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## Personal and professional practices of breast self-examination in nurses

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**PERSONAL AND PROFESSIONAL PRACTICES OF  
BREAST SELF-EXAMINATION IN NURSES**

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**Degree sought: Bachelor of Health Science (Nursing) Honours**

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**Date submitted: 15th November 1989**

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## **ABSTRACT**

### **PERSONAL AND PROFESSIONAL PRACTICES OF BREAST SELF-EXAMINATION IN NURSES**

Breast cancer is the most frequently occurring cancer in females in Western Australia (W.A.). Despite technological advances the death rate from breast cancer is not decreasing. With the hope of reducing the mortality rates, preventative measures are being encouraged for the early detection of breast cancer. The Cancer Foundation of W.A. promote the performance of Breast Self-Examination (BSE) on a monthly basis. The purpose of this study is to determine the frequency of BSE practice amongst nurses and the incidence of nurses teaching BSE to patients. The Health Belief Model (HBM) is used as a theoretical framework. This model attempts to explain preventative health behaviour in terms of the combination and interaction of differing attitudes. The basis for this research is in relation to two concepts of the HBM; perceived susceptibility to breast cancer and perceived benefits of BSE. The following hypotheses were formulated for investigation in this study: 1) Nurses who practice BSE will perceive themselves to be more susceptible to breast cancer, and will perceive greater benefits of BSE than nurses who do not practice BSE; 2) nurses who practice BSE will teach this preventative measure to patients more frequently; and 3) oncology nurses will demonstrate a greater frequency in personal practice of BSE than maternity or surgical nurses.

The design of this study is a cross-sectional descriptive survey. A self-administered 23 item questionnaire was employed to measure the practice of BSE, the perceived susceptibility of breast cancer, the perceived benefits of BSE, the frequency of teaching BSE to patients, and the incidence of any personal or family history of breast disease. A non-random convenience sample of 49 nurses was gained from maternity, oncology and surgical wards from one acute care hospital setting. Findings indicated that 90 percent of the nurses practiced BSE but only 39 percent were deemed effective in their routine of BSE. No significant correlation existed between effective BSE practicers and the incidence of teaching to patients. The occurrence of BSE was found to be significantly less in nurses 40 years of age and over ( $p = 0.005$ ). Area of nursing had no effect on the nurses' teaching or personal BSE practice. Findings could not significantly support the HBM since nurses practicing BSE did not demonstrate greater perceived susceptibility nor increased perceived benefits when compared with non-practicers.

Suggested implications for nursing practice are that all nurses, particularly those over 35 years of age, need to take part in a thorough educational programme in the benefits, purpose and technique of BSE. In the hospital setting BSE instruction and breast cancer knowledge should be included in all discharge planning.

**"I certify that this thesis does not incorporate, without acknowledgement, any material previously submitted for a degree or diploma in any institution of higher education and that, to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where due reference is made in the text".**

**Julia E. Agars**

**15 November 1989**

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## **CHAPTER I**

### **INTRODUCTION**

This study is concerned with nurses' personal Breast Self - Examination (BSE) practices and their health teaching of this preventative measure to patients. More specifically, the study determines the extent of effective BSE practices by nurses, and the proportion of nurses who teach BSE.

Breast cancer in Western Australia (W.A.) is the most frequently occurring cancer in females. While advances in medical science have not decreased the death rate from this disease, it is hoped that a reduction in the mortality rate could be achieved through the encouragement of early detection methods such as BSE. Studies have indicated that a majority of women do not practice BSE, mainly because they have not been shown how. Nurses are in a favoured position to perform BSE health teaching, but are not always maximising these opportunities. Evidence from the few studies that have been conducted on nurses' personal and professional BSE practice (Bayley, Cockram, Fatin & Wilson 1980; Cole & Gorman 1984; Edgar, Shamian & Patterson 1984; Elkind 1980; Hirst 1986), have revealed that nurses, generally, are ineffective practicers of BSE and that the frequency of BSE teaching is low.

The study is set in the context of preventative health behaviour. The theoretical basis is the Health Belief Model (HBM) which was initially developed in the 1950's (Becker 1974). The HBM was developed in an attempt to understand the widespread failure of people to accept disease preventatives or screening tests for the early detection of asymptomatic disease (Janz & Becker 1984). The health beliefs in this study, related to the likelihood of BSE practice, are determined by the nurses' perceived susceptibility to breast cancer and perceived benefits of BSE.

A method similar to that adapted by Hirst (1986) is employed in this study. Hirst (1986) employed breast unit, oncology, and gynaecology ward nurses to assess their personal and professional practice of BSE. In this present study, the sample of gynaecology nurses is replaced with maternity nurses as this point of contact with women, in a health care setting, may be the only opportunity for health teaching.

The purpose of this study is to determine the frequency of BSE practice amongst nurses and the incidence of nurses teaching BSE to patients. The significance of this study is that if BSE practices in nurses are found to be inadequate, teaching strategies could be evaluated and implemented in an attempt to improve these practices. Accomplishment of this may also increase the likelihood of health teaching of BSE, as positive correlations between effective BSE practice and incidence of teaching have been reported in studies by Bayley et al. (1980) and Hirst (1986).

### Definitions of major variables

The conceptual and operational definitions of major variables measured in this study are as follows:

1. Health beliefs - a set of perceptions an individual holds about her susceptibility to a disease (breast cancer), the seriousness of that disease on her life, and the benefits of taking an action (BSE) to reduce the threat of the disease (Stillman 1977);
2. BSE - the examination of both breasts by a woman in a systematic manner for the purpose of detecting an abnormality;
3. Effective BSE - palpation with pads of fingers + immediately following menstruation + lying down + at least two monthly;

4. Ineffective BSE - absence of BSE at least two monthly and/or two more of the above criteria for effective BSE;
5. Nurse - registered with the Nurses Board of W.A. as a Registered Nurse, or as a Registered Midwife if forming part of the maternity sample;
6. Perceived susceptibility and perceived benefits - see discussion of HBM; and
7. Teaching - "activities by which the teacher helps the student learn" (Redman 1984, p. 8). Actual instruction of BSE technique to female patients.

#### Organisation of the study

A review of the literature concerning breast cancer and the use of BSE as an early detection method is contained in Chapter II. The importance of patient education and nurses' personal and professional BSE practice is also discussed. The theoretical framework for this study is described with associated literature in Chapter III. Formation of hypotheses and conceptual definitions conclude this chapter. Chapter IV is concerned with methodology; including the study's design, questionnaire description, data collection procedure and sample details. Analysis of data and reporting of results is encompassed in Chapter V. Summary of findings and their comparison to other studies is incorporated in Chapter VI. Implications for nursing practice and recommendations for future research conclude the paper.

## CHAPTER II

### LITERATURE REVIEW

#### Breast Cancer

Breast cancer in Western Australia (W.A.) easily retains its place as the most frequent cancer in females (Hatton & Clarke-Hundley 1985). In 1985 the statistics, as stated by the Health Department of W.A., indicated that 68.3 per 100 000 of the total female population of W.A. developed breast cancer, and 26.2 per 100 000 died of it (Hatton & Clarke-Hundley 1985). Despite advances in surgical techniques, radiotherapy and chemotherapy, the death rate from breast cancer is not decreasing (Del Greco & Spitzer 1984).

A painless mass or thickening in the breast is the most common presenting symptom of breast cancer. Other clinical manifestations (indicative of advanced breast carcinoma) may include: skin puckering or dimpling; nipple discharge or retraction; change in size, shape or contour of the breast; skin oedema; discolouration; dilated superficial blood vessels; frank skin ulcerations; and hard palpable axillary lymph nodes (Nash 1985; Porth 1986).

The size of the primary mass (tumour) and axillary nodal involvement is a clinical predictor of outcome. Tumours less than two centimetres in size are generally associated with the most favourable outcome, with survival at five years being 90 percent. Tumour size is correlated also with the likelihood of axillary lymph node involvement, another prognostic indicator. Smaller tumours of less than 1.5cm are less likely to have nodal metastases than larger tumours (Braunwald et al. 1987; O'Malley & Fletcher 1987; Tabar & Dean 1987).



Braunwald et al. (1987), Littlefield (1986), Nash (1985), and Studva and Nash (1984) identified risk factors for the development of breast cancer that included the following:

1. Family history of breast cancer
  - especially mother or sister
  - especially if bilateral
  - especially if premenopausal
2. Personal history of breast cancer
3. Nulliparous or first birth after age 30
4. History of fibrocystic breast disease
5. Menarche prior to age 12
6. Menopause after age 50
7. Obesity
8. Increasing age, especially over the age of 40.

Almost all breast cancers (90 to 98 percent) are found by women themselves either accidentally or through BSE (Braunwald et al. 1987; Ludwick 1988; Nash 1985; Porth 1986; Senie, Rosen, Lesser & Kinne 1981; Studva 1984). The remaining 2 to 10 percent of cancers are discovered during examination by health professionals or by mass screening techniques, such as mammography (Braunwald et al. 1987).

With the hope of reducing cancer mortality secondary preventative measures are being encouraged. The various symptoms, self-discovery rate and importance of early detection, as previously discussed, support the need for regular, effective BSE. This is promoted by the Cancer Foundation of W.A. to be performed on a monthly basis for women over the age of 20.

### Breast Self-Examination

BSE is the examination of both breasts in a systematic manner for the purpose of early detection of abnormalities. It should be performed monthly immediately following menstruation, or the first day of every calendar month if menstruation does not occur. The Cancer Foundation of W.A. produce pamphlets that outline the correct technique (see Appendix A).

BSE used in conjunction with annual medical examinations and mammography are the most acceptable methods for detecting breast cancer (Del Greco & Spitzer 1984; Mahoney, Bird & Cooke 1979; Tabar & Dean 1987). In a study of 140 general practitioners' attitudes towards breast cancer and detection methods, it was found that "94 percent believed it was generally desirable for women to practice BSE" although, 17 percent of the same sample did not instruct women in the technique of BSE (Hill et al. in Wakefield 1976, p. 5).

Considering the importance of annual medical examinations it is interesting to note in a study of physicians' abilities to detect lumps in silicone models of breasts, the mean number of lumps detected was only eight (44 percent) out of a total of 18 lumps, with a range of three (17 percent) to fifteen (83 percent) (Fletcher, O'Malley & Bunce 1985). Baines (1983) supports a need for campaigns to increase the skills of physicians in breast examinations rather than teaching women themselves, but Venet (1980) disagrees, maintaining that teaching women

how to examine their own breasts is more important than teaching physicians, "as at least 98 percent of women who develop breast carcinoma discover the tumour themselves" (p. 931).

There are many advantages of BSE. It is simple, inexpensive, noninvasive, performed in private, nonradiative (Nettles-Carlson, Field, Friedman & Smith 1988; O'Malley & Fletcher 1987), and can be practiced in remote regions where other screening programmes are unlikely to be established (Del Greco & Spitzer 1984). O'Malley and Fletcher (1987) and Baines (1983) claim, however, that teaching and psychological costs need also be remembered. False positive results of BSE generate costs for additional physicians' visits and diagnostic costs, and false negative detections could generate additional costs from delayed diagnosis and treatment. The alternatives, mammography and clinical examinations, are also expensive and involve the employment of two professionals, a radiologist and a physician (O'Malley & Fletcher 1987). The practice of BSE, therefore, is generally an acceptable cost effective method.

Foster and Costanza (1984) conducted a study over a seven year period with 1004 newly diagnosed breast cancer patients, and found that more frequent BSE was related to earlier detection and improved survival. These findings have also been supported through studies by Caseldine et al. (1988); Feldman, Carter, Nicastri and Hosat (1981); Foster et al. (1978); Huguley, Brown, Greenberg and Clark (1988); Huguley and Brown (1981); and Mamon and Zapka (1985). Greenwald et al. (1978) estimated that breast cancer mortality would be reduced by 18.8 percent through BSE. In a recent meta-analysis of twelve studies Hill, White, Jolley and Mapperson (1988) found that 39 percent of the women who performed BSE had lymph node metastases, compared to 50 percent in those women who did not perform BSE. Findings by Haughey et al. (1988) and Senie et

al. (1981) disagree with the above, in discovering that BSE frequency and nodule detection was not significantly related to the pathological stage of disease at diagnosis.

The number of women practicing BSE every month varies in the literature, from 15 percent (Roberts, French & Duffy 1984) to 59 percent (Dickson et al. 1986). Foster et al. (1978) and Magarey, Todd and Blizard (1977) conducted studies with newly diagnosed breast cancer female patients and found that 50 percent of their samples had never performed BSE. Baines (1983) offered a realistic opinion for why many women may choose not to practice BSE, in that it is ironical that 'success' with BSE means you have found disease, and that there is a lack of short term satisfaction.

A need for health education is now undoubtedly obvious. Women need to be made aware that regardless of whether they perform BSE or not, there will be no effect whatsoever on the development of breast cancer. It must be reiterated that the rationale for BSE is earlier detection with subsequent earlier treatment and improved survival.

### Patient Education

The importance and need for patient education has increased in recent years and this has led to an increase in the professional nurse's opportunities for such a role (Caffarella 1984). Through teaching, it is possible to prevent, promote, maintain or to modify a number of health-related behaviours. It is a common belief that nurses are in the optimal and unique position to perform BSE health teaching as they practice in more settings than any other health professional (Clark, Kendall & Haverty 1987; Close 1987; Crooks & Jones 1989; Rowlands 1987; Winslow 1976).

Nurses are not always utilising these patient education opportunities as many assign low priority to patient education (Cohen 1981; Syred 1981; Wienzierl 1983). Reasons offered for this are lack of time, lack of preparation for the role, and confusion about their formal teaching role (Wienzierl 1983). Along with the transfer of nurse education into tertiary institutions has come an increased commitment to preventative health care. A part of that commitment involves the importance and credibility of the educative role of nurse practitioners. Hopefully, with emphasis on increased skills and knowledge, patient education will become a focal point of nursing care.

It has been identified that properly targeted educational programmes can improve BSE behaviours significantly (Baines 1983; Mamon & Zapka 1985). Dickson et al. (1986), in a study of 483 women, found that 62 percent indicated that they would practice BSE regularly if they were shown how. This same sample ranked nurses fourth, following doctors, magazines and television, as their most likely source of information about BSE. Evaluation of programmes conducted by nurses have shown an improvement of BSE practices, including technique, confidence and knowledge (Champion 1985; Michalek, Walsh, Burns & Mettlin 1981; Nettles-Carlson et al. 1988; Shamian & Edgar 1987; Styrd 1982).

Supporting nurses' knowledge in the area of breast lump detection and education of patients, Barckley (1980, p. 35) reports that

nurses performed physical assessments on 3883 patients. When the nurses' examinations were checked by a physician, the rate of agreement was found to be 97.1 percent. In the area of disagreement, the nurses erred in being too scrupulous; in not one instance did they miss a serious lesion.

### Nurses' Personal and Professional BSE Practice

Considering nurses' personal BSE practice, Cole and Gorman (1984) found that nurse compliers in BSE tended to be younger, more highly educated and with less bedside experience of breast cancer. Elkind (1980) however, in a study of 785 female hospital nurses, discovered that the greater the nurse's professional experience of cancer the more likely she was to value BSE. Bayley et al. (1980), in a study of 47 registered nurses, discovered that 76.6 percent practiced BSE and 31.9 percent said that they had taught the procedure, but only 11.1 percent were deemed as effective practicers. In a study by Hirst (1986) it was found that while only 18.5 percent of nurses employed in oncology, gynaecology and breast cancer wards were effective BSE practicers, 64 percent of these nurses had taught BSE.

In an attempt to understand the factors which influence why nurses do not teach or practice BSE more significantly, Edgar et al. (1984) compared BSE practices of 380 hospital-employed nurses and non-nurses. Their findings showed that the knowledge and confidence of BSE in nurses was significantly higher than the non-nurse group. However, the differences between the two groups in frequency of practice was extremely small as only 24 percent of nurses and 21 percent of non-nurses practiced regularly. It was inferred that as a majority of nurses do not practice BSE regularly, the frequency of their teaching would also be low.

BSE, then, has been identified as an important method for the early detection of breast cancer. Previous studies have indicated that a majority of nurses are not performing BSE themselves. A lack of nurses' own BSE practice may have serious implications for the teaching of BSE to patients. Consequently, this study is involved with the following research questions:

**Research Questions**

1. To what extent is effective BSE practice prevalent in nurses?
2. To what extent is the practice of BSE a factor in determining the instruction of BSE to patients?
3. Is there any difference in the teaching practices between nurses employed in an oncology ward and those in maternity or surgical wards?

## **CHAPTER III**

### **THEORETICAL FRAMEWORK**

#### **Health Belief Model**

This study is set in the context of preventative health behaviour. The theoretical framework for guiding this study is based on the Health Belief Model (HBM), which was formulated by Hochbaum, Leventhal, Kegeles and Rosenstock during the 1950's (Champion 1984), and later modified by Becker and Maiman in 1975 (Hallal 1982).

The Health Belief Model attempts to explain preventative health behaviour in terms of the combination and interaction of differing attitudes. The model is based on four concepts; perceived susceptibility, perceived seriousness, perceived benefits, and perceived barriers. These concepts have been specified by Champion (1984, p. 74) as follows:

- i) perceived susceptibility refers to a persons' view of the likelihood of experiencing a potentially harmful condition;
- ii) perceived seriousness is concerned with how threatening the condition is to the person;
- iii) perceived benefit focuses on the effectiveness of specific behaviour in reducing the threat of the condition, and;
- iv) perceived barriers are related to the negative aspect of the anticipated behaviour.



The HBM has provided a framework for previous studies investigating aspects of BSE. Increased perceived susceptibility to breast cancer has been shown to be the highest motivator for practicing BSE (Dickson et al. 1986; Hallal 1982; Howe 1981; Janz & Becker 1984; Kelly 1979; Massey 1986). The other concepts specified in the HBM, barriers, benefits and seriousness, have also contributed significantly to the practice of BSE (Calnan & Rutter 1986; Champion 1987; Champion 1988; Hallal 1982; Hirst 1986; Rutledge 1987; Rutledge & Davis 1988; Williams 1988). Some studies found that the HBM was not able to provide an explanatory basis for BSE health behaviours (Bennett, Lawrence, Fleischmann, Gifford and Slack 1983; Magarey et al. 1977, Schlueter 1982; Stillman 1977). Champion (1987) suggests that this lack of support is due to a problem with statistical analysis.

The HBM has been deemed appropriate as a paradigm for health-protecting or preventative behaviour (Pender 1987), and for explaining and predicting acceptance of health and medical care recommendations (Janz & Becker 1984; Rutledge & Kinman 1986). This model is suitable to explain a nurse's own preventative health behaviour of BSE. A diagrammatic explanation of the HBM is illustrated in Figure 1.

The basis for this research is in relation to two concepts of the Health Belief Model. In accordance with the HBM, the likelihood of nurses practicing BSE is dictated by their level of perceived susceptibility and perceived benefits. Perceived susceptibility refers to the nurse's belief of her chance of getting breast cancer. Perceived benefit refers to what the nurse believes she can gain from practicing BSE, that is, earlier detection of breast cancer with improved survival. The nurse's perception of these beliefs will be ascertained from their responses in Section B of the questionnaire. The study questionnaire is reproduced in Appendix B. In this

study, three areas of nursing practice are chosen; maternity, surgical and oncology. In accordance with the HBM, oncology nurses may perceive themselves more susceptible to cancer due to the modifying factors of daily contact and knowledge of cancer. The likelihood of their BSE practice, therefore, is greater.

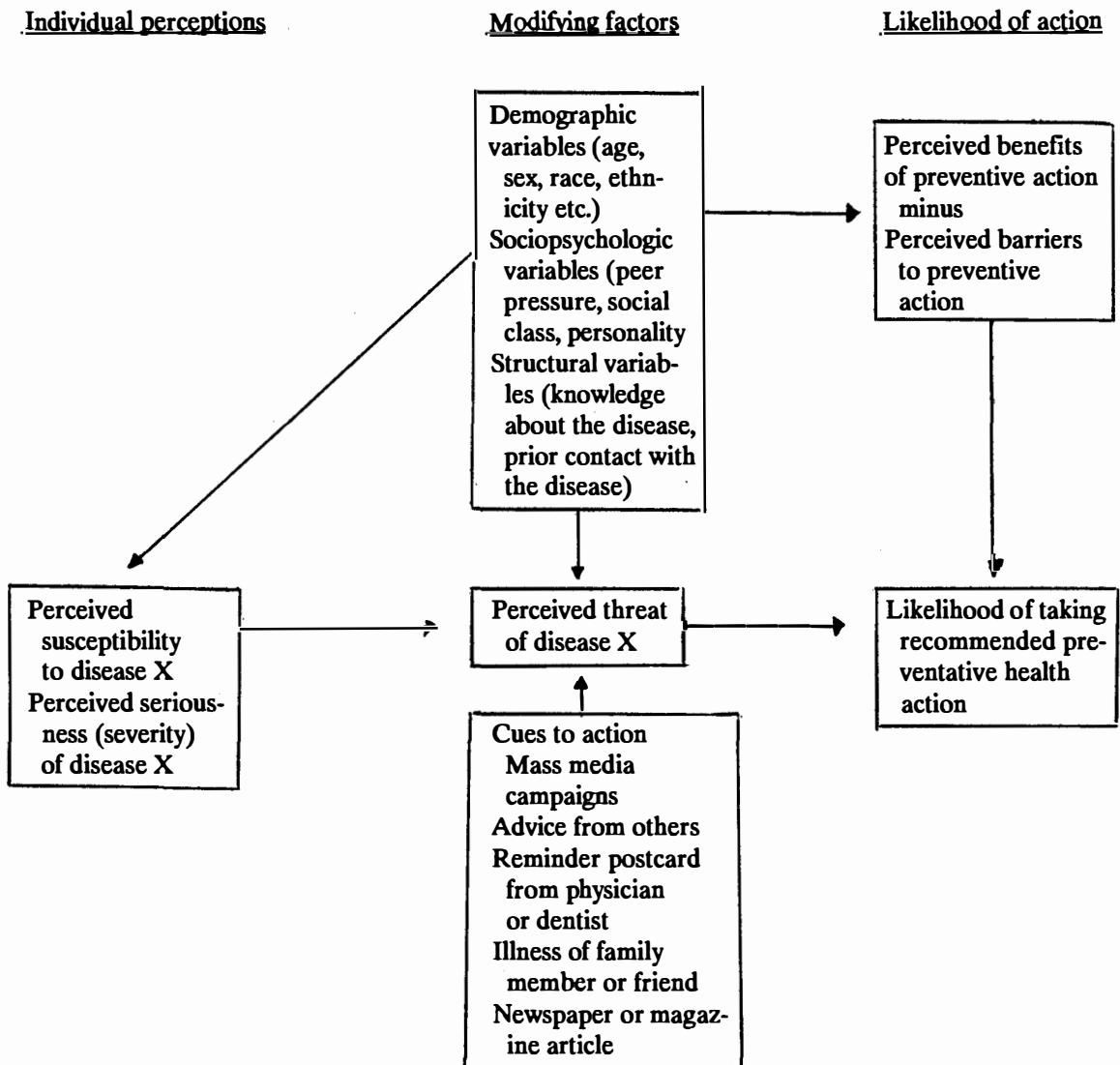
As discussed previously, this study adopts a method similar to that of Hirst (1986). The findings by Hirst (1986) indicated that nurses' personal BSE appeared to influence teaching practice, therefore, this concept is also assessed in this study.

### Hypotheses

Utilising the stated aims and the HBM as a framework, the following hypotheses were formulated:

1. The health belief scores of nurses who practice BSE will be higher (i.e. reflect greater perceived susceptibility and greater perceived benefits) than the health belief scores of nurses who do not practice BSE.
2. Effective BSE practicers will teach BSE more frequently in their professional practice than ineffective practicers.
3. Oncology nurses will demonstrate a greater frequency in BSE personal practices than maternity or surgical unit staff.

**Figure 1**  
**THE 'HEALTH BELIEF MODEL'**



(Rosenstock in Becker 1974, p. 7)

## CHAPTER IV

### DESIGN

The design of this study is cross-sectional in nature, as it examines three groups of nurses simultaneously and at one point in time. By adopting a descriptive survey the study determines the frequency and effectiveness of nurses' BSE practice, and the incidence of teaching BSE to patients.

#### Instrument

A self-administered questionnaire consisting of four sections was employed to examine the formulated hypotheses. The questionnaire is reproduced in Appendix B. The first section deals with personal practice of BSE. Practice is measured by frequency, its timing in relation to the menstrual cycle, correct palpation and the bodily position when performing BSE. Effective BSE (BSE score = 3) is seen as monthly performance immediately following menstruation and in a supine position using the flat parts of the fingers. Partially effective practice (BSE score = 2) is BSE at least every two months and two more of the above variables. A score of less than 2 is judged as ineffective BSE.

The second section of the questionnaire is intended to measure the respondent's health beliefs. Scores for this variable are obtained using a ten-item measure adapted from Stillman (1977). This section consists of a Likert-type scale in which the subjects respond to nine statements on an agree-disagree continuum, and to one statement in terms of a comparison with other women. The even-numbered items measure the individual's perceived susceptibility to breast cancer, and the odd-numbered items measure the perceived benefits of BSE in reducing the threat of breast cancer. For the first nine items, the lowest belief is allotted a

score of one and the highest belief, a score of four. The final item, number ten, is a three point scale with a response of 'above average' allotted a score of three. A total range of 5 to 19 is possible for perceived susceptibility, and a range of 5 to 20 for perceived benefits. In both instances, a score of 16 or more represents a high degree of belief; score 9 to 15 a moderate belief; and below 9, a low belief. Initially, the 'perceived susceptibility' and 'perceived benefit' scores will be analysed separately to identify which concept has a greater influence on the frequency and practice of BSE. The scores will then be combined to obtain the nurses' overall health beliefs in relation to breast cancer and BSE.

The third section of the questionnaire identifies the frequency of BSE instruction to patients. Section four examines whether a family or personal history of breast disease is present. A history of breast disease in association with a high health belief score will provide further support for the chosen theoretical framework as these are modifying factors of the HBM. This section also determines whether the subject has attended a recent lecture and teaching session conducted by the Cancer Foundation of W.A. concerning breast cancer and BSE.

#### Validity and reliability

BSE health educators employed by the Cancer Foundation of W.A. were asked to review the questionnaire to ascertain face and content validity. As a result of their review some minor adjustments were made to the wording of the questions in Section A. The study instrument developed by Stillman (1977) has been utilised and adapted for numerous studies (Brailey 1986; Hallal 1982; Hirst 1986; Massey 1986; Nettles-Carlson et al. 1988; Schlueter 1982; Shamian & Edgar 1987). A Cronbach alpha coefficient of 0.87 was obtained for Stillman's (1977) instrument

using the sample of 49 nurses in this study. Massey (1986) obtained a 0.70 alpha coefficient for the same instrument using a sample of 20 women.

### Sample

Nurses from one acute care hospital in the Perth metropolitan hospital were asked to participate in this study. The sample consisted of female Registered Nurses or Registered Midwives from four wards, oncology, surgical and maternity (two wards were used for the maternity sample to gain sufficient numbers of Registered Midwives). Criteria for sample selection included:

1. permanent employment within the hospital
2. working time greater than 24 hours per week
3. nurses not presently on annual leave
4. nurses employed for various shifts (day, evening and night duty)
5. nurses not presently on extended sick leave
6. nurses not presently on workers compensation

### Ethical Considerations

The proposal for this study was submitted to the School of Nursing Ethics Committee, and the selected hospital setting. Ethical approval was granted. The cover page of each questionnaire informed the subjects of the following: basic purpose of the study; that confidentiality and anonymity will be maintained as individual names are not required; approximate time to complete the questionnaire; that they have the right to refuse; and that their participation is completely voluntary. The cover page of the questionnaire is reproduced in

Appendix B. Consent from subjects is implicit in their voluntary placement of questionnaires into the sealed boxes provided on each ward.

### Data Collection

Initially a meeting was arranged with the nurses in each ward to introduce and explain the study. Questionnaires and a sealed box were placed in the respective wards. Seven days later, a follow-up notice was posted on each ward, asking the nurses who wished to participate in the study to complete the questionnaires by a certain date (five days later). The boxes were then collected and a further sign thanking the nurses involved was posted. From a total of 55 questionnaires distributed to the selected wards, 51 (93 percent) were returned. Two questionnaires were incomplete, and thus disregarded, leaving a sample size of 49 (89 percent return), which consisted of 20 maternity, 15 surgical, and 14 oncology nurses. Data analysis was conducted by computer using the SAS version six statistical package at the Churchlands campus of the Western Australian College of Advanced Education. Statistical procedures in this study included correlation, chi-square, t-test and regression.

### Assumptions

Although perceived seriousness is one of the variables identified in the HBM, Stillman (1977) quotes previous studies that indicate cancer is perceived as maximally serious. It was assumed for the purpose of this study that subjects would consider breast cancer to have a serious effect on their lives.

Judging proficiency of BSE by questionnaire may not be reliable. Nurses may know the technique but not implement it. In this study it is assumed that nurses will provide an accurate recall of their BSE practice.

### Limitations

Due to the nature of this study and restricted time scale only a small non-random sample from one hospital setting was employed for this study. These limitations determine that any conclusions from this study are only applicable to this particular group of nurses.

Also an important possible limitation that needs to be considered is that the nurses involved may have felt that a lack of personal BSE practice and teaching reflects their own professionalism. They may have answered, therefore, as they felt they should have.



CHAPTER V

DATA ANALYSIS

The data was initially assessed to gain an overview of the sample characteristics. Specific analysis for testing the formulated hypotheses was then undertaken.

Sample characteristics

In the sample of 49 nurses, 44 (90 percent) indicated that they had practiced BSE in the last twelve months. When considering the effectiveness of these practices, 17 (39 percent) were deemed fully effective, 11 (25 percent) partially effective, and 16 (36 percent) ineffective. The areas of effectiveness for assessing BSE practice are displayed in Table 1, together with the percentage of nurses that failed to meet the requirements for each area of effectiveness.

Table 1

PERCENTAGE OF NURSES FAILING TO MEET DIFFERENT CRITERIA  
FOR EFFECTIVE BSE

<u>Area of effectiveness</u>	<u>Failure rates %</u>
Regularity	34
Timing (relation to menses)	29
Position	21
Hand technique	16

### Hypothesis 1 - Health belief scores and BSE

It was hypothesised that the health belief scores of nurses who practice BSE will be higher than the health belief scores of nurses who do not practice BSE.

The range of health belief scores, which measure the perceived susceptibility and perceived benefit score, was 23 to 38 for BSE practicers and 35 to 36 for non-practicers. Analysis by a one-tailed t-test revealed that hypothesis one could not be supported, as the health belief scores of nurses that did not practice BSE are significantly higher than those that did ( $F = 38.6$ ;  $p > 0.002$ ). According to the HBM, the level of health beliefs should influence the practice of BSE, therefore, BSE practicers would be expected to have significantly higher HBS than non-practicers. The significance of these results must be viewed with caution, however, as only five (10 percent) of the sample are BSE non-practicers. See Table 2 for the comparative health belief scores of BSE practicers and non-practicers using t-test analysis.

When considering which concept, perceived susceptibility or perceived benefits, of the health belief model had the greatest influence on the frequency and practice of BSE, it was found that 82 percent of BSE practicers had high (16 - 20) perceived benefit scores, but only 49 percent had high (16 - 19) perceived susceptibility scores. A major benefit of BSE agreed by 94 percent of the nurses was that if they examined their breasts regularly, there would be fewer deaths from breast cancer.

The age range of the sample was 23 to 51 years (mean = 32.3; SD = 7.41). The age of the nurses did not indicate a noteworthy association with health belief scores using Pearson's correlation coefficient ( $r = 0.15$ ;  $p = 0.29$ ).

**Table 2**  
**COMPARATIVE HEALTH BELIEF SCORES (HBS) OF BSE PRACTICERS**  
**AND NON-PRACTICERS : t-TEST ANALYSIS**

BSE	No.	Mean	Std Dev	Std Err	HBS Range
No	5	35.4	0.55	0.24	35 - 36
Yes	44	33.0	3.4	0.51	23 - 38
Variances		t	df	Prob > [t]	
unequal		4.2215	41.5	0.0001	
equal		1.5604	47.0	0.1254	
Variances are equal, F = 38.6 df = (43,4) Prob >F = 0.0027					

Hypothesis 2- Effective BSE practice and the frequency of teaching

It was hypothesised that effective BSE practicers would teach BSE more often than nurses that do not practice BSE.

Overall 18 (37 percent) of nurses said that they had instructed a patient in BSE, though, in the last six months only 9 (50 percent) of these had taught one or more persons. Included in the total of BSE teachers was one nurse who did not

have any personal BSE practice. No significant relationship was found using the chi-square test between the nurses that taught and also practiced BSE ( $\chi^2 = 0.84$ ;  $p = 0.41$ ;  $df = 1$ ).

A comparison of the incidence of teaching was made in relation to BSE effectiveness. Of the 18 nurses that had taught BSE, only 7 (39 percent) were deemed effective in their BSE practice, and 11 (61 percent) were ineffective. It was hypothesised that effective BSE practitioners would teach more often than ineffective practitioners. A statistical relationship between BSE effectiveness and the incidence of teaching was not significant using chi-square ( $\chi^2=0.19$ ;  $p = > 0.2$ ;  $df=1$ ). One interpretation of these findings is that a high percentage of nurses in this study may be teaching an ineffective technique of BSE to patients, since the nurses themselves are ineffective BSE practitioners.

When nurses were divided into their areas of nursing, maternity, surgical and oncology, it was found that the frequency of BSE instruction was 8 (40 percent), 5 (33 percent) and 5 (36 percent) respectively. No significant relationship between the area of nursing and the incidence of teaching was obtained using the chi-square test ( $\chi^2=0.17$ ;  $p>0.2$ ;  $df=2$ ).

### Hypothesis 3 - area of nursing and incidence of personal BSE

It was hypothesised that oncology nurses would demonstrate a greater frequency in BSE personal practices than maternity or surgical unit staff. In accordance with the HBM, oncology nurses should perceive themselves to be more susceptible due to their constant exposure to the effects of cancer. This outcome was not evident for this sample as a chi-square of 1.008 ( $p>0.2$ ;  $df=2$ ) was obtained. Table 3 presents the age range and area of nursing for the BSE practitioners. Considering this further, an analysis of the effectiveness of BSE

practices was undertaken to see if a particular area of nurses was more effective in their own BSE. Of the nurses who practiced BSE, 13 (72 percent) maternity nurses and 8 (61 percent) oncology nurses were ineffective compared to only 6 (46 percent) surgical unit nurses.

Table 3				
BSE PRACTICERS : AGE AND WARD CHARACTERISTICS				
AGE RANGE	SURGICAL	ONCOLOGY	MATERNITY	% OF CATEGORY PRACTICING BSE
20 - 29	9	8	6	100
30 - 39	3	3	8	93
40 - 49	1	2	3	60
50 - 59	-	-	1	100
TOTAL	13	13	18	

The modifying factors of the HBM include the presence of a family member illness that increases the perceived threat of breast disease. This threat directly influences the likelihood of the person taking the recommended preventative action of BSE. Seventeen (35 percent) of the sample had a family history of breast disease. All of these nurses practiced BSE, with 12 (70 percent) of them doing so in an effective manner. The latter relationship proved significant using chi-square

analysis ( $\chi^2 = 2.95$ ;  $p = < 0.05$ ;  $df = 1$ ). Individual history of breast disease was also examined. Only five (ten percent) of the nurses indicated a personal history and all practiced BSE. As the mean age was only 32 years, the incidence of breast disease in these nurses should not be very high normally as breast cancer is mainly diagnosed in women over 40 years of age.

Nurses in their twenties were found to have the greatest incidence of BSE personal practices and the nurses in their forties the least. Table 3 exhibits the age range of BSE practicers. In fact, an inverse relationship was found between age and BSE ( $r = -0.39$ ;  $p = 0.005$ ). Using BSE as the dependent variable, multiple regression was performed using forward selection to assess further this effect of age on BSE practice. Findings indicated that age accounted for 15.2 percent of the variance, with the level of significance at 0.005.

Unknown to the researcher at the time of proposal, approximately three months prior to this data collection, the Cancer Foundation of W.A. conducted one-to-one BSE teaching sessions in this study's setting. Of the sample, nine nurses (18 percent) had attended such a session. Of these five (55 percent) were deemed effective BSE practicers, one (11 percent) partially effective, and three (34 percent) ineffective in their BSE practice. A positive correlation using Pearson's coefficient was obtained for the frequency of BSE and the attendance at teaching sessions ( $r = 0.27$ ;  $p = 0.05$ ). This may indicate in the short term that one-to-one teaching sessions are beneficial, but as this was only a very small sample ( $n=9$ ) the significance must be viewed with caution.

## CHAPTER VI

### SUMMARY, DISCUSSION AND IMPLICATIONS

#### Summary of study

The aim of this study was to assess nurses' personal BSE practice and the incidence of BSE instruction to patients. The Health Belief Model was utilised as the theoretical framework. The sample size of 49 included 20 maternity, 15 surgical, and 14 oncology nurses. In summation, the findings concluded that 90 percent of the nurses had practiced BSE in the last 12 months, but only 39 percent were effective in their routine. The occurrence of BSE was found to be significantly less in nurses 40 years of age and over ( $p=0.005$ ). Area of nursing had no effect on the nurses' teaching or personal BSE practice. Considering teaching practice, only 18 percent of the sample had instructed at least one patient in the technique of BSE. No significant correlation existed between effective BSE practitioners and the incidence of teaching to patients. A positive relationship was found to exist between family history of breast disease and the practice of BSE ( $\chi^2=2.95$ ;  $p=0.05$ ). The health beliefs, perceived susceptibility to breast cancer and the perceived benefits of BSE as motivators for the preventative action of BSE, could not significantly support the HBM.

#### Discussion

The hypotheses could not be supported in this study. Results indicated that of the 90 percent of BSE practitioners, 39 percent were judged to be fully effective; somewhat higher than reported by other studies on nurses' BSE practice (Bayley et al. 1980; Hirst 1986; Cole & Gorman 1984). Non-practice of BSE monthly (34 percent) and examination of the breasts at times other than immediately following

menstruation (29 percent) were the major reasons why BSE practice was rendered ineffective. These findings support those by Bayley et al. (1980). BSE in the pre-menstrual period may produce inaccurate findings as the breasts may be lumpy, tender or engorged.

This study supports the findings by Hirst (1986) as there were also no significant differences in BSE practice across the three nursing areas (though the surgical unit nurses had the highest percentage of effective practice). Experience with cancer patients did not appear to influence the nurses' own practices, though, in Elkind's (1980) study this was apparent. Although the mean age of the group was only 32 years, the occurrence of BSE was found to be significantly less in nurses 40 years of age and over ( $p = 0.005$ ). This finding supports those of Foster et al. (1978), Hirst (1986), Howe (1981), Huguley and Brown (1981) and Senie et al. (1981). This age difference is contrary to what might be expected, or hoped. Increasing age, especially over forty years, is a major risk factor for breast cancer. All of the nurses in the age range of 20 to 29 practiced BSE. This may be a result of preventative health care which is now being emphasised in nurse education. However, reasons for non-practice were not obtained so one can only speculate.

In contrast to Hirst (1986), no relationship was found between the frequency of BSE teaching and personal practices. There were approximately equal numbers of nurses teaching BSE across the three areas of nursing, but maternity nurses had instructed a greater number of women in BSE as part of their nursing practice. This is a pleasing indication as this contact with pregnant women, the majority of whom are under 30 years of age, may be the only opportunity for preventative health teaching of this nature.



The Health Belief Model has been utilised as a framework for many studies concerning the practice of BSE, with a large percentage providing support for this model. In this study, non-practicers had significantly higher health belief scores than BSE practicers, thus not supporting the HBM, but this was probably a bias due to the size of the sample. When the individual components of the health belief score were analysed it was found that nurses who practiced BSE had a higher perceived benefits score than perceived susceptibility score. However, this difference was not significant. This finding was also supported by Schlueter (1982) and Rutledge and Davis (1987). An indication may be that future BSE health teaching should emphasise risk factors to breast cancer, thus increasing feelings of susceptibility. This idea is supported by the findings that the majority of nurses who had a family history of breast disease were effective BSE practicers. Alternatively, health teaching sessions should continue to support and reinforce the benefits of BSE, considering the effect this variable had in this study. Even though support for the HBM was limited, Champion (1985), who has undertaken extensive research and developed the HBM further (1984, 1987, 1988) holds the opinion that the HBM has promise for the development of interventions which will increase the compliance with the practice of BSE (p.379).

Responses to Section B of the questionnaire produced some variation in beliefs. Of the sample, 65 percent considered themselves to have an average chance of developing breast cancer. This is comparable to the findings of Dickson et al. (1986) and Stillman (1977). Considering perceived benefits of BSE, 94 percent of this sample agreed that if they examined their breasts regularly there would be fewer deaths from breast cancer, somewhat higher than the 68 percent that Dickson et al. (1986) found. This may indicate that increasing education and media exposure of breast cancer and BSE in recent years may be influencing these

beliefs. Only 10 percent in this sample agreed that BSE is an embarrassing practice, whereas studies by Brailey (1986), Dickson et al. (1986) and Stillman (1977) found a sample average of 20 percent in relation to this statement. This may indicate a change in womens' attitudes, and acceptance of touching their own bodies in this manner.

### Implications for nursing practice

In this study, nurses' own confidence and actual observed technique of their BSE practice was not assessed. It cannot be automatically assumed that those nurses who were deemed effective in their practice are also confident in their practice or in their ability to teach. Women, in all probability, vary greatly in their performance of BSE, in terms of the time they allocate and the thoroughness of their technique. To increase the number of nurses practicing regular effective BSE, teaching strategies should be assessed and improved. All nurses, with particular reference to those over 35 years of age, need to take part in a thorough educational programme in the technique, benefits and purpose of BSE. Also their knowledge of breast cancer including: predisposing factors; morbidity and mortality rates; prognostic factors associated with tumour size and with nodal involvement; and associated surgical interventions should be improved. BSE education should emphasise that at present the only means of reducing mortality and morbidity due to breast cancer is through early detection.

Nurses are ideal health teachers as they reach a large number of women in a variety of settings including community, doctors' offices, industry, hospitals, and schools. In the hospital setting, at least, BSE instruction and breast cancer knowledge should be included in all discharge plans as it has been found that women are very receptive to one-to-one teaching at this time (O'Malley & Fletcher

1987). This type of teaching was associated significantly with effective BSE practice in this present study. Reasons for not teaching patients were not included in this study. A possible reason may be the lack of material teaching resources available in nursing settings. A solution that may increase the likelihood of teaching is the availability of silicone models of breasts. Nurses can then demonstrate BSE technique on lifesize models without having to physically palpate the patient involved. The use of these models have shown significant improvements of BSE frequency and effectiveness in studies by Edwards (1980); Marty, McDermott and Gold (1983); and Olenn (1981).

#### Recommendations for future research

This study could be replicated utilising a larger variety of nursing settings to assess the level of BSE instruction currently being practiced. These settings could include community health, occupational health, school health and doctors offices. Reasons for the lack of personal BSE amongst nurses and patient teaching should be assessed to determine if there are areas that can be improved. These areas could include: knowledge of BSE technique and breast cancer; confidence in teaching strategies and interpersonal skills; and availability of material resources.

A longitudinal study assessing different types of teaching techniques would be advantageous to determine which is the most effective in changing BSE practices, especially in the long term.

Further use of the Health Belief Model to evaluate its potential is advised to determine which of its aspects have the greatest influence in increasing the incidence of BSE as a preventative health care habit.

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## **Appendix A**

### **CANCER FOUNDATION OF W.A.**

#### **TECHNIQUE OF BREAST SELF-EXAMINATION**

1. Lie down in a relaxed and comfortable position. Examination of the breast should be in circles from the outer edge of the breasts towards the centre.
2. First examine your left breast. The left arm should be raised with the left hand behind the head. The left breast is then examined with the right hand. You should use the front part of the flat of your hand keeping your fingers straight and close together. It is important to learn how hard to press when examining your breasts. Never pinch up the breast. If you do, you may feel lumps even in a perfectly normal breast. Never dig into the breast with the fingertips.
3. Slide your hand over the breast, starting at the armpit and moving across the breast on the outer edge of the breast pressing to feel for lumps. Continue examining the outer edge of the breast.
4. Now repeat the action moving in a circle closer to the centre of the breast.
5. Finally slide your hand across the nipple making sure you have felt all parts of the breast.
6. Now carry out the same examination on your right breast using your left hand.

The Facts About Breasts and the Importance of Breast Examination, (no date) (pamphlet), Cancer Foundation of W.A.

## **Appendix B**

### **QUESTIONNAIRE INTRODUCTION**

This questionnaire is part of a research project being conducted for an honours degree (W.A.C.A.E.). It concerns breast self-examination practices. The results may suggest that health education programmes and additional teaching resources be made available for your use (personal and professional).

Confidentiality and anonymity is guaranteed for all respondents, as the collected data will be used for statistical purposes only.

Your participation is completely voluntary and you have the right to refuse at any time.

Completion of the questionnaire will take approximately 5 to 10 minutes. Please place completed questionnaire in the box provided on your ward.

Should you have any queries please do not hesitate to contact Julia Agars on 306 2867 or at Ward 6A.

**Please do not put your name on this questionnaire**

Thank you for your participation

Study questionnaire

1. Have you practiced breast self-examination in the past 12 months?

(Please circle appropriate response)

a) yes

b) no

**IF NO please go to Section B**

**SECTION A**

1. How often do you practice breast self-examination?

(Please circle appropriate response)

a) more than once per month

b) monthly

c) every other month

d) every three to four months

e) less than every six months

2. When do you practice breast self-examination in relation to your menstrual cycle?

(Please circle appropriate response)

a) no relation - any time during the month

b) immediately before menstruation

c) immediately after menstruation

d) midcycle

e) do not menstruate, practice any time during the month

3. How do you practice breast self-examination?

i) When performing hand palpation do you use;

(Please circle appropriate response)

a) the tips of your fingers?

b) the palms of your hands?

c) the flat parts (pads) of your fingers?

ii) Do you practice breast self-examination;

(Please circle appropriate response)

a) standing up?

b) lying down?

## SECTION B

Please circle appropriate response beside each question

SA = strongly agree

A = agree a little

D = disagree a little

SD = strongly disagree

1. If more women examined their breasts regularly, there would be fewer deaths from breast cancer  
SA   A   D   SD
2. My health is too good at present to even consider thinking that I might get breast cancer.  
SA   A   D   SD
3. Whether I find a lump in my breast myself doesn't really matter because by then it's too late anyway.  
SA   A   D   SD
4. Whenever I hear of a friend or relative getting breast cancer, it makes me realise that I could get it, too.  
SA   A   D   SD
5. If I examined my own breasts regularly, I might find a lump sooner than if I just went to the doctor for a check-up.  
SA   A   D   SD
6. There are so many things that could happen to me that it's pointless to think about any one thing like breast cancer.  
SA   A   D   SD
7. Even though it's a good idea, I find examining / having to examine my breasts an embarrassing thing to do.  
SA   A   D   SD
8. The older I get, the more I think about the possibility of getting breast cancer someday.  
SA   A   D   SD

9. Examining my breasts often makes /  
would make me worry unnecessarily  
about breast cancer.

SA A D SD

10. If I had to think about the possibility that I might someday get breast cancer, I would rate  
my chances as compared with other women as;

(Please circle appropriate response)

- a) average
- b) above average (more likely I would get it)
- c) below average (less likely I would get it)

## SECTION C

1. Have you ever taught / instructed a patient in breast self examination?

(Please circle appropriate response)

- a) yes
- b) no

**IF NO please go to Section D**

2. How many patients in the last six months have you taught/instructed in breast self-examination?

(Please specify approximate number in space provided)

\_\_\_\_\_

## SECTION D

1. Please indicate your age in the space provided

\_\_\_\_\_

2. Have you ever had any surgery for any type of breast disease?

(Please circle appropriate response)

- a) yes
- b) no

3. Have you any family history of breast disease / cancer?

(Please circle appropriate response)

- a) yes
- b) no
- c) unsure

4. What ward do you currently work in?

(Please circle appropriate response)

- a) maternity
- b) oncology
- c) surgical

5. Did you attend the recent breast cancer and breast self-examination lectures conducted by the Cancer Foundation of W.A.?

(Please circle appropriate response)

- a) yes
- b) no

6. Did you attend a recent 1:1 breast self-examination teaching session conducted by the Cancer Foundation of W.A.?

(Please circle appropriate response)

- a) yes
- b) no

**THANK YOU FOR YOUR PARTICIPATION**

**PLEASE PLACE QUESTIONNAIRE IN BOX PROVIDED ON YOUR WARD**