Physician Interest in Breast Cancer Screening Education

A Survey of Vermont Family Physicians

Susan L. Warner, MD, John K. Worden, PhD, Laura J. Solomon, PhD, and William C. Wadland, MD, MS
Burlington, Vermont

A mailed survey of 141 Vermont family physicians (74% participating) was conducted to determine their breast cancer screening practices and beliefs and their interest in receiving training in breast cancer screening. Of these, only 12% reported that at least three fourths of their female patients older than 50 years received mammograms at least once a year, compared with 33% who reported providing breast self-examination instruction and 35% who administered clinical breast examination with at least three fourths of these patients at least once a year. Nevertheless, 55% of the physicians rated mammography as a very effective breast-screening procedure; 28% rated breast self-examination and 16% rated clinical breast examination as very effective. Three fourths of the physicians showed great interest in learning more about breast palpation, breast self-examination instruction, and mammography. Individual instruction in the office was preferred over a group workshop format, and a trained nonphysician health professional was considered as acceptable as a physician to provide the instruction. Results suggest that breast cancer screening education for family physicians is a high priority, and that physicians will welcome such training, particularly if it is office-based.

Breast cancer afflicts one in 11 women in the United States and is the second leading cause of cancer death among women.[1] Although surveys in Vermont and elsewhere[2] indicate that about two thirds of the women aged 20 years and older receive a breast examination from a physician each year, it is not often that a cancerous lump is detected during a routine office visit. This fact, in addition to the increasing reliance on mammography for detection of breast cancer, may serve to undermine the importance of palpation in the diagnosis of breast cancer.

Despite the relative simplicity, low cost, safety, and accessibility of physician palpation and breast self-examination, these two modalities are not adequately utilized. Recent national interviews revealed that between 42% and 58% of women aged 45 to 64 years had received a breast examination in the past year,[3] and monthly breast self-examination performance was reported by only 20% to 40% of women in surveys conducted by the National Cancer Institute (1979) and American Cancer Society (1980).

In addition to the problem of underutilization, there are substantial problems with the quality of clinical breast examination and breast self-examination. In the Nyirjesy and Billingsley study[4] at Georgetown University Medical School in 1984, 50% of the tumors smaller than 2 cm and 25% of tumors greater than 2 cm were not palpated by practicing physicians. Fletcher et al[5] used silicone models to assess detection skills of 80 physicians from primary care, obstetrics and gynecology, and surgery at the University of North Carolina; these physicians discovered a mean of 44% of the lumps of various size, consistency, and depth.

Breast self-examination training delivered by physicians in the office setting has not been studied in depth. Baines et al, in the Canadian National Breast Screening Study,[6] found that 2 and 3 years after annual personal instruction in the office, patients' breast self-examination competence was measurably improved on an 8-point scale of criteria.

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From the Department of Medicine, Office of Health Promotion Research, Department of Psychology, Department of Family Practice, and Vermont Regional Cancer Center, University of Vermont, Burlington, Vermont. Requests for reprints should be addressed to Dr John K. Worden, Office of Health Promotion Research, University of Vermont, 235 Rowell Building, Burlington, VT 05405.

Amsel et al[7] showed a strong positive relationship between physician reinforcement and regular practice of breast self-examination. They found through a questionnaire survey of 518 women that only 30% were asked about breast self-examination practice by their physician at the time of their last examination. Even fewer, 25%, had been taught breast self-examination at the time of that examination. Women who were instructed in breast self-examination were three times more likely to practice regular breast self-examination than were those women who received no reinforcement from their physician. O'Malley et al[8] investigated reasons why physicians do not teach female patients to perform breast self-examination at the time of their clinical breast examination, and found that physicians reported that their training in breast self-examination instruction had been inadequate.

The purpose of this study is to determine effective methods of recruiting physicians to take part in a training session on breast palpation and breast self-examination instruction.

METHODS

The list of Vermont primary care physicians who were members of the American Academy of Family Physicians was used as the source of names for this survey. In November 1987 a questionnaire was sent to this group of 164 physicians along with a cover letter explaining the aims of the survey and a prepaid return envelope. Nonrespondents were sent a second copy of the questionnaire 3 weeks after the initial mailing. Of the 164 physicians surveyed, 23 returned an incomplete questionnaire for the following reasons: five had moved out of state, eight had retired, eight had further specialized (emergency medicine, psychiatry, epidemiology), and two did not specify. The remaining 141 physicians were considered eligible subjects; 105 returned the completed survey, yielding an overall response rate of 74%.

The questionnaire was designed to assess physicians' practices and beliefs regarding breast cancer screening, and their interest in specific breast cancer screening training formats. Regarding practices, physicians were asked (1) what proportion of their female patients over the age of 50 years received mammography, physical breast examination, or breast self-examination instruction at least once a year; and (2) who in their practice performed clinical breast examination and breast self-examination instruction. Regarding beliefs, physicians were asked (1) to rate, on a 4-point scale, their opinion of the effectiveness of mammography, breast self-examination, and clinical breast examination in the early detection of breast cancer in women over the age of 50 years; and (2) to rate, on a 5-point scale, their level of interest in the following topics: learning the most current breast cancer screening recommendations, improving breast self-examination instruction skills, improving the breast self-examination instruction skills of someone on their staff, improving breast palpation skills, and learning about recent advances in mammography. These scales were developed by the authors for the unique purpose of this study.

Two specific formats for providing such training were then described separately. One was a 2-hour group session, which would include information on recent advances in mammography, ways to prepare women for mammography, ways to teach breast self-examination skills, and practice in breast palpation. Respondents rated their interest in attending such a session. In a follow-up question they were asked whether receipt of continuing medical education credit would increase their likelihood of participating. They were further asked to comment on what would make the session more appealing.

The second training format described individual office-based instruction on breast self-examination and palpation skills, and a brief update on mammography. This 30-minute session would be scheduled in advance and could include training for members of the office staff. The training team would consist of a specially trained health professional and simulated patient. Respondents were then asked their willingness to participate if the instructor were a physician compared with a nonphysician health professional. In a subsequent question they were asked whether a $50 reimbursement would increase their likelihood of participating. Demographic data were collected, including date of graduation from medical school and type of practice.

RESULTS

The survey respondents mainly represented three types of practices: solo practice (30%), group practice (23%) and partnership (21%); the remaining 26% of the respondents were divided about equally among health maintenance organizations, community health centers, university faculty, residency training, and other. Women made up about 14% of the respondents. The median year of graduation from medical school was 1975. Although there were no differences in responses by sex of the physicians, some differences were observed by length of time since graduation from medical school, which are noted below.

Physicians were asked to estimate the proportion of their female patients over the age of 50 years who received breast cancer screening at least once a year by the following three methods: (1) mammography, (2) instruction on how to do breast self-examination, and (3) clinical breast

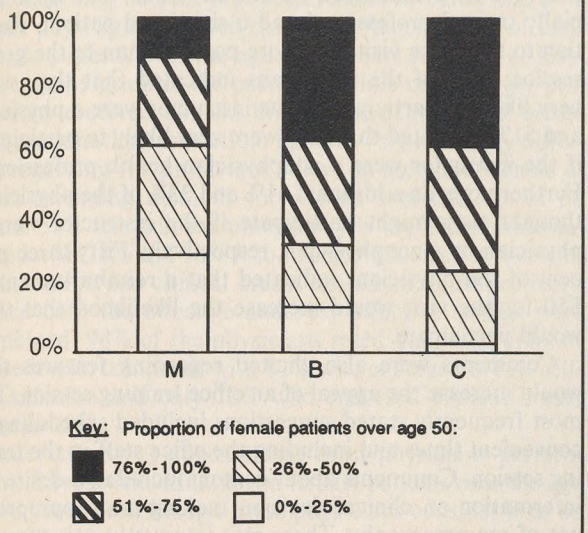

Figure 1. Percentage of physicians reporting mammography (M), patient instruction in breast self-examination (B), and clinical breast examination (C) at least once a year for female patients aged 50 years and older

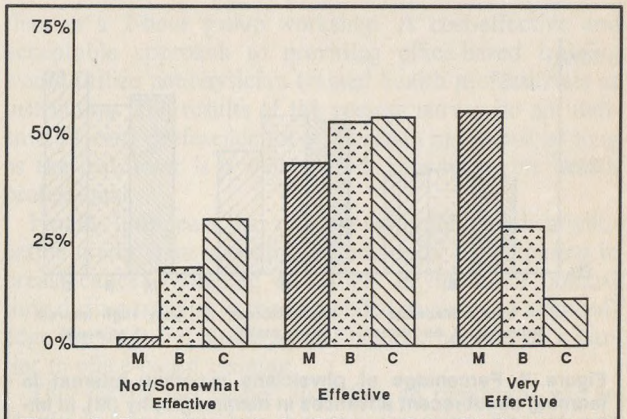

Figure 2. Percentage of physicians rating effectiveness of mammography (M), breast self-examination (B), and clinical breast examination (C) in the early detection of breast cancer for female patients aged 50 years and older

examination. As shown in Figure 1, 64% of the physicians indicated that fewer than one half of their female patients over the age of 50 years had received mammography at least once a year. Only 12% of the physicians indicated that three fourths or more of these patients had received mammography at least once a year, compared with the 33% who reported providing breast self-examination instruction and the 35% who performed clinical breast examination on three fourths or more of these patients at least once a year. The younger physicians, who graduated from medical school after 1980, reported twice the rate of annual breast self-examination instruction for three quarters or more of their patients over the age of 50 years than the physicians who graduated before 1965 ($\chi^2 = 13.417$, $P<.04$).

When asked who performs clinical breast examinations in their practices, 93% of the physicians reported that they alone do so. Of the remaining 7% of physicians who reported that another member of the office staff also performs clinical breast examination, 53% indicated that these personnel are physician assistants or nurse practitioners, and in 47% of the cases they are nurses.

Seventy-five percent of the physicians reported that they alone perform breast self-examination instruction in their practice. Of the remaining 25% of physicians who reported that another member of the office staff also performs breast self-examination instruction, 17% indicated that these personnel are physician assistants or nurse practitioners, 71% indicated that they are nurses, and 12% indicated that they are unspecified personnel. The older group of physicians, who graduated from medical school before 1965, reported personally instructing patients in breast self-examination less often than the two groups of physicians who graduated between 1965 and 1979, or after 1980 ($\chi^2 = 6.423$, $P<.05$).

Physicians were asked to rate the effectiveness of different breast cancer screening modalities for women aged 50 years and older. As indicated in Figure 2, 55% of the physicians felt mammography is very effective at detecting early breast cancer. Breast self-examination was judged to be very effective by 28% of the physicians, and clinical breast examination was felt to be very effective by 16% of the physicians. Thirty percent of the physicians rated clinical breast examination as only somewhat effective or as ineffective in the early detection of breast cancer for women aged 50 years and older.

When asked to rate their levels of interest in breast cancer screening training topics, as indicated in Figure 3, 76% of the physicians indicated high or very high levels of interest in improving their breast palpation skills, in improving their breast self-examination instruction skills, and in learning recent advances in mammography. In addition, 79% had high or very high levels of interest in learning the most current breast cancer screening recommendations, and 54% of the physicians had high or very high levels of interest in improving the breast self-examination instruction skills of someone on their office staff.

Two formats for physician instruction in breast cancer screening were described. The first was a 2-hour group session designed to discuss breast cancer screening recommendations, present recent advances in mammography, highlight ways to prepare women for mammography, learn

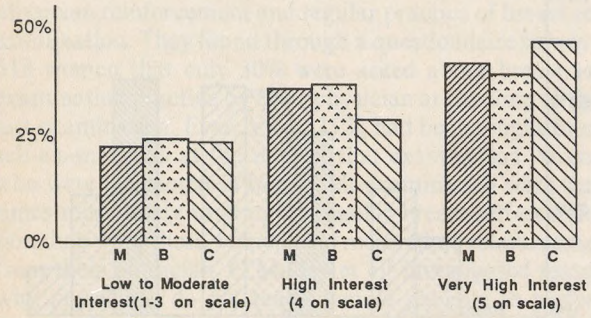

Figure 3. Percentage of physicians reporting interest in learning about recent advances in mammography (M), in improving skills for instruction of breast self-examination (B), and in improving palpation skills for clinical breast examination (C)

a one-step breast self-examination instruction procedure, and practice breast palpation skills.

Thirty percent of the physicians indicated they would be very likely to attend a 2-hour group training session, and 54% indicated they might attend. Receiving continuing medical education credit for the training increased the appeal of this format for 82% of the physicians. Fifty-six percent of the physicians preferred that the training session be held on a weekday evening, 37% preferred a Saturday morning, 22% preferred a Saturday afternoon, and 8% listed other options.

Respondents were asked to comment specifically about features that would increase the appeal of a 2-hour group training session. Their foremost concern was with the proximity of the training site to their workplace. Other major concerns were focused on the content and process of the training session. Content suggestions included personalized instruction, practical advice on distinguishing abnormal breast tissue, information on interpreting mammogram films, and ways to improve breast palpation skills. Process suggestions included the use of a variety of visual aids, handouts, a videotape for preview, and utilizing knowledgeable, skilled teachers. Some respondents felt this type of training should be offered as part of a regional Academy of Family Physicians program, and several physicians suggested including a free meal. Continuing medical education credit, low cost, and convenient time of day were also noted as appealing features, and two physicians mentioned a preference for the training session to be held in their offices. Four respondents indicated they did not need to review this topic.

The second breast cancer screening training format was described as a scheduled office training visit for the physician or the office staff, which included instruction on clinical breast examination and breast self-examination as well as a brief mammography update. The training would be provided in a scheduled 30-minute office visit by a specially trained professional and a simulated patient. Reaction to the office visit was more positive than to the group session: 60% of the physicians indicated that they were very likely to participate if the instructor were a physician and 51% indicated that they were very likely to participate if the instructor were a nonphysician health professional. Furthermore, an additional 31% and 33% of the physicians thought they might participate if the instructor were a physician or a nonphysician, respectively. Fifty-three percent of the physicians indicated that a reimbursement of $50 for the visit would increase the likelihood that they would participate.

Comments were also elicited regarding features that would increase the appeal of an office training session. The most frequently stated suggestions included scheduling at convenient times and including the office staff in the training session. Comments about content included a desire for information on clinical decision making and appropriate use of mammography. There was interest in using breast models for the training session as well as using them for patient education in the practice setting. The provision of continuing medical education credit was a common recommendation, and six physicians suggested using video as a medium for physician instruction or patient education.

DISCUSSION

In this study, physicians were asked about their current breast cancer screening practices, their views of the effectiveness of mammography, breast self-examination, and clinical breast examination, and their interest in improving their knowledge and skills in various methods of breast cancer screening. Over three fourths of the physicians showed a high level of interest in the following topics: the most current breast cancer screening recommendations, improving breast palpation skills, improving breast self-examination instruction skills, and learning about recent advances in mammography.

Limitations of this study include its reliance on self-report and its regional scope. This survey was limited to Vermont physicians, and while there is no indication that they differ from physicians in other rural areas, it is difficult to document similarity since survey methods vary in existing studies. A survey by the American Cancer Society[9] reported on the proportion of physicians following American Cancer Society guidelines, and a survey by Albanes et al[10] asked physicians to report on their usual method of practice regarding screening for patients in specific age groups. The present study has sought to measure specific indications of self-reported physician practices for female patients aged 50 years and older, and results were

more conservative than those of the other studies.

Concerning current practices, results revealed that 64% of the physicians reported that fewer than one half of their female patients over the age of 50 years received at least one mammogram in the past year, while much larger proportions received clinical breast examination and breast self-examination instruction. Results were markedly different regarding the physicians' views on the effectiveness of these screening methods for women over the age of 50 years: 55% felt that mammography is very effective compared with 28% and 16% who strongly endorsed breast self-examination and clinical breast examination, respectively. When both the effective and very effective ratings were combined, 98% of the physicians rated mammography at these levels, compared with 81% who endorsed breast self-examination and only 70% who endorsed clinical breast examination.

Interestingly, it appears that most physicians perform clinical breast examination on female patients over the age of 50 years even though these physicians consider it to be less effective than either mammography or breast self-examination. This result may be an indication that many physicians lack assurance in their palpation skills and would welcome refresher training. This interpretation is supported by the study of 80 physicians by Fletcher et al[5] in which one third felt that their training in clinical breast examination was inadequate, and 84% felt some need to improve their ability in breast lump detection.

It is somewhat surprising that physicians rate the effectiveness of breast self-examination above clinical breast examination even though estimates of breast self-examination frequency indicate that only 40% of adult women perform some form of monthly breast self-examination.[11,12] Furthermore, the quality of breast self-examination performance has been found to be inadequate.[12,13] One possible explanation for the perceived effectiveness of breast self-examination, however, is the opportunity for women to monitor breast changes more frequently than is possible in annual clinical breast examinations.

The data suggest that physicians are interested in training in mammography and in clinical breast examination and breast self-examination instruction, but there are important differences in the type of training required. While physicians have no question about the effectiveness of mammography, few of their female patients receive annual screening; apparently barriers other than the physician's judgment of efficacy need to be emphasized in a mammography promotion program. Previous studies[9,14] have shown that physicians are concerned about the radiation risk, low probability of detection in screening asymptomatic women, reliability of mammography results, and cost.

Concerning the most preferred program format for physician training in breast cancer screening, physicians showed more interest in a scheduled office visit training than in a 2-hour group workshop. A cost-effective and acceptable approach to providing office-based training would utilize nonphysician trained health professionals as instructors. The results of the present survey do not indicate a strong preference for a physician instructor, as long as the instructor is a well-trained, knowledgeable health professional.

Finally, it appears that offering continuing medical education credit is an appealing incentive for participating in breast cancer screening education. Payment for clinical time during training is recommended as a way to acknowledge the financial concerns that could otherwise be a barrier to office-based training.

This survey has helped to define an important gap in physician training in breast cancer screening. The interest of family physicians in improving their knowledge and skills in all three screening modalities is very high. Further, the willingness to accept training, especially in the office setting, provides a clear indication that such training should be provided to enhance the early detection of breast cancer.

References

1. Silverberg E, Lubera J: Cancer statistics 1987. CA 1987; 37:2–19
2. Amsel Z, Grover PL, Balshem AM: The impact of physician reinforcement on breast self-examination practice. J Fam Pract 1984; 19:236–238
3. Office of Cancer Communications: Increasing the use of mammography and breast palpation for early detection of breast cancer, NCI RFA 86-CA-22. Washington, DC, National Cancer Institute, 1986
4. Nyirjesy I, Billingsley FS: Detection of breast carcinoma in a gynecologic practice. Obstet Gynecol 1984; 64:747–775
5. Fletcher SW, O'Malley MS, Bunce LA: Physicians' abilities to detect lumps in silicone breast models. JAMA 1985; 253:2224–2228
6. Baines CJ, Wall C, Risch HA, et al: Changes in breast self-examination behavior in a cohort of 8214 women in the Canadian National Breast Screening Study. Cancer 1986; 57:1209–1215
7. Amsel A, Prakash GL, Balshem AM: Frequency of breast self-examination practice as a function of physician reinforcement. Patient Educ Counsel 1985; 7:147–155
8. O'Malley MS, Fletcher SW, Bunce LA: Physicians and the teaching of breast self-examination—Implications from a survey at a university teaching hospital. Am J Public Health 1985; 75:673–675
9. Survey of physicians' attitudes and practices in early cancer detection. CA 1985; 35:197–213
10. Albanes D, Weinberg GB, Boss L, et al: A survey of physicians' breast cancer early detection practices. Prev Med 1988; 17:643–652
11. Worden JK, Flynn BS, Solomon LJ, et al: A community-wide breast self-exam education program. In Engstrom PF, Mortenson LE, Anderson PN (eds): Advances in Cancer Control. New York, Liss, 1987, pp 27–37
12. Sheley JF: Inadequate transfer of breast cancer self-detection technology. Am J Public Health 1983; 73:1318–1320
13. Celentano DD, Holtzman D: Breast self-examination competency: An analysis of self-reported practice and associated characteristics. Am J Public Health 1983; 73:1321–1323
14. Cummings KM, Funch DP, Mettlin C, Jennings E: Family physicians' beliefs about breast cancer screening by mammography. J Fam Pract 1983; 17:1029–1034