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An evaluation of two pamphlets for assessing the accuracy of breast self-examination in older women

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AN EVALUATION OF TWO PAMPHLETS FOR ASSESSING THE ACCURACY OF BREAST SELF-EXAMINATION IN OLDER WOMEN

by

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APPROVAL PAGE

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The purpose of this study was to evaluate two pamphlets for assessing the accuracy of breast self-examination (BSE) in older women. The Learning Enhancement Pamphlet (LEP) was designed to be used by older women, and the Traditional Teaching Pamphlet (TTP) was developed by the Public Health Services, United States Department of Health and Human Services, and the National Institutes of Health.

Sixty-three women volunteers (Black = 22; White = 41), ages 65 to 94 years, from two independent care living facilities made up the study sample. A posttest only experimental design was used. Subjects were randomly assigned to one of two research assistants and randomly assigned to a treatment group. A one-on-one teaching approach was used while each participant used one pamphlet the first week and the other pamphlet the second week. An alternating procedure for pamphlet usage was utilized, and each subject served as her own control.

Accuracy for BSE performance using each pamphlet was measured. Data analysis demonstrated a 30% higher rate of mean scores on BSE accuracy of performance when using the LEP than when using the TTP. Whether the subjects preferred using one pamphlet over the other in relation to ease of reading,

ease of handling, ease of opening, color best suited for reading, following directions, and overall pamphlet preference for teaching BSE was explored. The LEP was preferred over the TTP in regards to handling, reading, opening, color, directions, and pamphlet preference.

During a three month follow-up interview with each subject, a total of 35 (55.6%) of the 63 subjects reported performing the procedure monthly during the three months or more often than monthly. Twenty (31.8%) women reported having used the LEP during the three months while one (1.6%) used the TTP and one (1.6%) used both pamphlets. Forty-one (65.1%) women stated that they had used neither pamphlet because they knew the steps of BSE and felt confident in performing the procedure.

Future research is recommended using the LEP augmented with other teaching modalites such as films and breast models. Such research should address issues regarding an older client's attitudes, motivation, and skill in doing BSE.

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CHAPTER I

INTRODUCTION

Self-care is an important consideration in health issues regarding the elderly (Bower & Patterson, 1986). Self-care is the ability of an individual to initiate and practice activities in relation to maintenance of life, health and well-being on his/her own behalf (Orem, 1985). Matteson and McConnell (1988) state that when the elderly are capable of practicing self-care behavior and promoting their own health, they remain independent, exhibit less depression and acquire self-confidence. Concomitant with the notion of self-care in the elderly is the need for older individuals to understand their role as active participants in their own health promotion (Cox, 1982; Wilson, 1985).

Nurses have an opportunity to assist the older individual in actively participating in the practice of self-health promotion (Edgar, Shamian, & Patterson, 1984; Grady, 1988; McDermott & Marty, 1984; Rutledge, 1987; Wilson, 1985). Since health promotion behavior includes the detection of illness and or disease as part of its function, nurses have a responsibility in teaching older persons appropriate skills to detect early symptoms of diseases for which this age group is

at risk (Lakin, 1988). One disease prevalent in older women that can be detected at an early stage by the individual herself is breast cancer (Long & Phipps, 1988; McClendon, Fulk, & Starnes, 1982; Saunders, Pilgrim & Pennypacker, 1986).

The American Cancer Society estimates that one out of nine women in the United States will develop breast cancer. The risk of breast cancer heightens with increasing age and is most frequently found in women of middle or older age groups (Senie, Rosen, Lesser, & Kinne, 1981; Silverberg & Lubera, 1988). Breast cancers gradually increase after menopause and peak in incidence in women over the age of 65 (Lashley, 1987; McLellan, 1988; Stromborg, 1982). However, breast cancer that is detected at an early stage of the disease can be effectively treated (Long & Phipps, 1988). Breast self-examination (BSE) is a simple and cost free method of early detection for breast cancer (Lauver & Angerame, 1988; McLendon et al., 1982; Pinto & Fuqua, 1991).

In helping promote self-care in the elderly, nurses should teach the steps of breast self-examination (BSE) to this age group of women (Arndt, 1987; Edgar et al., 1984). However, teaching elderly individuals is a challenge to nurses because of the uniqueness of the older person as a learner (Billie, 1980). When teaching the elderly person, the nurse must be cognizant of psychological, sociological, and physiological influences which may affect learning (Schaie,

1984). According to Smith (1984), older persons respond differently from children and younger adults in relation to sensing, perceiving, encoding, remembering, and restructuring information. Therefore, the difference in information processing in older adults may make them vulnerable to stress and failure if teaching methodologies for this age group reflect learning methods for younger persons (Botwinick, 1984).

Regretably, nurses have fallen short in adapting teaching methodologies to the needs of their older clients, especially in relation to breast self-examination (BSE) (Ludwick, 1988; Williams, 1988). Most of the nursing literature relating to teaching BSE focuses on younger adult women as learners (Champion, 1988; Massey, 1986; Stillman, 1977); therefore, nurses have not considered the uniqueness of older women as learners.

Nurses need to develop BSE teaching methods for older women in order to encourage BSE practice as a component of self-care (McNeal, 1987; Orem, 1985). Orem (1985) stipulates that age is an important factor for nurses to consider when they teach self-care behaviors. Emphasizing the uniqueness of the elderly woman may help in making her an active participant in her own health care (Orem, 1985; Wilson, 1985).

NEED FOR THE STUDY

There are no published materials on teaching BSE designed for the older learner (Ludwick, 1988; Williams, 1988). Although older women are at risk for breast cancer, research studies document that this age group of women practice BSE with less frequency than younger women (Chao, Paganini-Hill, Ross, Henderson, 1987; Huguley & Brown, 1981; Lashley 1987; Senie et al., 1981; Smith, Francis & Polissar, 1980; Stillman, 1977). Older women may be discouraged from learning and practicing BSE because existing written teaching materials do not reflect teaching methods that would enhance the learning of this age group.

PURPOSE

The purpose of this study is to investigate whether accuracy for performing breast self-examination in older women is greater using the Learning Enhancement Pamphlet (LEP) or the Traditional Teaching Pamphlet (TTP) (See definitions below). Additionally, investigation will be conducted to determine if older women prefer using one pamphlet over the other with regard to handling, ease of reading, opening, color of paper used, and ease of following directions. If there is a preference for one pamphlet over the other, can the preference be explained by the participant's age, education, income, and past history of having received self-breast

examination instruction? Additionally, behavioral responses in the four categories of facial expression, emotional response, body language, and verbal statements will be determined while participants use each pamphlet.

ASSUMPTIONS

1. Older adults have the ability to learn.
2. Individuals read at the level of their completed formal education (Fry, 1977; Redman, 1980).

VARIABLES

Breast Self-Examination

Breast self-examination is the practice of a woman inspecting her own breasts monthly for lumps or abnormalities.

Types of Pamphlets

Learning Enhancement Pamphlet (LEP)

The Learning Enhancement Pamphlet is a format of BSE instruction designed for older learners and thus uses non-glare yellow paper, bold black print, and an appropriate reading level.

Traditional Teaching Pamphlet (TTP)

The Traditional Teaching Pamphlet is the pamphlet of BSE information provided by the National Cancer Institute (1988) (NIH Publication No. 88-2409).

BSE Accuracy: BSE accuracy is the percentage of BSE steps an older woman performs correctly on herself as she reads each

step of the Learning Enhancement Pamphlet and the Traditional Teaching Pamphlet.

Behavioral Responses: Behavioral responses include facial expression, emotional responses, body language, and verbal statements which occur while the woman performs the steps of BSE as she uses both pamphlets.

RESEARCH QUESTIONS

1. Will breast self-examination (BSE) accuracy be greater when using the Learning Enhancement Pamphlet than when using the Traditional Teaching Pamphlet?

2. Can the accuracy of performing breast self-examination using the Learning Enhancement Pamphlet be explained by the participant's age, education, income, race or past history of having received breast self-examination instruction?

3. Can the accuracy of performing breast self-examination using the Traditional Teaching Pamphlet be explained by the participant's age, education, income, race or past history of having received breast self-examination instruction?

4. Is there a preference for one pamphlet over the other in relation to ease of reading, ease of handling, ease of opening, ease of following directions, color best suited for reading, and overall pamphlet preference?

5. If there is a preference for one pamphlet over the other in relation to ease of reading, ease of handling, ease of opening, ease of following directions, color best suited

for reading, and overall pamphlet preference, can the preference be explained by the participant's age, education, income, race or past history of having received breast self-examination instruction?

6. Are there differences in the behavioral responses in each category of facial expression, emotional response, body language, and verbal statements as the participant uses the Learning Enhancement Pamphlet and the Traditional Teaching Pamphlet?

7. If there are differences in the behavioral responses of facial expression, emotional response, body language, and verbal statement, can they be explained by the participant's age, education, income, race and past history of having received breast self-examination instruction?

8. At the end of the three-month period between breast self-examination intervention and the follow-up interview, how often does each participant report having practiced breast self-examination on herself?

9. At the end of the three-month period between breast self-examination intervention and the follow-up interview, which of the two pamphlets will have been reported to have been used more often to remind the client of how to perform breast self-examination?

LIMITATIONS

Limitations of the study are as follows:

1. Only older women who volunteer to be in the study will be included, and weaknesses in relation to generalizability of results to other populations are recognized (for example, more motivated individuals volunteer to participate in research).
2. Internal variables regarding subject's attitudes toward fear and denial of finding a lump in the breast which may be cancerous are not addressed. Reading and following pamphlet directions is unlikely to be affected by these factors in participants who understand the purpose of, and who volunteer to be in, the study.
3. Only written materials are being used to teach breast self-examination in this study, although it is understood that multisensory methods of teaching breast self-examination are optimal (Arndt, 1987; Backman, 1986; Baker, 1989; Champion, 1989; Edgar et al., 1984; Ludwick, 1988; Marty, McDermott, Gold, 1983; Rutledge & Davis, 1988; Young & Marty, 1985), this study is designed to investigate the use only of written media.

SUMMARY

Breast self-examination is a self-care behavior used to detect breast cancer. Older women are at higher risk for breast cancer but practice the procedure less frequently than their younger counterparts. Nurses have not used written

teaching materials designed for older adults, and the failure to treat older women as unique adult learners when teaching breast self-examination may be one factor in older women's lack of interest and practice. This study seeks to determine if using a BSE pamphlet written to meet the learning needs of the older woman predicts accuracy in performance of BSE and whether the specially designed pamphlet is preferred by the participants.

CHAPTER II

REVIEW OF LITERATURE

The extant nursing literature concerning the utilization of special methodologies to teach self-care behaviors to older clients is sparse. Much of the literature criticizes nurses for using the same teaching methodologies for all adult clients regardless of age (Billie, 1980; Lashley, 1987; Lauver & Angerame, 1988; Long & Phipps, 1988; Williams, 1988). Nurses apparently have ignored the older adult as a unique learner. Additionally, there is no documentation of nurses designing special written teaching materials for the purpose of teaching breast self-examination to older women. However, nurses are beginning to realize the special needs older adults have in teaching/learning situations in all areas of self-care education (Billie, 1980; Champion, 1992; Redman, 1980). In order to generate interest in self-care behavior among older adults, it is necessary for nurses to design teaching tools to meet the needs of the older population.

Nurses Teaching Older Individuals

Teaching functions to share knowledge, learning is "the process of acquiring relatively permanent changes in

understanding, attitude, knowledge, information, ability, and skill through experience" (Wittrock, 1977, p. ix). Teaching is a responsibility of nurses. The American Nurses' Association Standards of Nursing practice (1973) state, "Nursing actions provide for client/patient participation in health promotion, maintenance, and restoration" (p.3). The action that nurses utilize to meet this standard is teaching which is individualized to each client/patient.

Physiological Changes Affecting Learning

Everyone is a learner in the realm of life, the old as well as the young (Lumsden, 1987-88). However, the older adult has needs which differ from other learners (Bass, 1978; Billie, 1980). Two unique characteristics of the older adult that relate to learning are the physiological and psychological changes which occur with the aging process. These changes may interfere with an older person's ability to learn and must be assessed by the educator. In order to enhance an older individual's learning ability, strategies to overcome problems which interfere with the learning process must be devised (Bass, 1978; Billie, 1980).

One of the most frequent normal sensory changes in aging is visual, which generally begins late in the fourth decade of life (Burggraf & Donlon, 1985). Visual changes include the loss of transparency and elasticity of the lens of the eye and

diminished perception of detail of images (i.e., acuity) (Burggraf & Donlon, 1985). These visual alterations require the utilization of large print, non-glare paper and tangential light directed over the client's shoulder (Steffl, 1984).

Another visual change for older adults is color vision (Burggraf & Donlon, 1985). Decreased visual sensory perception of color results in difficulty for the older client in discriminating among blues, blue-greens and violets in the color spectrum. Better impact is made when reds, oranges, yellows and contrasting colors are presented to older adults (Burggraf & Donlon, 1985).

Sensory deficits in the elderly include not only visual perception but also auditory problems (Billie, 1980; Burggraf & Donlon, 1985). One of the first hearing losses experienced by adults is presbycusis, a bilateral loss of high frequency tones. Presbycusis also produces loss of discrimination for pure tones and decreased thresholds for all frequencies (Burggraf & Donlon, 1985; Malasanos, Barkaukas, & Stoltenberg - Allen, 1990). In addition, there are other quality changes that affect the hearing and do not allow discrimination for consonants (which are high pitched sounds). Poor discrimination for consonants makes normal conversations for the older adult difficult (Burggraf & Donlon, 1985).

Because these auditory problems interfere with the

teaching/learning process, the educator must use communication skills which help overcome the barrier of impaired hearing in the older client (Lewis & Collier, 1987). Communication strategies such as decreasing environmental noise and providing tangential light on the teacher's face to enhance lip reading help the older person to understand what is being said. Also, in order to maintain eye contact with the older learner the educator should sit or kneel on the same level as the learner while moving nearer to the client's ear. The educator should speak slowly using normal tones while avoiding over enunciation (Lewis & Collier, 1987). Simple sentences should also be used taking care not to be patronizing. When questions arise during the teaching/learning process, sentences can be rephrased using different words. Instructions should never be shouted to a client (Lewis & Collier, 1987).

In summary, there are physiological changes which occur in all adults. However, there is enormous intra and inter-variability in aging among individuals (Burggraf & Donlon, 1985). Physiological changes may interfere with an older person's ability to learn. The educator should assess visual and auditory changes in the older adult and adjust teaching methodologies to enhance learning.

Fluid and Crystallized Intelligence

As the nurse individualizes health-related instruction for older clients, she/he must be aware of intellectual processes in this population as they relate to learning. Although at one time research indicated a decrease in intelligence in older adults, the psychological literature from the 1960s to the present demonstrates consistently that decline of intelligence in this age group does not indicate decrement in intelligence itself but rather reflects other factors (Horn & Donaldson, 1977). These factors include biased sampling, test anxiety, reduced speed associated with task completion, lack of perception of the seriousness of the task, sensory deficits, and present testing tools which do not adequately measure adult intelligence (Erber, Feely, & Botwinick, 1980).

Another factor related to reported decline in intelligence in older people was research design. The use of cross-sectional research designs demonstrated a cohort effect of decreased intelligence; however, a combination of cross-sectional and longitudinal methodologies would have been more appropriate to show there was no overall effect of decreased intelligence (Schaie, 1973). A decline in intelligence is usually not apparent until after the age of 70 and later (Schaie & Willis, 1986).

When fluid and crystallized intelligence have been analyzed, fluid intelligence (i.e., basic cognitive intelligence from which inference is made) remained stable throughout middle-age but began to decline in older adulthood. Crystallized intelligence (i.e., the application of fluid intelligence to culturally acquired knowledge and intellectual skills) demonstrated an increase well into the sixties with a gradual slowing into the seventies and later (Perlmutter & Hall, 1985). Several reasons have been identified for what appears to be a decrease in fluid intelligence in many older adults (Horn, 1982). One reason cited is perceptual slowing. Birren (1974) states that perceptual slowing in older adults causes the change in test performance related to fluid intelligence. Horn (1982) asserts that there is a decrease in the ability to concentrate on simple intellectual tasks.

Another reason for decreased performance on tests related to fluid intelligence in older age seems to be an inclination to pay little attention to obvious features of the environment which are not task related (Horn, 1982). Similarly, Schaie (1979) and Anderson (1985) noted that when attention must be divided between two incoming stimuli, the older person tends to concentrate on a single task to the decrement of the other. However, Burke, Diaz, and White (1987) concluded that impaired

selective attention in older persons lies more in the realm of episodic or incidental memory than in attention. This view is congruent with that of Horn, Schaie, and Anderson.

Horn (1982) surmised that older individuals have more trouble organizing information during encoding, in developing expectations in relation to a task, and in keeping attention focused on a given situation. About half of the age decline regarding scores on tests measuring fluid intelligence are caused by one or more of these three processes (Horn, 1982). However, if there is a loss of fluid intelligence it is balanced by an approximate rise in the same amount of crystallized intelligence until the age of 65. Older adults consistently perform better than younger adults on vocabulary tests, tests utilizing analogies, and on divergent thinking. It is believed that older adults have a greater knowledge base, a better method of organization for available knowledge and more accessibility to cohesive and correct knowledge than younger persons (Horn, 1982).

Baltes, Kliegel, and Dittmann-Kohli (1988) suggested that improvement in intellectual ability in older persons is possible when training methodologies activate available latent cognitive skills (i.e., fluid and crystallized intelligence). When Baltes et al., (1988) measured intellectual function through the use of a battery of psychometric tests, they found that latent intellectual skills could be demonstrated by gains

in performance after self-guided retest practice. Moreover, when the psychometric tests were reduced to half the original length (e.g., administering all odd or all even test questions to each participant) and time was extended to take the tests, subjects increased their ability to correctly answer test questions (Baltes et al., 1988). Providing opportunity for practicing and pacing tasks is therefore an important consideration when teaching the elderly. This notion is consistent with other research findings (Craik & Rabinowitz, 1985; Eisdorfer, Axelrod, & Wilkie, 1963; Giambra & Arenberg, 1984; Schaie & Willis, 1986; Treat & Reece, 1976).

More recently, Hultsch and Dixon (1990) have summarized key themes which have emerged in the area of learning and memory in aging. They posit that the process of learning and memory in aging are affected not only by a stimulus at the time of encoding but also from broader stimulus components from a knowledge base which is culturally defined. Greater emphasis has been placed on studying memory in relation to real life events and the influence in which society affects age-related changes in memory performance.

In summary, older persons have the ability to learn and retain their intelligence well into their sixties. What appears to be the slowing of intelligence in aging may be due to a decrease in the inclination to pay attention to a task at hand or to problems with organizing information at the time of

encoding. The healthier the older person is physically, the better able she/he is to respond mentally. Because of these influences on intelligence in the elderly, nurses who teach this age group should allow time for pacing of tasks and require a single task to be done at a time.

Memory in Older Adults

In addition to intelligence, memory in older adults has been a topic of study. Research has addressed ways in which to improve memory in the older adult (Greenberg & Powers, 1987). One domain of research in relation to memory improvement has been in the area of sorting and classification during encoding of information. In 1971, Hultsch studied memory performance in three age groups of women in order to examine the relationship of age with the ability to sort and categorize learning materials at the time of encoding new information. There was memory improvement in older adults when they were allowed to use their own methods and time frame to organize at the beginning of the task (Hultsch, 1971).

Practice and pacing of tasks are two areas of research which have been investigated to improve memory (Greenberg & Powers, 1987). In 1974, Hultsch found that older adults improved in memory performance when they were repeatedly exposed to word lists even without the use of instructions to organize the words or in the absence of using organizational aids to encode material. With increased exposure to the

memory task, the elder group spontaneously improved on the amount of organization they needed to perform the task (Hultsch, 1974).

Taub & Long (1972) designed a research study to evaluate short-term memory performance with repeated testing situations. The authors concluded that older subjects can improve their memory performance through practice. These findings are consistent with the studies by Hultsch (1971, 1974). Additionally, Taub & Long (1972) found that improved memory performance in the elderly remains relatively stable following a six-month hiatus.

Research which addresses visual versus auditory stimuli at encoding was done by Winograd, Smith, and Simon (1982) to examine if visual memories were superior to auditory memories at time of recall. Results of whether pictures are remembered better than words indicated that older and younger subjects benefit from both picture and word stimuli, but older adults have superior recall for pictures as opposed to words (Winograd et al.; 1982).

Park, Puglisi and Sovacool (1983) compared a group of college students and a group of older adults to determine if memory for pictures, words and spatial location provided evidence for pictorial superiority. Paivio's research (cited in Park et al., 1983) was the foundation for the study. Paivio posits that pictures are coded in the mind both as

pictures and as words. Data analysis demonstrated that according to item recognition, both older and younger subjects evidenced pictorial superiority (Park et al., 1983). Also, spatial memory for pictures was superior over spatial memory for matched words in both young and old adults. Implications were drawn for the development of mnemonic systems for the elderly based on the findings of pictorial superiority. The implications agreed with Keitz and Gournard (1976), Kausler and Puckett (1981), and Winograd et al., (1982).

Imagery has also been investigated as a means to improve memory in older persons (Greenberg & Powers, 1987). Hulicka and Rust (1964) and Hulicka and Weiss (1965) reported that the elderly persons in their populations did not use memory links for purposes of recall unless prompted to do so. Treat and Reece (1976) studied pacing of paired-associate tasks as well as use of imagery. Data revealed that if pacing was not considered, older persons performed tasks better if they generated their own images than when they were prodded to use imagery by the experimenter (Treat & Reece, 1976). This finding is consistent with documentation by Hulicka and Grossman (1967).

Treat and Reece (1976) reported no statistically significant differences between experimenter-generated activities and self-generated activities. During fast-paced activity, effects were similar when instructions were provided

to use imagery than when there were no instructions. Treat (1977) reported that her population of older individuals did not spontaneously make use of imagery, but there was memory improvement when subjects were instructed to do so. This finding is not consistent with the earlier study by Treat and Reece (1976).

In summary, research addressing ways to improve memory in older adults demonstrates that these individuals should be allowed time to organize and sort their thoughts and ideas at the beginning of a task. Practicing a task also helps to improve memory. Many older adults respond to pictures better than words. Although many elderly people do not use imagery for recall, they perform well if they are reminded to do so and are allowed to generate their own image. Older persons prefer to relate past experiences to new learning, and they want to increase their knowledge in relation to existing needs. Understanding those methods to improve memory in older adults allows precise information about designing individualized teaching instruction to this age group.

Individualized Teaching in Breast Self-Examination

When individualizing teaching instruction in the area of health screening, the nurse must be aware of problems an older client might have with vision. Many techniques can be used to individualize teaching methodology for older adults. One

teaching technique related to breast self-examination is in the area of written instruction (Streiff, 1986). However, before the nurse develops or designs written teaching material, she/he must be aware of the reading level of the clients to whom the instruction is targeted (Dixon & Park, 1990; Doak & Doak, 1985; Duffy, 1988; Glazer-Waldman, Hall, & Weiner, 1985; Hautman, 1979; Manning, 1981; Taylor, Skeleton, & Czajkowski, 1982; Veziana & Carioselli-Dervan, 1986; Vivian & Robertson, 1980; Wise, 1979).

It has been estimated that in the United States, 20 percent of the population is functionally illiterate (Bormuth, 1973-1974). Functional illiteracy is the inability of a person to fulfill self-determined objectives in relation to role expectation because of poor or nonexistent verbal and reading skills (Hunter & Harman, 1979). The undereducated, illiterate segment of the population is primarily comprised of economically disadvantaged persons as well as racial and ethnic minority groups (Coombs, Prosser, & Ahmed, 1973). In addition, most older adults have fewer years of schooling compared to younger adults (Hooyman & Kiyak, 1991). In the United States, persons who have limited education tend to suffer from one or more other social disadvantage(s) such as unemployment, poverty, and aging (Duffy, 1988; Glazer-Waldman, et al., 1985; Hunter & Harman, 1979).

The majority of illiterate persons in the United States is unable to read teaching materials written at fourth to fifth grade levels (Bormuth, 1973-1974). Yet, Doak and Doak (1985) found that the 100 written medical instruction booklets they surveyed at a Norfolk, Virginia hospital required reading levels ranging from fourth grade to 16th grade. Mohammed (1964) studied reading levels of patients being educated in the area of diabetes mellitus in Cleveland, Ohio, and found that only 22 percent of her sample of 300 were able to read the written instructions provided.

Thus, many clients in health care settings have difficulty reading. It is estimated that there is a gap of three or more grade levels between the reading level of adult learners, and the written instructions which are given to them in health care settings (Doak & Doak, 1985). Written information given to clients in the health care system often contains long sentences and confusing medical terminology, and small print. Nevertheless, there are measures which can be employed by nurses to tailor written information to the level of client understanding (Dixon & Park, 1990).

Gunning (1968) advocated that teaching instructions for adults be written using short sentences made up of words familiar to the learner. Directions should be listed in order with verbs presented in the active voice to obtain the

reader's attention (Felker, Pickering, Charrow, Holland, & Redish, 1981; Gunning, 1968). Because words vary in meaning from person to person, instructions should be written to reflect the experience of the learner. The use of concrete verbs and nouns helps relate facts and events (Gunning, 1968).

Directions used in written material which involve related information should be "chunked" together into no more than five to seven items which relate to previous knowledge (Doak & Doak, 1985). If "chunking" is not related to antecedent knowledge, the learner will be unable to process the new information and store it into long-term memory. Whenever pictures or illustrations are used in teaching instruction, they should be commonplace so that the learner can link the new information to a reservoir of similar material stored in memory in an effort to build an understandable whole (Doak & Doak, 1985; Felker et al., 1981).

Such materials should be presented in a conversational style (Doak & Doak, 1985). In order to facilitate understanding, sentences should be to the point. Conceptual information should be portrayed by limiting each paragraph or step of instruction to a single action (Doak & Doak, 1985; Felker et al., 1981).

The number of new ideas included in written health materials for adults should be controlled by introducing one idea in a sentence and limiting the number of new ideas to a

page (Manning, 1981). The main focus of a paragraph should be stated in the first sentence. Open spaces should be provided on each page so that the instruction will not be crowded and formidable (Felker et al., 1981; Manning, 1981). Events and ideas should not be concealed in paragraphical verbiage; instead, a list can be used to catch the eye of the reader. The size and style of the print should be such that it is easily read by the learner. The paper selected should be attractive and congruous with the message (Manning, 1981).

In order for written instructions to be comprehensible, readability of the material must be compared to the learner's ability to read (Liquori, 1978; Morris, 1978; Spandaro, Robinson, & Smith, 1980; Streiff, 1986). Readability is defined as "all the elements of written material that affect the extent to which the reader understands it, reads it at an optimum speed, and finds it interesting" (Liquori, 1978; pp. 712, 714). Readability is dependent upon elements within the written instruction which include: vocabulary; sentence length and structure; elements of design relating to page, type size, spacing, contrasting, and color; and pictures or illustrations. The purpose of such design is to increase the readability of the structural elements (Liquori, 1978; Spandaro et al., 1980).

After written instructions for adults have been designed, they should be compared with the reading level of the learner

who will use the material (Narrow, 1979). Although there are varied formulas to assess the degree of reading difficulty relating to written materials the two most common variables tested are difficulty of the vocabulary and the average sentence length used (Doak & Doak, 1985). Fry (1968, 1969, 1975, 1977) developed the Graph for Estimating Readability, which compares reading ability to grade level. This graph has been validated by interformula, comprehension scores in addition to oral reading errors (Fry, 1968, 1969). Studies conducted by Britton and Lumpkin, Zingman, and Dulin (cited in Fry, 1977) found that the Graph for Estimating Readability produced scores similar to other formulas. Reading levels as assessed on Fry's Graph are within one grade level of one's "actual" reading level, which compares to the validity of similar formulas used for the same purpose (Fry, 1968, p. 514).

Vivian and Robertson (1980) recommended that health related literature for adults should be written at fifth grade level or lower. Morris, 1978 and Walkington (1982) suggest that when written instructions relating to health care are being used, a checklist or skill-check assessment tool is an easy and effective method for determining client learning. Each item in the checklist should reflect a goal or an objective found in the written instruction (Redman, 1980; Walkington, 1982).

In evaluating a client's knowledge and accuracy of performance relating to written instruction, she/he should be asked to demonstrate or reproduce the instruction(s) step-by-step while the health professional compares the client's technique with the checklist (McCaughrin, 1981; Redman, 1980; Swezey & Swezey, 1976). Degree of accuracy can be determined by calculating the percentage of the steps performed correctly by the client compared to the checklist. Another method of testing a client's understanding of a procedure is to allow verbal feedback. Verbal feedback is provided by asking the client to explain or paraphrase what she/he is doing while performing a return demonstration (McCaughrin, 1981; Swezey & Swezey, 1976).

Additionally, attitudes toward a procedure or learning situation can be measured (Redman, 1980). Although it is difficult to measure an individual's attitude regarding a teaching/learning situation due to the ability of the learner to control expression of feelings, affective (i.e., nonverbal) behavior can be directly observed unobtrusively (Argyle, Salter, Nicholson, Williams, & Burgess, 1970; Borgida & Nisbet, 1977; Johnston & Pennypacker, 1980; Redman, 1980; Skinner, 1954). A checklist can be used by the observer to document selected nonverbal behaviors as a method to augment and enrich the data being collected on the accuracy of a behavior (Brandt, 1972).

Prior to using both the behavioral checklist and the written teaching instruction material, the evaluation tools or checklists should be pilot-tested among a group of people who are demographically similar to the population targeted for the instruction (Walkington, 1982). Problems relating to the level of language, pacing, sequencing of words or omitted words, as well as unclear directions, can be corrected during this process. Although one goal of teaching clients about a health practice is to facilitate learning and change in behavior at the time of teaching, the final overall objective is to determine a consistent and permanent behavior change regarding the health instruction (Cohen, 1981; Wittrock, 1977). Therefore, as discussed earlier, the overall evaluation plan should include assessing the effectiveness of the teaching/learning process in terms of the client's maintenance of behavioral change and continuity of performing the procedure accurately (Glazer-Waldman, Hall & Weiner, 1985; McCaughrin, 1981).

If these guidelines for developing written teaching materials are individualized for older women in relation to examining their own breasts, it is reasonable to hypothesize they would be more motivated to practice BSE on a regular basis (Champion, 1992; Olsen & Mitchell, 1989). Additionally, ease of following clear simple directions in a step-wise fashion should provide a means of encouraging accuracy of the

procedure (Byrne & Edeani, 1984; Glazer-Waldman, et al., 1985; Liquori, 1978; Manning, 1981; McCaughrin, 1981; Mohammed, 1964; Morris, 1978; Redman, 1978; Spandaro et al., 1980; Vivian & Robertson, 1980).

After the BSE teaching has been completed and evaluated, the written instruction should be given to the client as a future reminder of the correct steps of the procedure (Narrow, 1979; Redman, 1980). The health related literature cites that one reason women do not continue practicing BSE after having been taught is due to forgotten steps (Calnan & Rutter, 1988; Celentano & Holtzman, 1983; Celentano, Shapiro, & Weismen, 1982; Champion, 1989; Clarke & Sandler, 1989; Creatin, 1989; Crooks & Jones, 1989; Gray, 1990; Holtzman & Celentano, 1983; Ludwick, 1988; Nemcek, 1989; Olsen & Mitchell, 1989; Owens, Daly, Heron, & Lienster, 1987; Stillman, 1977; Stromberg, 1982). Perhaps keeping the simple written instructions at home might be an incentive in making BSE a monthly practice. Given that older women are at high risk for breast cancer, nurses should use every effort to teach breast self-examination using individualized methods in an attempt to assist women in this population to take control of their health (Champion, 1992; Dixon & Park, 1990; Orem, 1985).

In summary, written instruction has been advocated as one method of teaching breast self-examination. However, written instructions should be designed to meet the readability level

of the targeted audience. Consequently, Fry's Graph for Estimating Readability was introduced as a method of estimating the grade level at which instruction is written. It was recommended that written health instruction should be written at the fifth grade level or lower.

Other suggestions for developing instructional material included: use of short sentences, active verbs, "chunking" of material, familiar illustrations, open space, and large print. After the instructions have been designed, it was posited that a tool or checklist be used to evaluate the accuracy of a clients' performance of a technology or procedure in relation to the written material. Also, the client should verbally state understanding of the procedure while performing each step.

Additionally, it was stated that attitudes or behavioral responses to a procedure can be measured by observing nonverbal behavior. A checklist is an appropriate tool for documenting these types of responses. Two other recommendations in relation to designing teaching materials and evaluating tools were pilot-testing the tools to correct logistical problems and assessing the procedure taught in terms of continuity of behavioral change.

These suggestions for designing health related teaching materials are advocated to improve learning in adults and older adults. Because these methods have been validated

through research, each is being used in the current research study to design the pamphlet for teaching breast self-examination.

Summary

Definitions of teaching and learning were provided. The notion that older individuals want to learn and are capable of learning was presented. Research indicates that there is a slowing of response in the elderly which sometimes impedes learning, but a significant decline in intelligence is not substantiated until the late sixties and beyond. Physiological changes due to the aging process which hamper memory and learning were reviewed along with teaching methods to help overcome problems caused by these changes. Methods used to improve memory in older adults were addressed. Repetition of a memory task, self-paced activities, presentation of a single activity at a time, self-generated imagery, multimodal stimuli at the time of teaching, and carefully guided instruction are important ways to improve memory in this age group.

Breast Cancer

It is estimated that in the United States in 1991 that 44,500 women will die from breast cancer and that 175,000 new cases of breast cancer will be diagnosed (American Cancer Society, 1991). Breast cancer is the second leading cause of cancer death in women ages 15 and up (American Cancer Society, 1991). One in nine women will be diagnosed with breast cancer this year (American Cancer Society, 1991). Although the sharpest increase in the incidence of breast cancer occurs in women between the ages of 35 and 50 because of decreased estrogen levels, the risk for breast cancer continues to rise in women after menopause (Gambrell, 1988).

Age and race are two important risk factors for breast cancer. However, it should be emphasized that age and race as predictor variables for breast cancer risk are both contaminated, because different age groups of women and women from different races report symptoms of breast disease at varying stages of breast cancer development. Older women are more likely to be diagnosed with advanced cancer of the breast than younger women, according to Satariano, Belle, and Swanson (1986). Among this older group studied, Black women had higher incidence rates of remote (involvement of distant tissue) and regional (involvement of lymph nodes) breast cancer than White women. Older White women had higher

incidence rates of localized (within the site) breast cancer than older Black women (Satariano, 1986).

Age is also an important factor when considering that breast cancer is the leading cause of premature mortality (i.e., death before the age of 65) among women in the United States ("Premature Mortality," 1987). According to a report on premature mortality, the rate of years of potential life lost (YPLL) due to breast cancer is 13% higher among Black women than White women. There is a higher age-specific (i.e., five-year intervals) death rate among Black women under the age of 50. Also, women who experience early menarche (early menstruation), late menopause, childlessness, being single, or experiencing a first pregnancy after the age of 35 or older are at risk for breast cancer (Senie et al., 1981). Additionally, increased dietary fat consumption, increased body fat and body weight were positively correlated to the incidence of breast cancer (Lane & Carpenter, 1987).

Even though information on risk factors regarding breast cancer has been provided through news media in recent years, many women do not feel knowledgeable on the subject (Nichols, 1982). Schlueter (1982) explored women's knowledge of breast cancer. The study sample was comprised of women who were members of sorority alumnae groups or Y.M.C.A. groups in a Midwestern metropolitan area. Most of the women (64.3%) in the study were college graduates and 19.7% held graduate

degrees; all participants belonged to high socioeconomic backgrounds. Age ranges in the study were from 20 to 39 years (Schlueter, 1982).

The 204 women in the study were placed into one of three exercise groups: high exercisers, moderate exercisers, or non-exercisers (Schlueter, 1982). Each participant answered a self-report questionnaire on factual knowledge about breast cancer, perceived susceptibility to breast cancer, practice of BSE and demographic data. Of the total sample, 75.8% were aware that family history of breast cancer is a risk factor for the disease while 30.4% were accurately aware that the risk is greater after menopause. Women in the sample who reported exercising regularly were less informed about breast cancer than those women in the non-exercise group (Schlueter, 1982).

The data from this study suggest that knowledge of breast cancer is lacking even in this sample of well-educated and high socioeconomic status women. These results cannot be generalized to other well educated women or groups of less educated and lower socioeconomic classes of women. There is a definite need for health care providers to increase awareness of the disease which is estimated to strike one in nine women this year in the United States regardless of education and socioeconomic status (American Cancer Society, 1991). Not only should women be taught risk factors and early

symptoms of breast cancer, but they also should be educated about early detection measures. Teaching women early detection measures for breast cancer is one step toward making them aware of the importance of early diagnosis and treatment of the disease (American Cancer Society, 1991).

Early diagnosis and treatment of breast cancer increases a woman's chance of survival, particularly if the tumor is found in an early stage with no metastasis (Silverberg & Lubera, 1988). If the tumor has metastasized, the survival rate is much less than when the tumor is localized.

Criteria developed by the National Cancer Institute are the guidelines for tumor size and staging used by most research on breast cancer (Satariano et al., 1986). Local breast disease is defined as primary tumor which is restricted to the breast tissue, nipple or areola (i.e., the dark circle area around the nipple of the breast) areas. Regional breast disease also includes invasion of the underarm lymph nodes. Metastasis of the disease to other areas such as the upper abdomen, lungs, or other breast is considered the remote stage of the breast tumor (Satariano et al., 1986). Therefore, early detection is the determining factor for providing optimal chances of survival from the breast cancer (McLellan, 1988; McNeal, 1987; Nash, 1984).

The American Cancer Society advocates three methods of breast cancer screening: a yearly physical examination by a

physician, mammography, and monthly breast self-examination (American Cancer Society, 1991; Lewis & Collier, 1987; Nash, 1984). Breast self-examination is the only one of the three methods which can be done without assistance and is cost-free (McLendon et al., 1982; Stillman, 1977). Breast self-examination instruction should stress regular monthly practice, thorough examination of breast tissue in order to detect a lump or thickening, and close adherence to following the steps of BSE (Siero, Pruyan & Pruyan, 1984).

Summary

The 1991 statistics regarding breast cancer were cited from the American Cancer Society. Older women are more likely to be diagnosed with advanced breast cancer than younger women. Older Black women have a higher rate for advanced breast cancer than older White women. The stage of a breast cancer tumor at the time of diagnosis as well as the general health of an individual are important factors in the prognosis of the disease.

Common risk factors for breast cancer include: being female, past unilateral breast cancer, family history of the disease, exposure to high dosages of radiation, childlessness, early menarche, late menopause, and first child after the age of 35. Although the news media has provided considerable

information on risk factors of breast cancer, many women admit a lack of knowledge in this area.

It was reported that yearly breast exams by physicians, mammography, and breast self-examination were the three types of screening measures for breast cancer advocated by the American Cancer Society and the National Cancer Institute. However, breast self-examination is the only cost-free modality for breast cancer screening which can be performed by the individual herself in about ten minutes each month.

Breast Self-Examination

Breast self-examination is a non-invasive (i.e., a procedure that does not require entering body cavities or puncturing the skin) screening procedure used to detect early symptoms of breast cancer (Chao, et al., 1987; Pinto & Fuqua, 1991). Since a painless lump felt in the breast is usually the first symptom noted in breast cancer, early detection of a localized breast lump is important (Long & Phipps, 1988). With early diagnosis and treatment, approximately 91% of the women experiencing localized breast cancer can live at least five years after treatment (American Cancer Society, 1991). If the tumor is not invasive, a woman's chances for reaching the five-year survival period approximate 100%. However, if the tumor has metastasized regionally, the chances of reaching the five-year survival period are 69%. If metastasis has

occurred in distant regions, the five-year survival rate chance lowers to 18%. Even though the incidence of breast cancer has increased over the years, mortality rates have been stabilized due to increased survival as a result of early diagnosis (American Cancer Society, 1991).

According to the American Cancer Society (1991), detection of cancerous breast tumors at an early stage in their development decreases the need for radical treatment measures and increases the chances for survival. Since a prevention for breast cancer has yet to be found, the best method of cancer treatment today is early detection of the disease through screening measures (McLellan, 1988).

Although mammography is recognized as the most effective of the three methods of screening for breast cancer, mammography screening is recommended only annually or semiannually depending on the age of the client (McLellan, 1988). It has been stated that mammography can detect some breast tumors two years before they can be palpated, but this method of screening is costly and not within financial reach of many women (Burg, Lane & Polenak, 1990; del Portillo, 1988; Ludwick, 1988; Olsen & Mitchell, 1989; Phillip, Harris, Flaherty & Joslin, 1986; Zapka, Stoddard, Barth, Costanza & Mas, 1989).

Only a minority of breast cancers are found during routine physical exams (Burg, et al., 1990; McLellan, 1988).

Approximately 10% of breast cancers will be manifested within a year following a negative breast exam by a physician (i.e., an exam which revealed no abnormalities) (Stromborg, 1982). The majority of breast lesions (90%) are discovered by women themselves (Gastrin, 1987; McLellan, 1988; Nash, 1984).

Although the percentage of women discovering their own breast tumors is high, many women do not practice BSE; therefore, breast cancers are not being found at an early stage of the disease (Grady, 1988; Kenny et al., 1988; Lierman, Young, Kaspozyk, & Benoliel, 1990). Some of the reasons cited for not practicing BSE include fear of finding a lump, inadequate skill and knowledge in performing the technique and embarrassment in doing the procedure (Calnan & Rutter, 1988; Celentano & Holtzman, 1983; Champion 1989; Clarke & Sandler, 1989; Cretain, 1989; Crooks & Jones, 1989; Gray, 1990; Holtzman & Celantano, 1983; Ludwick, 1988; Nemcek, 1989: Olsen & Mitchell, 1989; Owens et al., 1987; Stillman, 1977; Stromborg, 1982).

Knowledge and skill in performing the steps of BSE are important factors in being able to locate breast abnormalities (Celantano & Holtzman, 1983; Huguely, Brown, Greenberg, & Clark, 1988; Saunders, et al., 1986). It has been acknowledged in one study that BSE is a limited screening tool for finding breast cancer because only eight percent of the participants in the study knew how to perform the procedure

correctly ("BSE Doubted," 1991). Several prospective research studies have investigated the relationship between breast self-examination and stage of breast cancer at the time of diagnosis. According to Huguely et al., 1988, such prospective studies investigate women who report practicing BSE before being diagnosed with breast cancer. Prospective studies include only participants who practice BSE at least one time before breast cancer is found.

One prospective study investigated women who reported the practice of BSE before the onset of symptoms of breast cancer (Huguely et al., 1988). These researchers conducted a five-year study on 2,038 women who were newly diagnosed with breast cancer between June 1975 and February 1979 within a network of 14 Georgia hospitals. Data were obtained through medical records and personal interviews. Demographic variables on age, race, marital status and education level were also analyzed. Information regarding health history, prior history of cancer, family history of breast cancer, and personal use of cancer screening methods were considered.

The investigators developed a scale consisting of three measures of delay in diagnosis. "Patient delay" was defined as the interval between first symptom recognition and medical consultation (Huguely et al., 1988, p. 1390). The period of time between the first medical consultation and medical diagnosis was defined as "system delay," and "total delay" was

identified as the sum of patient and system delay (i.e., recognition of the first symptom to diagnosis).

Analyses demonstrated that those women who reported BSE practice were younger, more educated, White and married as compared to those who did not practice BSE. Additionally, those women who practiced BSE also used mammography as a screening method for breast cancer three times more often than those women who reported no BSE practice. Mammography also was more than twice as likely to be the screening method that diagnosed the breast cancer in those women who practiced BSE than in those women who did not practice BSE. System delay was shorter for the women who did not practice breast self-examination while patient delay tended to be shorter for the women who practiced BSE. Those women who practiced BSE had earlier stage lesions without involvement of lymph nodes and had lumpectomies (i.e., surgical removal of only the cancerous lump) at higher rates than those women who did not practice BSE because of less advanced disease. The greater proportion of advanced breast disease among those who did not practice BSE required the administration of adjuvant therapies such as radiation, chemotherapy, or hormone therapy (Huguely et al., 1988).

Presence of metastasis has a direct bearing on the treatment used (Satariano et al., 1986). The optimal treatment for breast cancer diagnosed at an early stage

without other tissue involvement is surgical removal of the lump (i.e., lumpectomy). More extensive breast surgery is required (i.e., removal of the breast, surrounding lymph nodes, underlying tissue, and muscle) when metastasis to the lymph nodes or other tissue occurs. Adjuvant therapies such as radiation, chemotherapy, or hormone therapy may be used in addition to extensive surgery for advanced breast disease. Adjuvant therapies may cause undesirable effects of generalized weakness, nausea and vomiting, and hair loss (Satariano, et al., 1986).

Survival from breast cancer was the focus of a study done by Huguely et al., (1988). Out of 2,093 women studied, 1,400 (66.9%) reported having practiced BSE. The statistics revealed that 887 (63.4%) among the group of women who practiced BSE were free from cancer after five years. Eighty-eight (6.3%) of the women who practiced self-breast examination were alive with active cancers after the five-year period. Of those who practiced BSE, 327 (23.4%) died as a result of breast cancer, while 96 or 6.8% of the same group died from other causes. Those women who were Black, unmarried and of low educational status had a higher risk of death from breast cancer than any other group of women (Huguely et al., 1988).

Results of the study suggest that mammography and BSE were statistically significant at providing an advantage for

survival from breast cancer (Huguely, et al., 1988). The practice of BSE as an adjuvant screening technique with mammography and yearly physician breast exams was recommended. This advice is consistent with suggestions from the American Cancer Society (1991).

Lack of evidence regarding the effectiveness of BSE practice as a screening measure for breast cancer was pointed out by Huguely et al., (1988). The authors stated that there is a paucity of information on how women feel about touching their own breast during BSE, little research on BSE techniques used by older women, insufficient data on the best methodology for teaching BSE, and absence of research in North America using a randomized control sample to evaluate the effectiveness of BSE. Because experimental research cannot be used to collect data on BSE, inferences regarding the advantage of monthly BSE practice are based on observational data only. However, the investigation by Huguely et al., (1988) was one of few the reported prospective cohort studies done to examine the relationship between BSE and survival from breast cancer.

Foster and Costanzia (1984) conducted a prospective cohort study in Vermont on 1,004 women who were newly diagnosed as having invasive breast cancer between the years of 1975 and 1982. Seventy-five percent of the self-examiners and 57% of the non-examiners in the study had reached the

five-year survival period. Findings from Foster's and Costanzia's (1984) investigation were almost identical to the figures revealed by Huguely et al., (1988) for the same variables. It was reported that 77% of the self-examiners and 61% of the non-examiners survived the five-year period (Huguely et al., 1988). These similarities in data results support the idea that an association between practicing BSE and survival from breast cancer are found in different populations (Foster & Costanzia, 1984). There is a possibility that differences between self-examiners and non-examiners were not controlled for in either study, however (Huguely et al., 1988).

Another prospective study was conducted in an effort to teach BSE to women between the ages of 45 and 64 in a population of British women (Phillip et al., 1986). Assessing the practice and efficiency of breast self-examination was the focus of the investigation. In this study, 304 women in Huddersfield, England who were newly diagnosed as having breast cancer comprised the study sample. Of this group, 165 (54%) reported daily to once every three or four months BSE checks while 139 (46%) reported no practice of BSE. Those women who reported some type of BSE practice also reported symptoms of breast cancer earlier and experienced earlier tumors than women who did not practice BSE. However, tumor size and lymph node involvement did not show statistically

significant differences between examiners and non-examiners (Phillip et al., 1986).

Women over the age of 50 in this study reported less practice of BSE than the younger women (Phillip et al., 1986). Although the BSE examiners reported varying intervals for BSE practice from every day to every three months, there was no statistically significant relationship between practicing BSE more often than every month and finding breast tumors at an earlier stage of development (Phillip et al., 1986).

One hundred-six patients in the study reported their symptoms to a physician within two weeks after discovering the abnormality (Phillip et al., 1986). Thirty-four of the women who found their breast lump delayed reporting symptoms for a year or more. Phillip et al., (1986) recommended practicing monthly BSE. Unanswered questions regarding the efficacy of BSE as an early cancer detection method were addressed as a problem area in this research. Only prospective studies using population-controlled methods to examine the effectiveness of BSE in early cancer detection were deemed appropriate to deal with the issue (Phillip et al., 1986).

Another research report used meta-analysis of 12 aggregated research studies (n=8,118) to explore the benefit of practicing BSE in relation to the extent of disease in patients with breast cancer (Hill, White, Jolley, & Mapperson, 1988). Data were available on studies published between the

period of 1970 and 1986. Criteria for inclusion of a study in the meta-analysis procedure included: a report of BSE practice before diagnosis of breast cancer and the staging of the disease at diagnosis. Six of the studies dealt with patient's prior history of BSE practice, and six of the studies focused on the method of detecting the tumor. Population samples from each of the 12 studies were similar with respect to race, socioeconomic state, education and history of the disease (Hill et al., 1988).

Based on the six studies with available data on BSE practice in relation to the diameter of the tumor, 1,115 women out of 2,852 (39%) who reported BSE practice at least once before their diagnosis, had metastases of the disease into the lymph nodes (considered to be an early tumor by the authors) as compared to 1,348 women out of 2,713 (50%) who reported non-practice of BSE (Hill et al., 1988). BSE, therefore, was found to be statistically significant as a screening tool for the detection of early breast cancer in these populations of women. These findings are similar to other studies which have reported that women who practice BSE have smaller tumors with less lymph node involvement than women who do not practice BSE (Phillip et al., 1986). The six studies reported by Hill et al., (1988) which focused on BSE as a method of tumor detection vs. accidental finding of a tumor were discussed. There was no statistically significant difference between

finding a breast tumor by women who practiced BSE then women who did not practice BSE and accidently found a tumor. The authors suggested that these varied results of the meta-analysis of studies investigating BSE and extent of breast disease in patients with breast cancer were caused by several factors. The factors cited were the following: 1) artificially placing variables in research studies into "positive" or "negative" dichotomies with no consideration for association of factors, 2) the null hypotheses which were measured might not have been identical in each study, 3) differences in execution of research design and, 4) variations in statistical power. It was concluded that breast self-examination is a worthwhile screening method for early breast disease (Hill et al., 1988). Comments related to regular practice of BSE and recognition of sensitivity to breast tissue changes were addressed (Hill et al., 1988). For instance, if the idea is accepted that women who practice BSE regularly are more sensitive to breast tissue changes and report symptoms early, it follows that they will benefit from having breast cancer diagnosed early. However, those women who report occasional or accidental BSE practice and find a lump in the breast, also will benefit from early diagnosis. Hill et al., (1988) indicated that incidental practice of BSE confounded true results regarding extent of disease.

In another research endeavor, a large, non-random sample of women (n = 236,594) was studied by the United Kingdom Early Detection of Breast Cancer Group (1988) to determine the initial results on the reduction of the mortality rate. Women (n = 45,841) from two different districts (Edinburgh and Guildford) were placed into two screening intervention groups which provided screening for breast disease through physician examination and mammography every other year (1st, 3rd, 5th and 7th) for seven years. Only clinical examination by a physician was offered during the 2nd, 4th and 6th years. Two other groups of women (n = 63,636) from two districts (Huddersfield and Nottingham) were placed into two breast self-examination groups. The BSE groups were invited to learn breast self-examination through class instruction on a one-time basis and were offered the use of a self-referral clinic which provided yearly physicians' breast exams and mammograms for those women who found any breast abnormality during the seven year period (UK Group, 1988).

Women (n = 127,117) from four districts (Dundee, Oxford, Southmead, and Stoke-on-Trent) represented four comparison or control groups. No special services were provided the participants in the control groups. All of these groups were considered cohort groups. Women in the four intervention groups were recruited to the study over three years from 1979 to 1981. Women in the four control groups were obtained

midway through recruitment of the intervention groups on the same day (U.K. Group, 1988).

A preliminary report indicated that the observed and expected deaths from breast cancer were not statistically significant between the two screening programs, the two BSE programs, and the four comparison programs (U.K. Group, 1988). Therefore, the results from all four treatment groups, screening and BSE, were combined and compared with the four comparison groups. These combined figures were used to calculate the risk of death from breast cancer in the screening groups and the BSE groups in relation to the comparison groups. During the first seven year period of this investigation, the reduction in the mortality for breast cancer in the screening groups fell short of the statistical significance (U.K. Group, 1988).

The following explanations were cited for these results. The population of women was comprised from a non-random sample. Also, according to the researchers, effects of the screening program might have been diluted due to the fact that some women who were included in the two screening groups were not screened for breast cancer because they did not receive an invitation to do so (U.K. Group, 1988). It is not clear to this researcher why or how women were included in these screening groups.

Additionally, there was a higher socioeconomic class of women in the Edinburgh population (U.K. Group, 1988). The socioeconomic class of the Edinburgh population of women might explain the lower rate of breast cancer in this area due to better health care. Also, acceptance into the screening group was low since some of the women may not have been living at the registered address. This possibility reduces the effectiveness of the screening program when 51 percent of women who were found to have breast cancer were not screened (U.K. Group, 1988).

Moreover, there was a high death rate among women who were screened for breast cancer. It was surmised that the cancers which were identified during the first screening and caused death were incurable at the time the individual entered the study. Had cancers been detected at an early stage of breast disease during the first screening, they would have been treated before they reached an incurable stage. Among 30,470 women who had no signs of cancer at the first screening there were 44 deaths from breast cancer (U.K. Group, 1988).

Another preliminary report on breast cancer screening was provided from a group of researchers at Cook County Hospital in Chicago (Ansell et al., 1988). Between the period of 1980 and 1983, a nurse-run breast detection screening program was begun. The screening program was conducted in the following manner.

During the time patients were waiting in the clinics to see their physicians for non-breast problems, they were recruited to participate in a breast screening class. Breast self-examination was taught in the class and the importance of routine physician exams and mammography was stressed. At the time of the patient's next clinical appointment, a nurse performed a breast exam and evaluated the participants' self-breast exam technique. Also, referrals to the screening program were accepted from other clinics at Cook County Hospital.

A random chart review was conducted in 1983 and 1985 on the women who had attended the clinic for at least one year to evaluate evidence for BSE teaching, mammography, and the need for BSE teaching. Breast self-examination knowledge was considered adequate if it had been taught in the five years before the chart review; physician or nurse-performed breast exam was considered adequate if it had been done in the year prior to the chart audit; mammography was considered adequate if it had been done two years before the chart evaluation.

In addition, during the years of 1984 to 1986, all the medical charts of women who had been diagnosed with breast cancer at the screening clinic were reviewed. Comparisons were made of the pathologic stage of the breast cancers diagnosed at the screening clinic and breast cancers which were diagnosed by referral from other clinics at Cook county

Hospital. A second comparison was made of the proportion of breast cancers diagnosed as being localized during the years 1980 to 1983 before the screening program was established and afterward during the years of 1984 to 1986.

Since the introduction of the breast screening program, over 7000 women had been taught BSE. There was an increase of 26% to 46% in yearly physician breast exams and an increase from 2% to 41% in periodic mammographies. The percentage of women having been instructed in BSE increased from 10% to 58%. The proportion of localized breast cancers was greater for the women who had their breast cancers diagnosed at the breast screening clinic (61%) than those women who were referred from other clinics (33%) (Ansell et al., 1988).

Also, there was an increase in the percentage of localized breast cancers diagnosed at Cook County Hospital (40%) as compared to 31% before the screening clinic was fully established because women were made aware and reported breast tissue changes at an early stage. All of these differences were statistically significant. The authors recommended that other health care providers take advantage of long waiting periods for clinical appointments. Establishing similar breast cancer screening programs is an excellent way to reach patients who might not otherwise be taught the importance of breast cancer detection (Ansell et al., 1988).

Breast cancer screening behaviors among elderly Hispanic women was the focus of another survey which was conducted in Los Angeles (Richardson et al., 1987). Between the years of 1984 and 1985, a total of 600 Hispanic women over the age of 55 were interviewed to determine their regularity and competency of BSE performance plus the frequency of physician breast exams and mammography screening health promotion behaviors. It was reported that 12.5% had a mammography within the past year, 50% had a physician breast exam in the past year, and 47% of the subjects had practiced BSE within the past month (Richardson et al., 1987).

However, when the subjects were asked to demonstrate the breast exam on a foam model, most of the participants were not able to perform the procedure accurately, and only 1% detected the five breast lumps in the model. It was concluded that although the frequency of breast screening behaviors of these Hispanic women was similar to the national norms, it is unlikely that the BSE techniques used by these women would palpate or recognize a breast tumor at an early stage (Richardson et al., 1987).

It was stated that the actual practice of BSE may not have been as frequent as the self-report responses indicated. Behaviors according to self-report included: 59% of the subjects indicated practicing BSE at least once in the past year, 79% of the women stated that they had heard of BSE, and

47% of the study population reported having done BSE within the past month. National surveys through self-report related to BSE indicate that 90% of all women have heard of BSE, 75% state they have practiced BSE at least once during the year, but only 24% of these women report actually examining their breasts monthly (Richardson et al., 1987). Additionally, because health expenses of this population of women were covered by Medicare and Medicaid, these women were able to be seen regularly by physicians and nurses which may have influenced their knowledge and practice of health screening. Other Hispanic women may have relied on home health remedies as part of their health promotion because they could not afford to be seen by a physician and were not knowledgeable in health care (Richardson et al., 1987).

However, the role of the news media in making these women aware of breast screening played an important part in their actions (Richardson et al., 1987). Some of the poor outcome of BSE knowledge and skill was attributed to patients' older age rather than ethnicity. No explanation was made as to the rationale for this statement. Also, it is interesting to note that no mention or recommendation was made for nurses and/or physicians to take opportunities to teach the proper procedure of BSE to Hispanic women even though BSE performance was poor in this group.

Another research project that focused on breast self-examination compared the performance of BSE practice in women at high risk of breast cancer with women at low risk (Alagna, Morokoff, & Reddy, 1987). The sample of high risk women was taken from a larger clinical research study of endocrinological factors related to breast cancer. The low risk sample was made up of women who attended a health fair (Alagna et al., 1987). Practice of BSE, knowledge of BSE technique, and BSE proficiency were measured. Practice was measured through self-report of how many times BSE had been performed during the preceding six months. Knowledge of technique was measured by selecting, from a prepared list of correct and incorrect behaviors, the correct steps of BSE. Proficiency was measured by selecting how often each subject performed each of five correct and each of four incorrect behaviors (i.e., never to always) in her individual examination (Alagna et al., 1987).

High risk women were more knowledgeable about each part of the BSE technique than were low risk women. Although overall proficiency in BSE technique was not statistically significant, chi-square analysis of specific components revealed two differences. Examination of the underarm area as reported by high risk women was statistically higher than examination of the underarm area by low risk women. Also low risk women reported more frequently using the palm of the hand

(i.e., an incorrect technique) than high risk women (Alagna et al., 1987).

The substantially lower rates of BSE practice seen in both groups of women in this study as compared to reported national studies of other high risk women were addressed. It was believed that the way in which the questions were worded contributed to the lower rates. Additionally, subjects were told prior to testing BSE proficiency that their responses could reveal how accurate their technique was which may have influenced their answers. Also, there may have been a tendency for scores to fall near the mean because the groups were at opposite ends of the continuum for risk of breast cancer. Women at moderate risk for breast cancer might have demonstrated higher rates of BSE practice than either of these two extreme groups (Alagna et al., 1987). Another research group in California (Kenney et al., 1988) investigated the effects of recommended intervals for BSE performance on reported frequency of adherence, accuracy and detection ability of breast self-examination. The study sample consisted of 51 university women volunteers (students, faculty, and staff) who were randomly assigned to three groups. One group of women was instructed to perform BSE every week (n=18), the second group (n=16) was instructed to perform the technique every two weeks, and the third group (n=17) was asked to practice BSE once a month. All of the

women who received BSE teaching were trained to at least 90% competence of steps performed correctly prior to being told what their recommended interval of practice would be (Kenney et al., 1988).

Out of the original 51 women, 41 completed the study. Although 97% of the women in the study reported awareness of BSE, 53% stated they did not practice BSE prior to their BSE teaching. The study results indicated that after six months, the more often BSE was recommended, the frequency of BSE practice increased (Kenney et al., 1988). However, none of the three groups reported practicing BSE as often as prescribed. The authors concluded that the once a month period usually recommended for BSE practice by the World Health Organization is arbitrary. However, Miller, Chamberlain, and Tsechkovski (1985) point out that frequency of BSE practice does not assure its effectiveness.

Skill of BSE performance was the focus of a study of a group of patients entering a cancer prevention program (McNeal, 1987). Breast self-examination was presented as a self-care activity in relation to health promotion. Five patients in this project were assessed on feelings with regard to performing breast exams, frequency of performance, and skill of performance prior to being given BSE teaching.

Assessment, planning, implementation and evaluation of teaching methodology were completed using the nursing process as a framework (McNeal, 1987).

Fear of finding a lump in the breast and embarrassment in performing self-examination were the two most cited reasons for failure to perform monthly BSE (McNeal, 1987). Time was allotted for the patient to ask questions or express feelings in relation to BSE practice. Using a breast model, step-by-step instruction was provided. Symptoms of breast cancer, what to do when symptoms are manifested and the benefits of BSE performance were also stressed. The patient was required to repeat the demonstration on the model. If the repeated demonstration was not done satisfactorily, "information was reinforced until both the client and practitioner were confident of the client's psychomotor skills" (McNeal, 1987, p. 31).

Analysis revealed a statistically significant increase between pretest (40%) and posttest scores (90%) on overall knowledge level. However, findings cannot be generalized to other populations because of the low number of people in the study group. Preliminary analysis revealed that plans are being made for long-term evaluation of the project. It was recommended that nurses assess their own beliefs about BSE as

well as frequency of practice in order to plan and implement an effective individualized teaching program for their clients (McNeal, 1987).

BSE teaching to older women was the subject of an article by Ludwick (1988). She emphasized differences in teaching approaches for the elderly because of disease or physical alterations. Although teaching the steps of BSE is the same for all age clients, older women may experience changes in vision, tactile sensation and agility which necessitate additional time for BSE instruction. When teaching older women BSE, a magnified mirror could be suggested for close inspection, as well as adequate lighting and talc used on the fingers to facilitate easy gliding over the skin. The use of talc also helps to increase sensitivity to touch and may aid the older woman in detecting a breast abnormality which might not be palpated otherwise (Ludwick, 1988).

Also, during teaching the nurse should be sensitive to the embarrassment BSE may cause in an older client who grew up in more conservative times (Ludwick, 1988). Adequate time should be provided for dressing and undressing. A blanket can be used to protect privacy and prevent chilling.

Baker (1989) field-tested an educational methodology regarding breast self-examination in older women using the Health Belief Model (HBM) (Becker, 1974) as a theoretical framework. The HBM describes the likelihood that an

individual will practice health behavior (i.e., breast self-examination) in an effort to decrease the consequences of the disease (i.e., breast cancer death). An individual's perceptions or beliefs in relation to susceptibility to a disease, belief related to the seriousness of developing a disease, benefits of practicing preventive or screening health behavior and barriers involved in the practice of preventive health behavior are four elements associated with the Health Belief Model (Baker, 1989).

Baker (1989) employed a quasi-experimental design to compare her BSE educational approach based on the HBM against a standard BSE program. In this study, 194 older women whose ages ranged from 60 to 95 were tested on improvement in the efficiency of BSE frequency and BSE proficiency. Women in the experimental group (n=68) received education in breast self-examination focusing on the needs of older women via a one-hour class, a workbook based on the elements stated in the Health Belief Model, modeling of BSE performance on film, and guided BSE practice (Becker, 1974). The control group (n=66) had a one-hour class using standard BSE information and viewed a film on BSE modeling. Participants in the control group also received a booklet with BSE information (Baker, 1989).

The experimental intervention class used varied teaching methodologies, each of which addressed several elements posited in the Health Belief Model. Group discussion

concerning perceived susceptibility of breast cancer, risk factors relating to breast cancer, perceived benefits and barriers to practicing BSE were topics explored. A lecture giving the facts and myths of breast cancer in relation to causes, risks and incidence of the disease was provided. A workbook tailored to the elements of the Health Belief Model was filled out by each member of the experimental group (Baker, 1989).

Moreover, a film published by the American Cancer Society demonstrating women modeling the steps of breast self-examination was shown to the experimental group (Baker, 1989). Lack of knowledge of BSE and lack of proper techniques in performing a breast exam were discussed as an instructor illustrated each step of the procedure on a silicone breast model. Feelings about performing self-examination were verbalized.

The control group of older women was provided BSE education intervention which conformed to the guidelines outlined in most BSE literature (Baker, 1989). A lecture depicting causes, risk factors, incidence, and consequences of breast cancer was given. This group was shown the same film by the American Cancer Society that was viewed by the experimental group. Also, each woman in the control group received a booklet which reiterated all the information presented in class.

Variables such as demographic information, BSE health beliefs, self-efficacy and BSE behavior were measured in both groups using self-report questionnaires administered through interview one week prior to the program intervention, one week after intervention and three months following participation (Baker, 1989). Proficiency scores on BSE knowledge and optimal BSE frequency were combined into the variable, BSE quality. The BSE frequency variable was converted into a dichotomous variable: 1) optimal BSE frequency (i.e., BSE performance no more than monthly and at least yearly) and 2) less than optimal BSE frequency.

Study results demonstrated that women in the experimental treatment group were statistically significantly ($p=.029$) more likely to perform breast self-examination correctly after using BSE instruction based on elements depicted in the Health Belief Model (Becker, 1974) than women in the control group (Baker, 1989). No mention was made as to whether the one-week or three-month time frame or both were used for prediction.

Younger women in the experimental group (e.g., ages ranged from 60 to 95 years) were more likely to score higher on BSE quality than were older women. Baker (1989) concluded that, as hypothesized, the use of strategies extrapolated from the Health Belief Model were successful in improving the quality of BSE practice. The women in the study tended to be well-educated, predominately White and self-selected, and

these factors decrease generalization of findings to other groups of older women. However, it was pointed out that this study sample was representative of the type of women who are likely to engage in formal instruction in breast self-examination; although, they are not the group of women at greatest risk for breast cancer (Baker, 1989).

The nursing literature indicates that nurses play an important role as formal instructors in teaching breast self-examination (Baker, 1988; Clarke & Sandler, 1989; Cole & Gorman, 1984; Cretain, 1989; Crooks & Jones, 1989; Gray, 1990; Harwood, 1983; Nemcek, 1989; Olson & Mitchell, 1989; Redeker, 1989; Whelen, 1984; Young & Phillip, 1985). Nurses have access to reaching vast numbers of women in myriad health care settings (Crooks & Jones, 1989). Given this opportunity, nurses should use their expertise in the area of teaching in order to help reduce the morbidity and mortality from breast cancer (Champion, 1992; Crooks & Jones, 1989).

Clarke and Sandler (1989) posit that many nurses do not teach BSE to their female clients, and one reason for this exclusion is the prevailing pessimistic attitude nurses display toward the outcome of breast cancer. A study completed by Harwood (1983) demonstrated that nurses exhibited less optimistic attitudes toward the detection and treatment of breast cancer than other health professionals in one hospital setting. Similarly, when Whelen (1984) compared

British and American nurses' attitudes toward survival from cancer, more pessimistic attitudes were found in both groups concerning breast cancer than any other malignancy. Of the nurses in Cole's and Gorman's (1984) survey, 56% demonstrated that these subjects did not believe that breast cancer was curable.

Additionally, as nurses teach breast self-examination to clients, they should assess the client's perceived attitudes regarding potential barriers to BSE practice (Grady, 1988; Rutledge, 1987). Barriers should be verbalized and discussed, and appropriate strategies to overcome them planned. Perhaps once barriers to BSE practice are overcome, the foci of BSE teaching can relate to knowledge of breast cancer and accuracy of performance (Champion, 1990).

Also, nurses should be aware of the client's attitude relating to health locus of control (Nemcek, 1989). The more a woman feels that she has direct control over her health and her body (i.e., locus of control), the more likely she is to practice screening and health behaviors (Brailey, 1986; Champion, 1988; Massey, 1986; Nemcek, 1989; Redeker, 1989). If a woman sees others such as physicians and nurses as the forces controlling her health destiny, she might not identify breast examination as a practice she needs to perform on herself (Nemcek, 1989).

Olson and Mitchell (1989) suggest that nurses focus their efforts toward the use of teaching techniques which help to increase a client's sense of competence in performing the steps of BSE. If women are encouraged to learn the steps of breast examination and are verbally rewarded in regard to proper performance at the time of teaching, perhaps they will be motivated to engage in monthly practice. Because nurses care for clients who are at high risk for breast cancer, usually older women, nurse clinicians should individualize BSE teaching to each client in all areas of nursing practice (Olson & Mitchell, 1989).

Summary

Breast self-examination was presented as a non-invasive screening procedure to detect early symptoms of breast cancer. Breast cancers grow at different rates, but with early diagnosis and treatment, approximately 91% of the women experiencing localized breast cancer live at least five years after treatment.

Knowledge and skill in performing the steps of BSE are important factors in being able to locate abnormalities. Many research studies were cited which investigated the relationship between breast self-examination and stage of breast cancer at the time of diagnosis. Although some

researchers stated that women who practice BSE reported their abnormalities earlier and had less invasive tissue involvement than women who did not practice BSE, this finding was not consistent.

Studies revealed that the majority of women who practice monthly BSE tend to be younger, married, white and in the middle socioeconomic class as compared to non-examiners. Also, women who reported BSE practice indicate the use of mammography and yearly physician breast exams as part of breast cancer screening as compared to the women who do not practice BSE. Although some women reported high frequency of BSE practice, their knowledge and skill of BSE technique were incorrect when these variables were tested. Women offered a variety of reasons why they did not practice monthly BSE. Some reasons reported were fear of finding a lump, lack of knowledge and skill in performing the procedure and embarrassment. There was some controversy in the research reports in regard to the risk for breast cancer (e.g., estrogen replacement therapy).

A minority of studies concluded that there was a lack of evidence regarding the effectiveness of BSE practice as a screening measure for breast cancer. However, most of the studies cited revealed that BSE practice was important in breast cancer screening and should be performed as an

adjunctive procedure to mammography and yearly physician breast exams.

General Summary of Literature Review

Three concepts related to the present research study were probed: nurses teaching older individuals, breast cancer, and breast self-examination. Health related literature augmented with psychological and educational research comprised the knowledge base from which each concept was explored. Older people were depicted as knowledge seekers and as being capable of learning when teaching methods are tailored to their specific needs.

Breast cancer was discussed as a prevalent type of cancer, and older women are at risk for this disease. Morphology (i.e., study of structure), morbidity (i.e., pertaining to diseased populations), and mortality (i.e., ratio of number of deaths in populations) were discussed. Breast self-examination was presented as a cost-free, easy-to-perform screening measure that all women can be taught to practice on themselves. Nurses were identified as being important health providers who can develop written materials to teach BSE to their clients. Techniques which should be utilized by nurses when they teach clients BSE to stimulate knowledge and skill of the procedure and reduce fear and anxiety in relation to breast cancer were described.

CHAPTER III

METHODOLOGY

Sample

Subjects for the study were selected from two settings: a continuing care retirement community and a public housing retirement home. The sample was a sample of convenience comprised of women from both retirement facilities who volunteered to be in the study. Criteria and rationale for the sample included the following:

> Female because 99 percent of breast cancers occur in women.
>
> Age 65 or older because 65 is generally used as a definition of elderly. In order to perform BSE, an individual should be able to engage in self-care (i.e., feed, bathe, clothe, and toilet self) since being able to engage in self-care allows the individual to have control over a screening technique for breast cancer as a health care practice.
>
> No history of unilateral/bilateral mastectomy or unilateral/bilateral lumpectomy since any of these surgical procedures will have altered breast tissue and BSE accuracy will not be consistent for all participants. Self-report and medical records determined any record of these procedures.

Able to read materials presented because the purpose of the study depended upon the participant's ability to read the directions and the two BSE pamphlets.

Presumed absence of dementia according to the Short Portable Mental Status Questionnaire (SPMSQ) because dementias might have made following directions difficult or impossible.

Absence of physical disease such as stroke, crippling arthritis, or Parkinson's disease which might have impaired finger, hand, or arm movements and hamper BSE performance and accuracy.

Setting

This study was conducted in two difference retirement settings: Epworth Place-Retirement, a section of the Methodist Home, Inc., and the Red Carpet Inn, a public housing facility. Both settings were located in Charlotte, North Carolina, a southeastern city with a population of 400,000. The locations were chosen because one setting houses older people who were better educated and had higher income levels than the residents in the other setting. Differences in educational and income levels were important variables in this study.

The Methodist Home, Inc., offers continuing care to older adults and is located on a 225-acre campus in the northeastern section of Charlotte. This setting is comprised of three facilities, each of which offers a different level of care. Epworth Place is the facility for older adults who are living independently. Epworth Place includes private rooms, one and two bedroom apartments, and cottages.

The Red Carpet Inn is under the auspices of the Charlotte Housing Authority and is located in the northwestern section of the city, (before being converted into a retirement facility, the Red Carpet Inn was part of a motel chain). It offers retirement living for older adults who are independent in self-care activities. The facility includes single-room dwellings with private bathrooms.

In each facility, the BSE teaching was conducted in a well-lit private room located on the main floor of the main building. All who lived in cottages at Epworth Place were taught in the same room in the administrative building. The room in each facility was designated for BSE teaching and contained a bed or cot, a table, a mirror, three chairs, and tangential light. Towels and blankets were provided by each facility to drape the women during BSE teaching.

Procedure

Initial appointments were made with coordinators of both facilities in order to discuss the purpose of the study and plans for BSE intervention. Explanation of the two BSE pamphlets was provided, and a copy of each pamphlet was given to the coordinators of both facilities. Written permission for conducting the study at the Red Carpet Inn was granted by Mr. William Simmons, Director of Human Services (APPENDIX A). Written permission to conduct the study at Epworth Place was

granted by the Ms. Jan White, Director of Nursing at the Methodist Home, Inc. (APPENDIX B).

In order to obtain subjects, the researcher conducted a group meeting in each facility. The meeting was advertised through fliers (APPENDIX C), which were sent to all eligible women in each setting. Before the fliers were sent to the residents, the coordinator in each facility announced and promoted at resident-meetings, etc., the opportunity for learning breast self-examination. It was also made known that each female resident in the setting would receive an invitation through a flier to attend the initial meeting. The flier provided a space for individuals to respond to the invitation to participate. All fliers were returned to the coordinator of each facility. Anyone interested in the study but unable to attend the meeting was asked to sign the flier and she would be contacted by the researcher. Through the use of a standard script (APPENDIX D), the researcher discussed the study and invited women to be participants in learning BSE. At that time the researcher introduced the two research assistants who were female students of nursing at Queens College in Charlotte.

During the meetings, it was stressed that each woman would be taught BSE twice (a week apart) in a private room in her own facility. Also, approximately three months after the original BSE teaching, a follow-up BSE interview would be conducted. Teaching would be conducted by one of the research

assistants using a one-to-one methodology. The researcher also would be in the room for the purpose of observing behavioral responses of the participant. The following week the same research assistant would teach BSE; again, the researcher would be in the room observing the participant's non-verbal behavior. Each participant would be required to disrobe to the waist. Also, it was emphasized that each participant would be asked to read and sign a consent form (APPENDIX E) and answer questions on a Demographic Sheet (APPENDIX F) (which also contained information regarding mental status) before intervention was begun.

It was announced that each participant who completed the study (e.g., after the three month follow-up) would receive a "certificate" (APPENDIX G) indicating that she had "graduated" from the BSE program. Also all "graduates" from each facility would be invited to a party given by the researchers at the end of the data collection.

At the close of each group meeting, all interested women were asked to sign their names and provide phone numbers for the researcher and research assistants. During this interaction, a covert assessment of the prospective participant's physical capabilities was made by the researcher and research assistants. Once a list of names was compiled, the researcher consulted the medical record of any woman who appeared to have a physical condition which might have affected finger, hand, or arm movements and impaired BSE

accuracy. Each person was contacted by phone or a visit to the room/cottage to make an appointment to do the BSE intervention.

All women who were physically or mentally impaired and signed up to be in the study were taught BSE using both pamphlets (a week apart). However, no behavioral observations were made, and the follow-up procedure was not done. Data collected for these women were not used. If a woman was taught BSE and was not included in the study, incorrect technique was corrected at the time it was noticed. Women on whom data were collected were instructed after BSE intervention (e.g., the week in which the second pamphlet was being used) what to do if a lump was found, and breast changes as they related to the older breast. Questions regarding BSE or breast cancer were answered. For participants in the study, incorrect technique was corrected at the end of BSE teaching during the week-later session. During the process of performing BSE using either pamphlet, if a participant had found a lump or mass in her breast, she would have been instructed to see her physician and data would not have been included in the study due to the stress caused by such a situation. No one reported finding a lump in her breast while doing BSE.

BSE instruction to enhance learning was conducted using communication techniques to help overcome physical deficits due to aging (Billie, 1980; Burggraf & Donlon, 1985; Lewis & Collier, 1987). For example, attention was given to lighting, enunciation, and comfort. Tangential light shone from behind the participant on the face of the research assistant. The research assistant used slightly louder than normal tone of voice, enunciated words well but did not over-enunciate. Time was allocated for proper responses by the participant (Birren, 1974; Hultsch, 1971). A comfortable chair large enough to seat the participant was provided (Burggraf & Donlon, 1985).

During the period of individual BSE intervention, the participant was met at the appointed private room. Subjects were randomly assigned to one of the two research assistants by using a table of random numbers and randomly assigned to one of the treatment groups. Each research assistant was taught the proper procedure for doing BSE and was trained to document accuracy of performance using the questionnaire designed for that purpose.

The researcher and research assistants wore white lab coats. A name tag was attached to the lab coat identifying the individual. A structured interview format was utilized and a script (APPENDIX H) was memorized and followed in order that each participant was provided with consistent information during BSE intervention.

To begin the study in each facility, a coin was tossed by the research assistant to determine which BSE pamphlet was to be used initially by the first participant. If the coin showed a head, the Learning Enhancement Pamphlet was used first. If the coin showed a tail, the Traditional BSE Teaching Pamphlet was implemented first. A record was kept by the researcher regarding the use of each pamphlet by each participant. Use of the pamphlets alternated with each participant. If the first participant used the Learning Enhancement Pamphlet (LEP) initially, she used the Traditional Teaching Pamphlet (TTP) a week later. The second participant in the same setting used the TTP first and the LEP a week later, etc. This alternating procedure pertained to each participant in both facilities.

Each subject who participated in the study served as her own control. During the first visit, the participant was asked to perform each step of BSE on herself using the selected pamphlet. Approximately one week later, the same participant was asked by the same research assistant to perform each step of BSE using the other pamphlet.

After the participant read and signed the consent form, answered the demographic information, and had disrobed to the waist, she was asked to read, perform, and verbalize each BSE step one at a time in the selected pamphlet. Verbalization helped the research assistant to know if the participant understood the step of BSE being performed. While the

participant was performing the BSE steps, the research assistant stood to the side of the participant while tabulating the accuracy of the steps.

Two questionnaires were utilized to tabulate BSE accuracy. One questionnaire (APPENDIX I) reflected the steps of BSE as written in the LEP. The second questionnaire (APPENDIX J) depicted the steps of BSE as written in the Traditional Teaching Pamphlet. Check marks were tabulated on each questionnaire as to whether the BSE step was accurately performed or not in a "yes" or a "no" column.

Ease of using the pamphlet was recorded on the questionnaire as answers to self-report questions. Although the six self-report questions were included at the end of both questionnaires after the steps of BSE, these data were collected only after the second BSE instruction.

At the beginning of the session, data were collected on selected demographic variables. After the demographic data were collected, questions chosen from the Short Portable Mental Status questionnaire (SPMSQ) (Pfeiffer, 1975) were used to screen for dementia. Ten questions were asked on the SPMSQ such as "What is the date of today?" "What is your telephone number?" "Who is the president of the United States now?" and "Subtract the number three from 20 and from each new number until the end." The demographic sheet was answered by the participant as the research assistant read each question before BSE teaching began.

Interrater reliability of .95 between the two research assistants and the researcher for assessing BSE accuracy (See Appendix M) and mental status capacity (See Appendix F) was achieved before data collection was begun using a third sample of five women in a setting unrelated to the study. Informal monitoring for interrater reliability was done throughout the study; the researcher supervised all data collection.

While the research assistant was tabulating BSE accuracy, the researcher also was in the room observing the participant's non-verbal behavior using the Behavioral Observational Check List Questionnaire (Appendix K).

Three months after BSE intervention was completed, the researcher visited each participant in the study in both settings in an effort to evaluate continuance of BSE practice and which pamphlet was being used.

Instruments

The Learning Enhancement Pamphlet

The Learning Enhancement Pamphlet (LEP) (APPENDIX L) designed by the researcher used non-glare yellow paper, bold black print and was folded into three panels. The LEP used all the information recommended by the American Cancer Society to teach BSE which was divided into 17 steps and included small amounts of information on each page. Diagrams of the

older breasts were depicted in the pamphlet. Contrasting red tabs on the outside and putty-color tabs on the inside of the pamphlet were used to facilitate opening by arthritic fingers.

Using Fry's (1977) graph for estimating readability, the Learning Enhancement Pamphlet was written at the second grade level. In non-technical language, the accuracy of Fry's graph is within one grade level of the participant's "actual" reading level, which compares to the validity of similar formulas used for the same purpose (Fry, 1968, p. 514).

The LEP was examined by a panel of gerontological nurses in a life care center for content clarification and ease of administration. The nurses used the pamphlet to instruct 16 residents in performing BSE. Changes were made in the pamphlet as a result of the feedback received from the panel.

Content validity was assured since the BSE steps of this pamphlet were being compared to an established BSE pamphlet utilized by the United States Department of Health and Human Services, Public Health Services, and National Institute of Health and reflected the steps of BSE recommended by the American Cancer Society.

Traditional Pamphlet

The Traditional Teaching Pamphlet (APPENDIX N) provided BSE information from the United States Department of Health and Human Services, Public Health Services, and National

Institutes of Health (NIH Publication No. 88-2409). The pamphlet was blue; arranged in booklet form; used non-glare paper; and included information regarding breast cancer, self-breast exams, and treatment measures. The steps of BSE began on page three and ended on page five. BSE information was divided into six main steps written in black letters. Pictures of the middle age breast were depicted in the pamphlet.

Using Fry's graph (1977) for estimating readability, the Traditional Teaching Pamphlet was written at the sixth grade level.

Behavioral Observational Questionnaire

The Behavioral Observational Check List Questionnaire (Appendix K) documented behavioral responses as each participant performed the steps of BSE using both pamphlets. The selected behaviors (facial expression, response, body language, and verbal statements) were thought to be nonverbal behavior women would demonstrate while performing BSE (Redman, 1980). See (Appendix O) for the Code Book for Observations Check List, and (Appendix P) for the Code Sheet for Behavioral Observations).

Short Portable Mental Status Questionnaire

The Short Portable Mental Status Questionnaire (SPMSQ) (Pfeiffer, 1975) was a screening tool used to assess organic brain deficit in older individuals. Validity of the tool was .88 and reliability was .83 (Pfeiffer, 1975). See (Appendix F) for the SPMSQ.

Design

In order to measure BSE accuracy, pamphlet preference, and ease of using a pamphlet, a posttest only design was used. An explanation of the research design follows:

P_1 = Pamphlet one, the BSE Learning Enhancement (LEP) (i.e., treatment one).

P_2 = Pamphlet two, the Traditional BSE Teaching Pamphlet (i.e., treatment two).

Y = Posttest on BSE accuracy and self-report questions relating to ease of reading, handling, opening, following directions regarding the pamphlet, as well as color preference and over all pamphlet preference.

Subjects in each setting were randomly assigned to one of the two research assistants by using a table of random numbers and randomly assigned to a treatment group. The treatment (i.e., LEP or TTP) used initially in each setting by the first participant was determined by the flip of a coin. For example, if the Traditional Teaching Pamphlet was used as the

first pamphlet for the first subject, then the Learning Enhancement Pamphlet was used as the first pamphlet for the second subject in the same setting. This alternating pattern of pamphlet selection was employed in each setting.

Example: Subjects were randomly assigned to the treatment group from 1 to n. However, the order in which the subject was located between 1 to n determined which pamphlet was used after the initial selection for the first participant in each setting.

If the first subject, according to the random assignment, was assigned to P_1, P_2, Y, the second subject, according to the random order in the same group, was assigned to P_2, P_1, Y.

If the second subject was assigned to P_2, P_1, Y, the next subject per random order was assigned to P_1, P_2, Y, etc.

Analysis

In this study, two BSE pamphlets (Learning Enhancement Pamphlet and the Traditional Teaching Pamphlet) were compared in order to determine if BSE accuracy was greater using one pamphlet and which pamphlet was easier to read, to handle and to follow.

For purposes of this study, BSE accuracy was defined as the proportion of steps each participant performed correctly on herself as she read each step of the Learning Enhancement

Pamphlet (LEP) and the Traditional Teaching Pamphlet (TTP). BSE accuracy was explained in relation to the variables of age, education, income, and past teaching of BSE.

How well the participant was able to open the pages, read, and follow directions as well as pamphlet preference for BSE teaching was measured by self-report questions.

Selected nonverbal behaviors were documented in an effort to observe additional reactions while the participant used each pamphlet (see APPENDIXES K,O,and P). Behavioral responses were to have been analyzed on a continuum of "positive," "negative," or "no response" under each category (i.e., facial expression, emotional response, body language, and verbal statements) for the entire pamphlet. All "positive," all "negative," or all "no response" behaviors in a given category were to have been considered as "consistent behavior" while a combination of "positive," "negative," and "no response" behaviors in a category were to have been considered "mixed behavior."

A three month follow-up plan (APPENDIX Q) was carried out in order to determine if a participant in the study was practicing breast self-examination every month and if either pamphlet was being used.

Research Questions

1. Will breast self-examination (BSE) accuracy be greater when using the Learning Enhancement Pamphlet than when using the Traditional Teaching Pamphlet?

2. Can the accuracy of performing breast self-examination using the Learning Enhancement Pamphlet be explained by the participant's age, education, income, race and past history of having received breast self-examination instruction?

3. Can the accuracy of performing breast self-examination using the Traditional Teaching Pamphlet be explained by the participant's age, education, income, race and past history of having received breast self-examination instruction?

4. Is there a preference for one pamphlet over the other in relation to ease of reading, ease of handling, ease of opening,ease of following directions, color best suited for reading, and overall pamphlet preference?

5. If there is a preference for one pamphlet over the other in relation to ease of reading, ease of handling, ease of opening, ease of following directions, color best suited for reading, and overall pamphlet preference, can the preference be explained by the participant's age, education, income, race and past history of having received breast self-examination instruction?

6. Are there differences in the behavioral responses in each category of facial expression, emotional response, body language, and verbal statements as the participant uses the Learning Enhancement Pamphlet and the Traditional Teaching Pamphlet?

7. If there are differences in the behavioral responses of facial expression, emotional response, body language, and verbal statement, can they be explained by the participant's age, education, income, race and past history of having received breast self-examination instruction?

8. At the end of the three-month period between breast self-examination intervention and the follow-up interview, how often does each participant report having practiced breast self-examination on herself?

9. At the end of the three-month period between breast self-examination intervention and the follow-up interview, which of the two pamphlets will have been reported to have been used more often to remind the client of how to perform breast self-examination?

Data Analysis of the Research Questions

Question one (1) was measured using a one-tailed t-test on the difference in percentage scores between the Learning

Enhancement Pamphlet and the Traditional Teaching Pamphlet.

Questions two (2) and three (3) were analyzed through analysis of variance.

Question four (4) was measured by estimating the percentage of preferences for one method over the other.

Question five (5) was measured by comparing the percentage of women associated with each variable in relation to each self-report question.

Question six (6) was to have been measured by estimating the percentage of positive behavior in each category of behaviors. Correlation between the four responses was to have been done and a t-test was to have been used to compare behaviors between the two pamphlets. These analyses were not done due to so few behavioral responses.

Question seven (7) was to have been measured by an ANOVA statistic on the difference in proportion of positive responses on each behavior on each pamphlet. This question was not analyzed due to so few behavioral responses.

Question eight (8) was analyzed by measuring the percentage of how often each participant performed BSE during the three month time period.

Question nine (9) was analyzed by measuring the percentage of the chosen pamphlet versus the other pamphlet.

CHAPTER IV

RESULTS

Brief Summary of Results

This study compared two different pamphlets for teaching older women breast self-examination. Each participant used each pamphlet (the Learning Enhancement Pamphlet [LEP] and the Traditional Teaching Pamphlet [TTP]) a week apart to determine if accuracy for performing breast self-examination (BSE) was higher using one pamphlet over the other. There was a 30% overall higher rate of mean scores on BSE accuracy using the Learning Enhancement Pamphlet,($\underline{X}$=.95) than when using the Traditional Teaching Pamphlet, ($\underline{X}$=.65), $\underline{t}(62)=10.40$, $\underline{p}=<.0001$.

General Characteristics of the Sample

Sixty-three women volunteers, ages 65 - 94 years, from two settings (Red Carpet Inn, N=31 ; Epworth Place, N=32) made up the study sample. The Red Carpet Inn is a public, subsidized housing, independent care facility whose residents are women who are less educated, have lower income levels, and are predominately Black as compared to the women at Epworth

Place. Epworth Place is the independent living care facility of the Methodist Home, Inc.

At the Red Carpet Inn, 39 women volunteered for the study. Six of these women refused to return the second week to use the second pamphlet, even though an explanation of what was required of each participant had been given prior to her signing the participant consent form. Two women did not fit the study criteria. Clinical observation made it obvious that one woman was mentally retarded and could not read the written instructions, and the other woman was younger than age 65. Although these two women were taught breast self-examination (BSE) using each pamphlet a week apart, they were not included in the study sample. In the first phase of the study, 31 women at the Red Carpet Inn were included. All of the 31 women also participated in the three month follow-up evaluation.

At Epworth Place, 32 women were in the first phase of the study. Each woman fit the study sample criteria. Each one also participated in the second phase of the study during the three month follow-up evaluation.

Demographic Characteristics of the Sample

Demographic data collected on this sample of women included: age, education , yearly income level, race and past history of having had breast self-examination instruction.

Age

The mean for the demographic variable, age, for the study sample of 63 participants was 79 years with the median age being 81 years. At the Red Carpet Inn, the mean age was 76 years with the median age being 78 years. The mean age of the women at Epworth Place was 82 years, and the median age was 82.5 years. Additionally, age was broken down into six groups: 1) 65-69 years, 2) 70-74 years, 3) 75-79 years, 4) 80-84 years, 5) 85-89 years, and 6) 90-94 years. At the Red Carpet Inn, out of 31 women 20 (64.5%) fit into the first three younger age groups; while out of 32 women at Epworth Place, 22 (58.7%) fit into the middle three older groups at Epworth Place. (See Table 1 for summary of age and age groups.)

Education

The variable, education, was divided into the following six groups: 1) elementary (grades 1-8), 2) high school (grades 9-12), 3) high school graduate, 4) business school, 5) college (grades 13-16), and 6) graduate education. Twenty (31.8%) women had some elementary education, 17 (27%) of the women had some high school education, one (1.6%) woman was a high school graduate with no further education, three(4.8%) of the women had business school education, 15 (23.8%) had college education, with seven (11.1%) women having had graduate education.

TABLE 1

AGE
AGE IN YEARS

ALL SUBJECTS IN SAMPLE		SUBJECTS AT RED CARPET INN		SUBJECTS AT EPWORTH PLACE	
N=63		N=31		N=32	
Mean	79.08 years	Mean	76.29 years	Mean	81.78 years
Std Dev	7.82 years	Std Dev	7.18 years	Std Dev	7.56 years
Median	81 years	Median	78 years	Median	82.5 years

AGE IN GROUPS

AGE GROUPS	ALL SUBJECTS IN SAMPLE		SUBJECTS AT RED CARPET INN		SUBJECTS AT EPWORTH PLACE	
	N = 63		N =31		N = 32	
	Frequency	%	Frequency	%	Frequency	%
1. 65 - 69 years	11	17.5	8	25.8	3	09.4
2. 70 - 74 years	8	12.7	5	16.1	3	09.4
3. 75 - 79 years	11	17.5	7	22.6	4	12.5
4. 80 - 84 years	17	27.0	8	25.8	9	28.1
5. 85 - 89 years	11	17.5	3	9.7	8	25.0
6. 90 - 94 years	5	7.9	0	——	5	15.6

The educational level of women at the Red Carpet Inn was much lower than the educational level at Epworth Place. At the Red Carpet Inn, one woman (3.2%) reported having had some college education; no one had any business school or graduate education. Three (9.4%) women at Epworth Place reported having attended business school, 14 (43.8%) stated they had some college education; while seven (21.9%) reported some graduate education (four reported having earned master's degrees.) (See Table 2 for explanation of educational groups.)

Income Level

The demographic variable of yearly income was broken down into the following seven groups: 1) $4,900 or below, 2) $5,000 - $14,900, 3) $15,000 - $24,900, 4) $25,000 - $34,900, 5) $35,000 - $44,900, 6) $45,000 -$54,900, and 7) $55,000 - $64,900. Twenty- seven (87.1%) women at the Red Carpet Inn reported an annual income of $4,900 or below ; while four (12.5%) women at Epworth Place reported the same income level. Four (12.5%) women at the Red Carpet Inn fit into the second income group of $5,000 - $14,900; while nine (28.1%) at Epworth Place fit into the same income bracket. All of the 31 women at the Red Carpet Inn fit into the first two groups of lower income levels. Three (9.4%) women at Epworth Place reported an annual income of $45,000 - $54,900, and one (3.1%) reported a yearly income of $55,000 - $64,900. The yearly

TABLE 2

EDUCATION

EDUCATIONAL LEVEL	ALL SUBJECTS IN SAMPLE		SUBJECTS AT RED CARPET INN		SUBJECTS AT EPWORTH PLACE	
	N = 63		N =31		N =32	
	Frequency	%	Frequency	%	Frequency	%
1. Elementary (Grades 1-8)	20	31.8	16	51.6	4	12.5
2. High School (Grades 9-12)	17	27.0	14	45.2	3	09.4
3. High School (Graduate)	1	01.6	0	—	1	03.1
4. Business School	3	04.8	0	—	3	09.4
5. College (Grades 13-16)	15	23.8	1	3.2	14	43.8
6. Graduate Education	7	11.1	0	—	7	21.9

income level at Epworth Place was considerably higher than at the Red carpet Inn.(See Table 3 for information regarding income level.)

Race

Of the sample studied, the only racial groups were White and Black. There were 22 (34.9%) Black women and 41 (65.1%) White women in the study sample of 63 women. All of the 22 (71%) Black women and 9(29%) of the White women were from the Red Carpet Inn. All 32 participants from Epworth Place were White. (See Table 4 for breakdown of race.)

Past History of Having Been Taught BSE

Past history of having received breast self-examination instruction was also investigated. Of the 63 women in the sample, 23 (36.5%) had received past instruction in BSE while 40 (63.5%) had not. Fourteen (45.2%) out of 31 women at the Red Carpet Inn reported having received past instruction and 17 (54.8%) reported not having been instructed previously. At Epworth Place, nine (28.1%) out of 32 women had been taught BSE in the past while; 23 (71.9%) had never been taught. (See Table 5 describing past BSE instruction.)

TABLE 3

INCOME

INCOME GROUPS	ALL SUBJECTS IN SAMPLE		SUBJECTS AT RED CARPET INN		SUBJECTS AT EPWORTH PLACE	
	N = 63		N = 31		N = 32	
	Frequency	%	Frequency	%	Frequency	%
1. $ 4,900 or <	31	49.2	27	87.1	4	12.5
2. $ 5,000 - $14,900	13	20.6	4	12.9	9	28.1
3. $15,000 - $24,900	8	12.7	0	—	8	25.0
4. $25,000 - $34,900	7	11.1	0	—	7	21.9
5. $35,000 - $44,900	0	—	0	—	0	—
6. $45,000 - $54,900	3	4.8	0	—	3	9.4
7. $55,000 - $64,900	1	1.6	0	—	1	3.1

TABLE 4

RACE

RACE	ALL SUBJECTS IN SAMPLE		SUBJECTS AT RED CARPET INN		SUBJECTS AT EPWORTH PLACE	
	N = 63		N = 31		N = 32	
	Frequency	%	Frequency	%	Frequency	%
Black	22	34.9	22	71.0	0	
White	41	65.1	9	29.0	32	100.0

TABLE 5

PAST BSE INSTRUCTION

PAST BSE INSTRUCTION	ALL SUBJECTS IN SAMPLE		SUBJECTS AT RED CARPET INN		SUBJECTS AT EPWORTH PLACE	
	N = 63		N = 31		N = 32	
	Frequency	%	Frequency	%	Frequency	%
YES	23	36.5	14	45.2	9	28.1
NO	40	63.5	17	54.8	23	71.9

Research Questions

Nine Research Questions were addressed in this study.

Research Question One

The First Research Question was, "Will breast self-examination (BSE) accuracy be greater when using the Learning Enhancement Pamphlet (LEP) than when using the Traditional Teaching Pamphlet (TTP)?" Results demonstrated a difference in the percentage scores for BSE accuracy between the two pamphlets. The percentage scores represent the scores accurately performed by all the women using the LEP and the TTP. The percentage accuracy score for the women in the entire sample in relation to the Learning Enhancement Pamphlet was (0.9459); while the percentage score for BSE accuracy using the Traditional Teaching Pamphlet was (0.6503). Descriptively, it is recognized that there is a 30% higher rate of percentage scores on BSE accuracy using the Learning Enhancement Pamphlet than when using the Traditional Teaching Pamphlet. The difference in accuracy scores between the Learning Enhancement Pamphlet and the Traditional Teaching Pamphlet was measured using a one-tailed t-test which demonstrated $t(62)=10.40$, $p=<.0001$. (See Table 6 for information regarding BSE accuracy using both pamphlets).

TABLE 6

MEAN ACCURACY SCORES OF WOMEN USING THE LEARNING ENHANCEMENT PAMPHLET AND THE TRADITIONAL TEACHING PAMPHLET (N=63)

PAMPHLET	MEAN ACCURACY SCORES	DIFFERENCE IN MEAN SCORES	STD DEV
Learning Enhancement Pamphlet	0.945845		
Traditional Teaching Pamphlet	0.650246		
		*0.295599	0.225642

*t (62)=10.40 , p < .0001(one-tailed)

Research Question Two

The Second Research Question was, "Can the accuracy of performing breast self-examination using the Learning Enhancement Pamphlet (LEP) be explained by the participant's age, education, income level, race, and past history of having received breast self-examination instruction?"

Age

Overall age did not predict BSE accuracy at a statistically significant level in relation to the 63 women who used the Learning Enhancement Pamphlet, $F(1,62)=.31$, $p>.9064$. Considering the matter descriptively, age as broken into groups demonstrated no statistically significant difference on BSE accuracy using the LEP. However, the age group of 80 - 84 years (27%) had the highest percentage scores on BSE accuracy using the LEP (0.9619); while the age group of 85 - 89 years (17.5%) had the lowest percentage scores on accuracy using the LEP (0.9251). (See Table 7 for effect of age on accuracy of BSE performance using the LEP.)

TABLE 7

*EFFECT OF AGE ON BSE ACCURACY USING THE LEARNING ENHANCEMENT PAMPHLET (N=63)

GROUP	FREQUENCY	AGE GROUP	PERCENTAGE ACCURACY	STD DEV
1	11	65-69	0.9358	0.0668
2	8	70-74	0.9559	0.0685
3	11	75-79	0.9465	0.0851
4	17	80-84	0.9619	0.0719
5	11	85-89	0.9251	0.1236
6	5	90-94	0.9412	0.0832

*F (1,62) = .31 , p > .9064

Education

The demographic variable of overall educational level of the 63 participants in relation to BSE accuracy using the LEP demonstrated no statistically significant difference, $F(1,62)=.84$, $p>.5293$. In describing educational levels broken into groups, the seven persons (11.1%) who reported graduate education had the highest percentage scores on accuracy (0.9916). Those three women (4.8%) who reported having a business education had the lowest percentage scores (0.9020) of the six educational groups studied. The 20 women (31.8%) who reported elementary education demonstrated percentage scores of (0.9294) on BSE accuracy using the LEP. (See Table 8 for effect of education on accuracy of BSE performance using the LEP.)

Income Level

The demographic variable of overall, annual income level did not predict BSE accuracy at a statistically significant level, using the LEP, $F(1,62)=1.76$, $p>.1364$. Six income groups were analyzed. In describing income level when broken into to the six groups, the eight out of 63 women (12.7%) who reported an annual income of $15,00 to $24,900 had percentage scores of (0.9853) on accuracy. The 31 women (49.2%) who reported annual income levels of $4,900 or below demonstrated the lowest percentage scores (0.9260) on BSE accuracy using the

TABLE 8

*** EFFECT OF EDUCATION ON BSE ACCURACY USING THE LEARNING ENHANCEMENT PAMPHLET (N=63)**

GROUP	FREQUENCY	EDUCATIONAL LEVEL	PERCENTAGE ACCURACY	STD DEV
1	20	Elementary (1-8)	0.9294	0.0754
2	17	High School (9-12)	0.9481	0.0747
3	1	High School Graduate	1.0000	———
4	3	Business School	0.9020	0.0899
5	15	College (13-16)	0.9490	0.1131
6	7	Graduate Education	0.9916	0.0222

*F (1,62) = .84 , p > .5293

LEP. The highest percentage scores on BSE accuracy using the LEP (1.000) was the $45,000 to $45,900 group; however, only one person (1.6%) fell into that group.(See Table 9 for effect of annual income on accuracy of BSE performance using the Learning Enhancement Pamphlet.)

Race

The demographic variable of race did not predict BSE accuracy at a statistically significant level using the LEP, $F(1,62)=3.49$, $p>.0.0666$. In describing race when broken into the two groups, out of the 63 women in the study sample, the 22 women (34.9%) who were Black had a percentage score of (0.9198) on BSE accuracy using the LEP; while the 41 (65.1%) White women showed a percentage score of (0.9598) using the same pamphlet. (See Table 10 for effect of race on BSE accuracy using the LEP.)

TABLE 9

*EFECT OF ANNUAL INCOME ON BSE ACCURACY USING THE LEARNING ENHANCEMENT PAMPHLET (N=63)

GROUP	FREQUENCY	ANNUAL INCOME	PERCENTAGE ACCURACY	STD DEV
1	31	$ 4,900 or <	0.9260	0.0759
2	13	$ 5,000 - $14,900	0.9774	0.0565
3	8	$15,000 - $24,900	0.9853	0.0416
4	7	$25,000 - $34,900	0.9076	0.0155
5	0	$35,000 - $44,900	——	——
6	3	$45,000 - $54,900	1.0000	0.0000
7	1	$55,000 - $64,900	0.9412	——

*F (1,62) = 1.76, p > .1364

TABLE 10

*EFFECT OF RACE ON BSE ACCURACY USING THE LEARNING ENHANCEMENT PAMPHLET (N=63)

RACE	FREQUENCY	PERCENTAGE ACCURACY	STD DEV
Black	22	0.9198	0.0761
White	41	0.9598	0.0836

* F (1,62) = 3.49, p > .0666

TABLE 11

*EFFECT OF PAST HISTORY OF BSE INSTRUCTION ON BSE ACCURACY USING THE LEARNING ENHANCEMENT PAMPHLET (N=63)

PAST INSTRUCTION	FREQUENCY	PERCENTAGE ACCURACY	STD DEV
Taught	23	0.9591	0.0625
Not Taught	40	0.9382	0.0922

* F (1,62) = .93, p > .3397

Past History of Having Been Taught BSE

The demographic variable, past history of having received breast self-examination instruction, did not predict BSE accuracy at a statistically significant level using the Learning Enhancement Pamphlet, $F(1,62)=.93$, $p>.3397$. In describing the two groups relating to past history of having been taught BSE, 23 out of the 63 women in the study sample (36.5%) reported having been taught BSE in the past and 40 women (63.5%) reported no past BSE instruction. The percentage scores in both groups were very similar (taught,=0.9591; not taught,=0.9382). (See Table 11 for effect of past history of BSE instruction on BSE accuracy using the LEP.)

Summary

None of the demographic variables of age, education, annual income level, race, and past history of having had BSE instruction had any effect BSE accuracy using the LEP.

Research Question Three

Research Question Three was, "Can the accuracy of performing breast self -examination using the Traditional Teaching Pamphlet (TTP) be explained by the participant's age, education, income, race, and past history of having received breast self-examination instruction?"

Age

The demographic variable, age, in relationship to BSE accuracy demonstrated that overall age showed a small difference $F(1,62)=2.14$, $p>.0734$, but not at a statistically significant level when using the Traditional Teaching Pamphlet (TTP).

In describing the effect of age, the greatest difference in percentage scores on accuracy, (0.4734) using the TTP was found in the eleven out of the 63 women in the study sample in age group five (17.5%), 85 to 89 years. The highest level of percentage scores on BSE accuracy using the TTP (0.7668) was found in the 17 participants (27.0%) in the fourth age group, ages 80 to 84 years. The youngest age group comprised of eleven women (17.5%) ,65 to 69 years, demonstrated percentage accuracy scores of (0.6395); while the second youngest age group with eight participants (12.7%), ages 70 to 74 years, showed percentage scores (0.6897) on BSE accuracy using the TTP. The oldest age group with five women (7.9%), ages 90 to 94 years had percentage scores of (0.6276) using the TTP. (See Table 12 for effect of age on accuracy of BSE performance using the TTP.)

TABLE 12

*** EFFECT OF AGE ON BSE ACCURACY USING THE TRADITIONAL TEACHING PAMPHLET, (N=63)**

GROUP	FREQUENCY	AGE	PERCENTAGE ACCURACY	STD DEV
1	11	65-69	0.6395	0.2512
2	8	70-74	0.6897	0.2771
3	11	75-79	0.6364	0.2610
4	17	80-84	0.7668	0.2462
5	11	85-89	0.4734	0.1472
6	5	90-94	0.6276	0.2031

*F (1,62) = 2.14 , p > .0734

Education

The demographic variable, education, demonstrated no statistically significant difference, $F(1,62)=.87$, $p>.5102$, in predicting accuracy of performing BSE using the Traditional Teaching Pamphlet. In describing the effect of education on accuracy scores using the TTP, the lowest percentage scores on accuracy (0.4483) were found in the education group, high school graduate (1.6%). However, only one participant fell into that group. Seven (11.1%) out of the 63 women in the study sample who reported graduate education had the highest percentage scores (0.8030) on accuracy; while the lowest level of reported education, elementary school, with 20 participants (31.8%), demonstrated percentage scores of (0.6138) on BSE accuracy using the TTP. Those three women (4.8%) who reported business school education had percentage scores of (0.7471) on accuracy of BSE performance using the TTP. (See Table 13 for the effect of education on accuracy of BSE performance using the TTP.)

TABLE 13

***EFFECT OF EDUCATION ON BSE ACCURACY USING THE TRADITIONAL TEACHING PAMPHLET, (N=63)**

GROUP	FREQUENCY	EDUCATIONAL LEVEL	PERCENTAGE ACCURACY	SRD DEV
1	20	ELEMENTARY (1-8)	0.6138	0.2311
2	17	HIGH SCHOOL (9-12)	0.6268	0.3102
3	1	HIGH SCHOOL GRADUATE	0.4483	——
4	3	BUSINESS SCHOOL	0.7471	0.0718
5	15	COLLEGE (13-16)	0.6483	0.2372
6	7	GRADUATE SCHOOL	0.8030	0.1744

* F (1,62) = .87, p > .5102

Income Level

The demographic variable of annual income did not predict BSE accuracy at a statistically significant level using the TTP, $F(1,62)=1.88$, $p>.1129$. In describing income level groups and BSE accuracy while using the TTP, the 31 out of 63 women in the sample (49.2%) who were in the lowest income group, $4,900 or below, showed percentage scores of (0.5807) on accuracy; the three women(4.8%) in the annual income group of $45,000 to $54,000 demonstrated the highest percentage scores (0.8506) of BSE accuracy while using the Traditional Teaching Pamphlet. The highest reported annual income group of $55,000 to $64,000 had a percentage score of (0.8276); however, only one (1.6%) participant fell into that group. (See Table 14 for the effect of annual income on accuracy of BSE performance using the TTP.)

Race

The demographic variable of race did not predict BSE accuracy at a statistically significant level while using the TTP, $F(1,62)=3.21$, $P>.0780$. In describing the two racial groups, out of the 63 women in the study sample the 22 Black women (34.9%) demonstrated a percentage score of (0.5752) on BSE accuracy using the TTP; while the 41 (65.1%) White women showed a percentage score of (0.6905) using the same pamphlet. (See Table 15 for the effect of race on BSE accuracy using the TTP.)

TABLE 14

*** EFFECT OF ANNUAL INCOME ON BSE ACCURACY USING THE TRADITIONAL TEACHING PAMPHLET, (N=63)**

GROUP	FREQUENCY	INCOME LEVEL	PERCENTAGE ACCURACY	STD DEV
1	31	$ 4,900 or <	0.5807	0.2320
2	13	$ 5,000 - $14,900	0.7745	0.2725
3	8	$15,000 - $24,900	0.6767	0.1950
4	7	$25,000 - $34,900	0.5862	0.2794
5	0	$35,000 - $44,900	——	——
6	3	$45,000 - $54,000	0.8506	0.1109
7	1	$55,000 - $64,000	0.8276	——

*F (1,62) = 1.88, p > .1129

TABLE 15

*EFFECT OF RACE ON BSE ACCURACY USING THE TRADITIONAL TEACHING PAMPHLET, (N=63)

RACE	FREQUENCY	PERCENTAGE ACCURACY	STD DEV
BLACK	22	0.5752	0.2388
WHITE	41	0.6905	0.2457

* F (1,62) = 3.21, p > .0780

TABLE 16

*EFFECT OF PAST HISTORY OF BSE INSTRUCTION ON BSE ACCURACY USING THE TRADITIONAL TEACHING PAMPHLET, (N=63)

PAST INSTRUCTION	FREQUENCY	PERCENTAGE ACCURACY	STD DEV
TAUGHT	23	0.6921	0.0516
NOT TAUGHT	40	0.6267	0.0392

*F (1,62) = .99, p > .3241

Past History of Having Been Taught BSE

The last demographic variable in Research Question Three was past history of having been taught breast self-examination instruction. Again, having been taught BSE in the past did not predict BSE accuracy at a statistically significant level while using the TTP, $F(1,62)=.99$, $p>.3241$. In describing the two groups of past history of having been taught BSE, the percentage scores for the 23 women (36.5%) who had previously been taught were (0.6921); while the percentage scores for the 40 women (63.5%) who had never been taught were (0.6267). (See Table 16 for the effect of past history of BSE instruction on accuracy using the TTP.)

Summary

As the findings described above indicate, none of the demographic variables of age, education, income level, race, and past history of BSE instruction related to Research Question Three predicted BSE accuracy using each pamphlet. (See Table 17, which is a composite summary of Tables 7-16.)

Research Question Four

Research Question Four was, "Is there a preference for one pamphlet over the other in relation to ease of reading, ease of handling, ease of opening, ease of following directions, color best suited for reading, and overall pamphlet preference for teaching BSE?" At the end of the

TABLE 17

*** COMPOSITE SUMMARY OF TABLES 7-16, (N=63)**

VARIABLE	GROUP	FREQUENCY	PERCENTAGE ACCURACY USING LEP	STD DEV	PERCENTAGE ACCURACY USING TTP	STD DEV
AGE	65-69	11	0.9358	0.0668	0.6395	0.2512
	70-74	8	0.9559	0.0685	0.6897	0.2771
	75-79	11	0.9465	0.0851	0.6364	0.2610
	80-84	17	0.9619	0.0719	0.7668	0.2462
	85-89	11	0.9251	0.1236	0.4734	0.1472
	90-94	5	0.9412	0.0832	0.6276	0.2031
			*F (1,62) = .31, p > .9064		*F (1,62) = 2.14, p > 0.0734	
EDUCATION	ELEMENTARY	20	0.9294	0.0754	0.6138	0.2311
	HIGH SCHOOL	17	0.9418	0.0747	0.6268	0.3102
	HIGH SCHOOL GRADUATE	1	1.0000	———	0.4483	———
	BUSINESS SCHOOL	3	0.9020	0.0899	0.7471	0.0718
	COLLEGE GRADUATE	15	0.9490	0.1131	0.6483	0.2372
	EDUCATION	7	0.9916	0.0222	0.8030	0.1744
			*F (1,62) = .84, p > .5293		*F (1,62) = .87, p > .5102	
INCOME	$ 4,900 or <	31	0.9260	0.0759	0.5807	0.2320
	$ 5,000 - $14,900	13	0.9774	0.0565	0.7745	0.2725
	$15,000 - $24,900	8	0.9853	0.0416	0.6767	0.1950
	$25,000 - $34,900	7	0.9076	0.0155	0.5862	0.2794
	$35,000 - $44,900	0	———	———	———	———
	$45,000 - $54,900	3	1.0000	0.0000	0.8506	0.1109
	$55,000 - $64,900	1	0.9412	———	0.8276	———
			*F (1,62) = 1.76, p > .1354		*F (1,62) = 1.88, p > .1129	
RACE	BLACK	22	0.9198	0.0761	0.5752	0.2388
	WHITE	41	0.9598	0.0836	0.6905	0.2457
			*F (1,62) = 3.49, p > .0666		*F (1,62) = 3.21, p > .0780	
PAST BSE INSTRUCTION	TAUGHT	23	0.9591	0.0625	0.6921	0.0516
	NOT TAUGHT	40	0.9382	0.0922	0.6267	0.0392
			*F (1,62) = .93, p > .3397		*F (1,62) = .99, p > .3241	

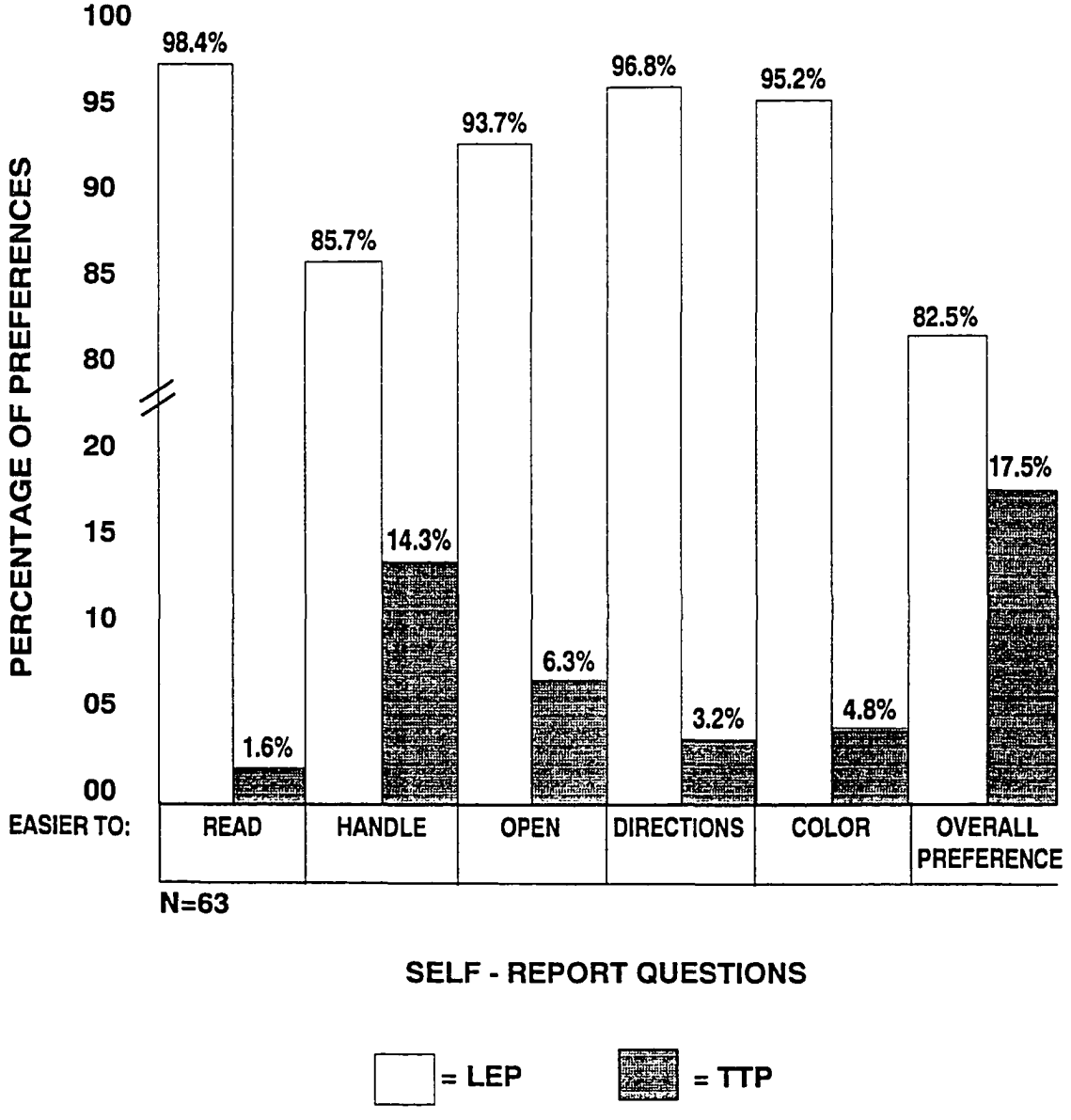
second teaching session after the participants had used the second pamphlets, the answers to six questions were obtained through self-report.

A description of the answers to the six self-report questions follows: The first self-report question,"Which pamphlet was easier to read?" showed that 62 out of the 63 women (98.4%) in the study sample were in favor of the Learning Enhancement Pamphlet (LEP) over the Traditional Teaching Pamphlet (TTP). The second question, "Which pamphlet was easier to handle?" demonstrated that 54 out of 63 women (85.7%) favored the LEP over the Traditional Teaching Pamphlet (TTP). Self-report question three, "Which pamphlet was easier to open?" showed that 59 women of the sample (93.7%) were in favor of the LEP. Question four, "Which pamphlet had easier directions to follow?," demonstrated that 61 out of 63 women (96.8%) favored the LEP. The fifth self-report question, "Which color was best suited for reading?," demonstrated that 59 (95.2%) out of 63 women preferred the LEP. The last self-report question, "Which pamphlet did you like for teaching breast self-examination?," showed that 52 (82.5%) were in favor of the LEP. It was recognized that the Learning Enhancement Pamphlet was preferred over the Traditional Teaching Pamphlet in regards to each of the self-report

questions. (See Figure 1 for a histogram of the proportion of preferences for the LEP over the TTP in relation to the six self-report questions.)

FIGURE 1

Histogram of the percentage of preferences for the Learning Enhancement Pamphlet over the Traditional Teaching Pamphlet as measured on the six self-report questions.



Research Question Five

Research Question Five was,"If there is a preference for one pamphlet over the other in relation to ease of reading, ease of handling, ease of opening, ease of following directions, color best suited for reading, and overall pamphlet preference for teaching BSE, can the preference be explained by the participant's age, education, income level, race, and past history of having had breast self-examination instruction?"

Age

The demographic variable, age, demonstrated a statistically significant difference in overall preference for the Learning Enhancement Pamphlet over the Traditional Teaching Pamphlet, $F(1,62)=2.40$, $p<.0481$. In describing the age groups and their effect on the six questions, the eleven out of the 63 women (17.5%) who were in age group one, ages 65 to 69, only six were slightly in favor of the LEP (55%) over the TTP with regard to overall pamphlet preference for teaching breast self-examination.

All eleven (17.5%) out of the 63 women in age group one, ages 65-69 years, demonstrated a preference for the LEP related to ease of reading, easier directions to follow, and best color suited for reading. Only nine (82%) of this group of women thought that the LEP was easier to handle than the TTP. It is also noted that of the eleven (17.5%) women in age

group one, only six (55%) favored the LEP over the TTP for overall pamphlet preference for teaching BSE.

All eight (12.7%) women in the second age group, ages 70-74 years, agreed on the LEP for ease of following directions and color best suited for reading. Seven (87.5%) out of this group preferred the LEP for ease of reading. Six women (75%) in this age group felt that the LEP in relation to ease of handling and overall pamphlet preference for teaching BSE was better than the TTP.

All eleven out of the 63 women (17.5%) in the third age group, ages 75-79 years, showed favor for the LEP in regards to ease of reading, ease of handling, ease of opening, easier directions to follow, and color best suited for reading. Only nine (82%) of these women favored the LEP over the TTP for overall pamphlet preference for teaching BSE.

There were 17 women in the fourth age group, ages 80-84 years. All of these women agreed on the LEP over the TTP in relation to ease of reading, opening, following directions, color preference, and overall pamphlet preference. Only 15 (88%) of this same group preferred the LEP in relation to ease of handling.

Out of 63 women, the eleven in age group of 85-89 years, agreed on the LEP over the TTP in regards to ease of reading. Nine women (82%) in this same group agreed on the other five self-report questions in relation to ease of handling, ease of

opening, easier directions to follow, color best suited for reading and pamphlet preference.

Five out of the 63 women (7.9%) were in the oldest age group, ages 90-94 years. All five of these women favored the LEP for ease of reading, ease of opening, easier directions to follow, and best overall pamphlet preference for teaching BSE. Of these five women, four (80%) were in favor of the LEP over the TTP in regards to ease of handling and color best suited.

Education

The demographic variable of education demonstrated no statistically significant difference in relation to overall pamphlet preference, $F(1,62)= .95, p>.4438$. In describing the educational groups and pamphlet preference, all of the 20 out of 63 (31.8%) with elementary school education agreed that the LEP was better than the TTP in regards to color preference. Moreover, only 15 women (75%) of this group felt that the LEP was better than the TTP in relation to overall pamphlet preference for teaching BSE. Since only one participant out of 63 women was included in the education group of high school graduate, she was placed with the high school education group (N=17) to make a total of 18 women. All the participants in the augmented group with high school education (N=18 or 28.6%) agreed on the self-report questions relating to ease of reading and easier directions to follow in favor of the LEP to the TTP; while 17 women (94%) of this group agreed on ease of

opening, color preference, and overall pamphlet preference for BSE teaching using the LEP.

Of the three out of 63 women (4.8%) who reported business school education, all agreed that the LEP was better than the TTP in each of the self-report questions, with the exception that only two women out of this group (67%) were in favor of the LEP in regards to overall pamphlet preference for teaching BSE. All of the 15 out of 63 women (23.8%) in the college group agreed that the LEP was better than the TTP in relation to ease of reading. Only 13 (87%) of these same women favored the LEP in regards to ease of opening, color preference, and overall pamphlet preference for BSE teaching. In the same group, 12 (80%) thought that the LEP was easier to handle. All of the seven out of 63 women (11.1%) with graduate education agreed that the LEP was better than the TTP on questions one through five. However, the self-report question on overall pamphlet preference for BSE teaching demonstrated that only five of these women (71%) favored the LEP over the TTP.

Income Level

The demographic variable, income, showed no statistically significant difference in relation to overall pamphlet preference, $F(1,62)=0.11$, $p>.9798$. In describing the income level groups and pamphlet preference, of the 63 women in the sample, 31 (49%) who were in the lowest income level of $4,900 or below, all agreed that the LEP was preferable to the TTP in

color. However, only 25 women (80%) of these 31 agreed that the LEP was better than the TTP for teaching breast self-examination. Also, 97% or 30 of this group felt that in relation to ease of handling and easier directions to follow, the LEP was preferable.

Of the 13 women (21%) in the income group, $5,000 to $14,900, all preferred the LEP over the TTP in regards to the self-report questions of ease of reading, easier directions to follow, and color best suited to reading; only nine women of the 13 (69%) of this group favored the LEP in relation to ease of handling. Of those eight women (12.7%) in the income group of $15,00 to $24,900, all agreed that in relation to ease of reading, handling, and opening, the LEP was better than the TTP. Only six out of eight (75%) of the same group thought that the color of the LEP was better than the TTP. Also,seven (85%) of this group felt that the LEP was better in regards to following directions and overall pamphlet preference for teaching BSE.

All seven out of 63 women (11.1%) in the income group of $25,00 to $34,900 agreed that the LEP was better than the TTP in relation to ease of reading,ease of handling, ease of opening, and ease of following directions. However, only six of the seven (86%) of the same group felt that the LEP was better than the TTP in the areas of color and overall pamphlet preference for teaching BSE. Out of the four of 63 women (6.1%) with reported annual incomes of $45,00 to $54,900 , all

agreed that the LEP was better than the TTP in the areas of ease of reading, easier directions to follow, and color best suited for reading. Only three out of four (75%) of this same group were in favor of the LEP over the TTP in relation to ease of handling, ease of opening, and overall pamphlet preference for teaching BSE.

Race

The demographic variable of race showed no statistically significant difference on the overall pamphlet preference, $F(1,62)=2.27$, $p>.1372$. In describing the two racial groups and pamphlet preference, out of the 22 Black women (34.9%) in the study sample, 20 (90.9%) were in favor of the LEP over the TTP in relation to the six self-report questions. Out of the 41 (65.1%) White women in the sample, 39 (95%) favored the LEP over the TTP in relation to the six self-report questions.

Out of the 22 Black women (34.9%) in the study, 21 (95.5%) were in favor of the LEP in regards to the question, ease of reading. Out of the same group, 17 (77.3%) women agreed that the LEP was better than the TTP in relation to ease of handling, and 20 (91%) were in favor of the LEP over the TTP in regards to ease of opening. Ease of following directions was supported by 21 (96%) of the Black women with a preference for the LEP. All of the 22 Black women favored the LEP over the TTP for color best suited for reading, and 16 (73%) of the Black women preferred the LEP over the TTP for

overall pamphlet preference for teaching breast self-examination.

All of the 41 (65.1%) White women favored the LEP over the TTP in relation to ease of reading. Also, 37 of this same group demonstrated preference for the LEP in regards to ease of handling. Thirty nine (95%) of these women preferred the LEP for ease of opening ; while 40 (98%) of the 41 White women favored the LEP in relation to ease of following directions. Of the White women, 38 (93%) thought that the LEP was better than the TTP regarding color best suited for reading. In regards to overall pamphlet preference for teaching BSE, 36 (88%) of these women favored the LEP over the TTP.

Past History of Having Been Taught BSE

The demographic variable, past history of breast self-examination instruction, demonstrated no statistically significant difference in overall pamphlet preference, $F(1,62)=.45$, $p>.5054$. In describing the two groups regarding past history of having been taught BSE, of the 23 out of 63 women (36.5%) with past history of BSE instruction, 22 (97%) preferred the LEP to the TTP in relation to ease of reading, easier directions to follow, and color preference; while 18 (78%) of these same women felt that ease of handling and overall pamphlet preference for teaching BSE was in favor of the LEP over the TTP.

All of the 40 women out of 63 (63.5%) who had never had past BSE instruction agreed that the LEP was better in relation to ease of reading. Thirty-nine (97%) of this group felt that the LEP had easier directions to follow. Also, 38 of the 40 women (95%) felt that the LEP was easier to open and had better color for reading in comparison to the TTP. Only 34 (85%) of the same group thought that the LEP was better suited to teaching BSE than the TTP.

Summary

It is recognized that education, income level, race, and past history of having been taught BSE did not predict the answers to any of the self-report questions. However, age did have a statistically significant effect on pamphlet preference for the LEP over the TTP, $F(1,62)=2.40$, $p<.0481$. Surprisingly, only six of 11 women (55%) in the youngest age group ,64 - 69 years, preferred the LEP to the TTP for overall pamphlet preference. (See Tables 18 - 22 for comparison of women favoring the LEP or the TTP with variables of age, education, income, race, and past history of having been taught BSE in relation to the six self-report questions.)

Research Question Six

Research Question Six was, " Are there differences in the behavioral response in each category of facial expression, emotional response, body language, and verbal statement as the

TABLE 18

COMPARISON OF THE NUMBER OF WOMEN FAVORING THE LEP OR TTP WITH AGE FOR EACH SELF-REPORT QUESTION. (N=63)

EASE OF READING

	LEP	TTP	TOTAL
65-69	11	0	11
70-74	7	1	8
75-79	11	0	11
80-84	17	0	17
85-89	11	0	11
90-94	5	0	5
TOTAL	62	1	63

EASE OF HANDLING

	LEP	TTP	TOTAL
65-69	9	2	11
70-74	6	2	8
75-79	11	0	11
80-84	15	2	17
85-89	9	2	11
90-94	4	1	5
TOTAL	54	9	63

EASE OF OPENING

	LEP	TTP	TOTAL
65-69	10	1	11
70-74	7	1	8
75-79	11	0	11
80-84	17	0	17
85-89	9	2	11
90-94	5	0	5
TOTAL	59	4	63

EASE OF FOLLOWING DIRECTIONS

	LEP	TTP	TOTAL
65-69	11	0	11
70-74	8	0	8
75-79	11	0	11
80-84	17	0	17
85-89	9	2	11
90-94	5	0	5
TOTAL	61	2	63

COLOR

	LEP	TTP	TOTAL
65-69	11	0	11
70-74	8	0	8
75-79	11	0	11
80-84	17	0	17
85-89	9	2	11
90-94	4	1	5
TOTAL	60	3	63

*OVERALL PREFERENCE

	LEP	TTP	TOTAL
65-69	6	5	11
70-74	6	2	8
75-79	9	2	11
80-84	17	0	17
85-89	9	2	11
90-94	5	0	5
TOTAL	52	11	63

* F (1,62) = 2.40, $p < .0481$

TABLE 19

COMPARISON OF THE NUMBER OF WOMEN FAVORING THE LEP OR TTP WITH EDUCATION FOR EACH SELF-REPORT QUESTION. (N=63)

EASE OF READING

	LEP	TTP	TOTAL
Elementary	19	1	20
High School	18	0	18
Business	3	0	3
College	15	0	15
Graduate	7	0	7
TOTAL	62	1	63

EASE OF HANDLING

	LEP	TTP	TOTAL
Elementary	17	3	20
High School	15	3	18
Business	3	0	3
College	12	3	15
Graduate	7	0	7
TOTAL	54	9	63

EASE OF OPENING

	LEP	TTP	TOTAL
Elementary	19	1	20
High School	17	1	18
Business	3	0	3
College	13	2	15
Graduate	7	0	7
TOTAL	59	4	63

EASE OF FOLLOWING DIRECTIONS

	LEP	TTP	TOTAL
Elementary	19	1	20
High School	18	0	18
Business	3	0	3
College	13	2	15
Graduate	7	0	7
TOTAL	60	3	63

COLOR

	LEP	TIP	TOTAL
Elementary	20	0	20
High School	17	1	18
Business	3	0	3
College	13	2	15
Graduate	7	0	7
TOTAL	60	3	63

OVERALL PREFERENCE

	LEP	TTP	TOTAL
Elementary	15	5	20
High School	17	1	18
Business	2	1	3
College	13	2	15
Graduate	5	2	7
TOTAL	52	11	63

TABLE 20

COMPARISON OF THE NUMBER OF WOMEN FAVORING THE LEP OR TTP WITH INCOME FOR EACH SELF-REPORT QUESTION, (N=63)

EASE OF READING

	LEP	TTP	TOTAL
$ 4,900 or <	30	1	31
$ 5,000-$14,900	13	0	13
$15,000-$24,900	8	0	8
$25,000-$34,900	7	0	7
$45,000-$54,900	4	0	4
TOTAL	62	1	63

EASE OF HANDLING

	LEP	TTP	TOTAL
$ 4,900 or <	30	1	31
$ 5,000-$14,900	9	4	13
$15,000-$24,900	8	0	8
$25,000-$34,900	7	0	7
$45,000-$54,900	3	1	4
TOTAL	57	6	63

EASE OF OPENING

	LEP	TTP	TOTAL
$ 4,900 or <	30	1	31
$ 5,000-$14,900	11	2	13
$15,000-$24,900	8	0	8
$25,000-$34,900	7	0	7
$45,000-$54,900	3	1	4
TOTAL	59	4	63

EASE OF FOLLOWING DIRECTIONS

	LEP	TTP	TOTAL
$ 4,900 or <	30	1	31
$ 5,000-$14,900	13	0	13
$15,000-$24,900	7	1	8
$25,000-$34,900	7	0	7
$45,000-$54,900	4	0	4
TOTAL	61	2	63

COLOR

	LEP	TTP	TOTAL
$ 4,900 or <	31	0	31
$ 5,000-$14,900	13	0	13
$15,000-$24,900	6	2	8
$25,000-$34,900	6	1	7
$45,000-$54,900	4	0	4
TOTAL	60	3	63

OVERALL PREFERENCE

	LEP	TTP	TOTAL
$ 4,900 or <	25	6	31
$ 5,000-$14,900	11	2	13
$15,000-$24,900	7	1	8
$25,000-$34,900	6	1	7
$45,000-$54,900	3	1	4
TOTAL	52	11	63

TABLE 21

COMPARISON OF THE NUMBER OF WOMEN FAVORING THE LEP OR TTP WITH RACE FOR EACH SELF-REPORT QUESTION, (N=63)

EASE OF READING

	LEP	TTP	TOTAL
BLACK	21	1	22
WHITE	41	0	41
TOTAL	62	1	63

EASE OF HANDLING

	LEP	TTP	TOTAL
BLACK	17	5	22
WHITE	37	4	41
TOTAL	54	9	63

EASE OF OPENING

	LEP	TTP	TOTAL
BLACK	20	2	22
WHITE	39	2	41
TOTAL	59	4	63

EASE OF FOLLOWING DIRECTIONS

	LEP	TTP	TOTAL
BLACK	21	1	22
WHITE	40	1	41
TOTAL	61	2	63

COLOR

	LEP	TTP	TOTAL
BLACK	22	0	22
WHITE	38	3	41
TOTAL	60	3	63

OVERALL DIFFERENCE

	LEP	TTP	TOTAL
BLACK	16	6	22
WHITE	36	5	41
TOTAL	52	11	63

TABLE 22

COMPARISON OF THE NUMBER OF WOMEN FAVORING THE LEP OR TTP WITH PAST HISTORY OF BSE INSTRUCTION FOR EACH SELF-REPORT QUESTION, (N=63)

EASE OF READING

	LEP	TTP	TOTAL
NOT TAUGHT	40	0	40
TAUGHT	22	1	23
TOTAL	62	1	63

EASE OF HANDLING

	LEP	TTP	TOTAL
NOT TAUGHT	36	4	40
TAUGHT	18	5	23
TOTAL	54	9	63

EASE OF OPENING

	LEP	TTP	TOTAL
NOT TAUGHT	38	2	40
TAUGHT	21	2	23
TOTAL	59	4	63

EASE OF FOLLOWING DIRECTIONS

	LEP	TTP	TOTAL
NOT TAUGHT	39	1	40
TAUGHT	22	1	23
TOTAL	61	2	63

COLOR

	LEP	TTP	TOTAL
NOT TAUGHT	38	2	40
TAUGHT	22	1	23
TOTAL	60	3	63

OVERALL DIFFERENCE

	LEP	TTP	TOTAL
NOT TAUGHT	34	6	40
TAUGHT	18	5	23
TOTAL	52	11	63

participant uses the Learning Enhancement Pamphlet or the Traditional Teaching Pamphlet?" Because of the few behavioral responses, either positive or negative in any one category using either pamphlet, statistical procedures could not be applied. However, a detailed description of behavioral responses follows for the few women who demonstrated responses. (Refer to the Behavioral Observations Check List [Appendix O] for explanations on behavioral response.)

At the Red Carpet Inn, the first participant identified was in the 70-74 years age group, high school education group, annual income group of $4,900 or below, was Black, and had a past history of BSE instruction. No positive or negative responses were noted while the participant used the Learning Enchancement Pamphlet, but a negative facial expression (frown) was seen while the participant read the steps: "While lying, places the flat part of the left fingers at the bottom of the right breast," and "While lying, squeezes the left

nipple to check for drainage." The same participant received a BSE accuracy score of 82% while using the LEP and a score of 38% using the TTP. The first two steps in which frowns were observed while reading the TTP were inaccurately performed by the participant; however, the third step which elicited a frown while reading the instructions was correctly performed during BSE performance. In relation to the six self-report questions, this participant preferred the LEP for ease of reading and opening, easier directions to follow and color best suited for reading. She preferred the TTP for ease of handling and overall pamphlet preference for teaching breast self-examination. During the three month follow-up visit, this participant reported practicing BSE more often than every three months and did not use either pamphlet to perform the exam.

The second participant demonstrating behavioral responses was in the 65-69 years age group, had elementary school education, was in the $4,900 or below annual income bracket, was Black, and had no past history of BSE instruction. Three negative facial expressions (frowns) were observed as the participant used the TTP and was reading the following steps: "While lying, feels on the outside of the breast in a circular pattern and gradually moves in toward the nipple," "While lying, places the flat part of the right fingers at the bottom of the left breast," and "While lying, squeezes the left nipple to check for drainage."

The same participant received a score of (100%) on BSE accuracy using the LEP and a score of (31%) using the TTP. While reading the TTP, the first two steps in which frowns were elicited were inaccurately performed, but the third step in which a frown was observed while reading the step was accurately performed. In relation to the six self-report questions, this participant preferred the LEP for ease of reading, handling, opening, easier directions to follow, and color best suited for reading. The TTP was favored for overall pamphlet preference for BSE teaching. During the three month follow-up interview, the participant reported practicing BSE once a month for three months and referred to the LEP to help her remember the steps.

The third participant observed demonstrating behavioral responses was in the 75-79 years age group, elementary school education group, $4,900 or below annual income group, was Black, and had never been taught BSE. The participant received a score of (100%) on BSE accuracy using the LEP, and no behavioral responses were observed. While using the TTP, the BSE accuracy score was (48%), and five negative facial responses (frowns) were observed while the participant read five of the BSE steps.

The five steps included: "While standing, checks breasts again with hands clasped behind head;" "While standing, feels under the right arm for lumps;" "While lying, places the flat part of the left fingers at the bottom of the right breast;"

"While standing, feels under the left arm for lumps;" and "While standing, feels on the outside of the left breast with the right hand and gradually moves in toward the nipple." Each of these five steps was missed in regards to BSE accuracy using the Traditional Teaching Pamphlet. The same participant favored the LEP over the TTP in relation to each of the six self-report questions. During the three month follow-up interview, this participant reported having practiced BSE once a month for three months and used the LEP to help her remember the steps of the exam.

The fourth participant displaying behavioral responses at the Red Carpet Inn was in the 75-79 years age group, high school education group, the $4,900 or below annual income group, was White, and had a past history of having been taught breast self-examination. The participant had a score of (94%) on BSE accuracy using the Learning Enhancement Pamphlet and displayed two positive facial expressions (smiles).

Two steps elicited smiles while reading the LEP which included: "While standing, checks breasts again with hands raised over the head;" and "While standing, places the flat part of the left fingers at the bottom of the right breast." Both of these steps were accurate in regards to BSE performance using the LEP. The one step missed on BSE accuracy using the LEP, "While standing, before a mirror, looks for color changes, dimpling, or puckering," elicited no behavioral response. No other responses were observed.

Four negative facial responses (frowns) were noted while the fourth participant read the steps of BSE from the Traditional Teaching Pamphlet, and BSE accuracy was (80%) using this pamphlet. Frowns were observed while the participant read the following steps: "While standing, places hands on hips and looks at her breasts before a mirror;" "While standing, checks breasts again with hands clasped behind the head;" "While standing, feels on the outside of the right breast in a circular pattern and gradually moves in toward the nipple;" and "While lying, squeezes the right nipple to check for drainage." Although frowns were elicited while reading the TTP, each of these four steps was done accurately during BSE performance. Additionally, the participant preferred the LEP to the TTP on each of the six self- report questions. During the three month follow-up visit, the participant reported practicing BSE more often than once a month but had not used either pamphlet during that time.

The fifth participant who was observed demonstrating behavioral responses fit into the 65-69 years age group, high school education group, the $4,900 or below annual income group, was Black, and had no past history of BSE instruction. Behavioral responses were not noted while the participant read the LEP; however, one negative facial response (frown) using the TTP was observed while the participant read this step: "While standing before a mirror, checks breasts again with

hands clasped behind head." Although the participant received a BSE accuracy score of (69%) using the TTP, the steps missed on accuracy did not elicit behavioral responses. This participant preferred the LEP over the TTP on all six self-report questions. During the three month follow-up visit, this participant reported practicing BSE more often than once a month but had not used either pamphlet.

The sixth participant was in the 85-89 year age group, elementary school education group, $4,900 or below annual income group, was Black with no past history of BSE instruction. No responses were observed while the participant read the Learning Enhancement Pamphlet; although, during performance, two out of 17 steps were missed making BSE accuracy (88%). Only one negative facial response (frown) was observed while the participant read the TTP; although, 15 out of 29 steps were missed making BSE accuracy (48%). The frown occurred while the participant read: "While standing, checks breasts again with hands clasped behind head," but this step was not one of the steps missed on BSE accuracy. No other behavioral responses were observed. In regards to the six self-report questions, the participant favored the LEP in relation to ease of reading, handling, opening, and color preference but preferred the TTP for easier directions to follow and best pamphlet suited for BSE teaching. During the three month follow-up interview, this participant reported

having practiced BSE once a month for two months and had used the LEP to remind her of the steps of BSE.

The last participant at the Red Carpet Inn observed displaying behavioral responses was in the 65-69 years age group, high school education group, $5,00 to $14,900 annual income group, was Black, and had a past history of BSE instruction. The participant was (100%) accurate on BSE performance using the LEP and had two positive facial expressions (smiles) while reading the following steps: "While standing, uses the right hand to feel under the left arm for lumps," and "While standing, places the flat part of the left fingers at the bottom of the right breast." No behavioral responses were observed while the same participant read the steps of BSE using the TTP. In relation to the six self-report questions, the participant preferred the LEP for ease of reading, easier directions to follow, and color best suited for reading but preferred the TTP for ease of handling and opening, and pamphlet preference for BSE teaching. During the time of the three month follow-up visit, this participant reported having practiced BSE for one month and used the LEP at that time.

Summary

Thirteen negative facial expressions (frowns) were observed while five participants read the Traditional Teaching Pamphlet. One participant elicited two positive facial

expressions (smiles) while reading the Learning Enhancement Pamphlet and four frowns while reading the TTP. A total of four positive facial expressions and 17 negative facial expressions were noted in participants from one setting. The remaining steps of BSE read from both pamphlets related to facial expressions elicited "no response." All other categories of behavioral responses, emotional response, body language, and verbal statements elicited "no response" while each participant read each of the BSE steps from both pamphlets. (See Table 23 for an overview of positive and negative facial responses using the LEP and the TTP.)

Research Question Seven

Research Question Seven was, "If there are differences in the behavioral response of facial expression, emotional response, body language, and verbal statement, will they be explained by the participant's age, education, income level,

TABLE 23

OVERVIEW OF POSITIVE / NEGATIVE FACIAL RESPONSES USING THE LEP/TTP

	BSE STEPS	FACIAL EXPRESSION Pos. Smile	FACIAL EXPRESSION Neg. Frown
1.	Places hands on hips and looks at her breasts before a mirror.		
	3. (Standing)		II
2.	Looks for color changes, dimpling, or puckering.		
	1. (Standing)		
	2. (Standing)		
	3. (Standing)		
3.	Checks breasts again with hands raised over head (hands clasped behind head).		
	2. (Standing)	I	III
4.	Looks at her breasts with arms by her side.		
	1. (Standing)		
5.	Uses the opposite hand to feel under each arm for lumps.		
	4. (Standing) (RT ARM)		II
	4. (Standing) (LFT ARM)	I	I
6.	Lies down and places a small pillow (or towel) under her right shoulder.		
	4. (Lying)		
7.	Places her right arm behind her head.		
	4. (Lying)		
8.	Places the flat part of left fingers at the bottom of the right breast.		
	4. (Standing)	II	
	4. (Lying)		II

	BSE STEPS	FACIAL EXPRESSION LEP Pos. Smile	FACIAL EXPRESSION TTP Neg. Frown
9.	Feels on the outside of the left breast in a circular pattern and gradually moves in toward the nipple.		
	4. (Standing)		
	4. (Lying)		I
10.	Feels under the right arm.		
	4. (Lying)		
11.	Squeezes the right nipple to check for drainage.		
	5. (Standing)		
	5. (Lying)		I
12.	Places the pillow (or towel) under her left shoulder.		
	4. (Lying)		
13.	Puts her left arm behind her head.		
	4. (Lying)		
14.	Places the flat part of her right fingers at the bottom of the left breast.		
	4. (Standing)		I
	4. (Lying)		I
15.	Feels the outside of the right breast in a circular pattern and gradually moves in toward the nipple.		
	4. (Standing)		I
	4. (Lying)		
16.	Feels underneath the left arm.		
	4. (Lying)		
17.	Squeezes the left nipple to check for drainage.		
	5. (Standing)		
	5. (Lying)		II

race, and past history of having been taught breast self-examination?" Since Research Question Six could not be answered through statistical analysis, Research Question Seven was not analyzed.

Research Question Eight

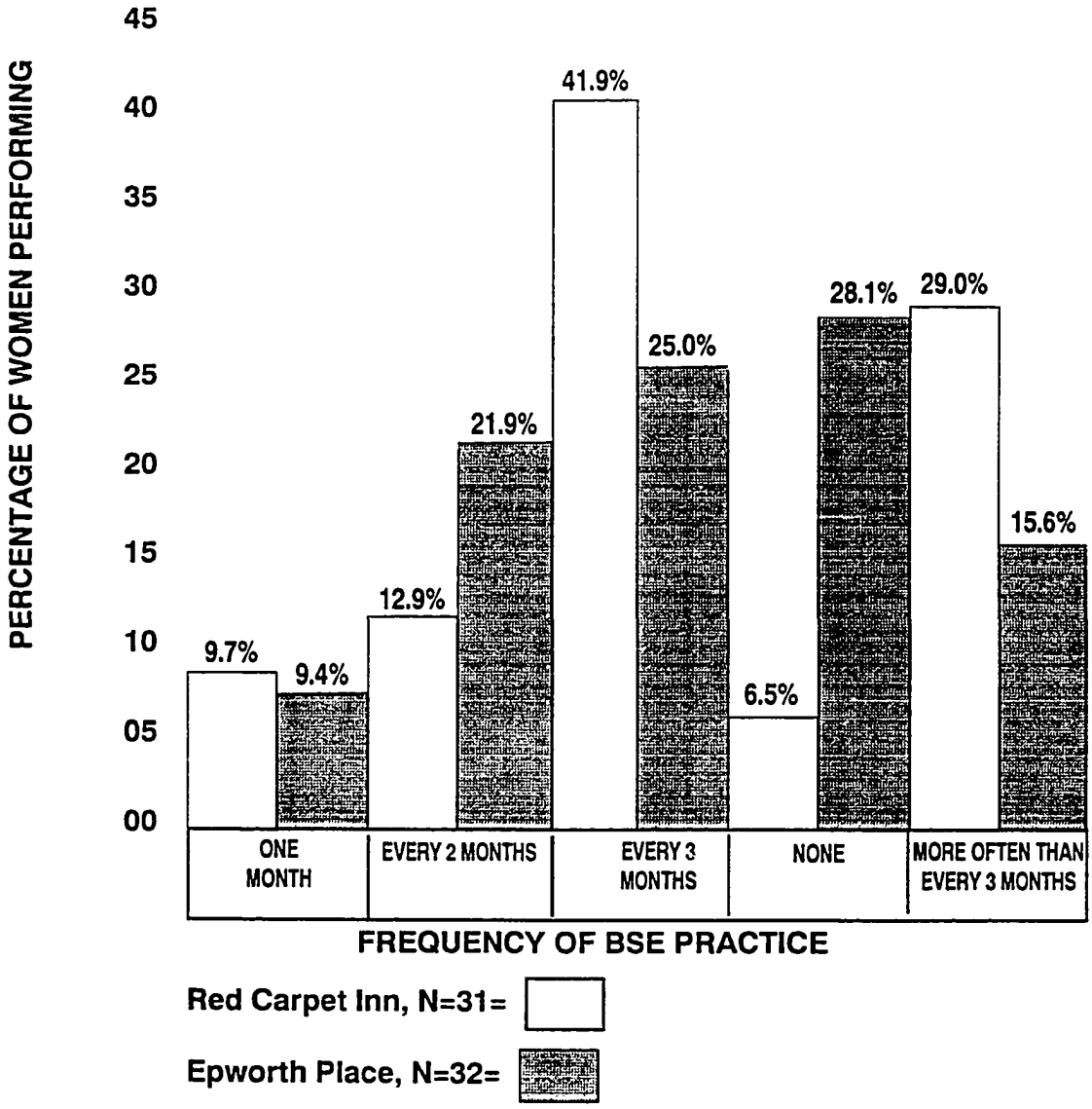
Research Question Eight was, "At the end of the three-month period between breast self-examination intervention and the follow-up interview, how often does each participant report having practiced breast examination on herself?" There were five possible answers to the question which included: once a month: 1) for one month, 2) for two months, 3) for three months, 4) none, or 5) more often.

Out of the 63 women in the study sample, 21 (33.3%) women had practiced BSE once a month for three months, and 14 (22.2%) women reported doing the procedure more than once a month; therefore, a total of 35 (55.5%) practiced the procedure as often or more often monthly. At the Red Carpet Inn, 13 (41.9%) of the women reported having practiced BSE once a month for three months; while nine (29.0%) of the women in this setting reported practicing BSE more than once a month. Eight (25%) of the 32 women at Epworth Place had done the exam once a month for three months, and five (15.6%) of the women in the same setting stated that they had practiced more often than once a month. (See Figure 2 for a histogram

of percent performanc of BSE practice in relation to the three month follow-up questions comparing the Red Carpet Inn and Epworth Place.)

FIGURE 2.

HISTOGRAM of subjects who performed BSE at the end of the three month follow-up period.



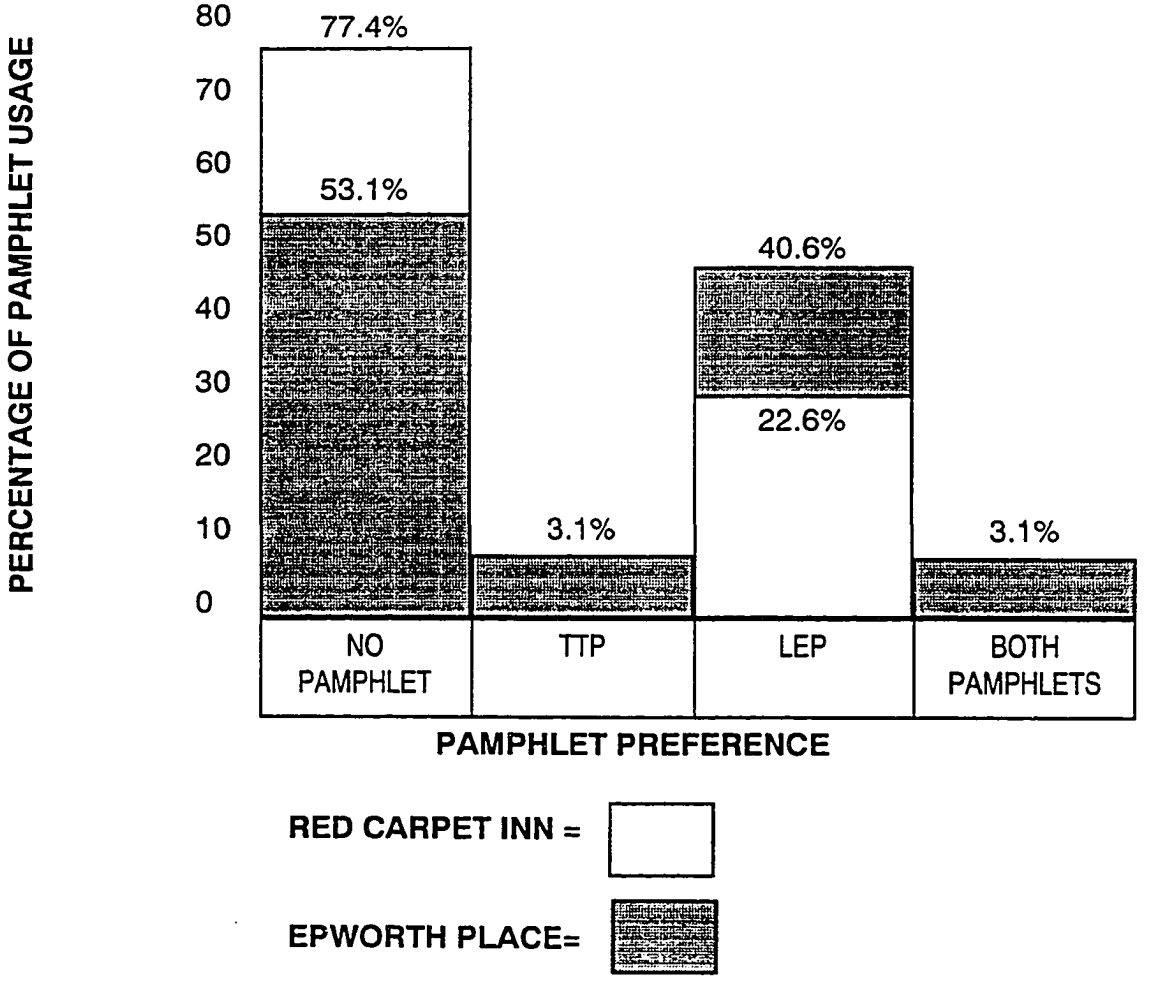
Research Question Nine

Research Question Nine was, "At the end of the three month period between breast self-examination intervention and the follow-up interview, which of the two pamphlets will have been reported to have been used more often to remind the participant of how to perform breast self-examination?" There were four answers from which to choose: 1) both pamphlets, 2) the Learning Enhancement, 3) neither pamphlet, and 4) the Traditional Teaching Pamphlet.

Twenty (31.8%) out of the 63 women in the study sample reported using the LEP, and one (1.6%) participant had used the TTP. Out of the 31 women at the Red Carpet Inn, seven (22.6%) reported using the LEP, and no one had used the TTP. Out of the 32 women at Epworth Place, 13 (40.6%) reported using the LEP; while one (3.1%) stated that she had used the TTP. (See Figure 3 for the frequency of reported pamphlet usage at the end of the three month period at the Red Carpet Inn and Epworth Place.)

FIGURE 3

HISTOGRAM of the frequency of the reported pamphlet usage at the end of the three month follow-up period at the RED CARPET INN (N=31) AND EPWORTH PLACE (N=32)



Comparison of Inaccurate Steps of BSE With Both Pamphlets

Although the major scope of this study was to compare each pamphlet as a whole, it is felt that an analysis of the individual steps which were missed as each participant performed BSE using each pamphlet is important. Therefore, a summary ensues describing the frequency of missed steps by each participant in the study sample using both pamphlets. Also, frequency of missed steps by each participant using both pamphlets in each setting will be addressed.

Steps Missed Using the LEP

Thirteen of the 17 steps of the LEP (76.5%) were missed by one or more of the 63 participants. Only four of the 17 steps (23.5%) of the Learning Enhancement Pamphlet were performed correctly by all of the 63 participants in the study sample.

In summarizing the accuracy scores relating to the steps of the LEP performed by the 63 women in the study sample, the following statements can be made. Thirteen of the 17 steps of the LEP were missed by one or more of the 63 women in the sample performed four of the 17 steps of the LEP correctly; while four women (6.4%) missed two steps. Two participants (3.2%) missed one step, and three women (4.8%) incorrectly performed three of the 17 steps.

At the Red Carpet Inn, six of the 17 steps of BSE using the Learning Enhancement Pamphlet were correctly performed by all of the 31 participants. In summarizing the BSE accuracy scores of the 31 women at the Red Carpet Inn in relation to the 17 steps of the LEP, six steps were correctly done by all 31 women. However,each of five other steps was missed by one (3.2%) individual, and four steps were inaccurately practiced by two (6.5%) women. Eleven (35.5%) of the women incorrectly performed one of the steps; while 12 (38.7%) women missed another step.

At Epworth Place, seven of the 17 steps of the LEP were accurately performed by each of the 32 participants. In summarizing the accuracy scores relating to the 17 steps of the LEP performed by the 32 women at Epworth Place, the following statements can be made. Seven steps were performed correctly by all of the 32 women. Six (18.8%) women missed one step. However, each of four steps of the pamphlet was missed by one (3.1%) participant. (See Table 24 for a comparison of inaccurate steps performed while doing BSE using the LEP by participants at the Red Carpet Inn, and Epworth Place.)

Steps Missed Using the TTP

There were 29 steps in the TTP relating to BSE performance. Although both the LEP and the TTP reflected the steps of breast self-examination recommended by the American

TABLE 24

COMPARISON OF INACCURATE STEPS PERFORMED WHILE DOING BSE USING THE LEP BY PARTICIPANTS AT THE RED CARPET INN, (N=31) AND EPWORTH PLACE, (N=32)

		WOMEN AT RED CARPET INN		WOMEN AT EPWORTH PLACE	
	BSE STEPS	FREQUENCY	PERCENT	FREQUENCY	PERCENT
1.	Places hands on hips and looks at her breasts before a mirror.	1	3.2%	1	3.1%
2.	Looks for color changes, dimpling, or puckering.	1	3.2%	2	6.3%
3.	Checks breasts again with hands raised over her head.	0	0	1	3.1%
4.	Looks at her breasts with arms by her side.	0	0	0	0
5.	Uses the opposite hand to feel under each arm for lumps.	2	6.5%	2	6.3%
6.	Lies down and places a small pillow (or towel) under her right shoulder.	0	0	0	0
7.	Places her right arm behind her head.	1	3.2%	0	0
8.	Places the flat part of left fingers at the bottom of the right breast.	2	6.5%	0	0
9.	Feels on the outside of the breast and moves toward the nipple.	12	38.7%	4	12.5%
10.	Feels underneath the right arm.	2	6.5%	2	6.3%
11.	Squeezes the right nipple to check for drainage.	1	3.2%	2	6.3%
12.	Places the pillow (or towel) under her left shoulder.	1	3.2%	0	0
13.	Puts her left arm behind her head.	0	0	0	0
14.	Places the flat part of her right fingers at the bottom of the left breast.	0	0	1	3.1%
15.	Feels the outside of the breast and moves in toward the nipple?	11	35.5%	6	18.8%
16.	Feels underneath the left arm.	2	6.5%	1	3.1%
17.	Squeezes the left nipple to check for drainage.	0	0	0	0

Cancer Society, the pamphlets differed in format. While the LEP had 17 steps, the TTP included sub-headings under seven of the eleven steps bringing the total number of steps to 29. There were no steps in the TTP which were correctly performed by all 63 women in the study sample.

In summarizing the accuracy scores relating to the 29 steps of the TTP performed by the 63 women in the study sample, the following statements can be made. There were no steps performed correctly by all of the women. Missed steps ranged from 38 women missing one step and two women missing one step of the pamphlet. Thirty of the women incorrectly performed four steps; while 35 women missed one step, and 37 women missed another step.

At the Red Carpet Inn, there were no steps of the TTP performed correctly by all 31 women. The step missed most was inaccurately performed by 21 of the 31 women. In summarizing the accuracy scores relating to the 29 steps of the TTP performed by the 31 women at the Red Carpet Inn, the following statements can be made. No steps of the pamphlet were performed correctly by all 31 participants. Inaccuracy scores ranged from one person each missing two steps to 21 women missing one step. Nineteen women incorrectly did three steps; while 17 individuals inaccurately performed four steps.

At Epworth Place, only one of the 29 steps of the TTP was accurately performed by each of the 32 participants. In summarizing the inaccurate steps performed by the 32 women at

Epworth Place, the following statements can be made. One step was accurately practiced by all the women. The range of missed steps was from one person missing two to 18 women incorrectly performing one step. Sixteen individuals incorrectly performed three steps; while eleven inaccurately did three steps. (See Table 25 for a comparison of inaccurate steps performed while doing BSE using the TTP by participants at the Red Carpet Inn and Epworth Place.)

Summary

Usually, the corresponding steps in both pamphlets incorrectly performed by a large number of women in the study sample were the same steps missed by a large percentage of women in both settings. There were two steps which fit this pattern. These steps in the LEP and the TTP included: "While lying, feels on the outside of the right breast in a circular pattern and gradually moves in toward the nipple," and "While lying, feels the outside of the left breast in a circular pattern and gradually moves in toward the nipple."

However, another step which was missed by a large percentage of women in the study sample and the two settings while using the TTP, in which the corresponding steps in the LEP were missed by only a few women. This step was, "While standing, uses the opposite hand to feel underneath each arm

TABLE 25

COMPARISON OF INACCURATE STEPS PERFORMED WHILE DOING BSE USING THE TTP BY PARTICIPANTS AT THE RED CARPET INN, (N=31) AND EPWORTH PLACE, (N=32)

BSE STEPS	WOMEN AT RED CARPET INN		WOMEN AT EPWORTH PLACE	
	FREQUENCY	PERCENT	FREQUENCY	PERCENT
1. Stands before mirror.				
a. Inspects both breasts for anything unusual, such as any discharge from the nipple or puckering, dimpling, or scaling of the skin.	2	6.5%	4	12.5%
2. Watches closely in the mirror.				
a. Clasps hands behind her head.	1	3.2%	1	3.1%
b. Presses hands forward.	7	22.6%	2	6.3%
3. Presses hands firmly on hips.				
a. Bows slightly toward the mirror.	2	6.5%	0	0
b. Pulls shoulders and elbows forward.	6	19.4%	1	3.1%
4. Raises left arm.				
a. Uses 3 or 4 fingers of the right hand to explore the left breast, carefully, and thouroughly.	9	29.0%	9	28.1%
b. Begins at the outer edge, presses the flat	18	58.1%%	12	37.5%
part of the fingers in small circles moving the circles slowly around the breast.	17	54.8%	13	40.6%
c. Gradually works toward the nipple covering the entire breast.	15	48.4%	17	53.1%
d. Pays special attention to the area between the breast and the armpit.	14	45.2%	16	50.0%
e. Feels under the armpit for any unusual lump or mass under the skin.				
5. Gently squeezes the niple and looks for discharge.	3	9.7%	6	18.8%
6. Raises right arm.	10	32.3%	10	31.3%
a. Uses 3 or 4 fingers of the left hand to explore right breast firmly, carefully, and thoroughly.	21	67.7%	17	53.1%
b. Begins at the outer edge, presses the flat-part of the fingers in small circles around the breast.				

TABLE 25 (continued)

COMPARISON OF INACCURATE STEPS PERFORMED WHILE DOING BSE USING THE TTP BY PARTICIPANTS AT THE RED CARPET INN, (N=31) AND EPWORTH PLACE, (N=32)

BSE STEPS	WOMEN AT RED CARPET INN		WOMEN AT EPWORTH PLACE	
	FREQUENCY	PERCENT	FREQUENCY	PERCENT
c. Gradually works toward the nipple covering the entire breast.	17	54.8%	16	50.0%
d. Pays special attention to the area between the breast and armpit.	19	61.3%	18	56.3%
e. Feels under the armpit for any unusual lump or mass under the skin.	18	58.1%	13	40.6%
7. Gently squeezes the nipple and looks for discharge.	4	12.9%	7	21.9%
8. Lying down raises left arm.				
a. Uses 3 or 4 fingers of the right hand to explore left breast firmly, carefully, and thoroughly.	9	29.0%	8	25.0%
b. Begins at the outer edge, presses the flat part of the fingers in small circles slowly around the breast.	18	58.1%	10	31.3%
c. Gradually works toward the nipple covering the entire breast.	18	58.1%	13	40.6%
d. Pays special attention to the area between the breast and armpit.	19	61.3%	16	50.0%
e. Feels under the armpit for any unusual lump or mass under the skin.	16	51.6%	11	34.4%
9. Gently squeezes the nipple and looks for discharge.	1	3.2%	11	34.4%
10. Raises right arm.				
a. Uses 3 or 4 fingers of the left hand to explore right breast firmly, carefully, and thoroughly.	7	22.6%	7	21.9%
b. Begins at the outer edge, presses the flat part of the fingers in small circles slowly around the breast.	19	61.3%	10	31.3%
c. Gradually works toward the nipple covering the entire breast.	17	54.8%	13	40.6%
d. Pays special attention to the area between the breast and armpit.	17	54.8%	15	46.9%
e. Feels under the armpit for any unusual lump or mass under the skin.	16	51.6%	11	34.4%
11. Gently squeezes the nipple and looks for discharge.	3	9.7%	9	28.1%

for lumps." The same situation holds true with several other steps. Steps such as, "Lies down and places a small pillow (or towel) under the right shoulder," "While lying, places the right arm behind the head," "While lying, places the flat part of the left fingers at the bottom of the right breast," "While lying, feels underneath the left arm," and "While lying, squeezes the left nipple to check for drainage," were missed by a small percentage of women using the LEP but were inaccurately performed by a larger percentage of women using the TTP. (See Table 26 for a comparison of inaccurate steps performed while doing BSE using both pamphlets by participants at the Red Carpet Inn and Epworth Place.)

TABLE 26

COMPARISON OF INACCURATE STEPS PERFORMED WHILE DOING BSE USING BOTH PAMPHLETS BY PARTICIPANTS AT THE RED CARPET INN (N=31)AND EPWORTH PLACE (N=32).

	* BSE STEPS	WOMEN AT RED CARPET INN		WOMEN AT EPWORTH PLACE	
		FREQUENCY	%	FREQUENCY	%
1.	Places hands on hips and looks at her breasts before a mirror.	1	3.2%	1	3.1%
	3. (Standing)	2	6.5%	0	0
2.	Looks for color changes, dimpling, or puckering.	1	3.2%	2	6.3%
	1. (Standing)	2	6.5%	0	0
	2. (Standing)	6	19.4%	1	3.1%
	3. (Standing)	1	3.2%	1	3.1%
3.	Checks breasts again with hands raised over head (hands clasped behind head).	0	0	1	3.1%
	2. (Standing)	7	22.6%	2	6.3%
4.	Looks at her breasts with arms by her side.	0	0	0	0
	1. (Standing)	2	6.5%	4	12.5%
5.	Uses the opposite hand to feel under each arm for lumps.	2	6.5%	2	6.3%
	4. (Standing) (Left)	18	58.1%	12	37.5%
	4. (Standing)(Right)	18	58.1%	13	40.6%
6.	Lies down and places a small pillow (or towel) under her right shoulder.	0	0	0	0
	4. (Lying)	7	22.6%	7	21.9%
7.	Places her right arm behind her head.	1	3.2%	0	0
	4. (Lying)	7	22.6%	7	21.9%

* The words in parenthesis underneath each step of the Learning Enhancement Pamphlet represent the corresponding step of BSE in the Traditional Teaching Pamphlet.

TABLE 26, (continued)

	* BSE STEPS	WOMEN AT RED CARPET INN		WOMEN AT EPWORTH PLACE	
		FREQUENCY	%	FREQUENCY	%
8.	Places the flat part of left fingers at the bottom of the right breast.	2	6.5%	0	0
	4. (Standing)	10	32.3%	10	31.3%
	4. (Lying)	19	61.3%	10	31.3%
9.	Feels on the outside of the breast in a circular pattern and gradually moves in toward the nipple.	12	38.7%	4	12.5%
	4. (Standing)	17	54.8%	16	50.0%
	4. (Lying)	17	54.8%	13	40.6%
10.	Feels under the right arm.	2	6.5%	2	6.3%
	4. (Lying)	16	51.6%	11	34.4%
11.	Squeezes the right nipple to check for drainage.	1	3.2%	2	6.3%
	5. (Standing)	4	12.9%	7	21.9%
	5. (Lying)	3	9.7%	9	28.1%
12.	Places the pillow (or towel) under her left shoulder.	1	3.2%	0	0%
	4. (Lying)	9	29.0%	8	25.0%
13.	Puts her left arm behind her head.	0	0	0	0
	4. (Lying)	9	29.0%	8	25.0%
14.	Places the flat part of her right fingers at the bottom of the left breast.	0	0	1	3.1%
	4. (Standing)	9	29.0%	9	28.1%
	4. (Lying)	9	29.0%	8	25.0%
15..	Feels the outside of the breast in a circular pattern and gradually moves in toward the nipple.	11	35.5%	6	18.8%
	4. (Standing)	17	54.8%	12	37.5%
	4. (Lying)	18	58.1%	13	40.6%
16.	Feels underneath the left arm.	2	6.5%	1	3.1%
	4. (Lying)	16	51.6%	11	34.4%
17.	Squeezes the left nipple to check for drainage.	0	0	0	0
	5. (Standing)	3	9.7%	6	18.8%
	5. (Lying)	1	3.2%	11	34.4%

CHAPTER V

SUMMARY, DISCUSSION, and CONCLUSIONS

Summary

The risk of breast cancer gradually increases as a woman ages (ACS, 1992; Lashley, 1987; McLellan, 1988; Stromborg, 1982.) Nurses have an opportunity and a responsibility to teach older women how to detect breast disease at an early stage of development through breast self-examination (BSE) techniques (Baker, 1989; Champion, 1990; Ludwick, 1988.) However, nurses have failed to realize the uniqueness of the older adult learner in relation to psychological, sociological, and physiological influences which may affect learning (Billie, 1980; Schaie, 1984.) Therefore, nurses have not adapted teaching methodologies to meet the needs of their older clients, especially in relation to breast self-examination (Ludwick, 1988; Williams, 1988.) Most of the nursing literature relating to teaching BSE focuses on younger adult women as learners (Champion, 1988; Massey, 1986; Stillman, 1977.) Moreover, nurses need to develop BSE teaching methods for older women incorporating techniques which enhance learning in this age group (Ludwick, 1988; Williams, 1988.)

The purpose of this study was to evaluate two pamphlets for performing breast self-examination in older woman. The Learning Enhancement Pamphlet (LEP), developed by this researcher to teach the steps of BSE advocated by the American Cancer Society, uses methods of design reflected from the nursing, psychological, and educational literature to enhance learning in the older adult. The Traditional Teaching Pamphlet (TTP) is a pamphlet comprised of BSE information recommended by the United States Department of Health and Human Services, Public Health Services, and National Institutes of Health (NIH Publication No. 88-2409.)

In addition to evaluating whether accuracy for performing breast self-examination (BSE) in older women was greater using the LEP or the TTP, the accuracy of performing BSE using each pamphlet was explored in relation to the participant's age, education, income level, race, and past history of having been taught BSE. Additionally, investigation was conducted to see if the women in the sample preferred using one pamphlet over the other in relation to handling, ease of reading, ease of opening, color of paper used, ease of following directions, and overall pamphlet preference for teaching BSE. An additional area of exploration relating to pamphlet preference was to determine if the pamphlet preference could be explained by the participant's age, education, income level, race, and past history of having been taught BSE.

Moreover, data were recorded on behavioral responses in the four categories of facial expression, emotional response, body language, and verbal statements while participants used both pamphlets. Finally, three months after treatment each participant was visited and asked how often she had performed BSE during the three month period and which pamphlet she reported having used during this time.

A posttest only experimental research design was used. Subjects from two settings who volunteered to be in the study were randomly assigned to one of two research assistants and randomly assigned to a treatment group. The research assistant collected data for both treatments on each assigned participant. The treatment consisted of each participant performing BSE using one pamphlet one week and repeating BSE performance using the other pamphlet the following week. An alternating procedure for pamphlet usage was utilized in each setting, and each subject served as her own control using this method. The researcher collected data on behavioral responses while every participant read the steps of BSE from each pamphlet.

Sixty-three women volunteers, ages 65-94 years, from two settings,the Red Carpet Inn (N=31) and Epworth Place (N=32), made up the study sample. At the Red Carpet Inn, 37 women were taught BSE using the first pamphlet, but six of these women refused to return to use the second pamphlet; therefore, data were collected on 31 women. It is not known why these

six women did not choose to return since a consistent format for data collection was used on everyone. Neither did the six women fit into a uniform demographic pattern.

There was a 30% higher rate of mean scores on accuracy of performance of BSE using the Learning Enhancement Pamphlet, ($\underline{X}$= .95) than when using the Traditional Teaching Pamphlet, ($\underline{X}$=.65), $\underline{t}(62)=10.40$, $\underline{p}<.0001$. None of the demographic variables of age, education, income level, race, or past history of having been taught BSE had an effect on BSE accuracy while using the LEP.

The LEP was preferred to the TTP in relation to ease of reading, ease of handling, ease of opening, ease of following directions, color best suited for reading, and overall pamphlet preference for teaching BSE, it was found that the Learning Enhancement Pamphlet (LEP) was preferred over the Traditional Teaching Pamphlet (TTP). Also, it was determined that the variable of age demonstrated a statistically significant difference in overall preference of the LEP over the TTP for teaching breast self-examination. For most of the age groups, 70% to 80% of the women preferred the LEP; however, it was unexpected that only 55% of the women in the youngest age group of 65 to 69 years preferred the LEP over the TTP.

Few behavioral responses occurred in any of the categories of: facial expression, emotional response, body

language, and verbal statement while participants used both pamphlets. Therefore, statistical analysis could not be done.

At the three month follow-up period, each participant reported how often she had practiced breast examination. The percentage of women practicing BSE was measured. A second question relating to which pamphlet the participant used during the three month interval from initial teaching to follow-up was analyzed by measuring the percentage of the chosen pamphlet versus the other pamphlet.

Although the major scope of this study was to compare each pamphlet as a whole, an analysis was made to determine the individual steps missed by each participant using each pamphlet. Analysis was conducted to determine the frequency of steps missed using each pamphlet All of the steps in the Traditional Teaching Pamphlet were missed by one or more of the 63 participants. The steps missed using both pamphlets, usually, were corresponding steps. Also, the steps incorrectly performed by a large number of women in the study sample were the same steps missed by a large percentage of women in both settings. However, there were several steps missed by a large percentage of women in each setting while using the TTP, but the corresponding steps in the LEP were missed by only a few women.

Discussion of the Findings

Research Question One

Measurement of Research Question One, "Will breast self-examination accuracy be greater using the Learning Enhancement Pamphlet or the Traditional Teaching Pamphlet?" demonstrated that the mean scores on BSE accuracy using the Learning Enhancement Pamphlet were 30% higher than the mean scores on accuracy using the Traditional Teaching Pamphlet. Higher mean scores on BSE accuracy were expected using the LEP since the pamphlet was designed to enhance learning in the older adult. First, literature suggests that health-related written teaching material must be tailored toward the reading level of the clients for whom the instruction is targeted (Dixon & Park, 1990; Doak & Doak, 1985; Duffy, 1988; Hautman, 1979; Manning, 1981). Vivian and Robertson (1980) recommended that health-related instruction for adults be written at the fifth grade level or lower. The LEP was written at the second grade level according to Fry's Graph for Estimating Readability (Fry, 1968, 1969, 1975, 1977).

Second, the LEP utilized short sentences made up of words familiar to the learner (Gunning, 1968). The steps of BSE were written in chronological order using verbs in the active voice to capture the reader's attention (Felker et al., 1981; Gunning,1968). Pictures of the older breast were used in the pamphlet so that the reader could relate the appearance of her

own breasts to the pictures (Doak & Doak, 1985; Felker et al., 1981). Also, the material was presented in a conversational style limiting each step of instruction to a single action to enhance the process of sensing, perceiving, and encoding the information (Botwinick, 1984; Gunning, 1968). Open spaces were provided on each page to lessen the possibility of confusion relating to crowded instruction. Each step of BSE was written individually in order to catch the eye of the reader instead of being concealed in paragraphical verbiage (Manning, 1981).

Additionally, the size of the pamphlet measured 4 and 3/4 inches by 8 and 1/2 inches contained into three panels to fit conveniently into the reader's hand. Contrasting red tabs were used on the outside panel and putty colored tabs on the inside panel to facilitate easy opening for arthritic hands (Liquori, 1978; Spandaro, 1980). Bold black print was used to increase the readability of the instruction (Morris, 1978; Streiff, 1986). The LEP utilized yellow, nonglare paper since bright reds, oranges and yellows in addition to contrasting colors should be used in teaching materials designed for the elderly (Burggraf & Donlon, 1985). Because of decreased visual sensory perception of color vision, the older eye may have difficulty discriminating words written on paper in the color spectrum of blue, blue-green or violet.

Research Question Two

Research Question Two was, "Can the accuracy of performing breast self-examination using the Learning Enhancement Pamphlet be explained by the participant's age, education, income level, race, or past history of having been taught BSE ?"

Age

Age, as a main effect, did not predict accuracy using the Learning Enhancement Pamphlet. Age was expected to demonstrate a main effect due to the physical changes which may occur with aging such as visual problems. There does not seem to be any clear pattern to age differences. In this research, there was an attempt to look at age, education, income, race,and past experience of having been taught BSE as having an effect on BSE accuracy. Because women at the Red Carpet Inn were younger, predominately Black, with less education and reported income levels than the participants at Epworth Place who were White, tended to be better educated and had higher reported income levels, these variables seem to be confounded in these two settings in this study.

Education

There was no statistically significant differences in the income groups and BSE accuracy using the LEP. This finding is inconsistent with other research findings relating to

education and intellectual functioning. Byrne and Edeani (1984) found a positive correlation between educational levels and higher mean scores on knowledge of medical terminology in their sample of 125 patients whose ages ranged from 15 to 82 years.

There was no statistically significant difference in mean accuracy scores in relation to education while using the LEP. In describing the findings, the women who reported having had high school education had accuracy scores of (0.9481); while those women who reported having had college education had scores of (0.9490). Seventeen women reported having some high school education:(Red Carpet Inn, N=14); (Epworth Place,N=3.) Fifteen women stated they had received some college education: (Red Carpet Inn, N=1); (Epworth Place, N=14.) There seems to be no explanation for the similar mean scores on BSE accuracy between the high school educated women and the college educated women in this sample.

The majority of college educated women were in the older age groups from Epworth Place (43.8%). Only one women in that sample reported being a high school graduate with no further education. Perhaps, if the demographic questionnaire in this study had broken down high school and college education into the number of years of schooling that had been attained, rather than grouping all high school education into one category and all college education into another category, a plausible explanation could be given. Additionally, according

to Kirsch and Guthrie (1977-1978), literacy estimates should not depend solely on one's educational level since individuals vary widely in their abilities to read and perform at each grade level.

One would have expected that the women who reported business school education would have received higher mean scores on BSE accuracy (0.9092) than the elementary education group (0.9294), but there was no statistically significant difference between the two groups. Two factors which should have raised mean accuracy scores in the business school education group are the requirement of a high school education or its equivalent for entrance into business school and the focus of technology in business school programs. Each of the three women in the business school education group lived in the same setting, but each was in a different age group. There were 20 women in the elementary education group as compared with three women in the business school group; although, some intervening factor may have influenced the lower scores on accuracy in this group at the time of data collection.

Income Level

Income levels did not demonstrate statistically significant differences. It was expected that the women in the lower income level, $4,900 or below, would have shown the lowest mean scores in the sample. However, the women in the lowest income group had higher mean scores (0.9260) than those

women in the higher income group (0.9076) of $25,000 to $34,900. These findings are inconsistent with Hunter and Harmons' (1979) theory that as income levels rise, educational levels increase; therefore, individuals in higher income brackets should be more literate than persons in lower income levels. The type of education received by the higher education group may be a factor in the findings in this study.

Race

There were no statistically significant differences in race and BSE accuracy using the LEP.It was expected that the White women in the study would receive higher scores, and these findings are inconsistent with Hunter and Harmons' (1979) notion that individuals who have limited education often are also the persons who are affected by racial or ethnic discrimination and decreased income levels. All the Black women plus nine of the White women came from the Red Carpet Inn whose participants reported lower income levels and lower educational levels than the all White women setting of Epworth Place. The findings in this study are also inconsistent with the research conducted by Samora, Saunders, and Larson (1961) who investigated patient understanding of medical terminology. They concluded that the probability of poor understanding was increased in those persons who reported

low levels of education and came from low socioeconomic backgrounds. It is not clear why similar findings were not found in this study.

Past History of Having Been Taught

There was no statistically significant difference on past history of having been taught BSE and accuracy using the LEP. Twenty-three of (36.5%) the 63 women in the study sample reported having been taught breast self-examination in the past. However, many of these women indicated that they did not practice BSE because the teaching had not been done recently, and they had forgotten some of the steps. Many research studies have reported that lack of knowledge and forgotten steps of BSE were a barrier to BSE practice (Howe, 1980; Keller, 1978; Kelly, 1979; Kenny et al.,1988; Rose,1978; Mclendon et al., 1982; Stillman,1977). The statements made by the women in this study are consistent with these research findings.

However, if how recently the participant had been taught BSE in the past had been measured, discussion of this event and its effect on BSE accuracy in this study might be more accurate. Additionally, some research has shown that if women are taught BSE by nurses or physicians, retention of knowledge is greater than when they are taught by the news media, friends, family,etc. (Assaf, Cummings, & Walch, 1983; McLendon et al., 1982; Sheley,1983). Measurement of this variable might

have contributed to the information relating to why the women in this study who had been taught BSE in the past had forgotten some of the steps.

Research Question Three

Research Question Three was, "Can the accuracy of performing breast self-examination using the Traditional Teaching Pamphlet (TTP) be explained by the participant's age, education, income level, race, and past history of having been taught breast self-examination?

Age

Age demonstrated no statistically significant difference on BSE accuracy scores using the TTP. One reason that significant differences were not found may be due to the fact that the time it took a woman to practice BSE while reading the pamphlets was not a factor in this study. Each participant was given as much time as necessary for her to read the pamphlet and perform the step on herself. Had time been controlled in this study, no doubt the older women would have performed more slowly than the younger women. According to Botwinick (1985) slowing accompanies the aging process because of central nervous system changes.

The methodology of providing enough time for an older person to do a task in teaching elderly clients is consistent with other research (Baltes et al., 1988; Burggraf & Donlon,

1985; Craik & Rabinowitz, 1985; Giambra & Arenberg, 1984; Glazer-Waldman, 1983; Greenberg & Powers, 1987; Narrow, 1979; Schaie & Willis, 1986). Additionally, the participant read and performed the exam on herself using each pamphlet in a designated area in each setting; therefore, lighting and comfort (the participant was unclothed to the waist) was the same for each participant as both pamphlets were used. One focus of the study was to provide an accepting environment in which the participants would not feel rushed.

Education

Education did not demonstrate a statistically significant effect on BSE accuracy using the TTP. In describing the findings, it is interesting that the one person in the study who reported being a high school graduate with no further education made the highest mean score on accuracy (1.0000) using the LEP but the lowest score on accuracy (0.4483) using the TTP. Also, the seven women who reported having graduate education had the highest scores on accuracy (0.8030) using the TTP and the highest mean scores (0.9916) using the LEP. However, the three participants who had business education obtained the second highest accuracy scores (0.7471) using the TTP and the lowest scores using the LEP (0.9020) of any education group.

Income Level

Income levels did not demonstrate a statistically significant difference on BSE accuracy using the TTP.

Race

Race did not demonstrate a statistically significant difference on BSE accuracy using the TTP. In describing the accuracy scores using the TTP, the highest accuracy scores were found in the group of White women (0.6905) as compared to the group of Black women (0.5752). There was a 4% increase in

accuracy scores for the group of White women (0.9598) over the group of Black women (0.9198) using the LEP; while there was a 11.5% increase in accuracy scores using the TTP in the group of White women (0.6905) over the Black women (0.5752.)

Past History of Having Been Taught

Again, past history of having been taught BSE did not demonstrate statistically significant differences in accuracy scores using the TTP between the 23 women who had been taught (0.6912) and the 40 women who had not ben taught (0.6267).

Research Question Four

Research Question Four, "Is there a preference for one pamphlet over the other in relation to ease of reading, ease of handling, ease of opening, ease of following directions, color best suited for reading, and overall pamphlet preference for teaching BSE?" The histogram in Figure 1 demonstrates the overall percent of preferences for the LEP over the TTP in regards to each of these six self-report questions.

It was expected that the Learning Enhancement Pamphlet would be preferred to the Traditional Teaching Pamphlet because it was designed to increase learning in older women in regards to each of these six variables. One reason for the relatively high percent of preference for the Traditional Teaching Pamphlet over the Learning Enhancement Pamphlet in relation to ease of handling may be attributed to the fact

that the TTP was in booklet format as opposed to the three panel design of the LEP, and the TTP was heavier than the LEP. Many participants commented that the heaviness of the TTP made handling easier. The TTP was heavier than the LEP because it was constructed of heavier paper and had additional information regarding breast cancer.

In relation to the overall pamphlet preference of one pamphlet over the other for teaching BSE, many women preferred the LEP for performing the steps of BSE but liked the TTP for overall teaching. The purpose of the TTP was to provide information other than the steps of BSE. Information regarding myths, risks, and signs of breast cancer in addition to mammography, biopsy, and treatment options for breast cancer were addressed in the TTP. The women who stated they preferred the TTP for overall pamphlet preference commented that they liked the additional information to the steps of BSE. The LEP was designed to teach the steps of BSE only.

Research Question Five

Research Question Five was, "If there is a preference for one pamphlet over the other in relation to ease of reading, ease of handling, ease of opening, ease of following directions, color best suited for reading, and overall pamphlet preference for teaching BSE, can the preference be explained by the participant's age, education, income level, race, and past history of having had BSE instruction?"

Age

The only notable discussion of age with research question five is that age demonstrated a statistically significant difference in overall pamphlet preference for the Learning Enhancement Pamphlet over the Traditional Teaching Pamphlet, $F(1,62)=2.40$, $p<.0481$. It is felt that the simplicity in construction to enhance reading and comprehension in the older adult used in the LEP was the determining factor for the preference. Also, during teaching intervention, each participant was asked to describe what she was doing as she performed the steps of BSE in order to ascertain understanding of what had been read. It was evident using this method of evaluating comprehension of the pamphlets that when reading the LEP, the women understood what was written to a higher degree than when reading from the TTP. This method of evaluating understanding of written instruction incorporates findings from other research (Doak & Doak, 1985; Glazer-Walden, 1985; Gibson & Levin, 1975; Narrow,1979; Redman, 1980; Swezey & Swezey, 1976).

Age group one, ages 65 to 69 years, consisted of eleven of the 63 women in the study sample. Only six of this group (55%) were in favor of the LEP over the TTP with regard to overall preference for teaching breast self-examination. This low percentage represents the largest percent of difference in any of the age groups in relation to any of the six self-report questions.

Although a definitive answer is not available, one might speculate several reasons for this finding. First, the younger women in this study tended to be the ones who practiced BSE most often; therefore, they may have been more interested in the additional information the TTP offered. Second, the women at Red Carpet Inn were younger than the women at Epworth Place. The Red Carpet Inn did not have a clinic on the premises to advocate wellness or health-related activities. However, information on health could be obtained from instructional classes, exercise classes, etc. offered on the setting from time to time. Other health information was obtained from clinics and/or physicians. Many of the women at Red Carpet Inn used the Public Health Department for their health care. Those women who used the Health Department would have received self-care teaching because of the Health Department's emphasis on teaching and self-care promotion. Because of these factors the younger women may have been better informed on health-related issues than those women who relied on a physician to keep them healthy. Therefore, these women may have been more interested in the additional health information the TTP offered.

Because the women in the other groups of education, income level, race, and past history of having been taught BSE, highly favored the LEP over the TTP in relation to the

six self-report questions, further discussion will not ensue because it is felt that pamphlet construction explains the favorable responses.

Research Questions Six and Seven

Research Question Six was, "Are there differences in the behavioral response in each category of facial expression, emotional response, body language, and verbal statement as the participant uses the Learning Enhancement Pamphlet or the Traditional Teaching Pamphlet?" Research Question Seven was, "If there are differences in the behavioral response of facial expression, emotional response, body language, and verbal statement, will they be explained by the participant's age, education, income level, race, and past history of having been taught BSE?"

Because of the few behavioral responses, either positive or negative, in any one category using either pamphlet, statistical analysis could not be conducted. It is felt that the lack of behavioral responses could be attributed to the fact that each participant was intent on reading and trying to perform correctly the steps of BSE using each pamphlet. Had "a look of concentration" been developed as a reportable behavior, the results would have been very different to those found.

Also, having the participants verbalize each step after it was read while doing the step of BSE, perhaps, reduced

chances for responses which might have been elicited when the participant only read the steps without verbalization. It should be noted that only positive responses were elicited when reading the LEP and negative responses were seen while reading the TTP. It is felt the design of the LEP to make reading and comprehension easier is the reason for the differences in responses.

It is felt that only facial responses were elicited because each participant had to read the pamphlet, stand before a mirror, perform the step on herself, and read the next step. This activity left little time or energy for any other types of responses. Literature supports the fact that older adults are not able to respond to multiple stimuli to the same degree that younger adults can (Burggraf & Donlon, 1985; Horn, 1982; Schaie, 1984; Schaie & Willis, 1986). Because none of the participants were aware that behavioral responses or BSE performance was being recorded, the findings may be a true reflection of the behavioral responses in this sample of women (the participants were aware that something was being recorded, but they were not informed as to the type of information being documented.)

Research Question Eight

Research Question Eight was, "At the end of the three month period between breast self-examination intervention and

the follow-up interview, how often does each participant report having practiced breast examination on herself?"

Out of the study sample of 63 women, 21 (33.3%) had practiced BSE once a month for three months, and 14 (22.2%) reported practicing BSE more often than once a month. Therefore, a total of 35 (55.5%) of the women had performed the procedure as often or more often than they had been taught. These findings are consistent with BSE frequency rates (54%) found in the sample of women in a research study which explored clinical measures to assess the practice and efficiency of BSE (Philip et al.,1986). Lashley (1987) reported higher frequency rates (61%) in her sample of 105 older women. However, lower frequency rates of BSE practice were reported by other researchers (Assaf et al., 1985; Champion, 1988; Hailey & Bradford, 1991; Howe, 1980; Lierman et al., 1990; Richardson et al., 1987; Williams, 1988).

Looking at the histogram in Figure 2, the younger, less educated, lower income level, predominately Black women at the Red Carpet Inn reported practicing BSE every three months (41.9%) or more often (29%). These figures are higher than the women at Epworth Place who reported doing BSE every three months (25%) or more often (15.6%).

The three most reported reasons for not having practiced BSE each month were, "too busy," "forgot to do," or "don't feel the need to do it at my age." During the BSE intervention after using the second pamphlet, each participant

was asked to mark one day on the calendar each month (birthday or day on which the Social Security check arrived) to remind her to perform the procedure. The strategy of providing cues to remind a woman to practice monthly BSE is a method acknowledged by several researchers (Grady, 1988; Gray, 1990; Hailey & Bradford, 1991; Lauver, 1987; McLendon et al., 1982).

Additionally, each participant was taught that as age increases, the risk for breast cancer also rises; therefore, older women should examine their breasts every month in order to detect any change in breast tissue (Champion, 1992; Lakin,1988; Lashley, 1987; Lauver, 1987; Long & Phipps, 1988; Ludwick, 1992; McLendon et al., 1982; Saunders et al., 1986; Senie, 1981; Sliverberg & Lubera, 1988). Grady (1988) reported that the older women in her study had a greater tendency to practice BSE on a continuous basis than the younger women in the study sample. Huguely and Brown (1981) found that older women practiced BSE less often than younger women. Philip et al., (1986) found similar results in their sample. However, Celentano et al., (1982) and Rutledge (1987) found that there was no relationship between frequency of practice and age.

It has been reported by some researchers that women of lower socioeconomic class practice self-breast exam with less frequency than the women of higher socioeconomic brackets (Howe, 1980; Huguely et al., 1987; McLendon et al., 1982; Richardson et al., 1987; Smith et al., 1980). However, Celentano and Holtzman, (1983) found through their telephone

survey of 308 women that (46.2%) of the Black women compared to (27.3%) of the White women stated they performed monthly BSE. The findings from this study are consistent with Celentano and Holtzmans' conclusions.

One reason the number of younger, predominately Black, lower educated,lower income level of women in this study may have practiced BSE with more frequency than their White counterparts, may be due to the lack of medical help or information on the premises of their setting. These women might have felt that BSE practice would benefit them in terms of cost effectiveness and locus of control over their own health care. Also, these women were living independently and seemed focused on maintaining their independence. Additionally, many women at the Red Carpet Inn, used clinics at the Public Health Department for health care. Major foci of the health department are health teaching and self-care.

Research Question Nine

Research Question Nine was, "At the end of the three month period between breast self-examination intervention and the follow-up interview, which of the two pamphlets will have been reported to have been used more often to remind the participant to perform breast self-examination?"

Out of the study sample, 20 of the 63 women (31.8%) reported having used the LEP, one person (1.6%) stated she had used both pamphlets. However, 41 (65.1%) of the 63 women

indicated that they had not used either pamphlet. When each of these 41 women was asked why neither pamphlet was used, all of them stated that they remembered the steps and felt confident in performing the exam.

Again, one can only speculate as to the overwhelming response of participants being confident in performing BSE. One reason may be the one-to-one teaching approach requiring each participant to disrobe to the waist using each pamphlet. A one-to-one method for teaching BSE is recommended by many researchers (Celento & Holtzman, 1983; Champion, 1989; Coleman, 1990; Keller, George, & Podell, 1980; McLendon et al., 1982; Saunders et al., 1986; Tiivel, 1986). A second reason for the confidence in BSE performance may be the emphasis on correcting individual steps missed using both pamphlets. After the participant had used the second pamphlet the second week of intervention, she was correctly shown, via a modeling technique by the research assistant, any steps of BSE which had been missed. After the research assistant had done the step on herself over her clothes, the participant was asked to repeat the step on her own breasts. The participant was still undressed to the waist after having used the second pamphlet.

Even when intervention took place a week apart, the research assistants were able to know all of the steps missed by each participant with both pamphlets because of the check-lists which were used reflecting the BSE steps of each

pamphlet. Check-lists to document proficiency of a technique are recommended by many researchers (Dunbar, 1979; Celento & Holtzman, 1983; Champion, 1992; Lashley, 1987; McLendon et al., 1982; Marrow, 1979; Redman, 1980; Richardson et al., 1987; Sheley, 1983). Check-lists permit the researcher to refer to a participant's prior proficiency in performing a motor or technical skill.

Third, it is felt that confidence was high because of the combined methodology of pamphlet usage plus the required return demonstration using the two pamphlets. Although, the present research only used these two methods to teach BSE , it is recognized that multisensory methods such as the use of films and breast models to teach breast self-examination are optimal (Arndt, 1987; Backman, 1986; Baker, 1989; Champion, 1989; Edgar et al., 1984; Ludwick, 1988; Marty et al., 1983; Rutledge & Davis, 1988; Young & Marty, 1985).

Fourth, the rooms in each setting in which each participant performed BSE were not intimidating. Each room was comfortable allowing the participant to remove her clothing without getting chilled. Each room was adequately lighted, had full-length mirrors, and a bed or cot on which to lie. Chairs were provided so the participants could be seated to read the consent form and answer the demographic questions. Each participant had one research assistant for both interventions,

and the researcher who was collecting data on behavioral responses, was positioned so that she was hardly seen by the participant during the breast exam.

BSE instruction to enhance learning was applied using communication techniques to help overcome physical deficits due to aging. Tangential light shone from behind the participant onto the face of the research assistant allowing the participant to lip read and view facial expression. Both the research assistant and the participant were seated when the purpose of the study was being explained, the consent form was being signed, and during the collection of the demographic data. Both were standing during the first part of the BSE procedure. During the "lying down" period of the procedure, the research assistant was seated at the bedside so that both individuals were at the same level to facilitate better hearing and eye contact. Also, it is felt that the accepting attitude of each participant by the two research assistants helped to motivate each woman to learn the steps of BSE.

The research assistant used slightly louder than normal tone of voice and enunciated words well without overenunciating. Time was allowed for proper responses by each participant. A structured interview format was utilized and a script was memorized and followed in order that each

participant was provided with the same information during BSE intervention. All of these techniques are recommended by other researchers to enhance learning in the elderly (Billie, 1980; Birren, 1974; Burggraf & Donlon, 1985; Burke et al., 1987; Canestrari, 1963; Hultch, 1971; Lewis & Collier, 1987).

It is surmised that the reason that at least 20 women who practiced BSE used the LEP is due to the pamphlet construction. A focus of the study was not to require the participant to memorize the steps of BSE but to provide a pamphlet to remind the individual of any steps which might have been forgotten. The LEP offered a quick, easy resource for BSE technique.

Comparison of Inaccurate Steps of BSE With Both Pamphlets

The steps of BSE most commonly missed by a large percent of the women using both pamphlets included the following:

1. "While standing and lying, raising each arm respectively, begins at the outer edge of the breast, presses the flat part of the fingers in small circles moving the circles slowly around the breast,"
2. " Pays attention to the area between the breast and the armpit,"
3. "Feels under the armpit for any unusual lump or mass under the skin."

These three missed steps are the same steps missed by women reported in other BSE research (Champion, 1992; Lashley, 1987; McLendon et al., 1982; Richardson et al., 1987).

It is felt that the reason that all women did better with each step using the LEP was the clear, simple single sentence instructions provided by the pamphlet. The benefits of the pamphlet construction can also be attributed to the fact that a high percentage of the women missed many of the BSE steps using the TTP but accurately performed the same steps using the LEP. The 30% higher BSE accuracy scores using the LEP over the TTP demonstrate the benefits of this pamphlet over the other pamphlet in this sample of women.

Conclusions

In summary, the findings from this study suggest that written materials designed by nurses to enhance learning in elderly women can be valuable tools in teaching breast self-examination. Additionally, a one - to - one teaching approach requiring participants to verbalize the steps of BSE while performing the exam without clothing, is a recommended methodology to use when teaching BSE. Moreover, the use of appropriate communication skills while implementing BSE teaching helps the client to overcome major sensory deficits and offers a personalized approach. A calm, unhurried

approach displayed by the research assistants in this study is another recommendation for teaching breast self-examination.

The individualized teaching approach should also focus on a woman's breast tissue, changes in the breast with aging, and careful evaluation of the client examining her own breasts. Teaching should concentrate on the client's technique in palpating the entire breast, the underarm areas, and the nipples. Given that most of the missed steps in this study using both pamphlets centered on "moving the hand in circles around the breast," "examining the tissue between the breast and the underarm areas " as well as "palpating underneath each arm," special attention should be devoted to emphasizing these areas when observing a client's BSE performance.

Because of the findings in this research, one step in the Learning Enhancement Pamphlet will be modified from, "Feel on the outside of the breast and move toward the nipple," to read, "Feel on the outside of the breast and move in circles toward the nipple." Another change which will be made in the LEP as a result of the present research findings is omitting the tabs on the outside and inside of the pamphlet. During the BSE intervention, it was observed that most of the women paid little attention to the tabs for opening the pamphlet; therefore, it is felt that the tabs are not needed.

Since many women in the study were interested in the additional information on breast cancer the TTP offered, and given the positive response for the LEP in relation to ease of

reading, ease of following directions, color preference, and overall pamphlet preference for teaching BSE, it is advocated that other health-related teaching material be designed for older women using a format to facilitate easier reading and learning. If the issues in the written material were related to breast cancer, the information could be attached to the LEP. The additional material should be color-coded according to types of information (i.e., risks for breast cancer in buff, statistics for breast cancer in orange, measures for detecting breast cancer in gold,etc.) in order to catch the eye of the reader. It is recommended that the steps of breast examination be introduced on the front page of the pamphlet in an effort to decrease intimidation regarding breast cancer and its related dangers. It is felt that the LEP is appropriate to be used in any health care setting where BSE teaching takes place. Clinics, physicians' offices, self-care settings, radiology facilities offering mammograms, and hospital settings could provide the pamphlet to their clients. Extended nursing facilities and senior citizen groups who have a wellness focus might be interested in using the pamphlet to facilitate confidence in those women who may have forgotten the steps or who have never been taught BSE. The pamphlet can serve as a reminder whenever it is necessary to refer to the steps of BSE. Also, because of the simple format, the

pamphlet could be read, understood, and used by women without the benefit of additional teaching.

Further research using the Learning Enhancement Pamphlet is recommended. Future research should focus on using larger groups of older women in order to enhance generalizability. Because it is felt that the expertise of the two research assistants in relation to communication skills as well as their knowledge in teaching BSE indirectly influenced the positive effects of accuracy and follow-up behavior in this study. This factor should be controlled in future studies using the Learning Enhancement Pamphlet. This study did not control for important variables such as attitudes toward breast cancer and performing BSE, locus of health control,and motivation for doing BSE. Since we know the kind of written material which works better for older women when teaching breast self-examination, now the body of knowledge can be extended to include these additional issues.

Pre and posttest situations relating to a client's knowledge of breast cancer and BSE technique should be explored. Finally, investigation should be made comparing groups of women who receive BSE teaching modalities such as films and BSE models (with and without masses) in addition to the pamphlet making certain that these women are able to detect any breast abnormalities should they occur. The intent in teaching a woman BSE is not only to change her behavior to

practice the procedure monthly but to be assured that her technique is so accurate that a developing breast lump can be palpated (Coleman, 1990; Johnston & Pennypacker, 1980).

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APPENDIX A

Consent From Director of Human Services

I, Carlene Fulk, am a doctoral student at the University of North Carolina at Greensboro and wish to conduct a research study at the Red Carpet Inn, Division of the Housing Authority in Charlotte, North Carolina focusing on teaching breast self-examination to older women.

The purpose of the study is to compare the effectiveness of two different pamphlets used to teach breast self-examination to older women.

I would like your written permission to allow a research assistant to interview women who are interested in learning to perform breast self-examination on themselves. The study will begin early September 1990 and will continue approximately until early November 1990.

The rights of the participants will be protected and their anonymity assured. Participants will be provided an explanation of the study and given the option to participate or refuse to participate. The participant may withdraw from the study if she chooses to do so.

Each participant will be taught the proper procedure of performing breast examination on herself using a one-to-one teaching approach. All questions concerning breast cancer or breast self-examination will be answered at the end of the teaching session, and a breast self-examination pamphlet will be given to each person taking part in the study.

Having read this consent, I, William Simmons, Director of Human Services, grant premission to allow this study to be conducted.

Signature: William G. Simmons

Date: Aug. 1, 1990

APPENDIX B

Consent from Director
The Methodist Home, Inc.

I, Carlene Fulk, am a doctoral student at the University of North Carolina at Greensboro and wish to conduct a research study at Epworth Place in Charlotte, North Carolina focusing on teaching breast self-examination to older women.

The purpose of the study is to compare the effectiveness of two different pamphlets used to teach breast self-examination to older women.

I would like your written permission to allow a research assistant to interview women who are interested in learning to perform breast self-examination on themselves. The study will begin early September 1990 and will continue approximately until early November 1990.

The rights of the participants will be protected and their anonymity assured. Participants will be provided an explanation of the study and given the option to participate or refuse to participate. The participant may withdraw from the study if she chooses to do so.

Each participant will be taught the proper procedure of performing breast examination on herself using a one-to-one teaching approach. All questions concerning breast cancer or breast self-examination will be answered at the end of the teaching session, and a breast self-examination pamphlet will be given to each person taking part in the study.

Having read this consent, I, Jan White, Administrator of Nursing, grant permission to allow this study to be conducted.

Signature: Jan White RN, MHA

Date: 4/27/90

APPENDIX C

Fliers

ATTENTION

ALL WOMEN RESIDENTS

You are invited to participate in a program on Breast Examination

LOOK FOR MORE INFORMATION IN YOUR MAILBOX

COMING SOON!

BREAST SELF - EXAMINATION

A Program about keeping well by examining your own breasts will be held on _____, _____, _____, _____.

Carlene Fulk, an experienced registered nurse, will give information about private classes to be offered to every women who wants to learn the techniques of breast self - examination.

Please complete the form below and give to Mrs. Stevenson - Byrd.

TEAR OFF AT DOTTED LINE

- -

_____ I plan to attend

_____ I cannot attend but want more information

(name) _____

(phone #) _____

Please give this form to Ms. Stevenson - Byrd.

APPENDIX D

Script for Group Meetings

Hi, I am Carlene Fulk, a registered nurse and teacher of student nurses at Queens College about whom you read in the flier you received several days ago.

I am interested in conducting a research study at Epworth Place (Red Carpet Inn). The aim of my research is to teach any woman at Epworth Place (Red Carpet Inn) who is interested in learning how to perform breast self-examination. It does not matter if you have been taught before how to perform a breast exam or if you now perform the exam at regular intervals.

I am concerned that in 1991 the American Cancer Society has estimated that one out of nine women in the United States will develop breast cancer. The risk of breast cancer increases with age and is most frequently found in women of middle and older age groups. Some researchers say that the risk for breast cancer peaks in women over the age of 65.

I am not minimizing the importance of the other two screening measures recommended by the American Cancer Society which include yearly or twice yearly mammography exams and yearly physician breast exams, but they are not performed as often as monthly breast self-exams. By performing breast self-examination, between the mammography and/or physician exams a woman might be able to feel a lump in her breast.

I don't wish to scare you about breast cancer. Usually, about 80% of the lumps found in breast tissue are not cancerous. However, any lump or change in the breast should be reported as soon as possible to your doctor. Ninety percent of all the lumps reported to physicians are found by women themselves. These are some of the reasons I feel that learning and performing breast self-exams are important.

One of these two research assistants here with me will teach the procedure. A private room in this building has been provided for you for the breast examination (description of the location of the room). Although you will have to disrobe to the waist, the research assistant and I will be the only persons in the room with you. Before the individual teaching has begun, you will be asked to sign a consent form which gives the research assistant permission to proceed. Even though you must sign a consent form, your name will not be given to anyone or published anywhere.

Also, we will be asking questions such as your age, number of years of education, and if you were ever taught breast self-examination.

There will be two teaching sessions. In one session, one pamphlet will be used. Approximately one week later, during the second session, you will be using another pamphlet. After

you have performed the breast exam twice, you will be asked a few questions about each pamphlet you have used. The research assistant will be glad to answer any questions you have about the practice of breast self-examination or breast cancer after the second session. Both pamphlets will be left with you to remind you of the proper steps of the procedure in case you should forget. Three months after the second session, the research assistants and I will return to have a follow-up interview with you. The entire procedure from beginning to end will take about 30 minutes of your time. If you choose to be a part of the study and decide not to continue, you are free to withdraw at anytime.

I would like for the teaching to begin at Epworth Place (Red Carpet Inn) early in _____ 1992 and end approximately early in _____ 1992.

If you are interested in learning how to perform breast self-examination, please sign your name and write your phone number on this white pad. The research assistant or I will get in touch with you by phone or come to your room, if necessary, to arrange a time to do the teaching. Perhaps we can start arranging appointments with some of you tonight.

I will be giving the institution a copy of the completed research project sometime in 1992 so you will be able to know

the results. If you would like to receive a summary of the research study yourself, please let us know.

Thank you for your time. Now, please sign your names and phone numbers if you are interested.

APPENDIX E

Participant Consent Form

I, (Patti Gant or Mary Moore), am conducting the research study on Breast Self-Examination. All information you provide will not appear in any publications. The study will be done in two sessions approximately one week apart. During each of the two sessions, you will use a different pamphlet to perform the steps of breast examination on yourself. While you are performing both breast exams, Mrs. Fulk and I will be marking off items on a checklist.

At the end of the second Breast Self-Examination performance, you will be asked a few questions regarding the two pamphlets you have just used. I am not interested in whether you have memorized the steps, but rather, which pamphlet allows you to most easily read each step. After all the questions have been answered about the two pamphlets during the second session, I will be glad to talk with you about breast self-examination.

Three months from now, Mrs. Fulk and I will return to interview you about breast self-examination. You have the right to refuse to answer any questions asked. If at any time you change your mind and do not wish to continue, you are free to withdraw from the study.

If you agree to take part in the study, you will be given Mrs. Fulk's name and phone number at Queens College in case you would like further information concerning the study.

I understand the above information and agree to participate.

Signed:_____Date:_____

Please Circle: Epworth Place Red Carpet Inn

APPENDIX F

Demographic Data

Number of Participant:_____ Date:_____

Pamphlet Number:_____Interviewer:_____

Name of Institution:_____

Section A. Interviewer's Script - Demographic Data

All the questions that you are being asked today will not be linked with your name. The information is strictly confidential.

Although some of the questions may not have anything to do with breast self-examination, they are important to the research study; so I encourage you to please answer them. If you do not understand a question, I will be glad to repeat it.

A1. What was the highest grade you completed in school?

None ____ Elementary (1-8) ____ High School (9-12) ____
High School Graduate ____ Business School ____
College (13-16) ____ Graduate Education ____

A2. Which of the following categories most nearly states your yearly income now?

$ 4,900 or below ____ $35,000 - $44,900 ____

$ 5,000 - $14,900 ____ $45,000 - $54,900 ____

$15,000 - $24,900 ____ $55,000 - $64,900 ____

$25,000 - $34,900 ____ $65,000 or above ____

A3. Have you been taught Breast Self-Examination?

Yes _____ No _____

Section B. SPMSQ

B1. What is the date of today? Month ___ Day ___ Year 19____

B2. What day of the week is it? _____

B3. What is the name of this place? _____

B4. What is your telephone number? _____

B5. How old are you? 65-69___ 70-74___ 75-79___ 80-84___

85-89___ 90-94___ 95 or over___

B6. When were you born? Month_____ Day_____ Year_____

B7. Who is the President of the U.S.?_____

B8. Who was President just before him?_____

B9. What was your mother's maiden name?_____

B10. Subtract 3 from 20 and keep subtracting 3 from each new number, all the way down to the end.

Patient's Name: _____

Race: 1. White _____ 2. Black _____ 3. Other _____

INSTRUCTIONS FOR SCORING THE SHORT PORTABLE MENTAL STATUS QUESTIONNAIRE (SPMSQ)

Questions B1 and B6 are to be scored correctly only when the exact month, exact day, and exact year are given correctly.

Questions B2 and B3 are self-explanatory.

Question B4 should be scored correctly when the correct telephone number can be verified.

Question B5 is correct when stated age can be verified.

Questions B7 and B8 require only the last name.

Question B10 requires that the entire series must be performed correctly in order to be scored as correct. Any error in the series or unwillingness to attempt the series is scored as incorrect.

SCORING OF THE SHORT PORTABLE MENTAL STATUS QUESTIONNAIRE (SPMSQ)

The data suggest that both education and race influence performance on the Mental Status Questionnaire and they must accordingly be taken into account in evaluating the score attained by an individual.

For purposes of scoring, three educational levels have been established: a) persons who have had only a grade school education b) persons who have had any high school education or who have completed high school and c) persons who have had any education beyond high school, including college, graduate school or business school.

For white subjects with at least some high school education, but not more than high school education, the following criteria have been established:

0-2 Errors	INTACT INTELLECTUAL FUNCTIONING
3-4 Errors	MILD INTELLECTUAL IMPAIRMENT
5-7 Errors	MODERATE INTELLECTUAL IMPAIRMENT
8-10 Errors	SEVERE INTELLECTUAL IMPAIRMENT

Allow one more error if subject has had only a grade school education.

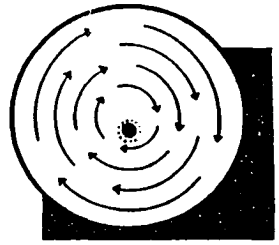
Allow one less error if subject has had education beyond high school.

Allow one more error for black subjects, using identical education criteria.

APPENDIX G

Certificate

BREAST SELF-EXAMINATION



In Recognition of Completion of the Research Study in Breast Self-Examination

_____

_____
Date

_____
Researcher

_____
Research Assistant

APPENDIX H

Individual Teaching Script

Mrs. (Miss)_____ please read this consent form. If you are willing to be a part of the study, please sign the consent form (Signs form).

I will tell you what I would like for you to do. First, you will need to undress to the waist (Disrobes).

Here is the first (second) pamphlet (Pamphlet is handed to participant at the page of the first step of BSE). Please begin reading step number one and perform that step on yourself while describing it to me. (After each exam has been completed, the participant will be allowed to dress. The research assistant makes an appointment to come in approximately one week for the second session). Thank you, and I will see you next week (Closes first session).

Now, (at the end of the second session) if you will sit down beside me, I have a few more questions to ask you about the pamphlets. As I ask each question, please point to the pamphlet you think most accurately answers the questions. (Time is allowed to answer questions).

Thank you. Now, if you would like to ask any questions about breast cancer or breast self-examination, I will be glad to answer them. (At this point, the time of the month the procedure should be performed and what to do if a mass or lump is found in the breast will be discussed. Also, if any steps

were performed incorrectly by the participant during the treatment intervention, those steps will be corrected at this time.)

I will leave these pamphlets with you to remind you to perform a breast exam each month and help you to remember any forgotten steps.

In three months, one of us will be getting in touch with you to make an appointment to interview you about breast self-examination.

Thank you.

Good-bye.

APPENDIX I

Learning Enhancement Pamphlet Questionnaire

Name of Institution:_____Date:_____

Number of participant:_____Pamphlet Number:_____

Name of Research Assistant:_____

BSE ACCURACY:	YES	NO
1. Places hands on hips and looks at her breasts before a mirror.	_____	_____
2. Looks for color changes, dimpling, or puckering.	_____	_____
3. Checks breasts again with hands raised over her head.	_____	_____
4. Looks at her breasts with arms by her side.	_____	_____
5. Uses the opposite hand to feel under each arm for lumps.	_____	_____
6. Lies down and places a small pillow (or towel) under her right shoulder.	_____	_____
7. Places her right arm behind her head.	_____	_____
8. Places the flat part of left fingers at the bottom of the right breast.	_____	_____
9. Feels on the outside of the breast and moves toward the nipple.	_____	_____
10. Feels underneath the right arm.	_____	_____
11. Squeezes the right nipple to check for drainage.	_____	_____
12. Places the pillow (or towel) under her left shoulder.	_____	_____

BSE Accuracy, continued
APPENDIX I

	YES	NO
13. Puts her left arm behind her head.		
14. Places the flat part of her right fingers at the bottom of the left breast.		
15. Feels the outside of the breast and moves in toward the nipple?		
16. Feels underneath the left arm.		
17. Squeezes the left nipple to check for drainage.		

Self-Report

	LEP	TRAD
1. Which pamphlet was easier to read?		
2. Which pamphlet was easier to handle?		
3. Which pamphlet was easier to open?		
4. Which pamphlet had easier directions?		
5. Which color was best suited for reading?		
6. Which pamphlet did you like best for teaching breast self-examination?		
Comments or Suggestions?		

APPENDIX J

Traditional BSE Teaching Pamphlet Questionnaire

Name of Institution:_____ Date:_____

Number of Participant:_____ Participant Number:_____

Name of Research Assistant:_____

BSE Accuracy:	YES	NO
1. Stands before a mirror.		
a. Inspects both breasts for anything unusual, such as any discharge from the nipple or puckering, dimpling, or scaling of the skin.		
2. Watches closely in the mirror.		
a. Clasps hands behind her head.		
b. Presses hands forward.		
3. Presses hands firmly on hips.		
a. Bows slightly toward the mirror.		
b. Pulls shoulders and elbows forward.		
4. Raises left arm.		
a. Uses 3 or 4 fingers of the right hand to explore The left breast, carefully, and thoroughly.		
b. Begins at the outer edge, presses the flat part of the fingers in small circles moving the circles slowly around the breast.		
c. Gradually works toward the nipple covering the entire breast.		
d. Pays special attention to the area between the breast and armpit.		
e. Feels under the armpit for any unusual lump or mass under the skin.		
5. Gently squeezes the nipple and looks for discharge.		

BSE Accuracy, continued
APPENDIX J

	YES	NO
6. Raises right arm.		
a. Uses 3 or 4 fingers of the left hand to explore right breast firmly, carefully and thoroughly.		
b. Begins at the outer edge, presses the flat part of the fingers in small circles around the breast.		
c. Gradually works toward the nipple covering the entire breast.		
d. Pays special attention to the area between the breast and armpit.		
e. Feels under the armpit for any unusual lump or mass under the skin.		
7. Gently squeezes the nipple and looks for discharge.		
8. Lying down raises left arm.		
a. Uses 3 or 4 fingers of the right hand to explore left breast firmly, carefully, and thoroughly.		
b. Begins at the outer edge, presses the flat part of the fingers in small circles moving the circles slowly around the breast.		
c. Gradually works toward the nipple covering the entire breast.		
d. Pays special attention to the area between the breast and armpit.		
e. Feels under the armpit for any unusual lump or mass under the skin.		
9. Gently squeezes the nipple and looks for discharge.		

BSE Accuracy, continued
APPENDIX J

	YES	NO
10. Raises right arm.		
a. Uses 3 or 4 fingers of the left hand explore right breast firmly, carefully, and thoroughly.		
b. Begins at the outer edge, presses the flat part of the fingers in small circles moving the circles slowly around the breast.		
c. Gradually works toward the nipple covering the entire breast.		
d. Pays special attention to the area between the breast and armpit.		
e. Feels under the armpit for any unusual lump or mass under the skin.		
11. Gently squeezes the nipple and looks for discharge.		

SELF-REPORT

	LEP	TRAD
1. Which pamphlet was easier to read?		
2. Which pamphlet was easier to handle?		
3. Which pamphlet was easier to open?		
4. Which pamphlet had easier directions.		
5. Which color was best suited for reading?		
6. Which pamphlet did you like best for teaching breast self-examination?		
Comments or Suggestions?		

APPENDIX K
BEHAVIORAL OBSERVATION CHECK LIST

Name of Institution: _____ Date: _____

Number of Participant: _____ Pamphlet Number: _____

Interviewer for BSE Accuracy: _____

		FACIAL EXPRESSION			EMOTIONAL RESPONSE			BODY LANGUAGE			VERBAL STATEMENT		
		Pos.	Neg.	No	Pos.	Neg.	No	Pos.	Neg.	No	Pos.	Neg.	No
	BSE Steps	Smile	Frown	Response	Laugh	Sigh	Response	Acceptance	Rejection	Response	Easy	Difficult	Response
1.	Places hands on hips and looks at her breasts before a mirror.												
	3. (Standing)												
2.	Looks for color changes, dimpling, or puckering.												
	1. (Standing)												
	2. (Standing)												
	3. (Standing)												
3.	Checks breasts again with hands raised over head (hands clasped behind head).												
	2. (Standing)												
4.	Looks at her breasts with arms by her side.												
	1. (Standing)												
5.	Uses the opposite hand to feel under each arm for lumps.												
	4. (Standing)												
	4. (Standing)												
6.	Lies down and places a small pillow (or towel) under her right shoulder.												
	4. (lying)												
7.	Places her right arm behind her head.												
	4. (Lying)												

	BSE Steps	FACIAL EXPRESSION			EMOTIONAL RESPONSE			BODY LANGUAGE			VERBAL STATEMENT		
		Pos.	Neg.	No	Pos	Neg.	No	Pos.	Neg.	No	Pos.	Neg.	No
		Smile	Frown	Response	Laugh	Sigh	Response	Acceptance	Rejection	Response	Easy	Difficult	Response
8.	Places the flat part of left fingers at the bottom of the right breast.												
	4. (Standing)												
	4. (Lying)												
9.	Feels on the outside of the breast in a circular pattern and gradually moves in toward the nipple.												
	4. (Standing)												
	4. (Lying)												
10.	Feels under the right arm.												
	4. (Lying)												
11.	Squeezes the right nipple to check for drainage.												
	5. (Standing)												
	5. (Lying)												
12.	Places the pillow (or towel) under her left shoulder.												
	4. (Lying)												
13.	Puts her left arm behind her head.												
	4. (Lying)												
14.	Places the flat part of her right fingers at the bottom of the left breast.												
	4. (Standing)												
	4. (Lying)												
15.	Feels the outside of the breast in a circular pattern and gradually moves in toward the nipple.												
	4. (Standing)												
	4. (Lying)												
16.	Feels underneath the left arm.												
	4. (Lying)												
17.	Squeezes the left nipple to check for drainage.												
	5. (Standing)												
	5. (Lying)												

Other Behavior / Comments:

* Although the focus of the behavioral response is on the direction of the response and not the intensity or duration, comments related to intensity, duration or differences in behaviors shall be addressed in the "Comment" section of this questionnaire.

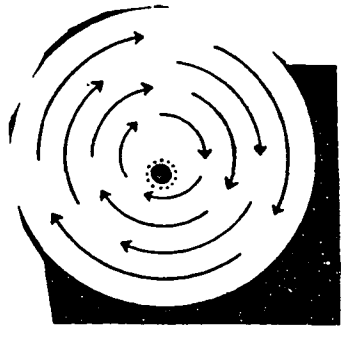
APPENDIX L

Learning Enhancement Pamphlet

BREAST SELF-EXAMINATION

Learning Enhancement Pamphlet

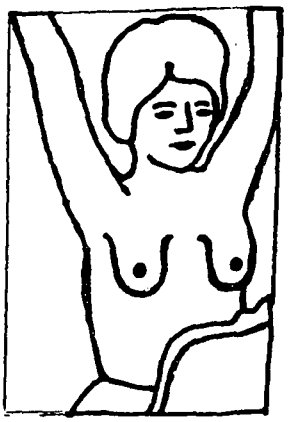
by: Carlene H. Fulk, M. S. N., C.



Once A Month Before a Mirror:

1. With your hands on your hips, look at your breasts.

2. Look for color changes, dimpling or puckering.

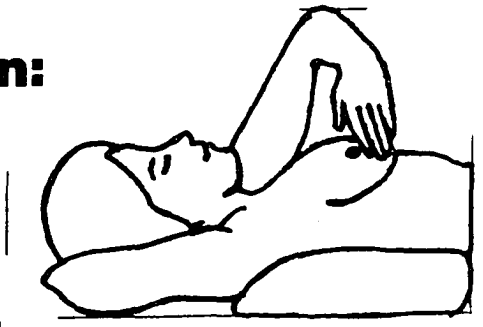


3. Check your breasts again with your hands raised over your head.

4. Look at your breasts with arms by your sides.

5. With the opposite hand feel under each arm for lumps.

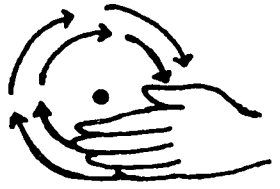
Lying down:



6. Place a small pillow under your right shoulder.

7. Put your right arm behind your head.

8. Place the flat part of your left fingers at the bottom of the right breast.



9. Feel on the outside of the breast and move toward the nipple.

10. Feel underneath the arm.

11. Squeeze the nipple to check for drainage.

12. Place the pillow under the left shoulder.

13. Put your left arm behind your head.

14. Place the flat part of your right fingers at the bottom of your left breast.

15. Feel the outside of the breast and move in toward the nipple.

16. Feel underneath the arm.

17. Squeeze the nipple to check for drainage.

APPENDIX M

Code Book for Conceptualization of BSE Accuracy

BSE Accuracy:

1. Standing before a mirror, places right hand firmly on the right hip and left hand firmly on the left hip at the respective iliac crests with fingers facing anteriorly and thumbs facing posteriorly to the body while looking at the breast using an anterior view. Anterior and lateral views are permissible but not lateral view alone.

2. Verbalizes that she is looking for color changes, dimpling, and puckering of the skin while hands are firmly placed on hips in position described above.

3. For the LEP, looks in the mirror anteriorly (anterior and laterals views are permissible, but not lateral view alone after raising both arms high above the head at a straight angle (180 degrees) to the body.

   For the Traditional Pamphlet, looks in the mirror anteriorly (anterior and laterals views are permissible,but not lateral view alone) after both hands have been clasped while touching the back of the head. In both situations, verbalizes that she is looking for color changes, dimpling and puckering of the skin.

4. Looks at breasts in the mirror anteriorly (anterior and laterals views are permissible, but not lateral view alone) after having placed the right arm and right hand at the right side of the body and the left arm and the left hand at the left side of the body parallel to the body from shoulder to mid-lateral thigh areas. Verbalizes that she is looking for color changes, dimpling and puckering of the skin.

5. Feels (palpates) for lumps under the right arm (axilla and Tail of Spence areas) with the flat part of the fingers of the left hand while continually maintaining contact with the skin and pressing into the tissue. Feels (palpates) for lumps under the left arm (axilla and Tail of Spence areas) with the flat part of the fingers of the right hand while continually maintaining contact with the skin and pressing into the tissue. Verbalizes that she is feeling for lumps and/or masses in each situation.

6. After lying supine on the cot/bed, places the small pillow (towel) underneath the right shoulder at the scapular area.

7. While lying supine with the pillow under the right shoulder, raises the right arm behind or above the head.

8. In a supine position with the pillow under the right shoulder and the right arm is raised above or behind the head, puts the flat part (pads) of the fingers of the left hand anywhere on the outer edge of the right breast.

9. Maintaining the above position, begins at the landmark chosen in "Step 8" presses fingers into breast tissue and moves them in a clockwise (or counter-clockwise) circular fashion while continually maintaining contact with the skin and underlying tissue until reaching the nipple of the right breasts. States that she is feeling for lumps or masses.

10. Maintaining the above position, uses the pads of the fingers of the left hand to feel (palpate) under the right arm by moving the hand over the entire axilla and Tail of Spence areas and continually keeping the fingers in contact with the skin and underlying tissue. States that she is feeling for lumps or masses.

11. In the above position, squeezes the right nipple using the fingers and thumb of the left hand. States that she is checking for drainage.

12. Removes the pillow (or towel) from underneath the right shoulder and places it under her left shoulder at the scapular area.

13. While lying supine with the pillow under the left shoulder, raises the left arm behind or above the head.

14. Assuming the above position, places the flat part (pads) of the fingers of the right hand anywhere on the outer edge of the left breast.

15. In the above position beginning at the landmark chosen in "Step 14" presses the fingers of the right hand into the breast tissue and moves the hand in clockwise (or counter-clockwise) circular fashion while continually maintaining contact with the skin and underlying tissue reaching the nipple of the left breast. States that she is feeling for lumps or masses.

16. In the above position, uses the pads of the fingers of the right hand to feel (palpate) under the left arm by moving the hand over the entire axilla and Tail of Spence areas while continually keeping the fingers in contact with the skin and underlying tissue. States that she is feeling for lumps or masses.

17. In the above position, squeezes the left nipple using the fingers and thumb of the right hand. States that she is checking for drainage.

Note: In order for a step to be accurate, the participant must perform all of the actions correctly in that step.

If a step is performed accurately but out of sequence, the step will be documented as accurate.

Medical terminology has been used to accurately describe anatomy and is the language understood by the two research assistants.

APPENDIX N

Traditional Teaching Pamphlet

BREAST CANCER:

WE'RE MAKING PROGRESS EVERY DAY

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
National Institutes of Health

DISREGARD MYTHS

You have probably heard some myths about breast cancer, but here are the facts. Although scientists do not know exactly why breast cancer develops they do know the disease is not caused by bumping, bruising, or caressing the breast. Also, cancer is not contagious.

KNOW THE RISKS

Any woman can develop breast cancer, but some are more at risk than others. A woman has a higher-than-average risk of developing breast cancer if:

1. She is over 50 years old, or
2. Her mother or sister has had breast cancer, or
3. She has had breast cancer before.

LEARN THE SIGNS

The earlier breast cancer is detected, the better the chances of survival and successful treatment. Learn breast cancer's warning signs:

1. A lump or thickening in the breast, or
2. A change in breast shape, or
3. Discharge from the nipple.

It is important for you to know these signs because most breast cancers are discovered by women themselves, not their doctors. If you discover any of the signs of breast cancer see your doctor immediately. It is a frightening experience to find a lump or another possible cancer sign, but you should know that 8 of 10 lumps are *not* cancerous. Many women have naturally lumpy breasts. But your doctor should determine if a lump or other sign is actually cancer or a harmless condition.

ASK FOR A BREAST EXAM

Don't be embarrassed. Asking your doctor or nurse for a breast examination as part of an office visit is one good way to learn what is normal for your breasts. But examination by a doctor is not enough — you, too, should examine your breasts monthly. Ask your doctor or nurse to teach you breast self-examination (BSE) to be sure you are practicing it correctly.

PRACTICE BREAST SELF-EXAMINATION

Breast self-examination is an important key to early diagnosis. Along with regular examination by your physician, monthly BSE can give you peace of mind because it helps you know how your breasts normally feel.

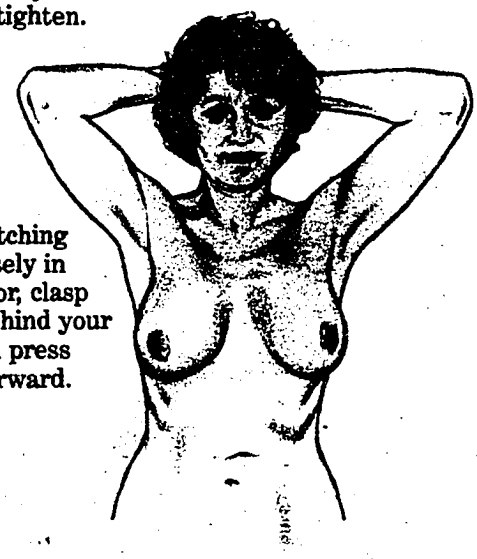
Knowing the normal feel of your breasts makes it easier to notice any changes early, when treatment is most effective. To examine your breasts correctly, you should follow the steps described on the next three pages.

BREAST SELF-EXAMINATION (BSE)

Here is one way to do BSE:

1. Stand before a mirror. Inspect both breasts for anything unusual, such as any discharge from the nipples or puckering, dimpling, or scaling of the skin.

The next two steps are designed to emphasize any changes in the shape or contour of your breasts. As you do them, you should be able to feel your chest muscles tighten.



2. Watching closely in the mirror, clasp hands behind your head and press hands forward.

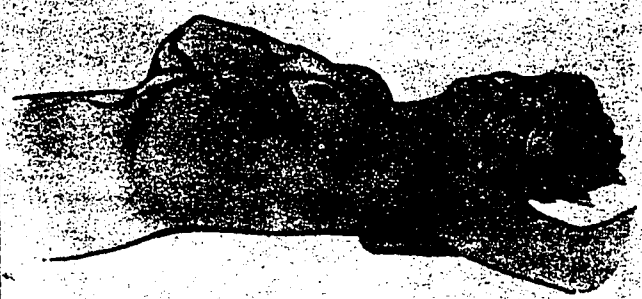
3. Next, press hands firmly on hips and bow slightly toward the mirror as you pull your shoulders and elbows forward.

Some women do the next part of the exam in the shower. Fingers glide over soapy skin, making it easy to concentrate on the texture underneath.

4. Raise your left arm. Use three or four fingers of your right hand to explore your left breast firmly, carefully, and thoroughly. Beginning at the outer edge, press the flat part of your fingers in small circles, moving the circles slowly around the breast. Gradually work toward the nipple. Be sure to cover the entire breast. Pay special attention to the area between the breast and the armpit, including the armpit itself. Feel for any unusual lump or mass under the skin.

5. Gently squeeze the nipple and look for a discharge. (If you have any discharge during the month, see your doctor.) Repeat the exam on your right breast.

6. Repeat steps 4 and 5 lying down. Lie flat on your back with your left arm over your head and a pillow or folded towel under your left shoulder. This position flattens the breast and makes it easier to examine. Use the same circular motion described earlier. Repeat on your right breast.



When To Examine Your Breasts

Every month! If you menstruate, the best time to practice BSE is 2 or 3 days after the end of your period, when your breasts are least likely to be tender or swollen. If you no longer menstruate, choose a day such as the first day of the month to practice BSE. That way, you will remember to do it every month.

ASK ABOUT MAMMOGRAPHY

Your doctor is an important resource for information on mammography, an x-ray of the breast. Mammography is the most reliable method for detecting breast cancer while a tumor is very small, before it can be felt. This stage is when the chances for effective treatment are best.

Modern mammography equipment uses very low doses of radiation. The risk of radiation exposure is small—especially when compared to the benefit of detecting breast cancer early.

The National Cancer Institute suggests that beginning at age 40, all women should be encouraged to have a mammogram every 1 to 2 years. When a woman reaches 50, she should have a mammogram each year.

Other medical organizations have different opinions regarding the age when routine mammographic examinations should begin. Ask your doctor if or when you should have a mammogram. Doctors agree that any woman with a symptom of breast cancer should not hesitate to have a mammogram if her doctor suggests it, regardless of age.

KNOW ABOUT BIOPSY

A biopsy is a test that determines if a breast problem really is cancer. Sometimes a biopsy is done with a needle that withdraws fluid or tissue from the lump. The specimen is then analyzed in a laboratory to determine whether cancer cells are present. Usually, however, a biopsy is a surgical procedure performed under local or general anesthesia. The lump, or a piece of it, is removed and analyzed.

When a biopsy is necessary, a woman has a choice to make. She can have a biopsy and immediate breast removal (mastectomy) if cancer is found. This is a one-step procedure. Or she can choose a two-step procedure. This method involves biopsy on one day; if cancer is found, the treatment usually takes place within a couple of weeks. The two-step procedure is recommended for most women because it offers extra time for:

1. Additional tests to determine the extent of the disease;

2. A second medical opinion;

3. Discussion of treatment alternatives;

4. Emotional preparation; and

5. Domestic and work arrangements for the recovery period.

A short delay between biopsy and treatment will not affect the spread of disease or any chances for successful treatment. Any woman planning to have a biopsy should discuss both procedures with her doctor to decide which is best for her.

Another important question to ask the doctor before the biopsy regards tests called hormone receptor assays. These tests are done on the cancerous tissue to determine if the cancer growth is stimulated by female hormones. The information provided by these tests can be useful in planning additional treatment for the patient. If the tests are not performed on a sample of the cancerous tissue at the time of diagnosis, the information may be difficult to obtain later. Therefore, you should ask your doctor before biopsy whether there are plans to perform hormone receptor tests.

LEARN ABOUT TREATMENT OPTIONS

The treatment of breast cancer today encompasses many more options than traditional radical surgery. In fact, today's treatments are less disfiguring than ever before. Knowing the options for treatment will help you play an active role in your health care should cancer ever be diagnosed.

Mastectomy, the surgical removal of the breast, is the most common treatment for breast cancer. There are several types of mastectomy, but "total mastectomy with axillary dissection" is the standard treatment for most breast cancers today. This procedure is also called a "modified radical mastectomy." This involves removing the breast and the lymph nodes under the arm, but leaving the chest muscles intact.

Mastectomy, however, is not the only treatment for breast cancer. Lumpectomy followed by radiation therapy as primary treatment is a promising technique for women who have early stage breast cancer. This procedure allows a woman to keep her breast. It involves removing only the breast lump and some or all the underarm lymph nodes. The remaining breast tissue is then treated with radiation. In some cases, radiation implants are placed temporarily in the breast to supplement the external radiation therapy.

Research is ongoing comparing radiation therapy's effectiveness with the traditional surgical approach, mastectomy. Study

results are encouraging. Researchers are hoping that over time the survival rates for women who are treated with radiation therapy will remain comparable to those women treated by mastectomy.

Chemotherapy, the use of drugs to destroy cancer cells, is another treatment often used in addition to either surgery or radiation therapy if the cancer has spread beyond the breast. Finally, depending on the results of the hormone receptor assays, hormone therapy may be used as part of treatment. Hormone therapy is used to discourage the growth of a tumor.

OBTAIN A SECOND OPINION

A woman who is considering treatment for breast cancer may obtain the opinion of a second physician if she wants another point of view. Many doctors routinely encourage their patients to seek the advice of another doctor so the patient feels confident that the treatment decision is wise. Asking for a second opinion does not show a lack of confidence in your doctor; it shows an interest in your future.

LEARN ABOUT BREAST RECONSTRUCTION

Breast reconstruction, a type of plastic surgery that rebuilds the breast, is an option for virtually any woman today. Many women find that plans for reconstruction help them adjust to mastectomy. Some women have reconstruction immediately following mastectomy; others decide on reconstruction several months or even years later. Any woman facing breast surgery who thinks she may be interested in breast reconstruction should discuss the options with her surgeon and a plastic surgeon before mastectomy.

KNOW YOUR RESOURCES

Many communities offer resources to help women cope with breast cancer and its treatment. Swim and exercise classes specifically for breast cancer patients aid in rehabilitation. Discussion and counseling groups for women and their partners can speed emotional adjustments. To find out about the resources in your community, call the Cancer Information Service (listed at the end of this publication) or the American Cancer Society office nearest you.

Remember, we're making progress every day. You *can* take advantage of it.

ASK QUESTIONS

Seek answers to any questions you may have. The Cancer Information Service provides free information about cancer. It can send you current publications on breast cancer, breast self-examination, and many other subjects. Call the following toll-free telephone number and you will be automatically connected to the Cancer Information Service office serving your area:

1-800-4-CANCER

In Alaska, call 1-800-638-6070; in Hawaii, on Oahu call 524-1234 (call collect from neighboring islands).

Spanish-speaking staff members are available to callers from the following areas (daytime hours only): California, Florida, Georgia, Illinois, New Jersey (area code 201), New York, and Texas.

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APPENDIX O

Code Book for Behavioral Observations Check List

Behaviors to be observed will include:

1. Facial Expression
   a. Positive (e.g., smile)
   b. Negative (e.g., frown)

2. Emotional Response
   a. Positive (e.g., laugh)
   b. Negative (e.g., sigh)

3. Body Language
   a. Positive (e.g., acceptance)
   b. Negative (e.g., rejection)

4. Verbal Statement
   a. Positive (e.g., easy)
   b. Negative (e.g., difficult)

Operational Definition of Terms:

1. **Facial Expression** - the conveyance of a feeling revealed in the area of the participant's face.

   a. **Smile** - an upward curving of the corners of the mouth.
   b. **Frown** - contraction of the eyebrows or forehead.

2. **Emotional Response** - the expression of a strong feeling.

   a. **Laugh** - to cry out making explosive like sounds of the voice such as a chuckle (soft low laughter), giggle (half-suppressed laugh in a series of high-pitched sounds), or snicker (sly, half-suppressed laugh).
   b. **Sigh** - to take in and let out a long, deep audible breath.

3. **Body Language** - moving or positioning of the whole body or some portion of the body.

   a. **Acceptance** - when part or all of the participant's body turns or is directed toward the interviewer who is the research assistant collecting data on BSE accuracy.

   b. **Rejection** - when part or all of the participant's body turns slightly or directly away from the interviewer who is the research assistant collecting data on BSE accuracy.

4. **Verbal Statement** - an oral utterance of declaration or assertion.

   a. **Easy** - any remark such as the following:
      "I do it like this."
      "This must be right."
      "This is not hard to do."
      "This is easy to read."

   b. **Difficult** - any remark such as the following:
      "Is this right?"
      "I can't do this."
      "This is hard to do."
      "This is hard to read."

5. **Positive Behavior** shall be interpreted as an affirmative or constructive act/conduct.

6. **Negative Behavior** shall be interpreted as an act of refusal or denial.

7. **No Response Behavior** shall be interpreted as neither positive or negative behaviors.

Note: Any behavior other than those documented on the check list will be addressed in the **"Other Behavior/Comment"** section. All positive or all negative behaviors in any of the selected categories (i.e., facial expression, emotional response, etc.) relating to each step of BSE will be treated as **Consistent Behavior**. A combination of positive and negative behaviors in any of the selected categories relating to each step of BSE will be treated as **Mixed Behavior**.

APPENDIX P

Code sheet for Behavioral Observations Check List

STEPS OF BSE	FACIAL EXPRESSION			EMOTIONAL RESPONSE			BODY LANGUAGE			VERBAL STATEMENT		
	Pos.	Neg.	No	Pos.	Neg.	No	Pos.	Neg.	No	Pos.	Neg.	No
	Smile	Frown	Response	Laugh	Sigh	Response	Acceptance	Rejection	Response	Easy	Difficult	Response
1.	HPFEPS	HPFENF	HPFENR	HPERPL	HPERNS	HPERNR	HPBLPA	HPBLNR	HPBLZO	HPVSPE	HPVSND	HPVSNR
2.	DMFEPS	DMFENF	DMFENR	DMERPL	DMERNS	DMERNR	DMBLPA	DMBLNR	DMBLZO	DMVSPE	DMVSND	DMVSNR
3.	HDFEPS	HDFENF	HDFENR	HDERPL	HDERNS	HDERNR	HDBLPA	HDBLNR	HDBLZO	HDVSPE	HDVSND	HDVSNR
4.	SDFEPS	SDFENF	SDFENR	SDERPL	SDERNS	SDERNR	SDBLPA	SDBLNR	SDBLZO	SDVSPE	SDVSND	SDVSNR
5.	AXFEPS	AXFENF	AXFENR	AXERPL	AXERNS	AXERNR	AXBLPA	AXBLNR	AXBLZO	AXVSPE	AXVSND	AXVSNR
6.	RPFEPS	RPFENF	RPFENR	RPERPL	RPERNS	RPERNR	RPBLPA	RPBLNR	RPBLZO	RPVSPE	RPVSND	RPVSNR
7.	RHFEPS	RHFENF	RHFENR	RHERPL	RHERNS	RHERNR	RHBLPA	RHBLNR	RHBLZO	RHVSPE	RHVSND	RHVSNR
8.	ROFEPS	ROFENF	ROFENR	ROERPL	ROERNS	ROERNR	ROBLPA	ROBLNR	ROBLZO	ROVSPE	ROVSND	ROVSNR
9.	RCFEPS	RCFENF	RCFENR	RCERPL	RCERNS	RCERNR	RCBLPA	RCBLNR	RCBLZO	RCVSPE	RCVSND	RCVSNR
10.	RAFEPS	RAFENF	RAFENR	RAERPL	RAERNS	RAERNR	RABLPA	RABLNR	RABLZO	RAVSPE	RAVSND	RAVSNR
11.	RSFEPS	RSFENF	RSFENR	RSERPL	RSERNS	RSERNR	RSBLPA	RSBLNR	RSBLZO	RSVSPE	RSVSND	RSVSNR
12.	LPFEPS	LPFENF	LPFENR	LPERPL	LPERNS	LPERNR	LPBLPA	LPBLNR	LPBLZO	LPVSPE	LPVSND	LPVSNR
13.	LHFEPS	LHFENF	LHFENR	LHERPL	LHERNS	LHERNR	LHBLPA	LHBLNR	LHBLZO	LHVSPE	LHVSND	LHVSNR
14.	LOFEPS	LOFENF	LOFENR	LOERPL	LOERNS	LOERNR	LOBLPA	LOBLNR	LOBLZO	LOVSPE	LOVSND	LOVSNR
15.	LCFEPS	LCFENF	LCFENR	LCERPL	LCERNS	LCERNR	LCBLPA	LCBLNR	LCBLZO	LCVSPE	LCVSND	LCVSNR
16.	LAFEPS	LAFENF	LAFENR	LAERPL	LAERNS	LAERNR	LABLPA	LABLNR	LABLZO	LAVSPE	LAVSND	LAVSNR
17.	LSFEPS	LSFENF	LSFENR	LSERPL	LSERNS	LSERNR	LSBLPA	LSBLNR	LSBLZO	LSVSPE	LSVSND	LSVSNR

APPENDIX Q

Follow-up Data Questionnaire

Name of Institution:_____

Name of Participant:_____ Pamphlet No.:_____

Data Collector: _____ Date: _____

1. How often in the past three months have you practiced breast examination on yourself since I last saw you during the research study?

   Once a month: for One Month _____for Two Months ____

   for Three Months _____ None ____ More Often _____

2. Which pamphlet are you using to do breast examination?

   LEP _____ Traditional _____ None _____

   Both _____