The Use of Mammography Vans by Low-Income Women: The Accuracy of Self-Reports

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ABSTRACT

The objective of this study was to determine the accuracy of self-reports of mammography use by low-income women. Mammography van records were used to verify self-reports of mammography use in the past year by women aged 50 through 75 years who had visited five community health centers (n = 237). Van records verified mammography use for 99% of these women (82% within the previous year and 98% within the past 2 years). Forty percent of those with van records who reported both the month and year of the mammogram were accurate. Inaccurately reported dates were more frequently after (74%) rather than before (26%) the actual date. These findings indicate that self-reports of mammography use by low-income women are generally reliable. (*Am J Public Health.* 1994;84:107–109)

Introduction

National objectives and initiatives specifically target low-income women for interventions designed to increase mammography use because there is evidence of particularly low utilization rates among the disadvantaged.[1–3] Methods of measuring the effectiveness of interventions designed to increase mammography use are needed. There are reports of a high validity of women's self-reports in health maintenance organization (HMO)[4,5] and community[6] settings. We examined whether this is also true for a less educated, lower-income population that visits community health centers.

The Suffolk County Department of Health Services funds five health centers in the intervention area of our community-based breast cancer project.[7] Beginning in January 1988, mammography was provided at each of the health center sites, initially through a county contract with a private mammography van service and subsequently (beginning February 1990) through a mammography van purchased by the Department of Health Services.

Methods

A telephone survey was conducted in 1990 of a random sample of women aged 50 through 75 years from computer files of women who had visited one or more of the five health centers for any reason within the previous year. The survey methodology has been described in detail elsewhere.[8] Sixty-three percent of the original sample completed the survey. Lack of a telephone number was the most common reason for failure to contact the women: 19% of the sample did not have telephones or had unknown or incorrect telephone numbers. Of the women with apparently correct telephone numbers, who therefore could potentially be contacted, 75% completed the survey.

Of the 844 women interviewed, 806 were included in the analysis (38 were excluded because of a prior history of breast cancer or because they were not in the age range of 50 through 75 years). The sociodemographic characteristics of the 806 respondents have been described elsewhere; they were consistent with a disadvantaged population.[8] The survey instrument included questions about whether the respondent had ever had a mammogram, when and where she had her last mammogram, and who paid for it. The date of the last mammogram was recorded by month (or season if the month could not be recalled) and by year.

The validation study of women's self-reports was limited to the 237 women who indicated that they had had a mammogram in a van in the previous year. Matches between survey and van records were double-checked by hand to identify incorrect or missed matches due to spelling errors and for accuracy of match by patient's name, address, date of birth, and clinic site where patient received her usual medical care. The patient's estimated date of her last mammogram and the actual date recorded in the van records were compared. Reports of a mammogram in the previous year were verified by determining whether the actual date of the van mammogram was no more than 12 months prior to the survey month. Since the van files covered a period longer than 1 year, occasionally a patient had a record of more than one mammogram in the van files. The date on which the woman was surveyed by telephone was used to compute the 12-month period of interest, thereby determining which mammogram record was to be included in the study.

Results

Mammography Use

Of the 806 respondents, 631 (78%) reported ever having had a mammogram.

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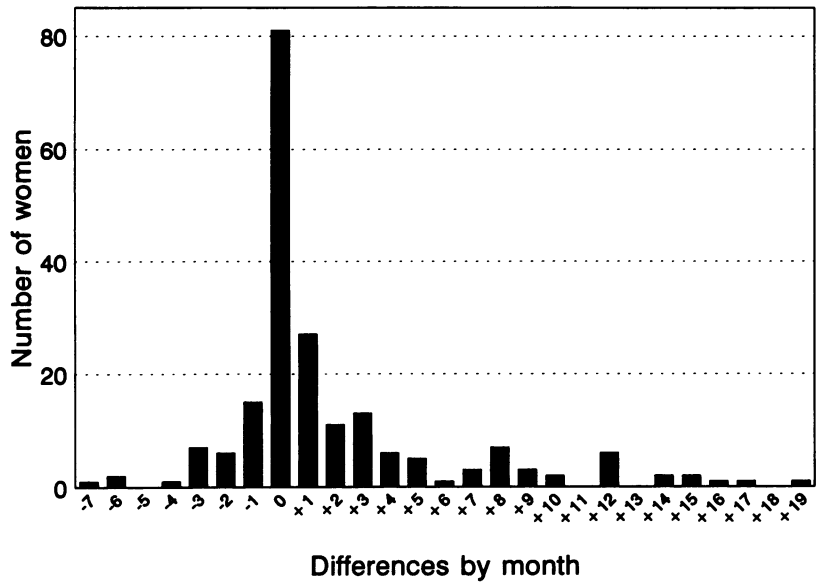
TABLE 1—Number of Women for Whom Documentation Supported the Accuracy of Self-Reported Mammography

Actual Date of Mammogram	No. (n = 237)	%
Within past 12 mo	194	81.9
Within past 13–24 mo	38	16.0
Within past 25–36 mo	3	1.3
No record found	2	0.8

TABLE 2—Number of Women Who Recalled Mammography Date Accurately, by Time since Mammogram

Time Since Mammogram	n	Estimated Date vs Real Date: No. Earlier	No. Same	No. Later	Mean Difference[a]	Median Difference[a]
≤3 mo	51	7	35	9	−2.24	0
>3–6 mo	54	12	24	18	1.15	0
>6–12 mo	71	13	21	37	45.92	30
>12 mo	28	0	0	28	297.86	288.5
Total	204	32	80	92		

[a]Difference = estimated date minus real date in months.



Note. 0 = agreement by month and year (accurate); − = estimated date before actual date; + = estimated date after actual date.

FIGURE 1—Differences between actual and estimated months of mammogram (n = 204).

Three hundred seventy-eight (47%) reported having had a mammogram in the previous year, and the majority of these (237, or 63%) gave a van as the location of the mammogram. Twenty percent said they had had the mammogram at a radiologist's or doctor's office; 12% at a clinic, health center, or HMO; and 6% at a hospital.

Accuracy of Reporting

Van records were obtained for 99% of the women who reported having had a mammogram in a van in the previous year, and 82% of these women had documentation that the mammogram was actually performed in that year (Table 1). An additional 16% had documentation of a van mammogram within the past 13 through 24 months, and 1% had documentation of a van mammogram within 25 through 36 months. No documentation was found for 2 women (0.8%).

Comparisons between self-reports and van records for month and year of the mammogram showed that 81 (40%) were in agreement, 124 (61%) were within 1 month, 161 (79%) were within 3 months, and 197 (97%) were within 1 year. For 7 (3%) of the women, the actual date differed from the self-reported date by more than a year. For the 123 women who were inaccurate in their recall, the self-reported date was more frequently after the actual date of mammography (for 91 women, or 74%) than prior to the actual date (for 32 women, or 26%). The difference between the actual and estimated dates of mammography in number of months is displayed in Figure 1.

Accuracy of recall diminished with time since the last mammogram,[9] as detailed in Table 2. The majority of women who had had a mammogram within the 3 months prior to being surveyed were accurate in their recall, whereas the majority of women who had had their mammograms from 6 to 12 months previously believed that they had had the mammogram later than the actual date. This was also true for all of the women who had actually had the mammogram more than a year prior to their date of recall.

Discussion

The results of our study indicate that the self-reports of low-income women visiting community health centers are a reliable source of data on mammography use in the past year. Van records verified mammography use for 99% of the women studied (82% within the prior year and 98% within the past 2 years). For 40% of the women who reported both the month and year of the mammogram, the dates corresponded to van records. The remaining women, who were inaccurate in recalling the date, were more likely to believe that they had had the mammogram more recently than they actually did (74%) rather than earlier. This memory effect is known as forward telescoping.[10,11] Accuracy in estimating the date of the mammogram declined with time,[9] and more than 6 months after having the mammogram most women (66%) believed that they had had it later than the actual date. More than 12 months after the mammogram, all women believed that they had had it later than the actual date. If the women were to rely on their own recall in scheduling subsequent mammograms, the time between mammograms would extend beyond the recommended interval. This suggests the desirability of using health center–initiated patient reminders to prompt timely scheduling of annual mammography.

A 94% accuracy rate for self-reports of mammography use in the past year

among women enrolled in an independent practice association HMO was reported by King et al.[4] Our project found that 88% of the self-reports of mammography use in the past year among women enrolled in a staff model HMO were confirmed by medical records.[5] This proportion is close to the 82% rate we found for the self-reports of women attending health centers, despite statistically significantly higher income and education in the HMO group than in the health center group. The women in the HMO also tended to underestimate rather than overestimate the time since their last mammogram.[5]

To explore the effectiveness of interventions designed to accomplish the Year 2000 objectives, it is important to be able to measure changing mammography screening practices among low-income women. The results of our validation study indicate that surveys of such women provide reliable data on mammography use in the previous year. □

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