

JOHANNESBURG NORTHERN SUBURBS WOMEN'S
ATTITUDES, KNOWLEDGE AND BEHAVIOUR TOWARDS
BREAST SELF-EXAMINATION

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DEDICATION

This is dedicated to my husband Peter for all his love and support and to my two sons, Jonathan and Matthew.

ABSTRACT

Breast self-examination (BSE) is a recommended breast cancer screening behaviour whereby a woman examines her breasts on a monthly basis to detect any problems.

The purpose of this study has been to determine Johannesburg northern suburbs women's attitudes, knowledge and behaviour towards BSE.

To this view, a questionnaire was developed. Subjects were recruited from three Johannesburg northern suburb general practices. The data was captured and analysed using the Epi-info 6 statistical package.

The results indicated that the majority of respondents were aware of BSE and believed in its value. Furthermore and consistent with first-world countries, only a minority of respondents practise BSE regularly, although the majority had examined their breasts at least once.

It is recommended that a formal breast cancer-screening programme, in particular BSE education at a primary health care level, be instituted since presently none exists in South Africa.

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NOMENCLATURE

Attitudes	A state of mind or feeling with regards to BSE and breast cancer.
Breast Cancer	A malignant tumor of the breast.
Breast Self-Examination (BSE)	The examination of both breasts (or one, if one has been removed) in a systematic manner, in order to detect any abnormalities.
Clinical Breast Examination (CBE)	A breast examination performed by a health care professional for example a doctor or nurse.
Health Belief Model (HBM)	A model developed by Rosenstock in 1960, which identified certain variables believed to influence the taking of a preventive action.
Health Care Workers	Health care professionals for example doctors and nurses.
Knowledge	Factual knowledge possessed by the respondent, in regard to possible causes of breast cancer and knowledge of breast self-examination.
Mammogram	A radiological depiction of the breast.
Pap Smear	A cytological smear of the cervix. It is a screening procedure to detect cancer of the cervix. It is recommended to be done annually on all sexually active women.

1.0 INTRODUCTION

The aim of this research project is to determine Johannesburg northern suburbs women's attitudes, knowledge and behaviour towards breast self-examination (BSE)

BSE is a method whereby a woman examines her breasts on a monthly basis to detect any lumps. It is a recommended breast cancer screening behaviour along with clinical breast examination (CBE) and mammography (1, 2, 3)

Breast cancer is the major form of cancer in women in the Western world. It is a considerable cause of morbidity and mortality (4). Although mortality rates have remained relatively stable the incidence of breast cancer is increasing (5). It has a very poor prognosis in the late stages unless detected and treated early. Reversing mortality depends on early detection (4). In most of the developed countries in the world there are extensive breast cancer screening programmes in place in an attempt to detect breast cancer early and thus reduce mortality rates (4, see also Appendix B). It is of concern that international research shows that not enough women practise BSE on a regular basis (6).

It is the hope of this report which describes attitudes, knowledge and behaviour of South African women, that strategies to increase BSE performance will be developed. It is hoped that recommendations based on the findings will assist with health education planning at both a local and government level, as South Africa currently has no formal breast cancer screening programme in place.

This introductory chapter will look at some background information on breast cancer and breast cancer screening as this will enable the reader to have a better understanding of where BSE fits into the greater context and thus to understand more clearly the aims and objectives of this research.

1.1 BREAST CANCER

This section covers breast cancer prevalence, incidence, risk factors and prognosis.

1.1.1 PREVALENCE OF BREAST CANCER

In the United Kingdom breast cancer is the major form of cancer in women, it being estimated that one in twelve women will develop it (4). It is the leading cause of female cancer death in the UK (4). Nearly 30 000 new cases of breast cancer are diagnosed annually and over 15 000 women die annually from breast cancer in the UK (7).

In the United States it is estimated that approximately one in ten women will develop breast cancer (8). Annually there are an estimated 142 000 cases of breast cancer being diagnosed (28% of all newly diagnosed cases of female cancers) and 43 000 deaths (18% of all female cancer deaths) (3). It is the leading cause of death of American women aged 40-55 years (1).

In Canada there are an estimated 16 300 new cases of breast cancer and an estimated 5 400 deaths annually. It is the second most common cancer in Canadian women, skin cancer being the first (9).

In comparison, according to the South African National Cancer Registry Report (1990/91 and 1992) (10, 11), cancer of the breast is the second most common cancer amongst females in South Africa, cancer of the cervix being the most

common. However breast cancer ranks first in white and asian females and second in coloured and black females (10,11).

South African statistics for cancer of the breast are as follows (10, 11):

8547 cases of breast cancer were reported in 1990 and 1991, this being 15,86% of all female cancers. This represents an overall risk of 1/29, if current lifestyle and dietary trends continue. Most of the cases reported occurred between the ages of 35-74 years with the highest number of cases reported being in the 50-54 year age group. 4084 new cases were reported in 1992. A breakdown of breast cancer statistics for the various race groups is as follows (10, 11):

TABLE 1.1: BREAST CANCER STATISTICS FOR VARIOUS RACE GROUPS IN 1990/1991 AND 1992

<i>Race Group</i>	<i>Number of Cases</i>		<i>Percentages</i>		<i>Risk</i>	
	<i>1990/91</i>	<i>1992</i>	<i>1990/91</i>	<i>1992</i>	<i>1990/91</i>	<i>1992</i>
Asian Females	392	180	25,37	29,32	1/18	1/20
Black Females	2955	1250	12,49	12,41	1/56	1/58
Coloured Females	701	307	20,26	20,22	1/30	1/33
White Females	4255	2016	17,91	18,93	1/13	1/15

1.1.2 INCIDENCE OF BREAST CANCER

Over the last 20 years the incidence of breast cancer worldwide has steadily increased by about 15% whereas the mortality rate has remained relatively stable (5)

1.1.3 RISK FACTORS FOR BREAST CANCER

A vast amount of literature exists on this subject. A brief overview will be given here (1, 2, 4, 12). Risk factors for breast cancer include hereditary, hormonal and dietary factors.

a) Hereditary factors:

A positive family history of breast cancer especially first degree relatives (i.e., a mother or sister with breast cancer) is strongly linked to an increased risk of breast cancer.

b) Hormonal factors:

These include an early menarche, a later menopause, nulliparity and delayed first pregnancy (after 30 years of age). These all give rise to an increased exposure to estrogens that are implicated in the pathogenesis of breast cancer. Post-menopausal hormone replacement therapy and the oral contraceptive pill are still controversial.

c) Dietary factors:

Obesity and dietary factors specifically a high intake of fat, particularly saturated animal fat is considered to be risk factors that lead to a rise in oestrogens. The role of alcohol is controversial.

d) Other factors:

Risk factors include exposure to ionising radiation, a previous history of breast cancer or benign breast disease and a history of ovarian or endometrial carcinoma.

Breast cancer is predominantly a disease of the developed world with dietary, hormonal and hereditary factors possibly playing a major role (11)

1.1.4 BREAST CANCER PROGNOSIS

Breast cancer has a very poor prognosis in the late stages of the disease (4). Long-term survival rests on early detection and treatment at the earliest possible stage. Survival is good in women whose cancers are detected when very small and with no spread (metastases) to either lymph glands or other organs (4, 12).

1.2 BREAST CANCER SCREENING

To detect breast cancer early is the basis for population breast cancer screening. There are extensive government sponsored mass breast screening programmes in place in most of the developed world. Extensive research has demonstrated the value of breast cancer screening programmes in a number of countries (12). To date no formal research has been conducted in South Africa in this area nor are there any formal or government sponsored breast cancer screening programmes in place.

In the first world, several countries already have programmes in place and goals set. To illustrate, a national breast-screening programme has been in operation in the UK since 1988. Its aim is to reduce breast cancer mortality by 25% in the population of women invited for screening (7). Israel also has a 25 year old breast cancer detection programme in place (13).

There are three methods of screening for breast cancer available viz., breast self-examination (BSE), clinical breast examination (CBE), and mammography.

1.2.1 BREAST SELF-EXAMINATION (BSE)

BSE is the self-examination of a woman's breast in order to detect any abnormalities. It is a well known technique for the detection of breast lumps.

In first world countries BSE is known about and promoted in health education programmes. In South Africa information about the technique is widely available on a more informal basis, for example, in doctors' waiting rooms, in magazines, posters, pamphlets etc. In the private sector campaigns on BSE and breast cancer have been sponsored. The Cancer Association of South Africa is also actively involved in promoting BSE and preventing breast cancer.

BSE has a number of advantages compared to CBE and mammography (14), to list but a few:

- a) It is the only method that can be performed by women themselves and is therefore available to all women.
- b) Low cost.
- c) It is a relatively quick, easy and simple technique to perform.
- d) It is painless.
- e) It is safe.
- f) It offers more frequent monthly assessment.
- g) Most importantly, it does not require overcoming barriers associated with access to the health care system.

Despite the extensive coverage that BSE is given and its advantages, research has shown that very few women actually practise BSE on a regular basis or do it correctly (15). In a selective review of BSE literature from 1977-1989 by Coleman (6), it was found that only 19-40% of women practise BSE regularly and that there is no strong evidence to suggest that they do it correctly. This is of major concern in that it is a valuable screening method for breast cancer and that the earlier breast cancer is detected the more favourable the prognosis (14).

There is a lot of controversy as to the value of BSE. Some studies have shown an association between BSE and better survival (5, 16, 17, 18), whilst others have not (20, 21, 22, 23).

Coleman (6) found that the weight of literature pointed to BSE functioning as an effective preventive health behaviour. Evidence indicates that regular BSE may reduce breast cancer mortality by 18%, yet the majority of women do not practise BSE (16). In Japan, Ota (17) demonstrated that women who practise BSE showed higher survival rates than those who did not. Newcomb (24) found that the small percentage of women reporting more thorough BSE had a 35% decrease in advanced stage breast cancer compared to those who did not. In a Swiss study (18) it was found that the BSE group had smaller tumours than those who did not practise BSE and that BSE combined with mammography is one of the best methods for the detection of breast cancer. The European Code against cancer recommends BSE for the early detection of breast cancer (25).

Findings of the Breast Cancer Demonstration Project (BCDP) (3) are:

- a) BSE was found to be a less sensitive form of screening than CBE.

- b) Estimate that BSE sensitivity for women aged 35-39 years was 41% and for women aged 60-74 years was 21% i.e., decreased with age
- c) Sensitivity of BSE can be improved by training. After a 30 minute training session the mean lump detection rate increased from 25% to 50% i.e., doubled.

The fact that BSE is a less sensitive form of screening than both CBE and mammography is one of the major objections cited in the literature (3, 4) as to its value.

Other objections are its high false positive rate which leads to anxiety, a higher frequency of visits to doctors and subsequently a higher number of unnecessary radiological and surgical procedures (3, 4)

Austoker (7) stated that "To date, routine BSE has not been shown to be an effective method of screening for breast cancer and should therefore not be promoted as a primary screening procedure. There is however a case to be made for women to become more 'breast aware' (4, 7)." Currently, the US Preventive Task Force's states: "Inadequate evidence that the practice of BSE improves survival, insufficient evidence to include or exclude it from the current periodic health examination (3)." This is also supported by the World Health Organisation (WHO) where they state that "there is insufficient evidence that BSE is effective in reducing mortality from breast cancer" The WHO does not recommend BSE screening programmes as public health policy although they find insufficient evidence to change existing programmes (3)

In conclusion, it would seem on reviewing the literature that BSE is still considered to be a useful technique for breast cancer screening but is most effective when combined with the two other recommended breast cancer screening procedures viz., CBE and mammography. This is supported by Janz (26) who found on reviewing 33 intervention studies that numerous studies back up the rationale for breast screening as an important means of detecting breast cancer early and that BSE is valuable in supplementing CBE and mammography.

The American Cancer Association recommends a regime for breast cancer screening that includes mammograms, CBE and BSE. When a woman does all three she is doing the best she can to ensure early detection of breast cancer (3). It is not the intention of this research that BSE should be seen in isolation to the other very important parts of breast cancer screening. BSE also has value in encouraging women to become more "breast aware" and to start taking responsibility for their own health and well-being. BSE should also be seen as an important health investment and self-care activity (4).

Thus, BSE is especially important in countries like South Africa where there are no government sponsored mass breast screening programmes that utilise CBE and mammograms.

1.2.2 CLINICAL BREAST EXAMINATION (CBE)

CBE is a breast examination performed by a health care professional (HCP), for example a doctor or nurse. The Breast Cancer Demonstrations Project (BCDP) estimated that the sensitivity of CBE for nurses was 65% and for physicians 87% which is higher than that of BSE (21%-41%) (3).

1.2.3 MAMMOGRAPHY

Mammography is a radiological depiction of the breast. It clearly detects early breast problems and has a high sensitivity and specificity (1)

The average sensitivity of mammography combined with CBE as determined by the BCDP was 75%. The specificity of mammography is 94-99%. There are large variations in observer performance (3).

Mammography has a number of disadvantages, viz. (3, 27, 28)

- a) It is expensive and is not a simple procedure
- b) Exposure to ionising radiation can be carcinogenic, although this has decreased dramatically with low-dose equipment and proper technique
- c) It is an uncomfortable procedure and can be painful

Currently, evidence suggests that mammography is the only proven effective screening procedure and that BSE and CBE are recommended as adjuncts to mammography (29)

1.2.4 CURRENT BREAST CANCER SCREENING RECOMMENDATIONS

International consensus recommends that optimal breast cancer screening should consist of the following three procedures (1, 2)

- 1) Age related mammography
- 2) Annual CBE
- 3) Monthly BSE

Up until March 1997 the American Cancer Society (ACS) and the National Cancer Institute (NCI) recommended annual mammograms from the age of 50 years. This was because the Health Insurance Plan (HIP) trial had demonstrated a clear reduction in breast cancer mortality in women aged 50-69 years of age who had undergone screening mammography (1)

However controversy existed in the 40-49 years age group as regards optimal screening intervals. Subsequently the Canadian National Breast Screening Study (CNBSS) found more node-negative small tumours in women aged 40-49 years who had annual CBEs and mammography than those who were not screened (5)

As a result, in March 1997, the ACS and NCI changed their guidelines and now recommend that women in their 40's have mammograms at 1-2 yearly intervals.

Recommendations according to the ACS and NCI are as follows:

- a) All adult women : monthly BSE and annual CBE
- b) Women aged 40-49 years : mammography at 1-2 year intervals
- c) Women aged 50 and older : annual mammography
- d) Women older than 70 years : annual mammograms as long as the patient can tolerate mammography and any resultant surgical/medical or radiological procedures

These recommendations are considered "pertinent for high risk areas, such as North America, Western Europe, South Africa and Australia" (2).

1.3 RATIONALE, AIMS AND OBJECTIVES FOR RESEARCH

1.3.1 RATIONALE FOR RESEARCH

Long term survival in breast cancer currently rests on detection and appropriate therapy at the earliest possible stage. Survival is excellent in those patients whose breast cancer is discovered at the earliest possible stage i.e., small size and without dissemination. Improving women's breast cancer screening behaviour could lead to a reduction in breast cancer mortality.

Developing strategies to increase BSE performance is a major challenge. Internationally, considerable research has been directed at encouraging women to perform BSE. Unfortunately the majority of women do not practise monthly BSE and only a minority has access to mammography.

The effectiveness of BSE educational programmes depends on an accurate understanding of beliefs and attitudes that affect a woman's decision to perform or not to perform BSE. Biger et al (30) recommended that "if health education programmes are to succeed, we must understand what motivates or prevents compliance with recommended health behaviour." Predictors of BSE need to be identified in order to improve educational programmes and facilitate more effective clinical encounters. Gregg (31) looked at explanatory models for cancer amongst African-American women and recommended that "if educational programmes are to succeed cultural as well as logistic barriers need to be overcome."

Patients and doctors need to each understand how the other perceives cancer, its treatment and its prevention. This mutual understanding can lead to cooperation to improve cancer screening rates. Gregg's (31) results indicate that cancer models held by patients differ significantly from those held by clinicians.

Currently there are no statistics on BSE and breast cancer screening available in South Africa as there are neither formal breast cancer screening programmes in South Africa nor are there any studies available.

1.3.2 AIMS AND OBJECTIVES

The aims of this study are to determine knowledge, attitudes and behaviour of Johannesburg northern suburbs women with regard to BSE.

The objectives are to:

- a) identify variables associated with BSE compliance and to therefore determine factors associated with BSE compliance;
- b) determine factors associated with BSE amongst specific groups of women viz., different age groups, high risk women, health care professionals and over-adherers;
- c) determine the percentage of respondents actually practising BSE and the frequency thereof;
- d) identify barriers associated with decreased BSE compliance;
- e) identify specific reasons for and against the practice of BSE;
- f) identify sources of BSE information and teaching in South Africa amongst respondents.

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

An extensive literature search was conducted using the CD ROM medium. The literature was reviewed from February 1966 to October 1996. This revealed a plethora of information.

In the United Kingdom, the United States of America and Canada, there are large state supported breast cancer screening programs in progress. This has encouraged extensive research in the area of BSE and related areas like women's attitudes and knowledge of BSE. To date, no local studies on South African women's attitudes, knowledge and behaviour regarding BSE have been found.

In much of the research, variables from various theoretical psychological models and frameworks are utilised to assist in assessing attitudes to BSE. Of particular note is the *Health Belief Model* (32). Others of interest are *The Theory of Reasoned Action* (33), *The Theory of Planned Behaviour* (which is an extension of the Theory of Reasoned Action) (33) and *The Multi-Attribute Utility Model* (16).

This literature review consists of five main areas viz.,

- a) The Health Belief Model
- b) Special findings: Findings from the literature relating to groups of women in the various categories specified in the study were reviewed
- c) Main results and findings: Results from the literature reviewed presented in tabulated form for clarity's sake and for ease of access and reference

- d) Key studies
- e) Results of BSE education and intervention programmes

2.2 THE HEALTH BELIEF MODEL (HBM)

The HBM has been widely used in the study of preventive health behaviour. It was first introduced in the 1950s by Hochbaum et al (19). It was then extensively developed by Rosenstock (19) in the 1960s to identify certain variables believed to influence the taking of a preventive action.

The HBM proposes that the likelihood of a health-related action is determined both by the individual's psychological state of readiness to take that action and by the perceived benefits minus the perceived barriers, the latter, both perceived benefits and barriers, are influenced by modifying factors (32, 34), whereas the former, psychological state of readiness, is determined by perceived susceptibility and perceived severity. Modifying aspects of sociodemographic and psychosocial attributes are thought to affect the likelihood of an action only indirectly (32, 34). High levels of perceived susceptibility, perceived severity and perceived benefits are positively related to preventive health behaviours (35).

The specific variables in the HBM are (19):

- a) *Susceptibility*: perceived personal vulnerability to or subjective risk of a health condition
- b) *Seriousness*: perceived personal harm of the condition
- c) *Benefits*: perceived positive attributes of an action
- d) *Barriers*: perceived negative aspects related to an action

- e) *General health motivation*: was later added to the original HBM variables
- f) *Confidence*: the belief that one can successfully execute a behaviour that will lead to a desirable outcome – this was the most recent concept added to the HBM

Much of the research looking at the relationship of the HBM variables to preventive health behaviour has demonstrated support for the model (35). It has been concluded that the HBM provides a workable theoretical and practical framework (35).

Champion (19, 21, 36, 37, 38, 39) has been a leader in the field of looking at how HBM variables relate to BSE behaviour. In 1984 she developed an attitudinal BSE-related scale based on the original HBM and later revised it in 1993 (19). Attitudinal variables specified by the HBM which predict BSE were found to be (36).

- a) Susceptibility
- b) Seriousness
- c) Barriers
- d) Health motivation
- e) Health locus of control
- f) Perceived barrier index: consisting of forgetting, exclusive reliance on medical personnel for breast examinations and a low confidence in the ability to perform BSE.

Extensive research conducted by Champion lends support to the use of HBM variables in predicting women's BSE behaviour and intentions.

2.3 SPECIFIC FINDINGS

2.3.1 HIGH RISK WOMEN (HRW)

High-risk women are considered to be those women with one or more first-degree relatives (mother, sister) with breast cancer. In several studies (40, 41, 42, 43) it has been found that there is no significant increase in breast screening behaviour, or BSE frequency in HRW.

In one of the studies previously cited (41) it was found that the most important barrier to BSE in HRW is psychological distress. In fact Stefanek and Wilcox (44) found that the more anxious the HRW is about breast cancer the less likely she is to perform BSE.

Studies by both Doyle (45) and Stefanek and Wilcox (44) found that variables in HRW associated with greater BSE frequency were:

- a) Confidence in performing BSE
- b) Learning BSE from a doctor or nurse, and
- c) That they (HRW) had control over finding breast cancer in its early stages (internal locus of control)

2.3.2 WOMEN WITH BREAST CANCER

Two studies (45, 46) concluded that women with breast cancer significantly practised BSE more frequently, were more proficient in BSE and had more knowledge about BSE than women without breast cancer.

2.3.3 HEALTH CARE PROFESSIONALS (HCP)

A study (47) looking at rural HCPs found that they scored higher on knowledge, positive attitudes towards early detection and reported a strong intention to participate in early detection behaviour. Ironically they were less likely to perceive early detection as being beneficial and scored higher on self-reported BSE efficacy. BSE frequency and regarded breast cancer as being more life-threatening.

In a study (48) looking specifically at nursing students, it was found that there was no significant increase in BSE frequency amongst nursing students as compared to the general population even though the nursing students had higher knowledge scores. Higher BSE frequency was associated with higher perception of susceptibility to cancer, higher perception of benefits of BSE and having nursed a patient with breast cancer.

Han et al (49) looked at factors influencing nurses teaching BSE. They indicated that higher levels of BSE teaching amongst nursing staff was associated with more nursing experience, having a friend with breast cancer, more knowledge about breast cancer screening, and more self-reported confidence and competence in performing BSE.

Najem et al (50) conducted research amongst medical, dental and nursing students and found that the major barrier to BSE was forgetfulness. The most significant predictor was a positive attitude towards BSE.

2.3.4 AGE-RELATED DIFFERENCES

As the risk of breast cancer increases with age, a tremendous amount of research has been directed at the older women. The elderly are therefore considered to be an "at risk population" and a special target group.

In a study looking at older Hispanic women (51), it was found that knowledge about breast cancer risks and detection was low. Ironically, Mah and Bryant (52) stated that older women believed that they were less susceptible to breast cancer than the general population and had a less positive attitude towards screening.

Champion's study of women over the age of 35 (36), revealed that BSE frequency was predicted by the attitudinal variables of health motivation, susceptibility and barriers.

Mamon and Zapka (53) researched characteristics associated with frequency of BSE by younger and older women. Their results showed that characteristics associated with BSE frequency by younger women were:

- a) Attitudinal barriers
- b) Medical services use
- c) BSE skill
- d) Internal locus of control
- e) Reinforcement through CBE
- f) Discussion of BSE with others

Characteristics associated with BSE frequency amongst older women were

- a) Perceived susceptibility
- b) Knowledge of risk factors
- c) Internal locus of control

Confidence in one's ability to perform BSE and exposure to information on breast cancer was positively associated with BSE frequency in all age groups

In another study by Champion (39), looking at the relationship of age to factors influencing BSE practice, it was found that in the oldest age group barriers was the only significant variable. In the middle-aged group (45-54 years), it was found that confidence and barriers were both significantly related to BSE. Factors significantly influencing the youngest group (35-44 years) were susceptibility, seriousness, barriers, confidence and knowledge

2.3.5 OVER-ADHERERS

Lauver and Angerame (14) looked at over-adherence with BSE recommendations and determined that 11% of women in his study were over-adherent i.e., examined their breasts more often than the recommended guidelines. These women were found to have higher rates of breast disease and the least professional instruction and encouragement.

This study also revealed that, ironically, women who over-adhere do so because they lack sufficient knowledge and confidence

2.3.6 RACIAL DIFFERENCES

Nemcek (54) looked at factors influencing American black women's BSE practice and found that the majority (67%) did not follow the American Cancer Society's recommendations. Additionally, the breast cancer knowledge was low and that factors associated positively with BSE frequency were older age and a history of breast problems.

In another study (55) looking at American black women's BSE knowledge, attitudes and performance, it was noted that BSE frequency was positively associated with the following variables:

- a) Level of competence
- b) Older age
- c) Belief in benefits of BSE
- d) Having been taught BSE
- e) Confidence level

Vernon et al (56) compared three racial/ethnic group's breast cancer screening behaviour and found that the main problem was that the higher income and education groups were over-represented.

In a study (57) conducted in America comparing African American and white women's breast cancer health beliefs and early detection practices, it was ascertained that the contribution of health beliefs to BSE frequency, mammography and CBE was unclear.

2.3.7 INTENTION TO PERFORM BSE

Burnett et al (58) concluded that intention to perform BSE was associated with attitudes towards BSE, previous BSE performance and the influence of significant others.

2.3.8 SOCIODEMOGRAPHIC FACTORS

Shepperd et al (59) looked at determinants of BSE amongst women with low incomes and education. Here it was determined that knowledge of BSE was the best predictor of BSE performance. Barriers to BSE performance recorded were: forgetting, exclusive reliance on medical personnel (external locus of control), and a low confidence in ability to perform BSE.

In this study (60) using Champion's HBM scale, the demographic variables of age, race, marital status, religion and education made no difference to BSE practice. Fletcher et al (61) also indicate that sociodemographic characteristics poorly predicted BSE performance. Similarly, in a Swedish study (62), age, occupation and education made no difference to BSE practice.

2.3.9 REASONS FOR AND AGAINST PERFORMING BSE

Friedman et al (40) list the most frequently cited reasons for doing BSE. These were:

- a) Early detection of breast problems and cancer
- b) Recommendations from a doctor
- c) Peace of mind

The most frequently cited reasons for not doing BSE was forgetting and not enough time

Kurtz et al (63) state that fear of finding a lump and ignorance of the procedure were the most commonly cited reasons for not performing BSE.

2.4 MAIN RESULTS AND FINDINGS

The literature was reviewed to determine variables positively and negatively associated with both BSE performance (whether a woman practises BSE) and BSE frequency (how regularly she practises BSE). Statistics of women practising BSE was also looked at.

It was felt that this was important to determine so that comparisons between this study and the international literature could be made (see Chapter 5).

Due to the plethora of information available, the results are presented in a tabulated form for clarity and ease of access and reference. (See Appendix A.)

The studies are grouped as follows:

- A1 Significant positive variables associated with BSE performance
- A2 Significant negative variables associated with BSE performance
- A3 Significant positive variables associated with BSE frequency
- A4 Significant negative variables associated with BSE frequency
- A5 Statistics (percentage figures) of different groups of women practising BSE

2.5 KEY BREAST SCREENING STUDIES

Two studies were felt to be worth mentioning. The first is the *Russian Federation/World Health Organisation (WHO) Study* (84). This study, sponsored by WHO, was started in 1993 and is planned to last for 15 years. It involves 193 000 women aged 40-64 years from Moscow and St Petersburg.

The major objective of the study is to determine the effect of a BSE programme on mortality from breast cancer. It involves an aggressive education programme, during and following which, all newly diagnosed cases of breast cancer will be followed up for 3-15 years. The power of this study is expected to permit detection of a 30% reduction in breast cancer mortality, provided that 50-70% of women in the study group practise BSE. Therefore a key issue is compliance of the population with BSE.

The results of this study will be valuable, particularly in view of the controversy surrounding the value of BSE.

The second study is the *Canadian National Breast Screening Study (CNBSS)* (5). This study's main objectives were to evaluate the efficacy of mammography, CBE and BSE teaching in reducing the death rate from breast cancer in women of two different age groups: 40-49 years and 50-59 years.

Results were similar for both age groups. Screening with annual mammography and annual CBEs detected considerably more node-negative, small tumours than usual, but made no impact on the rate of death from breast cancer up to seven years of follow-up.

The results from this study made a valuable contribution to the current recommendations, mentioned in the introductory chapter (section 1.2.4)

2.6 EFFECTS OF BSE EDUCATION AND INTERVENTION PROGRAMMES

As already mentioned, there are a large number of BSE education and intervention programmes in place in the first world countries.

Results of some of these programmes are presented in a tabulated form, in order to help justify the suggestions made in the recommendations that South Africa could benefit from a formal breast cancer screening programme. (See Appendix B).

3.0 METHODOLOGY

3.1 STUDY DESIGN

A cross-sectional descriptive design was used

3.2 POPULATION AND SAMPLING

Subjects were recruited from three Johannesburg northern suburb general practices. These practices were selected as the doctors involved were affiliated to the department of Family Medicine and were more than accommodating for their practices, patients and receptionists to be involved. Also, the doctors were willing to answer any questions or discuss any concerns with their patients. Some time was spent with each receptionist briefing them and enlisting their cooperation.

The population were all women 18 years or older in the three Johannesburg northern suburb general practices. The sample consisted of 100 consecutive consenting women in each practice all able to read and write English (as decided on by the practice receptionist)

3.3 MEASURING INSTRUMENT

A questionnaire (see Appendix D) was designed and developed using a number of sources and influenced by similar questions in other studies, as well as investigator-developed items. The questionnaire was modified using some variables from the Health Belief Model (19), for example, susceptibility, benefits, barriers, health motivation and confidence.

Four types of answer formats were used, viz , yes/no answers, four-and five-point scales, lists of options and open-ended questions.

A patient information sheet accompanying the questionnaire explained the purpose of the study, what the respondent's participation would mean in terms of meaningful contribution to research, together with a rider guaranteeing confidentiality and anonymity.

The questionnaire consisted of seven main areas. These are

3.3.1 SOCIODEMOGRAPHIC FACTORS

This section dealt with sociodemographic factors believed to be relevant to the practice of BSE: age, marital status, number of children and ages, educational level, occupation and language.

3.3.2 HEALTH MOTIVATION

Health motivation factors of healthy lifestyle, diet, exercise, smoking, alcohol and breastfeeding were included to determine whether there was a link between health motivation and BSE frequency and practice.

3.3.3 HEALTH PREVENTIVE BEHAVIOUR

This section included questions relating to BSE frequency, mammography, clinical breast examinations (CBE) and Pap (cervical smear) tests.

3.3.4 OTHER MODIFYING FACTORS

Other factors that may affect BSE-related behaviour were dealt with in this section. Present and past history of breast disease (benign or malignant), knowledge of someone with breast cancer, social support and encouragement for BSE were explored.

3.3.5 ATTITUDES, BELIEFS AND INTENTIONS WITH REGARD TO BSE

The following aspects were explored:

- a) perceived susceptibility to breast cancer
- b) fear of breast cancer
- c) perceived consequences of BSE
- d) perceived effectiveness of BSE
- e) intention to perform BSE
- f) reasons why BSE is or is not done
- g) confidence in performing BSE

3.3.6 KNOWLEDGE

Questions relating to knowledge of BSE and breast cancer were asked.

3.3.7 REQUESTS FOR MORE INFORMATION

Respondents were asked whether they would like more information about BSE and breast cancer.

3.4 THE PILOT STUDY

The questionnaire was initially piloted on a sample of 20 women from a general practice not used in the study. These women, covering a wide range of ages, education and ethnicity, were not included in the main study. The pilot study resulted in a few minor changes to the questionnaire.

3.5 DATA COLLECTION

Data was collected by means of an anonymous self-administered questionnaire.

100 questionnaires were given to each of the practices. The receptionists asked each successive female patient, satisfying the aforementioned criteria, whether they would participate in the study. On a busy day, it was possible that the next appropriate patient might not have been selected. They were free to refuse. The women who were willing to participate were then requested to fill in the questionnaire in the rooms, usually whilst waiting to see their doctor. The completed questionnaires were then collected. Thereafter information booklets on BSE and breast cancer were freely available to all female patients, whether they completed a questionnaire or not.

All practical procedures and problems were monitored and addressed respectively.

3.6 METHOD OF DATA ANALYSIS

Data was captured in Epi-Info 6 - a word processing, database and statistical package for public health.

Statistical analyses were performed using this package. Frequencies for all the responses were determined, which yielded all the information found in the results presentation sections 4.2-4.11

Cross-tabulations were performed using chi squares and yielding p-values. The results of all the cross-tabulations performed are listed in Appendix C.

3.7 LIMITATIONS OF THE STUDY

There are three limitations to this study.

- 1) The sample population, being predominantly white, middle-upper class and English-speaking is not representative of all South African communities. This however is the population group most likely to know about and be practising BSE. Therefore it was felt that adequate data on those respondents who do practise BSE would be collected.
- 2) It is recognised that the selection of practices is by no means random or stratified and therefore elements of bias could have been introduced. One of the problems in doing surveys amongst South African general practices is the lack of a reliable sampling frame. While it might theoretically have been possible to use medical council practice lists to draw a random sample of Northern suburb general practices, the feasibility of the study depends entirely upon the cooperation of practices and receptionists.
- 3) BSE performance was not evaluated because it was logistically not feasible to include it in the research design.

Further research is needed in both areas.

4.0 RESULTS: PRESENTATION

4.1 RESPONSE RATES

214 out of 300 patients from three Johannesburg northern suburbs general practices completed the questionnaires. This was an overall response rate of 71,3% of questionnaires handed to the receptionist.

100 questionnaires were placed at each general practice. The numbers returned were 86, 85 and 43 respectively

The first two practices had receptionists who were very willing and motivated and who managed to get 86 and 85 women respectively to complete questionnaires over a period of two weeks each. The third practice had a slow return of questionnaires with only 43 questionnaires filled in over a period of five weeks, before the receptionist lost interest, and refused to cooperate any further.

Each receptionist was requested to keep a count of the number of women who refused to fill in questionnaires, but this unfortunately did not happen due to time pressure, forgetting, etc. The receptionists reported that overall the women were interested in the questionnaires and quite willing to fill them in. Most managed to fill them in before seeing their respective doctors. About three questionnaires were taken home, by mistake, to be completed and only one was returned.

The response rates per question were also high ranging from 62% to 100%. The average response rate per question was 86,2%.

In reporting on the results, the number of respondents per question is indicated by $n = x$.

4.2 DEMOGRAPHICS

4.2.1 AGE

The age distribution of the respondents is shown in Figure 4.1.

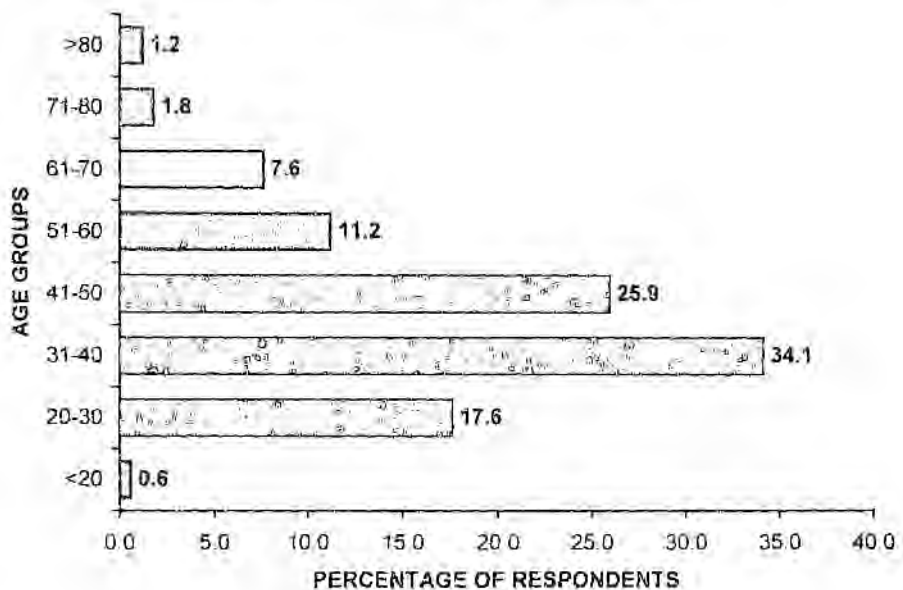


FIGURE 4.1: AGE DISTRIBUTION ($n = 170$)

The age range was from 19 to 81 years, with a mean age of 40,7 years. 77,6% of respondents were between the ages of 20 to 50 years, with the largest group being between 31 and 40 years (34,1%).

4.2.2 MARITAL STATUS

Table 4.1 depicts the frequencies of the respondents' marital status

TABLE 4.1: MARITAL STATUS OF RESPONDENTS (n = 214)

<i>Marital Status</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative (%)</i>
1. Single	32	15,0	15,0
2. Married	147	68,7	83,6
3. Divorced	22	10,3	93,9
4. Separated	4	1,9	95,8
5. Widowed	9	4,2	100,0
TOTAL:	214	100	

The majority (68,7%) of the respondents was married.

4.2.3 NUMBER OF CHILDREN

78.1% of the respondents who answered this question had children, with 41% having two children. The results are indicated in Table 4.2.

TABLE 4.2: NUMBER OF CHILDREN (n = 210)

<i>No. of Children</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative (%)</i>
Nil	46	21,9	21,9
One	31	14,8	36,7
Two	86	41,0	77,6
Three	35	16,7	94,3
Four	7	3,3	97,6
Five	4	1,9	99,5
Eight	1	0,5	100,0
TOTAL:	210	100	

4.2.4 HOME LANGUAGE

98,6% of the respondents (n = 211) speak English as their home language.

4.2.5 HIGHEST LEVEL OF EDUCATION

Respondents were asked to state their highest level of education. Of the respondents ($n = 158$) who replied, 94,3% had at least a Standard 10. Of this group, 37,3% had a University degree, 24,7% a Technikon diploma and 10,8% other diplomas, for example nursing, teaching or computer diplomas.

4.2.6 OCCUPATION

Respondents were asked to state their present occupation, in an open-ended question. The open-ended responses were grouped as follows:

- *Housewife* : Also includes mother, retired, unemployed, i.e., all those not working at present.
- *Medical Professionals* : All those involved in the medical profession in some way, e.g., doctors, nurses, pharmacists, occupational therapists, etc.
- *Professional* : e.g., attorney, psychologist, teacher
- *Secretarial*
- *Non-professional/Other* : e.g., export manager, systems analyst, stock controller, account controller, credit controller, etc.
- *Students* : Full-time students

The occupation distribution of the respondents is shown in Figure 4.2.

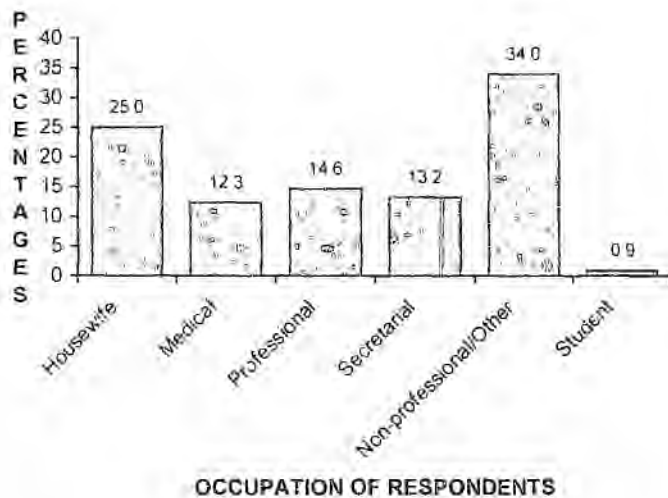


FIGURE 4.2: OCCUPATION DISTRIBUTION (n = 212)

As can be seen the largest group of respondents (34%) were from the Non-Professional/Other group

4.3 BREAST SELF-EXAMINATION (BSE) PRACTICE

Respondents were asked whether they had ever examined their breasts. These results are shown in Figure 4.3

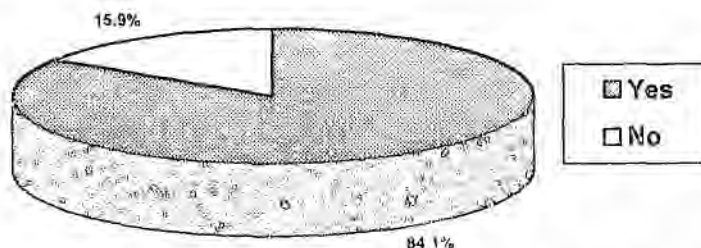


FIGURE 4.3: RESPONDENTS WHO HAVE EXAMINED THEIR BREASTS AT LEAST ONCE (n = 208)

As can be seen, the majority (84.1%) of respondents reported that they have examined their own breasts at least once

Respondents were asked to indicate when they practise BSE. The results of when the respondents practise BSE are depicted in Table 4.3.

TABLE 4.3: WHEN BSE IS PRACTISED (n = 165)

<i>When</i>	<i>Frequency</i>	<i>Percent</i>
Less than monthly	40	24.2
Monthly	21	12.7
More than monthly	6	3.6
Before your period	2	1.2
During your period	0	0.0
After your period	4	2.4
No specific time	92	55.8
TOTAL	165	100

The recommendation for BSE is that it should be done monthly, preferably after a period.

Only 12.7% of respondents practise BSE monthly and 2.4% do so after a period. Just over half (55.8%) the respondents practise BSE at no specific time and 24.2% do so less than monthly.

4.4 BSE FREQUENCY

4.4.1 FREQUENCY OF BSE IN THE LAST MONTH

The respondents' frequency of BSE in the last month is depicted in the following table:

TABLE 4.4: FREQUENCY OF BSE IN THE LAST MONTH (n = 202)

	<i>Last Month</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative (%)</i>
1	Nil	114	56.4	56.4
2	Once	67	33.2	89.6
3	More than Once	21	10.4	100.0
	TOTAL	202	100	

Over half of the respondents (56.4%) had not done BSE in the last month, while the remainder had at least once

4.4.2 FREQUENCY OF BSE IN THE LAST THREE MONTHS

The respondents' frequency of BSE in the last three months is depicted in Table 4.5

TABLE 4.5: FREQUENCY OF BSE IN THE LAST THREE MONTHS (n = 199)

	<i>Last 3 Months</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative (%)</i>
1	Nil	80	40.2	40.2
2	Less than 3 times	76	38.2	78.4
3	3 or more times	43	21.6	100.0
	TOTAL:	199	100	

40.2% of respondents had not done BSE in the last three months while 38.2% had examined their breasts less than three times in three months and 21.6% more than three times.

For the purposes of this study respondents were classified as being regular breast self-examiners if they had examined their breasts less than three times or three or more times in the last three months. This particular frequency was used extensively in cross-tabulations.

4.5 ATTITUDES, BELIEFS AND KNOWLEDGE OF BSE

4.5.1 BELIEFS TOWARDS BSE

4.5.1.1 Reasons why respondents believed BSE is useful

Respondents were asked whether they believed BSE was useful. 94.7% of respondents ($n = 208$) believed that BSE is useful. An open-ended question asked respondents to state their reasons why they believe BSE is useful¹. 189 respondents answered this question, yielding 199 responses¹. Table 4.6 lists the most frequently given reasons.

TABLE 4.6: REASONS WHY RESPONDENTS BELIEVE BSE IS USEFUL ($n = 189$)

<i>Reasons why respondents believe BSE is useful</i>	<i>199 Responses</i>	<i>%</i>
Early detection and prevention of breast cancer	103	51.8
To detect breast changes, lumps, irregularities, abnormalities and nipple discharge	51	25.6
In between gynaecological check-ups	20	10.0
"Breast Aware"	16	8.0
Wise/good thing to do	8	4.0
Easy, cheap and convenient	1	0.5

4.5.1.2 Reasons why respondents believed BSE is not useful

5.3% of respondents ($n = 208$) did not believe that BSE is useful. An open-ended question^{*} asked respondents to give their reasons why they do not believe that BSE is useful. six respondents answered this question, yielding eight responses.

¹ In all open-ended questions, more than one response was allowed.

Table 4.7 lists these

TABLE 4.7: REASONS WHY RESPONDENTS BELIEVE BSE IS NOT USEFUL (n = 6)

<i>Reasons why respondents believe BSE is not useful</i>	8 Responses	%
Problems with BSE competence	6	75,0
Don't believe it can detect breast cancer	1	12,5
Causes unnecessary worry	1	12,5

4.5.1.3 Reasons why respondents practised BSE

Respondents were asked in an open-ended question to give their reasons for examining their breasts. 133 of respondents answered this question yielding 161 responses. The most frequently disclosed reasons for doing BSE are listed in Table 4.8 below

TABLE 4.8: REASONS FOR PRACTISING BSE (n = 133)

<i>Reasons for practising BSE</i>	161 Responses	%
To detect breast changes, lumps, irregularities, abnormalities, unusual problems and nipple discharge	53	32,9
Early detection of breast problems	28	17,4
To detect or prevent breast cancer, fear of breast cancer	24	14,9
If one has tender breasts, breast lumps, breast cancer previous breast surgery	15	9,3
Wise/healthy precaution, for peace of mind	13	8,0
Have risk factors, have a positive family history	12	7,5
To be "Breast Aware"	6	3,7
Self-detectable - can do regular check-ups yourself not gynaecologist dependent	3	1,8
Encouraged by magazines, television	3	1,8
Advised by gynaecologist	3	1,8
Mother/friend died of breast cancer	1	0,6

4.5.1.4 Reasons why respondents did not practise BSE

Respondents who do not examine their breasts were asked in an open-ended question to give their reasons for not examining their breasts. The most frequently disclosed reasons for not doing BSE are listed in Table 4.9. 75 respondents answered this question, yielding 82 responses.

TABLE 4.9: REASONS FOR NOT PRACTISING BSE (n = 75)

Reasons for not practising BSE	82 Responses	%
Lack knowledge, unsure of techniques, have not been taught, lack of confidence	21	25,6
Not a priority, time constraints	13	21,9
Fear	13	15,8
Forgetting	11	13,4
Have no risk factors	10	12,2
Have regular gynaecological check ups, trust my doctor / mammogram more	10	12,2
Embarrassment	4	4,9
Very small breasts, have implants	3	3,7
Discouraged by someone	2	2,4

4.5.2 ATTITUDES TOWARDS BSE

72,7% of respondents (n = 161) felt they would practise BSE if a doctor or health care professional *advised* them to. 72,8% of respondents (n = 147) felt they would practise BSE if a doctor or health care professional *taught* them. 56,8% of respondents (n = 132) felt that they very definitely *intend to practise* BSE in future. 43,2% (n = 132) were ambivalent, i.e. felt they might practise BSE in the future.

4.5.3 KNOWLEDGE OF BSE

83,3% of respondents (n = 204) had been informed about BSE. Respondents were asked to indicate their sources of BSE knowledge and to state any other sources. Table 4.10 lists the results.

TABLE 4.10: SOURCES OF KNOWLEDGE OF BSE (n = 169)

<i>Sources of knowledge of BSE</i>		368 Responses	%
Gynaecologist		108	29,3
Magazines		75	20,4
Pamphlets / Posters		56	15,2
General Practitioner		55	15,0
Books		32	8,7
Family / Friends		21	5,7
Nurse		13	3,5
Other	School	3	0,8
	Other Doctors	2	0,5
	Television	1	0,3
	Medical training	2	0,5

68,8% of respondents (n = 208) felt moderately well-informed. 62,9% of respondents (n = 210) had been taught to examine their breasts. Respondents were asked to indicate who had taught them to examine their breasts. They could also indicate any other source of teaching not indicated in the questionnaire table. The results are illustrated in Table 4.11.

TABLE 4.11: SOURCES OF TEACHING OF BSE (n = 130)

<i>Sources of teaching of BSE</i>		162 Responses	%
Gynaecologist			53,0
General Practitioner		45	28,0
Nurse		20	12,3
Family		3	1,8
Friend		2	1,2
Other	School / Work	2	1,2
	Other Doctors	1	0,6
	Magazines	2	1,2
	Medical Training	1	0,6

As can be seen, most (53%) of the respondents had brought BSE by gynaecologists.

4.6 FACILITATORS TO BSE PRACTICE

In this section of the questionnaire factors thought to facilitate BSE practice were explored. These factors included encouragement, discussion, confidence and reminders.

4.6.1 ENCOURAGEMENT

Over half (58,6%) of the respondents (n = 203) reported that they had been encouraged by someone to practise BSE. Respondents were asked to indicate who had encouraged them. The responses to the question "Who encouraged you for BSE" are tabulated in Table 4.12.

TABLE 4.12: SOURCES OF ENCOURAGEMENT FOR BSE (n = 110)

<i>Sources of encouragement for BSE</i>		<i>153 Responses</i>	<i>%</i>
Doctors		92	60,1
Friends		21	13,7
Family		18	11,7
Nurses		15	9,8
Other	Magazines	4	2,6
Work		3	1,9

Significantly, doctors played an important role in encouraging the respondents to practise BSE

4.6.2 BSE DISCUSSION

Respondents were asked whether they discussed BSE with anyone. The majority (62,3%) of respondents (n = 207) who answered this question do not discuss BSE with anyone. Respondents were asked to indicate with whom they discussed BSE. Those with whom BSE is discussed are listed in Table 4.13.

TABLE 4.13: SOURCES OF BSE DISCUSSION (n = 76)

<i>Sources of discussion</i>		<i>130 Responses</i>	<i>%</i>
Friends		51	39,2
Family		32	24,6
Doctors		30	23,0
Work		9	6,9
Nurses		5	3,8
Other	Clients / Patients	3	2,3

4.6.3 CONFIDENCE IN BSE TECHNIQUE

Respondents were asked to indicate how confident they felt about examining their breasts. Just under a half (48,8%) of respondents who answered this question feel somewhat confident about examining their breasts. The results are shown in Table 4.14

TABLE 4.14: BSE CONFIDENCE LEVELS (n = 207)

<i>Confidence</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative (%)</i>
1. Very confident	32	15,5	15,5
2. Somewhat confident	101	48,8	64,3
3. Not at all confident	74	35,7	100,0
TOTAL	207	100	

4.6.4 REMINDERS

The overwhelming majority (94,3%) of respondents (n = 177) do not use reminders. Respondents were asked in an open-ended question to specify how they remind themselves. The types of reminders they use are indicated in Table 4.15.

TABLE 4.15: TYPES OF REMINDERS (n = 10)

<i>Sources of discussion</i>	<i>14 Responses</i>	<i>%</i>
Just remember	8	57,1
My body reminds me, e.g., after a period, tender breasts	2	14,3
Media / Articles	1	7,1
Routine: bath, shower, end of month	1	7,1
Specific: hang card in shower	1	7,1
Other: husband reminds me	1	7,1

4.7 HEALTH PREVENTIVE BEHAVIOUR

Health preventive type questions were asked as it was felt to be important to ascertain the respondents' health preventive behaviour patterns and to determine whether this distinguished those that practise BSE from those that do not.

4.7.1 HEALTHY LIFESTYLE RATINGS

Respondents were asked to use a five-point scale to indicate how they rate themselves in terms of a healthy lifestyle. Their responses are indicated in Figure 4.4

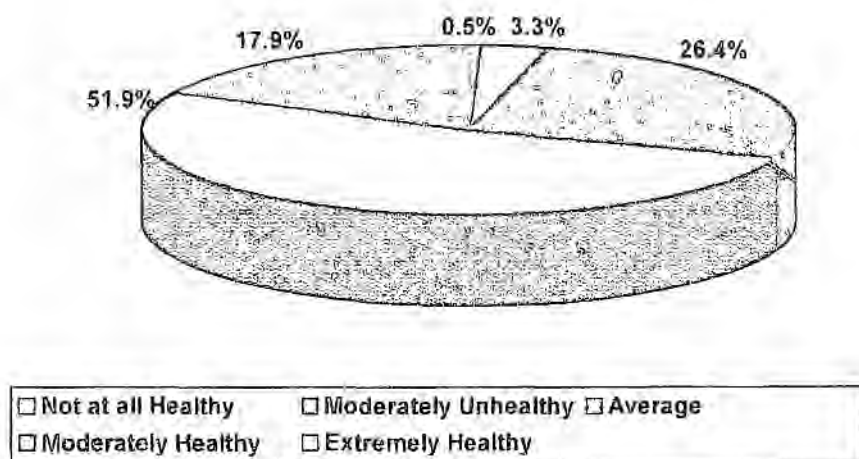


FIGURE 4.4: HEALTHY LIFESTYLE RATINGS (n = 212)

The majority of the respondents (96,2%) felt they led a moderately healthy type of lifestyle with very few (0,5% and 3,3%) indicating otherwise

4.7.2 HEALTHY DIET RATINGS

Respondents were asked to rate themselves in terms of whether they followed a healthy diet or not using a five-point scale. The results are illustrated in Figure 4.5

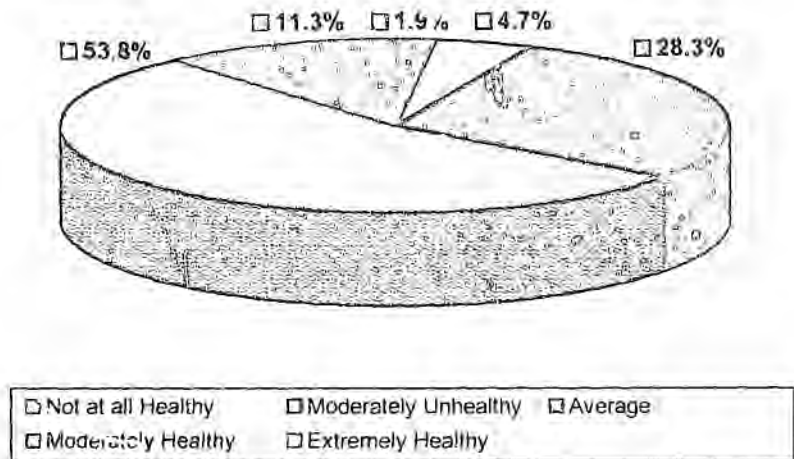


FIGURE 4.5: HEALTHY DIET RATINGS (n = 212)

As can be seen, these results are very similar to the healthy lifestyle in that 93.4% of respondents felt they had a moderately healthy type diet, with very few (4.7% and 1.9%) believing otherwise.

4.7.3 FREQUENCY OF EXERCISE

Respondents were asked to indicate how often they exercised. Exercise was not defined in any way. These results are depicted in Table 4.16.

TABLE 4.16: FREQUENCY OF EXERCISE (n = 211)

<i>Frequency of Exercise</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative (%)</i>
1. Not at all	61	28,9	28,9
2. Once a week	46	21,8	50,7
3. 2-3 x a week	82	38,9	89,6
4. Daily	22	10,4	100,0
TOTAL	211	100	

The majority (71,1%) of respondents stated that they exercised, with 38,9% exercising two to three times per week.

4.7.4 SMOKING

Respondents were asked whether they smoked or not and if so to indicate the extent of their smoking. 82,6% of respondents (n = 213) were non-smokers. Of the 17,4% of respondents who do smoke, 58,3% smoke between 10 and 20 cigarettes per day. The extent of smoking is depicted in Table 4.17.

TABLE 4.17: AMOUNT OF SMOKING PER DAY (n = 36)

<i>Cigarettes / day</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative (%)</i>
1. <10	8	22,2	22,2
2. 10-20	21	58,3	80,5
3. 21 - 30	6	16,7	97,2
4. > 30	1	2,8	100,0
TOTAL	36	100	

4.7.5 FREQUENCY OF ALCOHOL CONSUMPTION

Respondents were asked to indicate how often they drank alcohol. The results are shown in Table 4.18.

TABLE 4.18: FREQUENCY OF ALCOHOL CONSUMPTION (n = 213)

<i>Alcohol Consumption</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative (%)</i>
Never	15	7,0	7,0
Daily	34	15,9	22,9
2-3 x week	57	26,8	49,7
1 x week	44	20,7	70,4
1-2 x month	27	12,7	83,1
Very infrequently	36	16,9	100,0
TOTAL	213	100	

93% of the 213 women who responded to this question drink alcohol. Of these 51% do so at least weekly

4.7.6 PAP SMEARS

The overwhelming majority (95,3%) of respondents (n = 213) reported having had a pap smear at least once

4.7.6.1 Frequency of pap smears

Respondents were asked to indicate how often they have pap smears. The results are depicted in Figure 4.6.

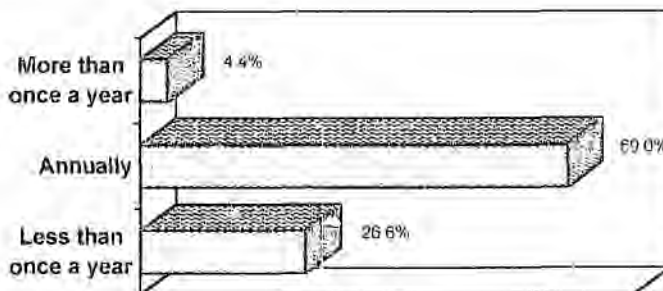


FIGURE 4.6: FREQUENCY OF PAP SMEARS (n = 203)

As can be seen, most (69%) respondents ($n = 203$) have annual pap smears

4.7.7 CLINICAL BREAST EXAMINATIONS (CBE)

The majority (87,9%) of respondents ($n = 214$) reported having at least one CBE

4.7.7.1 Frequency of clinical breast examinations

Respondents were asked to indicate how often they have clinical breast examinations. The results are shown in Figure 4.7 as follows:

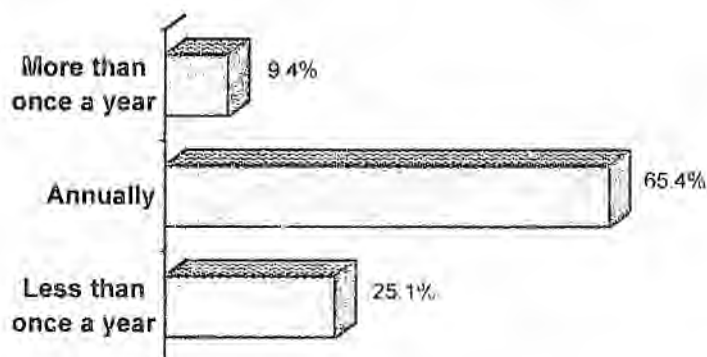


FIGURE 4.7: FREQUENCY OF CLINICAL BREAST EXAMINATIONS ($n = 191$)

Of the respondents who have had clinical breast examinations, 65,4% have annual clinical breast examinations.

4.7.7.2 Sources of clinical breast examinations

The sources of clinical breast examinations are depicted in Table 4.19

TABLE 4.19: SOURCES OF CLINICAL BREAST EXAMINATIONS (n = 193)

<i>Source</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative</i>
General Practitioner	50	25,9	25,9
Gynaecologist	142	73,6	99,5
Nurse	1	0,5	100,0
TOTAL	193	100	

Most (73,6%) clinical breast examinations are performed by gynaecologists. The most likely reason for this is that most women in the Johannesburg northern suburbs have their pap smears done by gynaecologists in private practice, so it is probable that their CBEs are performed at the same time.

4.7.8 MAMMOGRAMS

68,4% of respondents (n = 212) have not had a mammogram. Of the 31,6% respondents who have had a mammogram, 40,6% have only ever had one mammogram performed.

4.7.8.1 Frequency of mammograms

The frequency of mammograms performed is depicted in Table 4.20.

TABLE 4.20: FREQUENCY OF MAMMOGRAMS (n = 64)

<i>Mammogram Freq.</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative</i>
Once only	26	40,6	40,6
Annually	19	29,7	70,3
Once every 2-3 years	15	23,4	93,7
Once every 5 years	4	6,3	100,0
TOTAL	64	100	

4.7.8.2 Age groups

When those respondents who had and who had not had mammograms were cross-tabulated with the age group frequencies, it was found that the majority of women who have had mammograms fell into the 41 to 70 year age group (p -value ≤ 0.01), which conforms with recommended guidelines.

4.8 BREAST-RELATED ISSUES

4.8.1 BREAST-FEEDING

67.3% of respondents ($n = 214$) said that they had breast-fed at some stage. The results for the length of time that respondents breast-fed for are depicted in Table 4.21.

TABLE 4.21: LENGTH OF TIME OF BREAST-FEEDING ($n = 141$)

<i>Time Period</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative</i>
Less than 6 months	71	50.4	50.4
6-12 months	48	34.0	84.4
More than 12 months	22	15.6	100.0
TOTAL:	141	100	

As can be seen, of the 141 respondents who answered this question, 50.4% fed for under six months.

4.8.2 BREAST PROBLEMS

A list of possible breast problems was given in the questionnaire and respondents were asked to indicate whether they had ever had any of these problems. They could also specify any other breast problems that they may have, or had, that were not listed in the questionnaire. Of the 198 respondents who answered this question, 61.9% of women had or have got breast problems at some stage. The specific types of breast problems are listed below in Table 4.22

TABLE 4.22: TYPES OF BREAST PROBLEMS (n = 198)

<i>Breast problems</i>	<i>257 Responses</i>	<i>%</i>
Tender breasts	48	18.7
Lumpy breasts *	31	12.1
Breast lumps *	24	9.3
Breast surgery	17	6.6
Nipple discharge	12	4.7
Breast biopsy	10	3.9
Breast implants	6	2.3
Other : for example abscess, blocked duct, mastitis	11	4.3
None	98	38.1

* It is possible that some women were not able to distinguish between these two categories.

Of the 214 respondents who completed the questionnaires, two (0.93%) had breast cancer and 154 (71.9%) have benign (non-malignant) breast problems.

4.9 ATTITUDES, BELIEFS, AND KNOWLEDGE TOWARDS BREAST CANCER

4.9.1 BELIEFS AND ATTITUDES

4.9.1.1 Fear of getting breast cancer

Respondents were asked to rate their fear of getting breast cancer on a four-point scale. The results are listed in Table 4.23.

TABLE 4.23: FEAR OF GETTING BREAST CANCER (n = 214)

<i>Fear Ratings</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative</i>
Not at all	42	19,6	19,6
A little afraid	85	39,7	59,3
Moderately afraid	53	24,8	84,1
Very afraid	34	15,9	100,0
TOTAL	214	100	

As can be seen, 39,7% of respondents felt a little afraid whilst 40,7% were moderately to very afraid.

4.9.1.2 Perceived risk of getting breast cancer

Respondents were asked to rate how they perceived their risk of getting breast cancer on a four-point scale.

The results were as listed in Table 4.24 below

TABLE 4.24: PERCEIVED RISK OF GETTING BREAST CANCER (n = 212)

<i>Perceived Risk Ratings</i>	<i>Frequency</i>	<i>Percent</i>	<i>Cumulative</i>
Above average	16	7.5	7.5
Average	88	41.5	49.0
Below average	47	22.2	71.2
Do not know	61	28.8	100.0
TOTAL:	212	100	

As indicated, 41.5% of respondents felt they had an average risk of developing cancer of the breast.

4.9.1.3 Belief that breast cancer can be prevented

66% of respondents (n = 205) believed that breast cancer can be prevented

4.9.2 KNOWLEDGE

4.9.2.1 Knowledge of risk factors for breast cancer

TABLE 4.25: KNOWLEDGE OF RISK FACTORS FOR BREAST CANCER (n = 200)

<i>Risk factor</i>	<i>Is a risk factor</i>	<i>% Responses</i>
Having a relative with breast cancer	*	72.5
Not doing BSE	*	57.5
Smoking	Controversial	51
Oral contraception	Controversial	42.5
Stress		38
High fat, low fibre diet	*	38
Not breast feeding	*	23.5
Lack of exercise	*	22
Not having children	*	20
Cholesterol		13.5
High blood pressure		10.5
Mammogram		4.5
High protein diet		4.5

Respondents were asked to tick any of the above factors that they thought might be risk factors for breast cancer. The minority of respondents felt that the wrong risk factors were correct (e.g., cholesterol (13.5%), high blood pressure (10.5%)) 51% and 42.5% of respondents felt that the controversial risk factors (i.e., oral contraception and smoking respectively) were risk factors. The majority of respondents (72.5% and 57.5%) recognised correctly that having a relative with breast cancer and not doing BSE were risk factors, whilst the minority got the other four risk factors correct (i.e., high fat, low fibre diet (38%), not breast feeding (23.5%), lack of exercise (22%) and not having children (20%).

4.9.2.2 Knowledge of someone with breast cancer

66% of the women (n = 211) who answered this question knew someone who has got or had breast cancer.

Known persons with breast cancer are listed in Table 4.26.

TABLE 4.26: KNOWN PERSON WITH BREAST CANCER (n = 139)

<i>Known person with breast cancer</i>	172 Responses	%
Friends	94	54.6
Aunt	23	13.4
Other: Distant relative	12	7.0
Mother	10	5.8
Grandmother	9	5.2
Mother-in-law	8	4.6
Other: Acquaintance	7	4.0
Sister	5	2.9
Other: Colleague	2	1.2
Self	2	1.2

As can be seen, friends account for 54.6% or people known to the respondents with breast cancer. 8.7% of the respondents have first-degree relatives with breast cancer and 18.6% have second-degree relatives with breast cancer. Two of the 214 respondents (0.9%) currently had breast cancer themselves.

4.10 BSE TEACHING

74.9% of the 183 women who answered the question on whether they would like to be taught how to examine their breasts, indicated that they would. Respondents were then asked to indicate by whom they would prefer to be taught, 108 respondents answered this question yielding 121 responses. Their responses are indicated in Table 4.27.

TABLE 4.27: PREFERRED TEACHER (n = 108)

<i>Preferred teacher</i>	121 Responses	%
Doctor	94	77.7
Female	10	8.3
Nurses	1	0.8
Male or Female	12	9.9
Male	4	3.3

Likewise, respondents were asked to indicate their preferred method of teaching. These results are listed in Table 4.28.

TABLE 4.28: PREFERRED METHOD OF TEACHING (n = 112)

<i>Preferred method of teaching</i>	138 Responses	%
One-to-one basis	113	81.9
Pamphlets	11	8.0
Group	6	4.3
Books	4	2.9
Video	4	2.9

Doctors on a one-to-one basis are the significantly preferred method of teaching of BSE.

4.11 REQUESTS FOR MORE INFORMATION

75.9% of the 203 women who responded to the question on whether they would like more information on BSE indicated affirmatively. Likewise 79.8% of this sample that answered the question on whether they would like more information on breast cancer said that they would.

As can be seen, the results for the questions on whether women would like to be taught more and receive more information on BSE and breast cancer are remarkably similar, this representing about three quarters of all the women who answered these questions.

4.12 VARIABLES FOUND TO BE SIGNIFICANTLY ASSOCIATED WITH BSE PRACTICE

Variables were considered to be significant when cross-tabulated and yielded a p-value of <0.05 . The complete set of cross-tabulations results is presented in Appendix C.

4.12.1 VARIABLES SIGNIFICANTLY ASSOCIATED WITH BSE FREQUENCY

The variable of frequency of BSE in the last three months was cross-tabulated against various other variables. For the purposes of this study, respondents were

classified as being regular breast self-examiners if they had examined their breast less than three times or three or more times in the last three months (refer to section 4.4.2).

The variables that were found to be associated with BSE frequency in a positive way are tabulated in Table 4.29.

TABLE 4.29: VARIABLES POSITIVELY ASSOCIATED WITH BSE FREQUENCY

<i>Variable</i>	<i>p-Value</i>
Being confident about BSE	0.000002
Being well-informed about BSE	0.000003
Having discussed BSE with friends	0.00008
Having had a mammogram	0.0001
Having been encouraged by a doctor	0.0006
Having been encouraged to practise BSE	0.001
Having discussed BSE with family	0.004
Having discussed BSE with someone	0.005
Having had a breast biopsy	0.008
Being informed about BSE	0.012
Having been taught BSE	0.013
Having been taught BSE by a general practitioner	0.019
Having discussed BSE with doctors	0.025
Frequency of CBEs	0.033
Having had breast surgery	0.039
Fear of getting breast cancer	0.041
Believing that BSE is useful	0.042
Mother with breast cancer	0.04

4.12.2 VARIABLES SIGNIFICANTLY ASSOCIATED WITH HAVING EVER PRACTISED BSE

The variable of having ever practised BSE was cross-tabulated against all the other variables. The variables found to be significant are indicated in Table 4.30.

TABLE 4.30: VARIABLES POSITIVELY ASSOCIATED WITH HAVING EVER PRACTISED BSE

<i>Variable</i>	<i>p-Value</i>
Being well-informed about BSE *	<0.01
Being informed about BSE *	0.000004
Being confident about BSE technique	0.00003
Having been encouraged to practise BSE *	0.00005
Having been taught BSE *	0.00035
Having discussed BSE with someone *	0.0002
Being informed by a gynaecologist	0.0067
Believing that BSE is useful *	0.002
Having breast problems	0.004
Having discussed BSE with friends *	0.007
Having discussed BSE with family *	0.009
Having been encouraged by a doctor *	0.014
Having been taught BSE by a gynaecologist	0.014
Being informed by books	0.031
Friend with breast cancer	0.032
Being informed by a pamphlets/posters	0.036
Being informed by a general practitioner	0.041
Having lumpy breasts	0.042
Having tender breasts	0.049
Having had a mammogram *	0.01

Interestingly, the factors found not to be significant for both BSE frequency and practice were remarkably similar. It was found that lifestyle factors, for example, diet and exercise, were poorly correlated. The only health preventive behaviours that were positively associated were CBEs and mammograms. No correlation

was found between BSE frequency and practice, pap smears, breast-feeding, feeling at risk for breast cancer and holding the belief that breast cancer can be prevented. Using reminders also made no difference.

4.13 HEALTH CARE PROFESSIONALS (HCP)

The only variables found that were significant to HCPs were that they were more informed than the non-medical respondents and that they felt they were well informed. No other variables were found to be significant. When the medical profession was cross-tabulated with variables for BSE frequency they were not found to practise BSE more frequently.

4.14 OVER-ADHERERS

10.4% of respondents had examined their breasts more than once in the last month. 21.6% had examined their breasts three or more times in the last three months. Over-adherers were classified as being those respondents who had examined their breasts three or more times in the last three months. Variables found to be significantly related to over-adherence are tabulated in Table 4.31.

TABLE 4.31: VARIABLES SIGNIFICANTLY RELATED TO OVER-ADHERENCE

<i>Variable</i>	<i>p-Value</i>
Having had a mammogram	0.00003
Feeling confident about BSE ^a	0.00005
Having had a breast biopsy *	0.002
Being well-informed about BSE	0.002
Having been encouraged to practise BSE	0.003
Having been taught BSE	0.006
Having discussed BSE with someone	0.008
Having had breast surgery	0.013
Having had CBEs	0.022
Frequency of exercise *	0.023
Having a mother with breast cancer	0.01

4.15 AGE-RELATED DIFFERENCES

All age groups were cross-tabulated against variables for BSE frequency. No significant differences between the different age groups were found except that in the under 40s versus the over 40s it was found that the older group had examined their breasts more often ($p < 0.026$).

The younger group was found to have a higher frequency of pap smears ($p < 0.005$) and CBEs ($p < 0.035$) and to have been taught BSE ($p < 0.02$) more than the older group. This could be explained by the younger group being of childbearing age and thus visiting their gynaecologist regularly/annually for pap smears (69% of respondents have annual pap smears) and having their breasts routinely examined at the same time.

^a Indicates those variables common to those respondents who had examined their breast more than once in the last month

As the results show most of the respondents' CBEs (73.6%) and BSE teaching (53%) are carried out by gynaecologists.

The older group had undergone significantly more mammograms than the younger group ($p < 0.01$)

The older group also drank more alcohol than the younger group ($p < 0.0002$).

4.16 INTENTION TO PERFORM BSE

56.8% of respondents ($n = 133$) felt that they intended to practise BSE in the future. Intention to perform BSE was found to be positively related to the following variables in the Table below:

TABLE 4.32: VARIABLES SIGNIFICANTLY RELATED TO INTENTION TO PERFORM BSE

Variable	p-Value
Being confident about examining one's breasts	0.000018
Having discussed BSE with a friend	0.0028
Having discussed BSE with someone	0.006
Belief that BSE is useful	0.012
Having a friend with breast cancer	0.037
Being informed by a gynaecologist	0.043
Being informed about breast cancer	0.049

4.17 HIGH RISK WOMEN (HRW)

HRW were categorised as those who had first or second degree relatives with breast cancer. 27.2% of respondents fell into this category. Significant variables found on cross-tabulations to be associated with HRW are indicated in Table 4.33.

TABLE 4.33: VARIABLES SIGNIFICANTLY RELATED TO HIGH RISK WOMEN

<i>Variable</i>	<i>p-Value</i>
Having a mother with breast cancer	<0.01
Knowing someone with breast cancer	0.00000036
Feeling at risk for breast cancer	0.0006
Having lumpy breasts	0.038
Having breast cancer oneself	0.039
Having friends encourage BSE	0.048
Having had a mammogram	0.01
Having been taught BSE by a gynaecologist	0.04

No difference was observed between HRW and the other respondents' frequency and practise of BSE, nor in HRW requests for more information or wanting to be taught BSE.

5.0 DISCUSSION AND CONCLUSIONS

5.1 INTRODUCTION

This chapter draws conclusions in line with the study's aims and objectives and also makes comparisons between this study's findings and that of the international literature.

5.2 PROFILE OF RESPONDENTS

This study was conducted on 214 northern suburb Johannesburg women who were predominantly white, English-speaking married and well-educated (i.e., representative of South African first-world women).

5.3 RESPONDENTS PRACTISING BSE

It was found that the majority of subjects reported irregular BSE, both on a monthly basis (56,4%) and with respect to the time of the month (55,8%). Only 12,7% of respondents examined their breasts on a regular monthly basis. The majority (84,1%) was familiar with BSE and had examined their breasts at least once.

Although the international literature's results (Appendix A5) are variable, it can generally be concluded that the South African figures (which are of the first-world population as previously indicated) are in line with that of the rest of the first-world countries, principally in that most of the figures for actually performing BSE are well below current guidelines.

5.4 REASONS FOR PRACTISING BSE

The most frequent reasons given for examining one's breasts were to detect breast problems and cancer (65.2%) This was in accordance with Friedman's (40) most frequent reasons found

5.5 BARRIERS ASSOCIATED WITH BSE PRACTICE

The most common reasons given for not practising BSE were found to be similar to those of the HBM perceived barrier index (36) and Friedman (40) viz., a lack of knowledge and confidence, time constraints, forgetfulness, fear and exclusive reliance on medical personnel.

5.6 FACTORS ASSOCIATED WITH BSE PRACTICE

Factors associated with BSE frequency (BSE on a regular basis) and those associated with BSE practice (whether one practises BSE at all) listed in Tables 4.29 and 4.30 respectively, are consistent with those found in the literature (Appendices A1 and A3) This study's findings of factors associated with BSE are also similar to the attitudinal HBM variables found by Champion (37, 38)

In line with most of the international literature (41, 59, 60, 61), it was found that the sociodemographic factors of age and occupation made no difference to BSE practice, although some studies did find that other sociodemographic factors played a role (39, 48, 58, 65) In this study, general health preventive behaviours were also found to make no significant difference to BSE behaviour However breast-related preventive behaviour viz., frequency of CBE and having had a

mammogram, were found to make a significant difference to BSE practice and frequency.

Breast problems, specifically tender and lumpy breasts, were significantly associated with BSE practice. Previous invasive breast procedures like biopsies and surgery were significantly associated with BSE frequency.

Consistently, confidence in one's ability to perform BSE and being informed, especially being well informed were predictors of regular BSE practice. Encouragement, discussion and being taught BSE were also among the predictors of BSE practice. This supports the recommendations made at the end of this study stressing the importance of teaching BSE technique and imparting information by medical personnel as a means of improving BSE compliance.

5.7 INTENTION TO PERFORM BSE

More than half of the respondents (56,8%) felt that they intended to practise BSE in the future. Variables positively associated with intention to perform BSE were found to be similar to Burnett's study (58) viz., positive attitudes towards BSE and the influence of significant others.

5.8 THE ROLE OF REMINDERS

Reminders to practise BSE did not play much of a role amongst 94,3% of respondents. Only four respondents used something specific e.g., a routine, end of the month, a card hung in the shower etc. to remind themselves to practise BSE.

5.9 FACTORS ASSOCIATED WITH BSE AMONGST SPECIFIC GROUPS

5.9.1 HEALTH CARE PROFESSIONALS (HCP)

This study found that HCPs were more well-informed than the other respondents were. On cross-tabulation no significant increase in BSE practice or frequency as compared to the other respondents was found. These results are similar to those found in the literature (47, 48)

5.9.2 OVER-ADHERERS

In this study 10.4% of women were over-adherent which is similar to Lauver and Angerame's study (14) where the figure was 11%. Over-adherers in this study tended to have had more medical intervention i.e., mammograms and breast biopsies, than non-over-adherers. In contrast to Lauver's study (14) the women from this study felt confident and well-informed about BSE

5.9.3 AGE-RELATED DIFFERENCES

Results in the literature as to BSE frequency rates amongst different age groups were variable and inconclusive. This study indicated that the over 40 age group practised BSE more frequently than the under 40 age group. In contrast to the literature there were no other significant differences relating to BSE knowledge and attitudes, except that the younger group (under 40) tended to have more CBEs, were taught more BSE, and requested more information than the older group whose main statistical difference was that they had undergone more mammography.

5.9.4 HIGH RISK WOMEN (HRW)

As in the literature (40, 41, 42, 43) no significant increase in BSE practice or frequency was found in HRW in this study.

5.9.5 RACIAL DIFFERENCES

No conclusions can be drawn from this study as numbers of different race groups were too low. As is discussed in the recommendation this is an area that needs to be further researched.

5.9.6 WOMEN WITH BREAST CANCER

Here too, no significant conclusions can be drawn as only two of the 214 respondents had breast cancer.

5.10 ATTITUDES, BELIEFS AND KNOWLEDGE TOWARDS BSE

Attitudes and beliefs towards BSE amongst the respondents were extremely good with 94,7% believing in the value of BSE. Knowledge of BSE was also very high with most respondents (83,3%) having been informed about BSE and almost two thirds (62,9%) having been taught to examine their breasts.

5.11 SOURCES OF BSE INFORMATION AND TEACHING

5.11.1 INFORMATION

The most often reported sources of information were equally distributed as follows: doctors (44,3%) and literature (44,3%)

5.11.2 TEACHING

The most often reported sources of teaching were from medical personnel viz., gynaecologists (53%), general practitioners (28%) and nurses (12,3%).

Gynaecologists in the South African private sector play an important role in teaching BSE. This contrasts with the trend overseas where women receive pap smears, CBE and BSE education from their primary care physician and are only referred to a specialist when there is a need.

5.12 ATTITUDES, BELIEFS AND KNOWLEDGE TOWARDS BREAST CANCER

Two thirds (66%) of respondents knew someone with breast cancer and held the belief that breast cancer can be prevented. Knowing someone with breast cancer was significantly associated with both BSE practice and frequency. Most (80,4%) of respondents had some fear of getting breast cancer and this was significantly associated with BSE frequency.

Knowledge of accepted breast cancer risk factors was found to be generally poor.

5.13 CONCLUSION

In conclusion this study revealed that the vast majority of South African first-world women are aware of BSE and believe in its value.

Consistent with other first-world countries, only the minority of South African first-world women practise BSE regularly, although the majority have examined their breasts at least once and almost two thirds have been taught to examine their own breasts.

Variables delineated in this study to be significantly associated with BSE practice are similar to those found in other studies. Factors associated with BSE amongst specific groups were also mostly consistent with those of the international literature.

This study's results highlight the importance of BSE teaching and educating as a means of improving BSE compliance amongst women. This is illustrated in Table 4.29 where variables associated with BSE education and teaching found to be significantly associated with BSE frequency are:

- 1) being confident about BSE
- 2) being well-informed about BSE
- 3) being informed about BSE
- 4) having been taught BSE
- 5) having been taught BSE by a general practitioner
- 6) having discussed BSE with doctors

Likewise in Table 4.30, variables associated with BSE education and teaching positively associated with having ever practised BSE are

- 1) being well-informed about BSE
- 2) being informed about BSE
- 3) being confident about BSE technique
- 4) having been taught BSE
- 5) being informed by a gynaecologist
- 6) having been taught BSE by a gynaecologist
- 7) being informed by books
- 8) being informed by pamphlets/posters
- 9) being informed by a general practitioner

As already mentioned, three quarters of respondents indicated that they would like more information on both BSE and breast cancer and would like to be taught to examine their breasts.

6.0 RECOMMENDATIONS

6.1 BSE EDUCATION

This study's results highlight the importance of BSE teaching and educating as a means of improving BSE compliance amongst women. This is consistent with findings in the international literature (Appendix B).

This could be achieved by having a formal breast cancer screening programme (which includes BSE education) in the primary health care sector which could target the majority of South African women who are underprivileged and who currently have no access to breast cancer screening. Ideally all women universally should have access to breast cancer screening. Special groups that also need to be targeted are high-risk women, the elderly, adolescents and the socio-economically disadvantaged.

Justification as to the value of BSE education is found in the literature review (Appendix B) where BSE education and intervention programmes are reviewed.

6.2 OPPORTUNITIES AND AVENUES FOR FURTHER RESEARCH

Opportunities for further research in this area in South Africa are manifold, especially as to date, no studies on BSE in South Africa have been documented. Specific areas that need to be researched further regarding BSE follow:

6.2.1 ASSESSMENT OF BSE TECHNIQUE

Coleman (6) found on reviewing the literature that there was no strong evidence to suggest that women were practising BSE correctly. He suggested that 'since BSE is a learned skill it needs to be evaluated correctly'.

6.2.2 CULTURALLY SENSITIVE RACIAL BARRIERS AND STRATEGIES

This needs to be explored and overcome, as although breast cancer occurs less frequently in the Black population (11), BSE is valuable for all women irrespective of racial group.

6.2.3 SURVEY SOUTH AFRICAN GENERAL PRACTITIONERS

To assess:

- a) knowledge, attitudes and beliefs towards breast cancer screening. This is important to know as Lerman and Schwartz (66) propose that a doctor's willingness to recommend BSE was predicted by his attitude score which was most strongly predicted by his belief in the value of the procedure.
- b) how they would feel about continuing medical education (CME) in this area. A study surveying Vermont family practitioners (67) found that breast screening education was a high priority and that family practitioners would welcome such training.
- c) how competent they feel about their own clinical breast examination skills.

- d) whether they incorporate preventive interventions into their consultations and how they keep a record of such

As already mentioned and supported by the results of this study, medical personnel have a very important role to play in improving BSE compliance by imparting knowledge, teaching BSE, allaying anxiety, encouraging and improving confidence in BSE technique. The majority of respondents' preferred method of BSE screening was doctors on a one-to-one basis.

6.2.4 ASSESSMENT OF THE SOUTH AFRICAN NURSING ROLE WITH REGARD TO BREAST CANCER SCREENING

Specially to look in depth at South African nurses' role in breast cancer screening by:

- a) assessing knowledge, attitudes, beliefs and practices towards breast cancer screening,
- b) assessing barriers to CBE and BSE education, and
- c) evaluating and checking CBE techniques and skills

Nurses in South Africa represent the largest professional group in the health care workforce and as such are an under-utilised potential resource for breast cancer screening, detection and implementation.

The value of educating nursing staff is supported by the following two studies

- 1) Judkins and Boutwell (68) assessed a programme for teaching nurses BSE in a community setting and showed a significant increase in nurses' awareness (p value <0.01)
- 2) Han et al (49) found that nurses who taught more BSE reported more knowledge about breast cancer screening and BSE and were more confident and competent in performing BSE.

6.2.5 EVALUATION OF BREAST CANCER SCREENING SERVICES

Research is needed to evaluate exactly what, if any, breast cancer screening is taking place in South African primary health care and to evaluate the practicalities and cost implications of instituting a formal breast cancer screening programme at a primary health care level in South Africa

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APPENDIX A

A1: SIGNIFICANT POSITIVE VARIABLES ASSOCIATED WITH BSE PERFORMANCE

JOURNAL	AUTHOR/YEAR	n =	DESCRIPTION	VARIABLES POSITIVELY ASSOCIATED WITH BSE PERFORMANCE
6	Coleman E A 1991		A selective review of BSE literature: 1977-1989	- Confidence in BSE performance - Prior BSE instruction - Finding a way to remember
15	Thomas S M & Fick A C 1995		USA 40-65 years	- Physician recommendations - Belief in efficacy of early detection
16	Salazar M K 1994	52	USA Working women	- Close relative with breast cancer - Belief in BSE - Fear of breast cancer
21	Champion V L 1991	322	USA 35 years and older	- Health motivation - Social influence - Susceptibility - Barriers - Confidence - Knowledge
22	Fulton J P et al 1991	352	USA 40 years and older	- Socio-economic status - Medical care use - HCW recommendations for screening - Health beliefs about BSE and breast cancer
23	Yelland M J et al 1991	1103	Australia	- Age highest amongst 20-44 years Lowest amongst 65 years and older - Married women - Those who have Pap smears - Learned BSE from a doctor
38	Champion V L 1987	588	USA	- Knowledge - Susceptibility - Taught BSE by a HCP
60	Gray M E 1990	347	USA Rural	- Perceived more benefits of BSE - Perceived fewer barriers to performing BSE - Scored high on health motivation - Higher BSE knowledge
63	Kurtz M E et al 1993		USA Worksite population 35 years and older	- Perceived efficacy - Desire for control over health

APPENDIX A

A1: SIGNIFICANT POSITIVE VARIABLES ASSOCIATED WITH BSE PERFORMANCE (Continued)

JOURNAL	AUTHOR/YEAR	n	DESCRIPTION	VARIABLES POSITIVELY ASSOCIATED WITH BSE PERFORMANCE
69	Suttons S et al 1994	3291	London 50-64 years Breast screening centre	• Perceived importance of BSE • Personal consequence of breast screening • Effectiveness of breast screening • Chances of getting breast cancer • Attitudes of significant others • Moderate amount of worry
70	Wehrwein T C & Eddy M E 1993	86	USA Midlife women Ambulatory women's centre	• Perceived self-efficacy was a significant predictor
71	Murray M & McMillan C 1993	1162	Northern Ireland	• Married • 35-45 years • Working
71	Murray M & McMillan C 1993	400	Northern Ireland	• Confidence
72	Redman S et al 1990	1454	Australia	• History of breast lumps • Believe at increased risk of breast cancer • Have CBE's • Frequent users of general practitioners
74	GIVIO 1991	1315	Italy: clinical trial	• Level of education • History of benign breast disease
75	Kloskowski S & Ebeling K 1990	545	Germany	• Increasing age • Higher education • Prior breast biopsy • Pap smears • Regular CBE
76	Salazar M K 1992		USA Worksite education programs	• Health consequences • Likelihood of disease • Time factors
77	Ferro S et al 1992	657	Italy 20-64 years	• Preventive attitudes • History of breast disease
78	Katz R C et al 1995	178	USA Young women	• Fear of developing cancer • Self-rated confidence in BSE

APPENDIX A

A2: SIGNIFICANT NEGATIVE VARIABLES ASSOCIATED WITH BSE PERFORMANCE

<i>JOURNAL</i>	<i>AUTHOR/YEAR</i>	<i>n =</i>	<i>DESCRIPTION</i>	<i>VARIABLES NEGATIVELY ASSOCIATED WITH BSE PERFORMANCE</i>
15	Thomas S M & Fick A C 1995		USA 40-65 years	• Fear of breast cancer
16	Salazar M K 1994	52	USA Working women	• Belief that breast cancer causes pain • Belief that a healthy lifestyle is protective • Belief that reminders would be helpful
38	Champion V L 1987	588	USA	• HBM barriers
63	Kurtz M E et al 1993		USA Worksite population 35 years and older	• Lack of knowledge • Discomfort
79	Baines C J et al 1990	1582	Participants in the Canadian National Breast Screening Study (CNBSS)	• Forgetfulness

APPENDIX A

A3: SIGNIFICANT POSITIVE VARIABLES ASSOCIATED WITH BSE FREQUENCY

JOURNAL	AUTHOR/YEAR	n =	DESCRIPTION	VARIABLES POSITIVELY ASSOCIATED WITH BSE FREQUENCY
6	Coleman E A 1991		A selective review of BSE literature: 1977-1989	- Confidence in BSE performance - Prior BSE instruction - Finding a way to remember to do BSE
37	Champion V L 1990	362	USA 35 years and older	- Past frequency - Barriers - Health motivation - Internal locus of control - Being taught by a doctor - Confidence - Having BSE procedure checked - Perceived benefits - Perceived susceptibility
61	Fletcher S W et al 1989	300	USA 40-68 years	- Intention to perform BSE - Knowledge of how to perform BSE - Self-confidence in BSE ability
65	Li Z J 1995	174	China	Perceived competence
80	Osion R L & Mitchell E S 1989	191	USA	- Satisfaction with BSE ability - Explanation of BSE technique
81	Redeker N S 1989	48	USA	- Health beliefs - Health locus of control
82	Walker L R & Glanz K 1986	264	USA University students and staff	- General health measures - Variables of the HBM - Impact of women's social network - Set of secondary non-health related benefits and barriers - Women's evaluation of her personal health care system
83	Calnan M & Rutter D R 1988		Attendees of a BSE class	- Changing health beliefs - BSE education - Perceived value of doing the behaviour found to be a more important predictor than perceived vulnerability to cancer

APPENDIX A

A4: SIGNIFICANT NEGATIVE VARIABLES ASSOCIATED WITH BSE FREQUENCY

<i>JOURNAL</i>	<i>AUTHOR/YEAR</i>	<i>n =</i>	<i>DESCRIPTION</i>	<i>VARIABLES NEGATIVELY ASSOCIATED WITH BSE FREQUENCY</i>
37	Champion V L 1990	362	USA 35 years and older	• HBM specified barriers

APPENDIX A

AS: PERCENTAGE FIGURES OF DIFFERENT GROUPS OF WOMEN PRACTISING BSE

JOURNAL	AUTHOR/YEAR	n =	DESCRIPTION	PERCENTAGE FIGURES
16	Salazar M K 1994	52	USA Working women	29% performed BSE
25	Wardle J et al 1995	9181	20 European countries Young women: Part of the European Health Behaviour Survey	54% reported never having practiced BSE 8% reported regular monthly BSE practice 36% reported occasional BSE
40	Friedman L C et al 1994	427	USA Gynaecology outpatients	64% had practised BSE at least once during the past year 27% indicated that they practise BSE monthly
43	Kaplan K M et al 1991	2471	USA High risk women	49% reported monthly BSE
44	Stefenek M E & Wilcox P 1991	125	USA High risk women	36.8% reported monthly BSE
50	Najem G R et al 1995		Medical, dental and nursing students	38% reported monthly BSE
62	Persson K et al 1995	162	Sweden	10% practiced BSE
65	Lu Z J 1995	174	China	15% practised monthly BSE 48% had never performed BSE
72	Redmann S et al 1990	1454	Australia	39% reported monthly BSE
73	Murray M & McMillan C 1993	1162	Northern Ireland	28% perform BSE regularly 28% perform BSE occasionally - Remainder rarely or not at all
74	GIVIO 1991	1315	Italy	39% reported some BSE practice 8% reported regular, correct BSE practice
84	Hailey B J & Bradford A C 1991	201	University staff	31% reported monthly BSE
85	Hill D et al 1991	3527	Australia	78% reported BSE at least once 41% reported BSE in the last month 23% reported monthly BSE over the past year
86	Kash K M et al 1992	217	USA High risk women	40% reported monthly BSE 10% never performed BSE 50% reported irregular BSE

FOOTNOTE: As can be seen, most of the figures for actually performing BSE are very low and well below breast cancer screening recommendations.

APPENDIX B

EFFECTS OF BSE EDUCATION AND INTERVENTION PROGRAMMES

JOURNAL	AUTHOR/YEAR	n =	DESCRIPTION	RESULTS
5	Coleman E A 1991		Review of BSE literature (1977-1989)	Found that the most effective way of teaching a woman BSE was on her own breasts.
26	Janz N K et al 1989		Review of 33 intervention studies	Generally the more intense intervention resulted in better outcomes. Knowledge seemed sufficient to promote BSE initially but frequency required skills, training and corrective feedback.
69	Sutton S et al 1994	1301	UK Inner City London	Attitudes, beliefs and intentions to BSE screening behaviour were positively amenable to change.
79	Baines C J et al 1990	89 835	Participants in the Canadian National Breast Screening study (CNBSS)	Looked at women's attitudes to breast screening after participation in the CNBSS and found that participation was a positive experience for 93% of participants and that 89% of participants reported that they intended to practise BSE.
27	Lierman L M et al 1994		USA Middle-aged women	Proficiency and perceived skill continued to increase at 12 months post-instruction.
56	Kurtz M E et al 1994		USA Work-site population	Revealed that a BSE programme targeted at a work-site population positively influenced employees' attitudes to BSE frequency even though it was a brief educational intervention.
89	Agars J and McMurray A 1993	166	Western Australia Nurses	Found film and discussion groups to yield the greatest improvement in BSE proficiency amongst nurses as opposed to booklets and individual teaching. However each of these methods produced a significant improvement in BSE technique (p value < 0.0001).
90	Gastrin G 1993	56 000	Finland Mama Screening programme utilises Mama calendar	Results showed BSE compliance increasing from 2% to 55% and in the compliant group, breast cancer mortality was reduced by 29%. The system was found to be effective, easy and inexpensive to incorporate into existing healthcare systems.
91	Fletcher S W et al 1990	260	USA Mammare instruction programme	The Mammare instruction programme designed to teach women BSE found that BSE instruction should emphasize lump detection skills.
92	Wordens J K et al 1990	637	Vermont Community receiving BSE training	Significant increase in BSE frequency and detection of lumps in women who had received training.
93	Baines C J and To T 1990	89 835	Participants in the Canadian National Breast Screening Study (CNBSS)	Suggests that most women who enter screening programmes will upgrade their skills if subjected to brief episodes of repeated BSE instruction.

APPENDIX B

EFFECTS OF BSE EDUCATION AND INTERVENTION PROGRAMMES (Continued)

JOURNAL	AUTHOR/YEAR	n =	DESCRIPTION	RESULTS
94	Spatz T S 1991	49	USA 4MAT Model	Experienced improved results in training using the 4MAT model over traditional lecture/discussion formats.
95	Coleman E A et al 1991	79	USA Older women	Found that women who were taught BSE individually on their own breasts as opposed to in a group using a model performed BSE significantly more proficiently (p value <0.041).
96	Alcoe S T et al 1990		Canada 10 year study	Revealed that any BSE instruction (be it individually or in groups, regardless of details and teaching methods) will result in a reported increase in both frequency and proficiency.
97	Bennet S E et al 1990	783	USA Women from a health maintenance organisation	Cited even minimal intervention led to a greater awareness and frequency of BSE.
98	Alcoe S T et al 1995	614	Ireland	This study looked at three different methods of teaching BSE and found that all three groups reported increased confidence and frequency. However the group that was taught on their own breasts achieved the highest scores.

APPENDIX C: RESULTS OF CROSS-TABULATIONS

RESULTS OF CROSS TABULATIONS		BSE FREQUENCY IN LAST 3 MONTHS		HAVING EVER PRACTISED BSE		AGE < 40 years vs > 40 years		OCCUPATION: MEDICAL VS ALL OTHERS		INTENTION TO PERFORM BSE		OVER ADHERERS		HIGH RISK WOMEN	
		NOT SIGNIFICANT		NOT SIGNIFICANT		NOT SIGNIFICANT		NOT SIGNIFICANT		NOT SIGNIFICANT		NOT SIGNIFICANT		NOT SIGNIFICANT	
		NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT
1. Healthy lifestyle		*		*		*		*		*		*		*	
2. Healthy diet		*		*		*		*		*		*		*	
3. Exercise frequency		*		*		*		*		*		*		*	
4. Smoking		*		*		*		*		*		*		*	
5. Extent of smoking		*		*		*		*		*		*		*	
6. Alcohol consumption		*		*		*		*		*		*		*	
7. Having Pap Smears		*		*		*		*		*		*		*	
8. Frequency of Pap Smears		*		*		*		*		*		*		*	
9. Clinical breast examinations - CBE		*		*		*		*		*		*		*	
10. Frequency of CBEs		*		*		*		*		*		*		*	
11. HCP performing breast examinations	General Practitioner	*		*		*		*		*		*		*	
	Gynaecologist	*		*		*		*		*		*		*	
	Nurse	*		*		*		*		*		*		*	
12. Having had a mammogram		*		*		*		*		*		*		*	
13. Frequency of mammograms		*		*		*		*		*		*		*	
14. Best time BSE is used		*		*		*		*		*		*		*	
15. Having breast fed		*		*		*		*		*		*		*	
16. Duration of breast feeding		*		*		*		*		*		*		*	
17. Breast problems	It is gross	*		*		*		*		*		*		*	
	Lumpy	*		*		*		*		*		*		*	
	Red	*		*		*		*		*		*		*	
	Swollen breasts	*		*		*		*		*		*		*	
	Tender breasts	*		*		*		*		*		*		*	
	Nipple discharge	*		*		*		*		*		*		*	
	Breast lumps	*		*		*		*		*		*		*	
	Breast pain	*		*		*		*		*		*		*	
	Breast lump	*		*		*		*		*		*		*	
	Breast swelling	*		*		*		*		*		*		*	
	Other	*		*		*		*		*		*		*	
18. Knowledge of someone with breast cancer		*		*		*		*		*		*		*	
19. Spoken to with breast cancer	Spouse	*		*		*		*		*		*		*	
	Friends	*		*		*		*		*		*		*	
	Mother	*		*		*		*		*		*		*	
	Sister	*		*		*		*		*		*		*	
	Grandmother	*		*		*		*		*		*		*	
	Father	*		*		*		*		*		*		*	
	Mother-in-law	*		*		*		*		*		*		*	
	Other	*		*		*		*		*		*		*	
20. Fear of getting breast cancer		*		*		*		*		*		*		*	

RESULTS OF CROSS TABULATIONS		BSE FREQUENCY IN LAST 3 MONTHS		HAVING EVER PRACTISED BSE		AGE < 40 years VS > 40 years		OCCUPATION MEDICAL VS ALL OTHERS		INTENTION TO PERFORM BSE		OVER ADHERERS		HIGH RISK WOMEN	
		NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT	NOT SIGNIFICANT	SIGNIFICANT
21	Extent of knowledge about breast cancer	*		*		*		*		*		*		*	
22	Seeing that breast cancer can be prevented	*		*		*		*		*		*		*	
23	Being informed about BSE		*		*		*		*		*		*		*
24	BSE information source														
	General Practitioner	*		*		*		*		*		*		*	
	Gynaecologist	*		*		*		*		*	*	*		*	
	Nurse	*		*		*		*		*		*		*	
	Pharmacist/chemist	*		*		*		*		*		*		*	
	Family friend	*		*		*		*		*		*		*	
	Brother	*		*		*		*		*		*		*	
	Mother	*		*		*		*		*		*		*	
	Other	*		*		*		*		*		*		*	
25	Being worried about BSE		*		*		*		*		*		*		*
26	Having been taught BSE		*		*		*		*		*		*		*
27	Having seen a sign for BSE		*		*		*		*		*		*		*
	General Practitioner	*		*		*		*		*		*		*	
	Gynaecologist	*		*		*		*		*		*		*	
	Nurse	*		*		*		*		*		*		*	
	Family friend	*		*		*		*		*		*		*	
	Brother	*		*		*		*		*		*		*	
	Other	*		*		*		*		*		*		*	
28	Having been with a poster about BSE		*		*		*		*		*		*		*
29	Having been taught BSE		*		*		*		*		*		*		*
	Doctor	*		*		*		*		*		*		*	
	Nurse	*		*		*		*		*		*		*	
	Family friend	*		*		*		*		*		*		*	
	Brother	*		*		*		*		*		*		*	
	Other colleagues	*		*		*		*		*		*		*	
	Other	*		*		*		*		*		*		*	
30	Having practised BSE with someone		*		*		*		*		*		*		*
31	Knowing BSE to be taught with		*		*		*		*		*		*		*
	Doctor	*		*		*		*		*		*		*	
	Nurse	*		*		*		*		*		*		*	
	Family friend	*		*		*		*		*		*		*	
	Brother	*		*		*		*		*		*		*	
	Other colleagues	*		*		*		*		*		*		*	
	Other	*		*		*		*		*		*		*	
32	Being informed	*		*		*		*		*		*		*	
33	Being confident about examining own breasts	*		*		*		*		*		*		*	
34	Willingness to be taught BSE	*		*		*		*		*		*		*	
35	Requesting further information	*		*		*		*		*		*		*	

Breast Self-Examination Survey

Introduction

Dear Patient, my name is Dr Caroline Day and I am conducting a survey on women's attitudes to Breast Self-Examination (BSE). By Breast Self-Examination (BSE), I mean, examining your breasts in order to detect any changes or abnormalities. The results will be presented in my research project for the degree in Family Medicine at the University of the Witwatersrand.

Purpose of Survey

The purpose of the survey is to help Doctor's and other health care workers understand the problems women face with BSE. It is hoped that this will help them promote and teach it better.

Target Population

If you are 18 years or older and would like to help by filling in the questionnaire, your assistance would be most appreciated. The questionnaire takes a maximum of 10 minutes of your time. It is completely confidential and anonymous. Please answer as many questions as you can, and then place your questionnaire in the sealed box at reception.

For Further Information

If you would like information on Breast Self-Examination or are concerned about anything that the questionnaire raises, please do not hesitate to speak to your doctor. Information pamphlets on Breast Self-Examination techniques are available from the receptionist.

Thank you very much for your time and co-operation.

Dr Caroline Day

Questionnaire

How to Complete the Questionnaire

Where applicable

- ☒ place a *Tick* on the relevant box, which are highlighted in grey
- ✎ *Write* on the relevant box, which are highlighted in grey

1 What is your age in years?

✎

2 What is the highest standard of education you achieved?

	Highest Level of Education	☒
1	Standard 5 or Less	
2	Standard 6	
3	Standard 7	
4	Standard 8	
5	Standard 9	
6	Standard 10	
7	Technikon Diploma	
8	University Degree	
9	Other (State): ✎	

3 What is your current marital status?

Status	1	2	3	4	5
	Single	Married	Divorced	Separated	Widowed
☒					

4 What is your current occupation?

✎

5 How many children do you have? (Include Adopted and Step children)

Age Category	Number
1 No Children	☒
2 Less than 1 Year	
3 1 - 2 Years	
4 3 - 5 Years	
5 6 - 10 Years	
6 11 - 13 Years	
7 14 - 16 Years	
8 17 - 19 Years	
9 20 Years or Older	
Total	

6 What is your Home language?

Language	1 English	2 Afrikaans	3 Zulu	4 Sotho	5 Portuguese	6 Other (State) ☒
☒						

7 How do you rate yourself in terms of a Healthy Lifestyle?

Lifestyle	1 Not at All Healthy	2 Moderately Unhealthy	3 Average	4 Moderately Healthy	5 Extremely Healthy
☒					

8 How do you rate yourself in terms of a Healthy Diet?

Diet	1 Not at All Healthy	2 Moderately Unhealthy	3 Average	4 Moderately Healthy	5 Extremely Healthy
☒					

9 How often do you Exercise?

Exercise	1 Not at All	2 Once a Week	3 Twice to Three times a Week	4 Every Day
☒				

10 Do you Smoke?

	1	2
Smoke	Yes	No
☒		

10a If Yes, How much do you smoke?

	1	2	3	4
Number of Cigarettes	Less than 10 per Day	10 - 20 per Day	21 - 30 per Day	More than 30 per Day
☒				

11 How often do you drink alcohol?

	1	2	3	4	5	6
	Never	Daily	Twice to Three times a Week	Once a Week	Once or Twice a Month	Very Infrequently
☒						

12 Have you ever had a PAP smear?

	1	2
	Yes	No
☒		

12a If Yes, How often do you have PAP smears?

	1	2	3
	Less than once a year	Once a year	More than once a year
☒			

13 Have you ever had your breasts examined by a health care worker?
(e.g., Doctor or Nurse)

	1	2
	Yes	No
☒		

13a If Yes, How often do you have them examined?

	1	2	3
	Less than Once a year	Once a year	More than Once a year
☒			

13b If you do have your breasts examined, by Whom is the examination done?

	1	2	3
	General Practitioner (GP)	Gynaecologist	Nurse
☒			

14 Have you ever had a Mammogram? (A special X-Ray of the breast)

	1	2
	Yes	No
☒		

14a If Yes, How often?

	1	2	3	4
	Once Only	Once a Year	Once every 2 - 3 Years	Once Every 5 Years
☒				

15 Do you believe that Breast Self-Examination is useful?

	1	2
	Yes	No
☒		

15a If Yes, Why?

☒

15b If No, Why not?

☒

16 Have you ever breast fed?

	1	2
	Yes	No
☒		

16a If Yes, for How long?

	1	2	3
	Less than 6 Months	6 - 12 Months	More than 12 Months
☒			

17 Have you presently got or had any of the following breast problems and/or procedures?

	Breast Problems/Procedures	☒
1	A lump (e.g., a Fibroid)	
2	Lumpy breasts (e.g., Fibroadenosis)	
3	Tender breasts	
4	Nipple discharge	
5	A breast biopsy (Removal of a piece of breast tissue)	
6	A breast implant	
7	Breast surgery	
8	None	
9	Other (Please Specify): <i>2</i>	

18 Do you know anybody who currently has or has had breast cancer?

	1	2
	Yes	No
☒		

18a If Yes, Who?

		☒
1	Yourself	
2	Friends	
3	Mother	
4	Sister	
5	Grandmother	
6	Aunt	
7	Mother-in-Law	
8	Other (Please Specify): <i>Da</i>	

19 How afraid are you of getting breast cancer or a recurrence of breast cancer?

	1	2	3	4
	Not at All	A Little Afraid	Moderately Afraid	Very Afraid
☒				

20 How much at risk do you feel you are of getting breast cancer in relation to other women?

	1	2	3	4
	Above Average	Average	Below Average	I Don't know
☒				

21 Do you feel that breast cancer can be prevented?

	1	2
	Yes	No
☒		

21a Please Tick any of the following factors which you think may be risk factors for breast cancer?

		☒
1	High Fat, Low Fibre Diet	
2	Not Having Children	
3	Lack of Exercise	
4	High Blood Pressure	
5	Stress	
6	Not Breast Feeding	
7	Not Doing Breast Self-Examination	
8	Cholesterol	
9	Having a Mammogram	
10	Having a Relative with Breast Cancer	
11	High Protein Diet	
12	Oral Contraception (e.g. <i>The Pill</i>)	
13	Smoking	

22 Have you ever been informed about Breast Self-Examination?

	1	2
	Yes	No
☒		

22a If Yes, by Whom or by What means?

		☒
1	General Practitioner (GP)	
2	Gynaecologist	
3	Nurse	
4	Pamphlets / Posters	
5	Family / Friends	
6	Books	
7	Magazines	
8	Other (Please Specify): <i>Da</i>	

22b How well informed do you feel you are about Breast Self-Examination?

	1	2	3
	Not at All	Moderately	Very well Informed
☒			

23 Has anyone ever taught you to examine your own breasts?

	1	2
	Yes	No
☒		

23a If Yes, Who?

		☒
1	General Practitioner (GP)	
2	Gynaecologist	
3	Nurse	
4	Friends	
5	Family	
6	Other (Please Specify): <u>Σ</u>	

24 Have you ever examined your own breasts?

	1	2
	Yes	No
☒		

24a If Yes, When?

	1	2	3	4	5	6	7
	Less than Monthly	Monthly	More than Monthly	Before your Period	During your Period	After your Period	No Specific Time
☒							

24b How often have you examined your breasts in the Last month?

	1	2	3
	Nil	Once	More than Once
☒			

24c How often have you examined your breasts in the last 3 months?

	1	2	3
	Nil	Less than 3 Times	More than 3 Times
☒			

24d If you *do not* examine your breasts, would you do so, if a doctor or health care worker *advised* you to?

	1 Yes	2 No	3 Perhaps
☒			

24e If you *do not* examine your breasts, would you do so, if a doctor or health care worker *taught* you to?

	1 Yes	2 No	3 Perhaps
☒			

24f If you do not examine your breasts, do you have any intention to do so?

	1 Very Definitely	2 Maybe	3 Not at All
☒			

25 Has anyone ever encouraged you to practice Breast Self-Examination?

	1 Yes	2 No
☒		

25a If Yes, by Whom?

		☒
1	Doctors	
2	Nurses	
3	Friends	
4	Family	
5	Work Colleagues	
6	Other (Specify):	

26 Do you ever discuss Breast Self-Examination with anyone?

	1 Yes	2 No
☒		

26a If Yes, with Whom?

		☒
1	Doctors	
2	Nurses	
3	Friends	
4	Family	
5	Work Colleagues	
6	Other (Specify): <u> </u>	

27 Do you use Reminders to remember to examine your breasts? (e.g., Calendar, Your Period)

	1	2
	Yes	No
☒		

27a If Yes, How do you remind yourself? (Please Specify)

<u> </u>

28 If you do examine your breasts, why do you? (Please give as many reasons as you can think of)

<u> </u>

29 If you do not examine your breasts, why is this? (Please give as many reasons as you can think of)

30 How confident do you feel about examining your own breasts?

	1	2	3
	Very Confident	Somewhat Confident	Not at all Confident
☒			

31 Would you like to be taught to examine your breasts?

	1	2
	Yes	No
☒		

31a If Yes, by Whom?

	1	2	3	4
	Doctor	Nurse	Male	Female
☒				

31b And How?

	1	2	3	4	5
	One-to-One Basis	Group	Books	Pamphlets	Video
☒					

32 Would you like more information about Breast Self-Examination?

	1	2
	Yes	No
☒		

33 Would you like information about Breast Cancer?

	1	2
	Yes	No
☒		

Thank You

for taking part in this Survey.

Author: Day C.J

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