Relative Effectiveness of Methods of Breast Self-Examination

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Accepted for publication: October 29, 1990

This study investigated the effectiveness of different methods of breast self-examination (BSE) on coverage of breast area and lump detection, using a factorial design, pairing three search patterns (concentric circle, radial spoke, vertical strip) with two finger palpation techniques (small circular movements, sliding movements). Ninety-seven female undergraduates were randomly assigned to one of six BSE training conditions which were identical except in the BSE search pattern and finger palpation technique explained by the instructor. Following the 20-min, small-group training, subjects' coverage of breast area was assessed by scoring their BSE performance on a breast board. Lump detection was determined by the number of lumps correctly identified in silicone breast models. Results indicated that the vertical strip pattern was associated with significantly greater coverage of the breast area. There were no significant differences in lump detection; however, the sliding finger palpation technique resulted in significantly more false identifications of lumps.

KEY WORDS: breast self-examination; cancer; early detection.

This research was funded by the Vermont Regional Cancer Center.
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INTRODUCTION

Breast cancer is one of the leading causes of death among women in the United States. In 1989, approximately 142,000 women were diagnosed with breast cancer, and 43,000 women died from the disease (American Cancer Society, 1989). Unlike other forms of cancer, little is known about how to prevent the onset of cancer of the breast; however, it is well established that early detection is associated with better prognosis and less invasive treatment.

Currently, mammography, clinical breast examination, and breast self-examination (BSE) are the primary screening approaches for earlier detection of breast cancer. Of these procedures, BSE is the most convenient and the least expensive, as it can be performed by a woman in 5 min once a month in her home. Several retrospective studies have found a positive correlation between practice of BSE and early detection of breast cancer as determined by both tumor size and pathological stage (Feldman et al., 1981; Foster et al., 1978), as well as a positive correlation between BSE practice and prolonged survival (Foster and Costanza, 1984). These positive associations were observed despite the fact that quality of BSE was left uncontrolled and has been reported to be uniformly poor among BSE performers (Diem and Rose, 1985; O’Malley and Fletcher, 1987; Pennypacker et al., 1982; Saunders et al., 1986).

BSE quality is determined by assessing thoroughness of coverage of the entire area in which lumps can occur and by measuring the number of correct detections of lumps and the number of false positives (i.e., the incorrect detection of a lump when none is actually present) associated with the palpation technique used for lump detection (O’Malley and Fletcher, 1987).

The American Cancer Society currently recommends choosing one of three search patterns for coverage of the breast during BSE (American Cancer Society, 1987). The concentric circle pattern starts with palpation along the outer edge of the breast and continues in smaller concentric circles until reaching the nipple. The radial spoke pattern (wedge or spokes-of-a-wheel), currently being used in a Canadian Breast cancer screening study (Bassett, 1985), as well as by many practitioners, involves examining wedges of the breast from the outside of the breast tissue until converging at the nipple. A third search pattern involves examining the breast in vertical strips from the top to below the bottom of the breast area (Saunders et al., 1986).

An important question is whether one search pattern is associated with a more thorough BSE; however, research investigating the contribution of search patterns to the thoroughness of BSE is limited. Saunders