohort respondents who considered it "very likely" or "somewhat likely" that they would get breast cancer.

Discussion

This study examined the population-level response to the media attention paid to a public figure's experience with breast cancer. Almost all women over the age of 50 had heard about Nancy Reagan's experience through the media and a very small proportion of the defined population sample was influenced in terms of a behavioral change—i.e., seeing a health professional or having their first mammogram. The slight increase in knowledge of risk was not accompanied by an increased sense of personal susceptibility to breast cancer.

Data from the 1987 Behavioral Risk Factor Surveillance System (BRFSS) analyzed by the Centers for Disease Control³ showed an absolute increase of 12 percent in

TABLE 1—Selected Characteristics of Cohort and Independent Samples

Characteristics	Cohort (N = 142)	Independent Samples	
		Time-1 (N = 183)	Time-2 (N = 205)
Mean Age (years)	62	63	63
Education Level Completed			
≤High school	63 (45.3)	82 (45.8)	99 (48.8)
1-3 years of college	37 (26.6)	47 (26.3)	57 (28.1)
College graduate+	39 (28.1)	50 (27.9)	47 (23.1)
Annual family income			
≤\$15,000	27 (20.3)	39 (24.2)	45 (24.1)
\$15,000+	106 (79.7)	122 (75.8)	142 (75.9)

TABLE 2—Percent Changes in Response from Time-1 to Time-2

Variables	Cohort	Independent Samples
Correct answer to what proportion of women will get breast cancer at some time in their lives	+9.2% ^a (p = .049)	+3.5% (p = .412)
Perceives self at risk for getting breast cancer	-5.6% ^b (p = .136)	-1.6% (p = .711)

NOTE: P values in the cohort sample are probabilities (two-tailed) obtained by using the normal approximation to the binomial for analysis of discordant pairs.⁹
^aMcNemar chi-square = 3.89, p < .05.
^bMcNemar chi-square = 2.23, p > .10.

screening mammography use between the first two months of 1987 and the last two months of 1987 among women who had a medical checkup in that year. The CDC noted the temporal association with Mrs. Reagan's breast cancer but could not attribute the increase in mammography to this event because the effects of the media coverage of the Nancy Reagan news could not be distinguished from the media attention paid to other cancer control promotions in the same year.

According to the Health Belief Model, a media event can serve as a cue or a trigger for an individual to take a preventive health action but the effectiveness of the external cue depends on a complex host of variables including the perceived benefits of an action, the structural barriers to taking an action, as well as the intensity and duration of the cue.⁴ On the basis of communication research, the rapid diminution of the effect of episodic information,⁵⁻⁷ even if widely diffused (as with Mrs. Reagan's experience), may be overcome by community-based interventions⁸ that maintain any changes in knowledge, attitudes, and behavior and that help in removing barriers to screening. The small increase in numbers of women contacting a health professional, and the direct attribution of the adoption of first-time use of mammography to the news of Nancy Reagan's breast cancer by a small number of women found in this study, may provide impetus for further work on the integration of such experiences with intervention programs to encourage preventive health behaviors.

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