AN INVESTIGATION OF KNOWLEDGE AND PRACTICE OF
BREAST SELF EXAMINATION
AMONG FEMALE HIGH SCHOOL LEARNERS:
AN INTERVENTION STUDY

BY

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An Investigation of Knowledge and Practice of Breast Self Examination among Female High School Learners: An Intervention Study

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DECLARATION

I declare that the work submitted in this dissertation is the result of my own investigation, and all the sources used or quoted have been indicated and acknowledged by means of references.

It has not already been accepted for any degree, and is also not being concurrently submitted for any other degree.

_________________________
Phumla Phungula

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DEDICATION

I would like to dedicate this piece of work to Tata and Mama for their love that got me where I am now. Ndiyosoloko ndinibulela ngayo yonke into enindenzela yona ebomini bam.
ABSTRACT

The main purpose of the study was to investigate whether female high school learners are knowledgeable of and practise breast self examination. The pre-measurement and post-measurement single group design was used to ascribe differences between the pre- and post-measurements to the experimental intervention. The sample was focused on two groups: multiracial (n = 56) and rural high school (n = 71) learners. These two groups were interviewed using a structured questionnaire (Pillay, 2002) assessing their knowledge and practice regarding breast self examination.

The age range of the participants was between 14 and 21 years with a mean age of 16.65 years. Results showed that more than half (62.9%) of the total sample were aware of breast self examination. Older learners in higher grades were more knowledgeable about breast self examination than those who were younger and doing lower grades. Of those learners who were aware of breast self examination, 57.5% practiced BSE. Breast cancer awareness programme that was provided during the study had a great impact on the responses of the learners. Knowledge of BSE had a significant improvement. Public health education is a factor that impacts on young women’s knowledge and understanding of breast cancer. Based on these young women’s responses, it has been concluded that current public health education is either not communicating its message or failing to reach enough women. Based on this assumption and the knowledge that most breast awareness campaigns are aimed at older women, it is recommended that an important improvement may be to target women at younger ages to educate them about what is normal or not, and what they should know and be aware of regarding their bodies.
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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Breast cancer, the most common cancer among women worldwide, is the disease women fear most. It is a progressive disease and small tumours are more likely to be early stage of the disease, have a better prognosis and are more successfully treated (Smith, Saslow, Sener, Burke, Costanza, Evans, Foster, Hendrick, Eyre, & Andrews-Sawyer, 2003). Breast cancer’s experience by women has several distinct phases, each characterised by a unique set of psychosocial concerns. These phases include diagnosis, primary treatment, special issues related to non-invasive breast cancer, genetic risk and its psychological management, completing treatment and re-entry to usual living, survivorship, recurrence, and palliation of advanced cancer (Hewitt, Herdman, & Holland, National Research Council, 2004).

1.2 Theoretical background of the study

Currently, cancer is the second most common cause of death (22%) in the developed countries following cardio-vascular diseases. In developing countries, it is the third cause of death after infectious and parasitic diseases and cardio-vascular diseases. It makes up 9% of the total death in developing world (World Health Organisation, 2008). Breast cancer is a significant cause of morbidity and mortality among women and the second leading cause of death due to cancer in women, exceeded only by lung cancer (American Cancer Society, 2007). It is estimated that one in every eight women will develop breast cancer during their lives. This reflects a dramatic increase in the disease.
Diagnosis of breast cancer affects women physically, emotionally, as well as psychologically (Stone, Richards, A’Hern, & Hardy, 2000; Hann, Denniston, & Baker, 2000). There are many obvious and real factors that are related to psychological distress in women diagnosed with breast cancer, such as facing a life-threatening illness, painful and impairing treatments, and significant role changes. Issues related to body image and sexuality in women faced with breast cancer can also add to psychological distress. The fear of breast cancer brings with it other concerns and uncomfortable emotions, such as, uncertainty, feeling out of control, losing self-esteem and femininity, and worries; and physical distress such as fatigue/low energy, pain, and general health (Golden-Kreutz, Browne, Frierson & Andersen, 2004). Psychosocial distress interferes with their ability to cope with cancer and can extend along the continuum from common feelings of vulnerability and sadness to problems that are disabling, such as depression, anxiety, panic, and feeling isolated or in a spiritual crisis (Hewitt, Herdman, & Holland, National Research Council, 2004).

Many women, in some societies, still associate breast cancer with a death sentence (Koroltchouk, Stanley & Stjernsward, 1990), but in reality early detection of the condition can lead to effective treatment and a positive prognosis (Balogun & Owoaje, 2005). Maurer (1997) in Ozturk et al. (2000) states that, efforts to control the mortality rate from breast cancer should be directed towards early detection through secondary preventive measures such as Breast Self Examination.

Health education interventions to promote Breast Self Examination generally focus on increasing breast cancer knowledge and immediate behaviour change. The South African Department of Health in association with Cancer Association of South Africa (2006) recommended that women perform periodic mammograms, clinical breast examination, and
monthly Breast Self Examination to become familiar with both the appearance and feel of their breasts so that any change that occurs is noticeable. With the new national curriculum (Outcome Based Education), Life Orientation is one of the learning programmes being taught at schools. This kind of a learning programme also stresses that the learners be taught about personal, community, and environmental health promotion. The learners acquire knowledge about breast cancer prevention; skills on how to deal with the condition; as well as attitudes about health and health promotion. According to Taylor, Peplau, & Sears (2000), through learning, there is a change in attitude, which then leads to change in behaviour.

In a study by Fry and Dunn (2005), it was reported that although some researchers have found that Breast Self Examination education can increase Breast Self Examination performance for older women, few studies have focused on younger women. Maurer (1997) as cited in Ozturk et al (2000) emphasized that, since youngsters and/or young adults are heavily influenced by their peers, a Breast Self Examination programme that incorporates peer education and elements essential to positive identity formation may be an effective means to establish Breast Self Examination.

According to Pillay (2002), the Cancer Association of South Africa stressed the need for Afro-centric research into the psychosocial aspects of breast cancer. Very little research has been conducted with African descent women. This has probably been due to the extent of the socio-political disadvantages to which this group has been subjected. As a result, the general awareness of breast cancer, as well as health promotion and illness prevention issues, is rather low (Pillay, 2002). Also, health care facilities for the poor, especially in the rural areas, are insufficient. It has been stressed that the current treatment services are so poor in certain
communities that these must be improved; otherwise the early detection of breast cancer will be of no value.

1.3 **Motivation of the study**

The researcher was motivated by the statistical information about the escalating incidence of breast cancer, which, in South Africa, is the leading cause of death in women (16.6%) (WHO, 2008). 3 800 cases are being diagnosed every year, and out of these cases, 3000 women die each year from breast cancer in this country (South African Medical Research Council, 2008). Most women are not aware of breast cancer and how to practice Breast Self Examination.

1.4 **Statement of the problem**

According to Vorobiof, Sitas, and Vorobiof (2001), South African doctors have seen an alarming increase in the incidence of breast cancer among young black women since 1998. Even more alarming than the reported increase in the incidence of breast cancer was the fact that young black women had the lowest survival rates because they presented themselves to doctors too late. According to Vorobiof et al (2001) this is due to the fact that most black women first prefer to consult traditional healers about lumps in their breasts.

Although breast cancer usually develops after age 45, its age of onset is decreasing, and more young women are at great risk of developing breast cancer (Vorobiof et al, 2001). Younger women have a lower survival rate than older women due to cancer being at advanced stages at diagnosis.
Although self examination is usually recommended by authorities, it is not possible to say that Breast Self Examination practice is widespread. Even though most women have heard about self examination and its importance in their health, very few practise Breast Self Examination regularly, and others do not practise it at all. In a study by Pillay (2002), one in five women had not heard of breast cancer, and half were not even aware of its existence. These findings are of great concern, in view of the prevalence of breast cancer in South Africa.

1.5 Aim of the study

The main purpose of the study was to investigate whether female high school learners are knowledgeable of and practise Breast Self Examination. The objective was to ascribe differences between the pre- and post-measurements to the experimental intervention (Welman, Kruger, & Mitchell, 2005).

1.6 Significance of the study

A study of this kind is significant in the field of health and social sciences. Data will assist in gaining more information about Breast Self Examination practice, and it would contribute towards the development of educational and prevention programmes and community interventions. Promoting awareness and practices of Breast Self Examination in females is of crucial importance for early detection of breast cancer.

1.7 Résumé

The statistics show that breast cancer is the most common cancer among women worldwide. In South Africa, it is the leading cause of death in women. Vorobiof et al (2000) found that breast cancer’s age of onset is decreasing and younger women are at risk of developing it.
The aim of the study was to investigate whether female high school learners are knowledgeable of and practice Breast Self Examination, in order to detect problems early and receive early treatment of breast cancer. The next chapter will review literature on the literature on breast cancer and Breast Self Examination.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Breast cancer is a general term used for different types of cancers that develop from breast tissue cells. Cancer of the breast is an uncontrolled growth of malignant tissue (uncontrolled and causes death) that arises in the breast (American Cancer Society, 2007). It is a space-occupying destructive mass that grows and progresses at its own rate independent of the body's control. When abnormal cells divide in an uncontrolled manner they can form a mass of extra tissue, or tumour, which can be benign or malignant.

Benign or non-cancerous tumour cells do not spread to other parts of the body. They can usually be removed and do not recur. Malignant or cancerous tumour cells can invade nearby tissues and break away from the primary tumour to form secondary tumours, also known as metastases, elsewhere in the body (Lewis, 2005). The cancerous cells may spread to the draining lymph nodes of the region, usually in the armpit. Once the region has been affected, it may result in a swelling or even an ulcer and infection. As time progresses, the cancer cells may spread into the blood stream, causing seeds - or metastases - to be deposited in vital organs such as the brain, lungs, liver and bone, where they form space-occupying lesions and destroy the host organ (Rees, 2005). It is the effects of metastases on the vital organs that affect survival from the disease and usually lead to fatality.
2.2 Signs and Symptoms of Breast Cancer

The first and common sign of breast cancer is often a painless lump or thickening in the breast (Lewis, 2005). But early breast cancer is often found on a mammogram (for women 45 years and older) before a lump can be felt. Most breast lumps are not cancerous. Other symptoms of breast cancer may not appear until the cancer is more advanced. These include:

- A spontaneous clear or bloody discharge from your nipple, often associated with a breast lump
- Retraction or indentation of your nipple
- A change in the size or contours of your breast
- Any flattening or indentation of the skin over your breast
- Redness or pitting of the skin over your breast, like an orange peel
- A change in the color or feel of the skin around the nipple (areola).

A number of conditions other than breast cancer can cause the breasts to change in size or feel. Breast tissue changes naturally during pregnancy and menstrual cycle. Other possible causes of noncancerous (benign) breast changes include infection or injury.

2.3 Risk factors

Agars and McMurray (1993) as cited by Ozturk, Engin, Kisioglu, & Yilmazer (2000) reported that breast cancer continues to have no exact known cause or primary prevention. It is widely believed that it may include several genetic, environmental, nutritional and hormonal factors. A risk factor is anything that makes it more likely a person will get a particular disease (Kneisl, Wilson, & Trigoboff, 2004). The genetic and environmental factors work together; therefore, a person with a genetic risk for developing breast cancer will have greater risk when exposed to specific environmental influences (Stern & Sekeres, 2004). Many risk factors have been successfully identified.
2.3.1 Women and Age

The woman’s chances of developing breast cancer increase with age, i.e. as a woman ages, her likelihood of developing breast cancer also increases. Close to 80 percent of breast cancers occur in women age 45 or older. The rates of breast cancer in young women actually quite low, but they increase rapidly with advancing age. Colditz and Stein (2004) state that, many patients do not realize the impact of age on risk. They often overestimate or underestimate their risk of breast cancer. Although breast cancer can strike both men and women, the vast majority of breast cancer occurs in women. Less than 1% of all cases are diagnosed in men. Most women with breast cancer have no known risk factors other than simply being women. In fact, being female is the single greatest risk factor for breast cancer.

2.3.2 Family History and Genetic Factors

Literature (Stern & Sekeres, 2004) indicates that another risk factor for the development of breast cancer is the family history of breast cancer. A woman’s chance of being diagnosed with breast cancer increases by 1.5 to 3 times if a mother or sibling has the disease. Breast cancer that runs in families may be related to one of two genetic mutations: BRCA1 and BRCA2 (Burke, Press, & Pinsky, 1999; Koenig, Greely, McConnell, Silverberg, & Raffin, 1998). A woman who has inherited a mutated BRCA1 or BRCA2 gene may have up to about 80% chance of developing breast cancer at some stage in her life. However, most women with family history of breast cancer do not have an inherited BRCA1 or BRCA2 mutation (Rees, 2005). The level of risk is usually much lower, for example below 30% for those with a mother or sister with the disease. The vast majority of breast cancer is not primarily due to an inherited gene that is passed from generation to generation. Although family history is the factor most significantly correlated with an age specific increase in breast cancer risk, it appears to be involved in only a small percentage of affected women. Only 5 to 10% of breast
cancer is attributable to inherited factors (American Cancer Society, 2008; Radford & Zehnbauer, 1996 cited in Press, Fishman & Koenig, 2000). Usually these genes help prevent cancer by making proteins that keep cells from growing abnormally. But if they have a mutation, the genes are not as effective at protecting from breast cancer (Rees, 2005).

2.3.3 Prolonged Exposure to Oestrogen

Early age of menarche (at age 12 or earlier) increases the risk of breast cancer (Press, Fishman & Koenig, 2000). Also, women who have their menopause at a later age (after age 50) have a higher risk of breast cancer than those women who have an early menopause. This is attributed to the prolonged exposure of the breast tissue to oestrogen. Early menarche results in exposure of breast tissue to oestrogens and other hormones at a younger age and increases total lifetime exposure. Oestrogen stimulates breast tissue cell growth (Rees, 2005; Harvey & Darbre, 2004). If a woman’s first full-term pregnancy occurs after age 30, or they never become pregnant, they have a greater chance of developing breast cancer. Lewis (2005) mentions that although it is not entirely clear why, an early first pregnancy may protect breast tissue from developing genetic mutations that result from oestrogen exposure.

Recent use of birth control pills is associated with an increased risk of breast cancer in premenopausal women (Vorobiof, Sitas, & Vorobiof, 2001). The risk seems to be greater for women who use birth control pills for four or more years before their first full-term pregnancy, but since delayed first pregnancy is also a risk factor, part of the risk could be attributed to that. Overall, risk of breast cancer for users of birth control pills is small and appears to be confined to the short term. Using birth control pills also does not appear to further increase breast cancer risk in women with a family history of breast cancer or with a personal history of benign breast disease.
2.3.4 Radiation Exposure

High dose radiation exposure is associated with increased breast cancer risk, especially when the exposure occurs at an adolescence stage during breast development. However, as argued by Colditz & Stein (2004), these extremely high levels of exposure to ionising radiation are rare and are not comparable to low dose radiation commonly used for mammograms and other types of diagnostic radiography. These low dose radiation exposures do not increase the risk of breast cancer.

2.3.5 Other Risk Factors

Other risk factor elements are mammographic breast density, long-term hormone therapy, excess weight, smoking, alcohol abuse, lack of exercise, and a poor diet. By being aware of the risk factors and knowing that they fall into a high-risk category, women would be more vigilant when it comes to changes to their breasts. Knowledge of the risk factors together with regular screening schedule, watching for changes in their breasts and taking better care of themselves, allows women to beat the odds (Department of Health, Cancer Association of South Africa, 2001). Having one or even several risk factors does not necessarily mean a person will develop cancer.

Relative to other cancers, there has been little focus on primary prevention on breast cancer. The predisposing factors have been well described and are seen primarily as to do with individual lifestyle choices such as age at first full term pregnancy, breast feeding, alcohol consumption; biological factors such as age at menarche and menopause, rather than any collective or broadly environmental factors (Adami, Hunter, & Trichopoulos, 2002). The environmental factors have tended no to have been addressed in national strategies.
2.4 Breast Cancer in South Africa

South Africa has a population of about 44 million, of whom 77% are black Africans. The incidence rate of breast cancer in black African women in rural areas 30 years ago was very low, about 5 to 10 per 100,000 (Walker, Adam & Walker, 2004). Likewise in 1993, in a rural hospital serving the needs of about 110,000 Africans, only three of the 64 women admitted to hospital for cancer had breast cancer (Kakembo, Walker, & Walker, 1996 in Walker, Adam, & Walker, 2004). The national breast cancer rates for South Africa are rising. In 1986 the incidence rate was 9.7 for African women and 65.1 for white women, per 100,000 (South Africa Institute for Medical Research, 1987.) During 1993-1995, records indicated a slight increase in the incidence rate in African women to 11.3, and an increased rate in white women to 70.2, per 100,000 (Sitas, Madhoo & Wessie, 1998). In South Africa, with the continually increasing changes in various aspects of lifestyle associated with urbanisation, the incidence rate in African women is likely to rise further (Walker, Adam, & Walker, 2004).

2.5 Contrasting Perspectives on the causes of breast cancer

The South African doctors have reported that there is an overall increase in the incidence of both invasive and non invasive breast cancer in South Africa, the specific causes of which are unknown, according to Vorobiof, Sitas, and Vorobiof (2001). Lifestyle factors are seen as important, with obesity, alcohol intake, high intake of meat, and dairy fat implicated, but the precise nature of these relationships is still unclear (Potts, Dixey & Nettleton, 2008). These authors argue that there is no mention of wider, shared environmental factors, other than radiation. There is no speculation on what might lie behind the relationship between high intake of meat and dairy fat and breast cancer, or whether this might be based on the effect of agricultural practices, rather than individual metabolism.
For over 30 years, the role of sex hormones in the aetiology of breast, uterine and cervical cancers has been well established (Ryan, 1975; Smith, 1975; Bernstein and Ross, 1993; Kelsey and Whittemore, 1994; Titus-Ernstoff, Hartch, Hoover, & Greenberg, Palmer, 2001, in Phillips, 2009). The female hormone, oestrogen, has been proven to stimulate breast cell division, affect other hormones and support the growth of oestrogen-responsive tumours. Specifically related to breast cancer, researchers have argued that oestrogen is the major factor in breast cancer aetiology (Harvey and Darbre, 2004). The greatest percentage of breast tumours will grow in the presence of hormones. It is estimated that 90 per cent of breast cancers in developed countries do not have a genetic aetiology (Parkin and Fernández, 2006). This statistic provides the impetus and the urgency behind much research on the effects that chemicals have on the female body.

Evidence is mixed on the relationship between smoking and breast cancer risk. Some studies (WHO, 2003; ACS, 2008) show no link between cigarette smoking and exposure to secondhand smoke and breast cancer. Others (Lancet, 2002) suggest that smoking increases breast cancer risk. Exposure to secondhand smoke and breast cancer risk remains an area of active research. Despite the controversy surrounding this issue, there are health benefits.

2.6 Race and Breast Cancer

White women are more likely to develop breast cancer than black, Hispanic or Asian women are, but black women are more likely to die of the disease because their cancers are found at a more advanced stage (Forshee, Storey, & Ritenbaugh, 2003; Ries Eisner, Kosary, Hankey, Miller, Clegg, Mariotto, Feuer, & Edwards, 2004; Love & Lindsey, 1995). Although some studies show that black, younger women may have more aggressive tumours (Dixon & Hortobagyi, 2000; Johnson & Dickson-Swift, 2008), it is also likely that the disparity is at
least partially due to socioeconomic factors. Women of all races with incomes below the poverty level are more often diagnosed with late-stage breast cancer and more likely to die of the disease than are women with higher incomes. Low-income women often do not receive the routine medical care that would allow breast cancer to be discovered earlier.

One of the mantra of breast cancer activists has been that the disease ‘knows no boundaries of race, ethnicity, or social class’ (Brenner, 2000). This claim hypothesizes that all women, regardless of their socioeconomic status or race ethnicity, are at the same risk for breast cancer. Eisenstein (2001) could imagine the breast cancer movement being an impetus for a global social justice movement because she imagines that breast cancer is a universally experienced illness. To the contrary, note others, the empirical evidence does not match this imagined universality: In reality, breast cancer accounted for only 21% of worldwide new cancer cases in the 1990s, and breast cancer incidence is much higher in developed countries, with lower rates in Asia and sub-Saharan Africa (Key & Marble, 1995, cited in Moffett, 2003). Furthermore, the disease is experienced very differently depending on a woman’s race, nationality, age and class. In the United States for example, Caucasian women tend to get the disease later on in life, while a large number of African-American women with breast cancer develop the disease before the age of 40 (Key & Marble, 1995).

According to the National Cancer Institute website, White, Hawaiian, and Black women have the highest rates of breast cancer, with Korean, American Indian, and Vietnamese women having the lowest rates (National Cancer Institute http://www.nci.nih.gov). Although white women have the highest rates of the disease, black women have the highest rates of mortality of the disease (until the age of 70 and over, after which white women have the highest rates).
The lowest rates of breast cancer are observed in Africa, and the highest rates are among white women in the USA (Moffett, 2003).

2.7 Culture and Breast Cancer

A range of cultural beliefs (for example, the role of sorcery, witchcraft and suspicion of medical services) may be important determinants of seeking traditional medical treatment for all chronic conditions (Vorobiof, Sitas, & Vorobiof, 2001; Wright, 1997). Moreover, the role that the traditional healers could play in their influence in the black community should be investigated (Pillay, 2002). These beliefs vary from place to place but are probably more relevant among some rural patients. Traditionally, black patients seek a cause for illness within the framework of indigenous beliefs (Mkhize, 2004); good health is perceived as consisting of a healthy body as well as a healthy social, emotional, and spiritual life. Women seek help first from a traditional healer as a way of dealing with the cause of the disease, and, in their views, this does not imply delaying medical treatment, which could be a contributing factor in breast cancer death (Seif & Aziz, 2000). Pillay (2002) emphasised that it must be acknowledged that the indigenous healer is well placed to promote screening programmes for breast cancer, especially in rural communities. According to WHO in Mkhize (2004), about 80% to 90% in developing countries rely on traditional healers for healthcare. The concept that a painless breast lump is a cancer and, therefore, a potentially fatal disease, is difficult for many black rural women to accept. Black patients living in the environment of an urban community, with exposure to Western medical standards of care, may have the necessary freedom of action and choice to obtain available medical attention (Vorobiof, Sitas, & Vorobiof, 2001).
2.8 Stress and Breast Cancer Diagnosis

In a study by Golden-Kreutz, Browne, Frierson and Andersen (2004), stress was assessed in women diagnosed with breast cancer. The cancer experience does not occur in isolation but rather in the context of the patient’s daily living (family, social, and occupational responsibilities) and other ongoing stressors (financial difficulties). It was reported that perceived stress declined with time. This is consistent with the study by Edgar, Rosberger, & Nowlis (1992), which reported a significant decline in distress (mood, anxiety) from diagnosis onward for women with breast cancer. However, even though perceived stress may decline with time, it is suggested that clinical interventions remain necessary and beneficial. For example, if quality of life outcomes are to be improved, the best time to offer psychological/behavioural interventions should be when stress is high—at the time of initial diagnosis and treatment. Despite any decline that occurs with time, it is the magnitude of initial stress that predicts later quality of life outcomes (increased negative affect; lower self-esteem/self-efficacy; and poorer physical health and sleep quality).

2.9 Health Behaviours and Breast Cancer

2.9.1 Issues of being overweight

Despite its lower incidence, breast-cancer mortality rates for Black women are higher than those for White women (Forshee, Storey, & Ritenbaugh, 2003; Ries et al., 2004). Obesity may contribute to this disparity (Coates Clark, Eley, Greenberg, Huguley, & Brown, 1990; Hunter & Willett, 1993; Jones, Foreman, Gonzalez, Chilton, Johnston, & Hajek, 1997; Ownby, Frederick, Russo, Brooks, Swanson, Heppner, Brennan, 1985). More than 77% of Black women are overweight or obese as compared to 46% of White women (Flegal, Carroll, Ogden, & Johnson, 2002). Studies show that obesity at diagnosis or post diagnosis is associated with shorter survival periods (Senie, Rosen, Rhodes, Lesser, & Kinne, 1992;
Simon & Severson, 1997). Although weight loss or prevention of further weight gain could benefit many breast cancer patients (Boyd, Campbell, Germanson, Thomson, Sutherland, & Meakin, 1981; Chlebowski, Aiello, & McTiernan, 2002; Newman, Miller, & Howe, 1986; Senie, Rosen, Rhodes, Lesser, & Kinne, 1992), it is often an elusive goal. Studies of White and Black women show that rather than lose weight, most patients gain weight during the course of chemotherapy treatments (Demark-Wahnefried, Rimer, & Winer, 1997; Stolley, Sharp, Wells, Simon & Schiffer, 2006). This weight gain is related to time since diagnosis, postmenopausal status, adjuvant chemotherapy, current energy intake, and physical activity. These results are concerning given the high likelihood that many Black women are already overweight or obese at time of diagnosis.

### 2.9.2 Issues of dietary practice and exercise patterns

There is some thought that changing behaviours that contribute to obesity could benefit breast cancer survivors (Demark-Wahnefried Morey, Clipp, Pieper, Snyder, Sloane, & Cohen, 2003; Rock & Demark-Wahnefried, 2002). In particular, efforts to eat a higher quality and lower calorie diet and to increase physical activity may help to reduce risk for breast cancer recurrence (Chlebowski et al., 2002), secondary cancers (American Cancer Society, 2003), and co-morbid conditions and improve quality of life. Studies support anecdotal evidence that a breast cancer diagnosis may promote self-initiated changes in health behaviours (Maunsell, Drolet, Brisson, Robert, & Deschenes, 2002; Patterson, Neuhouser, Hedderson, Schwartz, Standish, & Bowen, 2003; Reardon & Aydin, 1993; Spencer, Carver, & Price, 1998; Taylor, Lichtman, & Wood, 1984). Participation in behavioural interventions may also promote healthful behaviour changes among breast cancer survivors (Berglund, Bolund, Gustafsson, & Sjoden, 1994; Goodwin, Esplin, Butler, Winocur, Pritchard, Brazel, Gao, & Miller, 1998; Mock, Dow, Meares, Grimm, Dienemann, Haisfield-Wolfe, Quistasol, Mitchel, &
Making health behaviour changes following a breast-cancer diagnosis may contribute to improved survival, both in terms of time and quality of life. Research (Stolley, Sharp, Wells, Simon & Schiffer, 2006) showed that breast-cancer survivors are motivated to make behaviour changes but are often confronted with numerous barriers that interfere with this process. In helping Black breast-cancer survivors succeed in adopting more healthful diet and physical activity patterns, practitioners must incorporate the specific facilitators and barriers experienced by women.

2.10 The World Conference on Breast Cancer

The World Conference on Breast Cancer was started in 1997. Its goal was to provide an international and multi-disciplinary forum where all the issues around breast cancer can be addressed, a very different mandate than that of most breast cancer conferences which focus solely on the scientific model (http://www.worldbreastcancerconf.ca/wcbchome.html).

This organisation often points to environmental causes of cancer, and pushes for universal access to care and healthful living conditions rather than focusing on mammograms. The Conference calls for global action in response to these concerns, and is committed to seeing that the voices of everyone affected by the disease be heard. The 2002 Conference placed special emphasis on women from developing countries, emerging nations and lower economic groups. International presenters offer a more complete picture of the aetiology and the consequences of breast cancer. Moffet (2003) stated that in 1999, a Ghanaian woman
gave an address titled ‘Cancer and Power’ in which she noted that the greatest risk factor facing women living in third world poor countries is living in third world countries, and that powerlessness to change the “national inequalities” that force people to inhabit unsafe and unhealthy environments is the leading cause of cancer today. The address relocated risk factors away from the particular genetic body, to the political, geographic and economic environments (Eisenstein, 2001). Further, it engages in a healthy critique of the medical establishment and corporate interest in sponsoring initiatives around the disease (Moffet, 2003).

2.11 Perceptions of the Religion on breast cancer

Holt, Schulz and Wynn (2009) state that researchers (for example, Chatters, Taylor, & Lincoln, 1999; Levin & Taylor 1997) are attempting to understand the socio-cultural factors (such as the importance of family, racial/ethnic affiliation, religiousness/ spirituality, fatalism, distrust of the health care system) that influence disease morbidity and mortality, and there is an increased focus on culturally appropriate health promotion. With this movement has come increased attention to the role of religiousness in health.

Religion refers to ‘an organized system of beliefs, practices, rituals, and symbols’, while spirituality refers to ‘one’s transcendent relationship to some form of higher power’ (Thoresen, 1998, in Holt, Caplan, Schulz, Blake, Southward & Buckner, 2009). Religiosity may be seen as a component of spirituality, as spirituality refers to a broader construct than religiosity. Religion and the church play an important role in the lives of many Africans as well as African Americans. This group, on average, tends to be more religiously involved than other demographic groups (Chatters, Taylor, & Lincoln, 1999). This is true for African American women, particularly those who are older (Levin & Taylor, 1997). As Lincoln and
Mamiya (1990) note, that much of black culture was forged in the heart of black religion. The church is often used as a venue for the delivery of health information and services (Stillman, Bone, Rand, Levine, & Becker, 1993; Weinrich, Holdford, Boyd, Creanga, Cover, Johnson, Frank-Stromborg, & Weinrich, 1998).

2.12 The Religion–Health Connection

The association between religiousness and health is well established (Koenig, McCullough, & Larson, 2001; Levin, 2001). These reviews conclude that although some studies find negative or no associations between religiousness and health (Holt, Lukwago & Kreuter, 2003); the weight of the evidence suggests that there is a positive association between religiousness and health-related outcomes and disease states. These include but are not limited to heart disease, hypertension, cancer (breast cancer), health-related behaviours, and mortality (Koenig et al., 2001).

The specific mechanisms of the religion–health connection are relatively unknown. Conceptual models and theory in religion and health focus on various mechanisms or factors that are proposed to mediate the association between religiousness and health. Factors such as lifestyle, social support, and positive self-perceptions are included among these mechanisms (Chatters, 2000). One particular model proposes that religiousness affects health through factors such as social support, positive health behaviours, and positive psychological states (Oman & Thoresen, 2002). Another model discusses the role of healthy lifestyle, social integration/support, comfort/religious coping to deal with stressors, and theodicy, which involves finding meaning in why things happen. Holt, Schulz and Wynn (2009) also mentioned that examination of the religion–health connection may lead to areas of exploration and provide language for use in future item development. The powerful role of
God, having faith in God, and the role of prayer in one’s health were recognized with a near equal frequency as were specific health-related behaviours. Mental health also plays a role in physical health, being happy or thinking positively has an important impact and positive outcome in one’s health. In contrast, stress and worry could play an opposite role.

2.13 Young women's perceptions of breast cancer

Breast cancers in younger women tend to be larger, at a more advanced stage and more aggressive than those affecting older women (Dixon & Hortobagyi, 2000; Brennan, French, Houssami, Kirk, & Boyages, 2005). Young women (aged 20–29 years) with breast cancer have a 72.4 per cent mortality rate (Australian National Breast Cancer Centre, 2004). Due to the high incidence and mortality associated with breast cancer it is a significant public health concern in today’s society (Johnson & Dickson-Swift, 2008). Women’s views vary depending on their life experiences and perceptions and as a result it is difficult to generalize how young women feel about breast cancer and what they perceive their personal risk to be. Previous breast cancer research has identified two distinct groups of women, those who are overly worried and feel that they are at a high risk of getting breast cancer and those who think that it is not going to happen to them (Bryan, 2001; d’Agincourt-Canning, 2006; Siegel, Gluhoski, & Gorey, 1999). The general perception is that young women do not consider themselves at risk for developing breast cancer as they believe that it is a problem that affects old and older women.

One of the main reasons why young women do not perceive themselves to be at risk for breast cancer stems from a very low level of knowledge and understanding about the disease (Paul, Barratt, Redman, Cockburn, & Lowe, 1999; Vahabi, 2005). Family history has been repeatedly acknowledged as a very strong risk factor for the development of breast cancer.
(Calle, Martin, Thun, Miracle, & Heath, 1993; Williams, Clarke, & Borland, 2001; Foxcroft, Evans, Porter, 2004), and most women are able to correctly identify family history and age as the main risk factors (Buxton, Bottorf, Balneaves, Richardson, McCullum, Ratner, & Hack, 2003; Williams, Clarke, & Savage, 2002). Epstein, Lin, Audrain, Stefanek, Rimer, and Lerman (1997) found that increased media attention to breast cancer has heightened public awareness and knowledge of the familial aspect of breast cancer. Experiencing the illness of a close family member has resulted in many overly concerned young women attending breast clinics believing that they have breast cancer, even when their age and symptoms mean it is doubtful (Baum, Saunders, & Meredith, 1994).

2.14 Breast cancer detection programmes

To date, one of the major strategies that have been implemented in an attempt to reduce the incidence of and mortality from breast cancer is the development of effective breast cancer detection programmes. These programmes are the most effective means available and they encompass regular mammography screening (for women 45+ years old), regular clinical breast examinations (CBE) by the medical practitioner, and regular Breast Self Examinations (BSE), which are used for early detection of the cancer (Mason & White, 2008; American Cancer Society, 2003).

2.15 Breast Self Examination (BSE)

Breast Self Examination refers to a woman being aware of the normal look and feel of her breasts and looking for changes in size or shape of the breasts, the presence of lumps, skin dimpling, redness, discharge or unusual pain (American Cancer Society, 2007; Mason & White, 2008; Cancer Association of South Africa, 2006). Many of the cancer organizations consider Breast Self Examination as an important early detection method as it allows women
to become familiar with their breasts and learn what is normal and abnormal (The Breast Cancer Advocacy Coalition’s, 2008; American Cancer Society, 2007; WHO, 2008). For younger women, this is often the only method that is available to them to detect abnormal changes at an early stage due to the inaccuracy and ineffectiveness of other screening tests (Crossing & Manaszewicz, 2003), due to greater breast tissue density (Carney, Miglioretti, Yankaskas, Kerlikowske, Rosenberg & Rutter, 2003; Rosenberg & Levy-Schwartz, 2003).

Regular Breast Self Examination is a cost-effective, non-invasive, convenient, private and simple method (Ozturk et al, 2000; Ku, 2004). It has been associated with a reduction in primary tumour size and, consequently, more conservative treatment that requires no specific equipment (Kurebayashi, 1994; Ozturk et al, 2000; Hill, 1988). Despite these benefits, only 18 per cent to 36 per cent of women actually perform Breast Self Examination (Ashton, Karnilowicz & Fooks, 2001).

### 2.16 Perceptions of Breast Self Examination

There is a significant difference in the perception of the risk and effect that such perception has on Breast Self Examination between age groups (Johnson & Dickson-Swift, 2008). Older women who have a higher perception of risk are more likely to undertake regular Breast Self Examinations, whereas there is no correlation found between young women and perceived risk in association with Breast Self Examination (Johnson & Dickson-Swift, 2008). This could be because it is well known by women that breast cancer risk increases with age and young women do not feel that they are at risk until they reach an older age. Therefore, they see no need to undertake regular Breast Self Examination.

Whilst mammography is not an accurate screening tool for young women it is important that young women are ‘targeted’ for education programmes that provide information about what
is normal and abnormal and that raise awareness (Baum, Saunders, & Meredith, 1994) as well as exploring their current knowledge (Vahabi, 2005). There is a significant lack of information and research that addresses young women’s knowledge and perceived barriers to breast cancer information. Although some studies show that young women have a high level of knowledge (Johnson & Dickson-Swift, 2008), the definition of ‘young’ used for recruitment to these studies began at 40 years of age. Focusing on the younger end of those most at risk is common in breast cancer research (Siegel, Gluhoski, & Gorey, 1999; Dunn & Steginga, 2000), however, there is very little research exploring the knowledge of women under 40 years. A study by Friedman, Neff, Webb and Latham (1998) identified barriers to mammography use and found that younger women (identified as women at the younger end of those most at risk) cited factors such as being too busy as their reason for not utilizing this screening tool. Young women are not accessing or using breast cancer information. Generally it can be said that there is a distinct shortage of research examining breast cancer in young women. Despite some studies focusing on prognosis and diagnosis for young women (Kroman, Jensen, Wohlfahrt, Mouridsen, Andersen, & Melbye, 2000) there is little information available that covers knowledge and perceptions of the disease.

2.17 Challenges of Breast Cancer Screening

In spite of the evidence supporting the effectiveness of early detection technology in breast cancer, women do not take advantage of this life-saving technology (Walker, Adam & Walker, 2004). In South Africa, the reason of women not taking this advantage could be that screening, particularly mammography, is very expensive, so very little has been carried out (Walker, Adam & Walker, 2004). Moreover, the Breast Cancer Advocacy Coalition (2008) argued that breast health services in South Africa are fragmented and not comprehensive. One of the contributing factors is that breast health and breast cancer are not regarded as
public health priorities both nationally and provincially. Therefore, the coalition advocated for an accessible breast health service for all, specifically a comprehensive breast health service that is equitable, available, affordable and accessible to all women in South Africa.

2.18 Clinical Breast Examination

Clinical breast examination (the physical examination of a woman’s breasts by a medical or allied health professional) is a screening method available to all women (Mason & White, 2008). It is rarely offered in clinical practice (Crossing & Manaszewicz, 2003) however, possibly due to the lack of strong evidence demonstrating its effectiveness in decreasing breast cancer mortality (Humphrey, Helfand, Chan, & Woolf, 2002).

2.19 Breast Self Examination Controversy

Breast Self Examination remains the most controversial of commonly recommended strategies for breast cancer screening (Abdel-Fattah, Zaki, Bassili, El-Shazly & Tognoni, 2000). Although Breast Self Examination has been widely promoted, some researchers have been unable to find evidence that it reduces mortality from breast cancer (Thomas, Gao, Self, Allison, Tao, & Mahloch, 1997; Semiglazov, Sagaidak, & Mikhailov, 1993; Semiglazov, Manikhas, Moiseenko, Protosenko, Kharikova, & Seleznev, 2003; Nekhlyudov & Fletcher, 2001). Data from the studies that were conducted in China (1997) and Russia (1993) found no and did not suggested any beneficial effect of Breast Self Examination in reducing breast cancer mortality. They, however, did suggest increased harm in terms of increased numbers of benign lesions identified and increased number of biopsies performed. These findings led to the review in 2001 by the Canadian Task Force on Preventive Health Care (CTFPHC), which led to the recommendation that routine teaching of Breast Self Examination be excluded from the periodic health exam of women (Bexter & CTFPHC, 2001). Moreover,
conclusion drawn was that programs to encourage Breast Self Examination, in the absence of mammography, would be unlikely to reduce mortality from breast cancer (Thomas, Gao, Ray, Wang, Allison, & Chen, 2002). Therefore, women who choose to practice Breast Self Examination should be informed that its efficacy is unproven and that it may increase their chances of having a benign breast biopsy.

Rosolowich and Winnipeg (2006) mentioned that since the release of recommendations of Breast Self Examination by the CTFPHC, women have been confused about the value of regular Breast Self Examination. Some organizations and researchers advise that women should have breast awareness, be informed on the benefits as well as the limitations of Breast Self Examination, and report any changes indicative of breast cancer (ACS, 2003; Nekhlyudov & Fletcher, 2001, Champion, 2003). American Cancer Society has changed its Breast Self Examination recommendations. Instead of a recommended breast cancer screening tool, the ACS (2008) now views Breast Self Examination as an optional screening tool. Women who choose to do Breast Self Examination should receive instruction and have their technique reviewed on the occasion of a periodic health examination. It is acceptable for women to choose not to do Breast Self Examination or to do Breast Self Examination irregularly (Smith, et al, 2003).

Despite scientific evidence suggesting an overall harmful outcome from teaching Breast Self Examination, the recommendations were immediately criticized by breast cancer advocacy groups (Miller, 2001; Nekhlyudov & Fletcher, 2001; Lerner, 2002).

To increase the practice of Breast Self Examination, it is important to examine the decision-making processes underlying women’s Breast Self Examination behaviour. Although some
studies have revealed a predictive role for self-identity (Armitage & Conner, 2001), others may indicate that engaging in health promoting behaviours such as Breast Self Examination does not play a salient role in the self-concepts of younger women as younger women may not perceive breast cancer as a currently important consideration in their lives (Mason & White, 2008).

2.20 Theoretical Frameworks on Breast Cancer Screening

Tolma, Reininger, Evans and Ureda (2006) state that several studies have examined factors influencing breast cancer screening behaviours and have consistently concluded that women who are better educated and more affluent are more likely to go for screening. In addition to the above factors, women who are least likely to have had a recent mammogram are those with no usual source of care; with no health insurance. Based on a recent review, less than one third (28%) of the intervention studies reviewed and that took place between 1960 and 1997 based their research design or interpretation of the results on a sound theoretical framework (Meissner et al., 1998). The most predominant theory used was the Health Belief Model. Other theories that were used were the Social Learning Theory, Social Cognitive Theory, Theory of Planned Behaviour (TPB), and Theory of Reasoned Action.

2.20.1 Social Learning Theory

Bandura’s Social Learning Theory has been applied extensively to understanding the context of health behaviours and behavioural modification, including self-efficacy in Breast Self Examination (Su, Ma, Seals, Tan, & Hausman, 2006). Using his theory, a few studies in Chinese populations have examined the effectiveness of health-related interventions. For instance, learning behaviours through observation of others seems to be a reinforcing factor,
whereas acquisition of skills followed by increased self-efficacy to perform screenings seems to be an enabling factor (Liang, Yuan, Mandelblatt, & Pasick, 2004).

**2.20.2 Theory of Reasoned Action**

According to the Theory of Reasoned Action, intention is the immediate antecedent of the behaviour, and it is assumed to capture the motivation to behave in a particular way (Fishbein & Ajzen, 1975). In turn, intention is determined by two factors; attitude toward the behaviour and subjective norms. Attitudes are formed by salient beliefs about the expected outcomes derived from the performance of behaviour and the subsequent evaluation of realization of those outcomes. Subjective norms consist of the person’s perception of social pressure to perform or not to perform the behaviour under consideration, based on significant individuals’, known as referents, approval or disapproval of performing the behaviour (Ajzen, 1991, in Mason & White, 2008).

Tolma, Reininger, Evans and Ureda (2006) cited Ajzen (1988) that the Theory of Reasoned Action is built on the assumption that most of the behaviours are under volitional control, an assumption that these authors argue that it is not true for all behaviours. To overcome the weakness of the model, Ajzen (1988) introduced to the model the construct of perceived behavioural control. Personal behavioural control beliefs can be divided into two categories: (a) internal factors such as acquisition of information, skills, and abilities, as well as emotions and compulsions, and (b) external factors, that is, situational and environmental factors external to the individual. The more resources and opportunities individuals think they possess and the fewer obstacles or impediments they anticipate, the greater their perceived behavioural control is over their behaviour. Perceived behavioural control can predict
behaviour directly, only when it reflects actual control with some degree of accuracy (Ajzen, 1988, cited by Tolma, Reininger, Evans and Ureda, 2006).

2.20.3 Theory of Planned Behaviour

The TPB is an extension of the Theory of Reasoned Action. The Theory of Planned Behaviour has been found to be a useful model in predicting intention and behaviour. This theoretical framework is appropriate to study breast cancer screening for two reasons. First, the TPB allows for an understanding of the cultural perspectives affecting the behaviour (Poss, 2001) because it provides a methodology for the elicitation of the salient cultural beliefs of the population under investigation. Second, breast cancer screening behaviour is not fully under volitional control because it is influenced by environmental factors; thus, perceived behavioural control becomes a valuable theoretical construct. The construct of self-efficacy is added to the TPB framework. Self-efficacy refers to the confidence one feels about performing a particular behaviour, including confidence in overcoming the barriers to achieve that behaviour (Bandura, 1986, in Tolma, Reininger, Evans & Ureda, 2006). Self-efficacy has the greatest impact on intention controlling for the other constructs of the TPB. Moreover, the strong link between self-efficacy and intention has been empirically established (Terry & O’Leary, 1995). Self-efficacy is concerned not with the skills themselves but with the judgments about what one can do with those skills.

There is less focus on the achievement of the goal or the actual control of the behaviour (Bandura, 1991, in Yu, Song, Seetoo, Cai, Smith & Oakley, 2007; Tolma, Reininger, Evans & Ureda, 2006). On the other hand, perceived behavioural control is concerned with how easy or difficult the behaviour will be based on the presence of the skills. This indicates more focus on the actual control of the behaviour (Ajzen, 1988, cited by Tolma, Reininger, Evans
and Ureda, 2006). According to Bandura (1986), there are four ways to increase self-efficacy. These are mastery of the behaviour through the successful performance of successive steps, vicarious observation, verbal persuasion and reinforcement, and management of emotional arousal. Women who feel that engaging in health promoting behaviours, such as Breast Self Examination, is important to their self-concept should have stronger intentions to perform Breast Self Examination (Mason & White, 2008).

Younger women who hold more positive attitudes towards the behaviour, experience greater social pressure to engage in the behaviour and perceive higher levels of behavioural control regarding their ability to perform the behaviour are more likely to intend to engage in Breast Self Examination (Orbell, Hodgkins, & Sheeran, 1997). In addition, younger women with stronger intentions and greater control over performing Breast Self Examination behaviour are more likely to engage in the behaviour. The significant findings for intentions and perceptions of control in predicting Breast Self examination behaviour point to the potential for considering implementation intentions (e.g. encouraging women to plan when and where they will perform Breast Self Examination) as these have been shown to increase levels of Breast Self Examination by providing a mechanism that facilitates the retrieval of intentions from memory (Prestwich, Conner, Lawton, Bailey, Litman, & Molyneaux, 2005).

2.20.4 The Health Belief Model

The Health Belief Model (Hochbaum, 1958) is a psychological model that attempts to explain and predict health behaviours. This is done by focusing on the attitudes and beliefs of individuals. The model was first developed in 1958 by social psychologists Hochbaum, Rosenstock and Kegels working in the U.S. Public Health Services. It has frequently been applied to many illnesses including breast cancer screening. The model stipulates that health-
related behaviour is influenced by a person’s perception of the threat posed by a health problem and by the value associated with his or her action to reduce that threat (Dündar, Özmen, Öztürk, Haspolat, Akyıldız, Çoban & Çakıroğlu, 2006). In this model, the individual perceives herself at risk for disease and perceives the disease or associated sequelae as serious or severe (Kohler, Grimley & Reynolds, 2003; Janz, Champion & Strecher, 2002; Redding, Rossi, Rossi, Velicer & Prochaska, 2000). The following concepts were considered predictors of the health behaviour of Breast Self Examination:

- **Perceived seriousness**: how threatening the condition/disease is viewed, that is, having at least moderate severity on her lifestyle, in order to practice Breast Self Examination. According to the HBM, a woman’s emotions and beliefs about breast cancer may interfere with her perception of the degree of seriousness, thereby affecting her performance or practice of Breast Self Examination.

- **Perceived benefits**: the degree to which one believes taking a specific action to prevent a condition will be useful. The more beneficial one believes a behaviour to be, the more it will be practiced. The norms and pressures within one’s social group may influence perceived health beliefs.

- **Perceived barriers**: aspects that inhibit the performance of Breast Self Examination. The more barriers perceived with performing Breast Self Examination, the less frequently it will be performed. Barriers associated with Breast Self Examination are inconvenience, pain, fear of finding a lump, and embarrassment.

- **Health motivation**: a cue or cues to actions that promote the decision making to perform Breast Self Examination. Media reports about preventing breast cancer, illness of a family member, and perceived benefits are examples of cues (Graham, 2002).
2.20.5 The Precaution Adoption Process Model

Originally, Weinstein (1988) discussed stage aspects of precaution adoption in some detail, with special attention to the role played by perceptions of personal vulnerability. That discussion lead to propose the *precaution adoption process* model (Weinstein & Sandman, 1992). The core of this model is a sequence of five stages: “unaware of the issue,” “aware of the issue but not personally engaged,” “engaged and deciding what to do,” “planning to act but not yet having acted,” and “acting.” If the conclusion of the decision-making stage is that action is not needed, this outcome represents an additional stage, although not a stage along the route to action. For completeness, a seventh stage was added, “maintenance,” to indicate the repetitions that may be required after preventive actions are first performed. Maintenance is not a problem when actions need not be continued over time, as in testing for radon, obtaining a lifetime vaccination, or removing asbestos from a home, but it is certainly an important consideration for life-style changes that are difficult to maintain (Weinstein & Sandman, 1992).

This model also addresses the concept of perceived threat as it relates to behaviour change. This model takes a staged approach to address how individuals make decisions and translate them into action. It involves multiple components that address how information is received and stresses the importance of the credibility of the messenger. It also addresses communications with others linking to social networks and social support systems and takes into account that personal susceptibility must be acknowledged. In addition, the concept of benefits versus costs, which is also common in other health education theories, is addressed in this model (Redding, Rossi, Rossi, Velicer & Prochaska, 2000).
2.20.6 The Social Cognitive Theory

Use of the Social Cognitive Theory to convey messages regarding collectivism, in which the family or group is the basic unit of society, can benefit health education programmes. This theory, which addresses the concept of reciprocal determinism, focuses on the interaction of the person, environment, behaviour and changes that occur in each dimension as a result of changes in other dimensions (Baranowski, Perry & Parcel, 2002). Focusing on outcome expectations for an entire collective group or community, as well as interpersonal relationships within the collective group (for example, family, friends and church) may be more motivational than focusing on individual behaviour change (Resnicow, Braithwaite, Dilorio & Glanz, 2002). Using this strategy establishes that social network and support system that is a necessary component for behaviour changes.

2.21 The impact of relevant interventions

2.21.1 Culture and health beliefs

Challenges are presented when using conventional breast cancer intervention programmes with African women. Cultural and health beliefs of these women often differ from mainstream society, thus contributing to cancer disparities (Forte, 1995). It is imperative that interventions targeted at behavioural issues be conceptualized in the context of the culture of the targeted population. Thus, it is important that theory based culturally relevant interventions with tailored messages are implemented within minority populations (Agho, Mosley, Rivers & Parker, 2007). Two dimensions may be considered when discussing culturally relevant health education intervention: surface and deep structure (Resnicow, Braithwaite, Ahluwalia, & Baronowski, 1999). Surface structure involves tailoring materials and messages such as settings, language, and media channels, which pattern characteristics of the target population. This also involves using people or health educators to implement
messages so that they are appropriate and well received. The deep structure dimension pertains to the role of culture, psychosocial, environmental, and historical factors that influence health behaviours. Through this dimension, perceptions regarding cause of illness or specific behavioural risk factors associated with illness and environmental factors such as family, spirituality, economics, government and society, are all addressed to influence the behaviour of the targeted group.

The creation of support networks to sustain lifestyle changes is imperative when implementing health education interventions. The concept of social network is important. A social network is a social centred web of social relationships that has many characteristics ranging from how support is given and received, to how close the focal person is to other network members, and how well network members interact with each other. Utilizing existing social networks provides the opportunity to facilitate an emotional, informational and instrumental support service that promotes sustained lifestyle changes (Heaney & Israel, 2002).

2.21.2 Health Behaviour Awareness
The WHO emphasise the need for programmes of prevention to inhibit the entrenchment and spread of diseases of unhealthy lifestyles in communities of developing countries. A healthy lifestyle implies consistent health-conscious behaviour across a range of activities including dietary choice, substance use, exercise and preventive practices. Knowledge about health (or risk awareness) is an important factor in an informed choice concerning healthy lifestyle. For instance, the reduction of smoking and exercising can be attributed to growing awareness of the serious health risks (Peltzer, 2002).
2.22 Résumé

The fact that breast cancer has no exact known cause makes it difficult to come up with primary prevention. However, many factors have been identified which increase the risk of women in getting breast cancer. A commonly held view is that the causes of breast cancer are not fully understood, and some of what is known is contentious (Dreidger & Eyles, 2001). While there is a consensus that breast cancer is multi-factorially caused, there is disagreement about the relative role of environmental and lifestyle factors, particularly as with regards to oestrogenic activity.

To detect and help in prevention of breast cancer, many programmes have been implemented. Breast Self Examination is one of them, particularly for younger women, whom their breasts are not fully developed for mammography. However, they has been controversy regarding Breast Self Examination. Some researchers (Bexter & CTFPHC, 2001) argue that Breast Self Examination can actually cause harm than good, therefore; it has been recommended that women should be informed on the benefits as well as the limitations of Breast Self Examination. The next chapter will look into the research methodology and the sampling procedures utilised to select participants of this study.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction
This chapter contains information regarding the type of research and sampling procedures utilized in this study in order to investigate the knowledge and practice of Breast Self Examination among female high school learners.

3.2 Methodology and Design

3.2.1 Research Design
The study used a quantitative investigation of knowledge and practice of Breast Self Examination. This enabled a more accurate, honest and holistic investigation of this sensitive condition. The researcher used a pre-measurement and post-measurement single-group design, to ascribe differences between the pre- and post-measurements to the experimental intervention. The study consisted of female learners from a town high school with learners of different races as well as rural high schools with only black learners. The researcher offered Breast Self Examination educational program to the participants between the pre- and post-measurement periods.

3.2.2 Data Collection

3.2.2.1 Sampling Method
A non-probability purposive sampling technique was used to select the participants. Purposive sampling starts with a purpose in mind and the sample is thus selected to include
people of interest and excludes those who do not suit the purpose. This is the most important type of non-probability sampling. Researchers rely on their experience, ingenuity and/or previous research findings, to deliberately obtain units of analysis in such a manner that the sample may be regarded as being representative of the relevant population (Welman, Kruger, & Mitchell, 2005). The rationale for selecting this sampling technique for this study was based on the notion that breast cancer is the condition that affects mostly women. Furthermore, Breast Self Examination is the only method available for adolescent girls at this stage for early detection of breast cancer. The general rule for data collection is that participants have to be able to offer their views and opinions in a way that would help to uncover the nature and essence of the phenomenon being investigated (Osborne, 1990). The sample was focused on two groups: learners from multiracial high school with rather better facilities in town, as well as learners from rural disadvantaged high school. A total of 127 adolescent girls were selected. Fifty six girls were selected from School A in Empangeni; with twenty seven from grade 12 and twenty nine from grade 10. Seventy one girls were selected from School B at KwaDlangezwa Township; with thirty one girls from grade 12 and forty girls from grade 10. The participants were between the ages of 14 and 21 years from these two grades in both schools. They were grouped according to their schools and grades.

3.2.2.2 Instrument for Data Collection

A structured pre-test and post-test questionnaire was used. This questionnaire was adapted from the questionnaire in the study conducted by Pillay (2002). It included biographical data (date of birth, grade, residence (rural/urban), home language, race, religion), as well as close-ended questions which focused on breast self examination.
3.2.2.3 Procedure

The pre-test questionnaire was administered to the participants in the beginning before the programme was offered to assess the level of knowledge and understanding that they had about breast cancer and Breast Self Examination. The researcher was given a Life Orientation one hour time slot at each school, to offer the programme. Participants were required to tick the ‘Yes’ or ‘No’ boxes for their answers. They were also required to tick a box on questions with different responses provided to them, to choose from which most suited their responses (See Appendix C). The awareness programme was then offered immediately after the pre-measurement questionnaire. The post-test questionnaire was given to the respondents after a period of three months the programme was offered. This period of time was given for them to familiarize themselves with the feel and appearance of their breasts, so that they can notice any difference or change in the way their breasts looked and felt.

The researcher explained to all the respondents the procedure involved. All respondents were encouraged to be as honest as possible and work individually in the process of answering questions. The questionnaire was administered to all the respondents.

In the breast cancer awareness programme, respondents were invited to engage in a group discussion concerning the knowledge and understanding they had about breast cancer and Breast Self Examination. Their views were taken into account. The researcher facilitated the discussions using the data gathered from the questionnaires. After the discussions, the researcher then offered an instruction on how to perform a Breast Self Examination. The participants were also given the pamphlets displaying how to perform a Breast Self Examination (http://www.breastcancer.org/symptoms/testing/types/self_exam/bse_steps.jsp). See Appendix D.
3.2.3 Data Analysis

Data collected from the questionnaires was analysed quantitatively. The information obtained from the participants will be coded, categorised and presented in tables and graphs. For statistical purposes, Statistical Package for the Social Sciences (SPSS) was used to analyse data.

3.3 Ethical Considerations

The research was undertaken with the approval of the Department of Psychology and Research Ethics Committee of the University of Zululand. The management of the schools was informed of the nature of the study. Permission was asked and obtained from relevant persons in charge, to conduct the study at the mentioned schools (see Appendix B). Participants were provided with written information about the nature of the study. They were also given an opportunity to understand what the study aimed to achieve as well as were explained the right to or not to participate. The right to discontinue participation at any stage if they felt uncomfortable was explained to them. Confidentiality and anonymity were also ensured (see Appendix C).

3.4 Résumé

The purpose of the present study was to investigate the knowledge and practice of Breast Self Examination among high school adolescent girls. Data was gathered from a purposive sample of one hundred girls from two schools, using self-administered, closed-ended questionnaires. Various statistical analyses of the data were computed using the Statistical Package for the Social Sciences (SPSS). The next chapter will present the results of the study as well as the discussion of the results found from the study.
CHAPTER FOUR

DATA ANALYSIS

4.1 Introduction

This chapter presents results from the study about knowledge and practice of Breast Self Examination by high school female adolescent learners. These results are from two schools that were chosen for the comparison of the knowledge and practice of Breast Self Examination by these learners. Respondents were asked questions that sought to ascertain personal information such as their age, grade, race, residence, home language and religion. The structured questions were meant to determine the relationship between demographic characteristics and the knowledge and practice of Breast Self Examination. The results are explained in terms of pre-test and post test of these two schools.

4.2 Results of the study shown in tables

A total of 127 participants ranged between age 14 and 21 years (mean age = 16.65 years), with the mean age of the 71 High School A learners being 16.80 years and that of the 56 High School B learners being 16.50 years. One hundred and four (81.9%) were Black; fifteen (11.8%) were White; three (2.4%) were Coloured; and five (3.9%) were Indian. Sixty nine (54.3%) were Grade 10 learners, and fifty six (44.1%) resided in urban areas. The participants’ social and demographic characteristics are presented in Table 4.1.
**TABLE 4.1:** Socio-demographic characteristics of participants

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>N</strong></td>
<td><strong>%</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Age (years) (n = 127)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;14</td>
<td>10</td>
<td>7.9</td>
<td></td>
</tr>
<tr>
<td>15-17</td>
<td>82</td>
<td>64.6</td>
<td></td>
</tr>
<tr>
<td>18-20</td>
<td>34</td>
<td>26.8</td>
<td></td>
</tr>
<tr>
<td>&gt;21</td>
<td>1</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>127</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Race (n = 127)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>104</td>
<td>81.9</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>15</td>
<td>11.8</td>
<td></td>
</tr>
<tr>
<td>Coloured</td>
<td>3</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Indian</td>
<td>5</td>
<td>3.9</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>127</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Level of Education (n = 127)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 10</td>
<td>69</td>
<td>54.3</td>
<td></td>
</tr>
<tr>
<td>Grade 12</td>
<td>58</td>
<td>45.7</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>127</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Residence (n = 127)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>56</td>
<td>44.1</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>71</td>
<td>55.9</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>127</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.2 shows awareness of breast cancer and practice of Breast Self Examination in High School A Grade 10/12 pre and post test breakdown. Before the programme, grade 12 learners were significantly more aware of cancer, breast cancer, and Breast Self Examination. These learners significantly practiced Breast Self Examination more than grade 10 learners. Analysis of item 4 was performed on reduced samples (N = 41) since the response on this
item depended on the “yes” answer of the item before it. After the programme, the learners from both grades were aware of cancer; breast cancer; Breast Self Examination; and that doctors could test for breast cancer. However, there was no statistical significance observed.

**TABLE 4.2:** High School A Pre & Post test results by Grade

<table>
<thead>
<tr>
<th></th>
<th>Grade 10 (n=40)</th>
<th>Grade 12 (n=31)</th>
<th>Total (N=71)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heard of cancer</td>
<td>82.5 (100)</td>
<td>100 (100)</td>
<td>91.3 (100)*</td>
</tr>
<tr>
<td>Heard of breast cancer</td>
<td>82.5 (100)</td>
<td>100 (100)</td>
<td>91.3 (100)*</td>
</tr>
<tr>
<td>Know about BSE</td>
<td>37.5 (100)</td>
<td>83.9 (100)</td>
<td>60.7 (100)**</td>
</tr>
<tr>
<td>Practice BSE (N=41)</td>
<td>26.7 (47.5)</td>
<td>92.3 (80.6)</td>
<td>59.5 (64.1)**</td>
</tr>
<tr>
<td>Know doctors can test for</td>
<td>85.0 (100)</td>
<td>96.8 (100)</td>
<td>90.9 (100)</td>
</tr>
<tr>
<td>breast cancer?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NB: Post test percentage results are shown in brackets*

* p<0.05; ** p<0.0005 for pre test percentage results.

Table 4.3 shows awareness of breast cancer and practice of Breast Self Examination in High School B Grade 10/12 pre and post test breakdown. There was no significant difference between Grade 10 and 12 learners since both grades were aware of cancer and breast cancer, before and after the programme. However, more Grade 12 learners were aware of Breast Self Examination. After the programme in both grades, there was an increase in the awareness of cancer; breast cancer; Breast Self Examination; and that doctors could test for breast cancer. However, this increase was not enough to reach statistical significance.
TABLE 4.3: High School B Pre & Post test results by Grade

<table>
<thead>
<tr>
<th></th>
<th>Grade 10 (n = 29) %</th>
<th>Grade 12 (n = 27) %</th>
<th>Total (N = 56) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heard of cancer</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td>100 (100)</td>
</tr>
<tr>
<td>Heard of breast cancer</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td>100 (100)</td>
</tr>
<tr>
<td>Know about BSE</td>
<td>58.6 (100)</td>
<td>81.5 (100)</td>
<td>70.1 (100)</td>
</tr>
<tr>
<td>Practice BSE (N = 39)</td>
<td>58.8 (58.6)</td>
<td>36.4 (85.2)</td>
<td>47.6 (71.9)</td>
</tr>
<tr>
<td>Know doctors can test for breast cancer</td>
<td>96.6 (100)</td>
<td>100 (100)</td>
<td>98.3 (100)</td>
</tr>
</tbody>
</table>

NB: Post test percentage results are shown in brackets

No Statistical significance

Table 4.4 shows awareness of breast cancer and practice of Breast Self Examination and the influence of race in High School B. There was no significant difference on all races on items 1 & 2 since they all had heard of cancer and breast cancer before and after the programme. There was a significant difference in their knowledge of Breast Self Examination. White learners all knew what Breast Self Examination was, before the programme was offered. The lowest percentage was observed in Black learners on their Breast Self Examination knowledge.
Table 4.4: High School B Pre and Post test by Race

<table>
<thead>
<tr>
<th></th>
<th>Black (n=33)</th>
<th>White (n=15)</th>
<th>Coloured (n=3)</th>
<th>Indian (n=5)</th>
<th>Total (N=56)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Heard of cancer</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td>100 (100)</td>
</tr>
<tr>
<td>Heard of breast cancer</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td>100 (100)</td>
</tr>
<tr>
<td>Know about BSE</td>
<td>54.5 (100)</td>
<td>100 (100)</td>
<td>66.7 (100)</td>
<td>80.0 (100)</td>
<td>75.3 (100)*</td>
</tr>
<tr>
<td>Practice BSE (N = 39)</td>
<td>44.4 (60.6)</td>
<td>33.3 (93.3)</td>
<td>100 (100)</td>
<td>75.0 (60.0)</td>
<td>63.2 (78.5)</td>
</tr>
<tr>
<td>Know doctors can test for breast cancer</td>
<td>96.9 (100)</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td>100 (100)</td>
<td>99.2 (100)</td>
</tr>
</tbody>
</table>

NB: post test percentage results are shown in brackets
* p < 0.05

Table 4.5 reflects the influence of quality of educational environment on breast cancer awareness before the programme. High School B learners were significantly more aware, than High School A learners, of cancer; breast cancer; knew women with breast cancer; as well as that it can be successfully treated. High School A learners significantly practiced Breast Self Examination more and were significantly more aware of monthly practice of Breast Self Examination.
### TABLE 4.5: High School A versus High School B results

<table>
<thead>
<tr>
<th></th>
<th>High School A (N =71)</th>
<th>High School B (N=56)</th>
<th>Total (N=127)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heard of cancer</td>
<td>90.1</td>
<td>100</td>
<td>95.1*</td>
</tr>
<tr>
<td>Heard of breast cancer</td>
<td>90.1</td>
<td>100</td>
<td>95.1*</td>
</tr>
<tr>
<td>Know women with breast cancer</td>
<td>30.9</td>
<td>50.0</td>
<td>40.5*</td>
</tr>
<tr>
<td>Choose can be successfully treated (than lose the breast)</td>
<td>19.7</td>
<td>42.9</td>
<td>31.3*</td>
</tr>
<tr>
<td>Know about BSE</td>
<td>57.7</td>
<td>69.6</td>
<td>63.7</td>
</tr>
<tr>
<td>Practice BSE (N=80)</td>
<td>68.3</td>
<td>46.2</td>
<td>57.3*</td>
</tr>
<tr>
<td>Practice BSE once a month than once a week (N=46)</td>
<td>28.6</td>
<td>27.8</td>
<td>28.2**</td>
</tr>
<tr>
<td>Know doctors can test for breast cancer</td>
<td>90.1</td>
<td>98.2</td>
<td>94.2</td>
</tr>
<tr>
<td>Prefer to consult a doctor (than pray about the condition) about a lump in her breast</td>
<td>88.7</td>
<td>96.4</td>
<td>92.6</td>
</tr>
</tbody>
</table>

* p < 0.05; ** p < 0.005

Table 4.6 reflects the influence of the breast cancer awareness programme on the responses that the learners gave. There is a statistical significant difference in their responses before as well as after the awareness programme was offered, as the learners’ responses increased in the post test. There was also an increase in their practice of Breast Self Examination, although the responses did not reach the statistical significance. Refer to Appendix A.
### TABLE 4.6: The influence and effectiveness of the awareness programme on participants responses

<table>
<thead>
<tr>
<th></th>
<th>Pre test (%&lt;sup&gt;n=127&lt;/sup&gt;)</th>
<th>Post test (%&lt;sup&gt;n=127&lt;/sup&gt;)</th>
<th>Total (%&lt;sup&gt;N=254&lt;/sup&gt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heard of cancer</td>
<td>94.5</td>
<td>100</td>
<td>97.3**</td>
</tr>
<tr>
<td>Heard of breast cancer</td>
<td>94.5</td>
<td>100</td>
<td>97.3**</td>
</tr>
<tr>
<td>Know women with breast cancer</td>
<td>39.4</td>
<td>39.4</td>
<td>39.4</td>
</tr>
<tr>
<td>Choose can be successfully treated (than lose the breast)</td>
<td>29.9</td>
<td>92.9</td>
<td>61.4***</td>
</tr>
<tr>
<td>Know about BSE</td>
<td>62.9</td>
<td>100</td>
<td>81.5***</td>
</tr>
<tr>
<td>Practice BSE (N=80)</td>
<td>57.5</td>
<td>66.1</td>
<td>61.8</td>
</tr>
<tr>
<td>Practice BSE once a month than once a week (N=46)</td>
<td>28.3</td>
<td>54.8</td>
<td>41.5*</td>
</tr>
<tr>
<td>Know doctors can test for breast cancer</td>
<td>93.7</td>
<td>100</td>
<td>96.9**</td>
</tr>
<tr>
<td>Prefer to consult a doctor (than pray about the condition) about a lump in her breast</td>
<td>92.1</td>
<td>100</td>
<td>96.1**</td>
</tr>
</tbody>
</table>

* p< 0.05; ** p< 0.01; *** p< 0.0005

#### 4.3 Results of the study shown in diagrams

##### 4.3.1 HIGH SCHOOL A Pre and Post test

All Grade 12 learners from School A (100 %) have heard of cancer and breast cancer. However, 17.5% of Grade 11 learners did not know what cancer as well as what breast cancer was. This shows a significant difference between educational level and the knowledge. After the awareness programme was offered to the learners, there was a change in their responses. All the learners from both grades had awareness about cancer and breast cancer. The responses are presented in the graphs below.
4.3.1.1 Have you heard of Cancer and Breast Cancer?

4.3.1.2 Do you know of women who have or have had Breast Cancer?
4.3.1.3 What happens to women with Breast Cancer?

![Bar chart showing the outcomes for women with breast cancer.](chart1.png)

4.3.1.4 Do you know that you can do breast examination yourself to detect problems early?

![Bar chart showing breast examination knowledge.](chart2.png)
4.3.1.5 Do you practice breast self examination?

4.3.1.6 How often?
4.3.1.7 Do you know doctors can test for Breast Cancer?

4.3.1.8 What action would you take if you discovered a lump in your breast?
4.3.2 HIGH SCHOOL B Pre and Post test (Race)

The responses from High School B learners are categorised into race as well as education. This is due to the fact that it was a multiracial school, which was not the case in High School A as it only had learners of the same race.

All the learners from all races had heard of cancer as well as breast cancer. Therefore, there was no significant difference in their responses in both pre test and post test.

4.3.2.1 Have you heard of Cancer and Breast Cancer?

![Bar graph showing the number of people who have heard of cancer and breast cancer by race and test type. The graph displays data for Black, White, Coloured, and Indian learners in both pre and post tests.](image-url)
4.3.2.2 Do you know of women who have or have had Breast Cancer?

4.3.2.3 What happens to women with Breast Cancer?
4.3.2.4 Do you know that you can do breast examination yourself to detect problems early?

4.3.2.5 Do you practice breast self examination?
4.3.2.6 How often?

4.3.2.7 Do you know doctors can test for Breast Cancer?
4.3.2.8 What action would you take if you discovered a lump in your breast?
4.3.3 HIGH SCHOOL B Pre and Post test (Education)

The learners from both grades all had heard of cancer and breast cancer, before and after the programme. Therefore, there was no significant difference in their responses.

4.3.3.1 Have you heard of Cancer and Breast Cancer?

![Bar chart showing the number of people who have heard of cancer and breast cancer before and after the programme.]
4.3.3.2 Do you know of women who have or have had Breast Cancer?

4.3.3.3 What happens to women with Breast Cancer?
4.3.3.4 Do you know that you can do breast examination yourself to detect problems early?

![Bar chart showing the number of people in different grades (Grade 10, Grade 12) pre-test and post-test regarding whether they know they can do breast examination to detect problems early. The chart includes categories for 'No' and 'Yes'.](chart1)

4.3.3.5 Do you practice breast self examination?

![Bar chart showing the number of people in different grades (Grade 10, Grade 12) pre-test and post-test regarding whether they practice breast self examination. The chart includes categories for 'No' and 'Yes'.](chart2)
4.3.3.6 How often?

![Bar chart showing the frequency of breast cancer tests among Grade 10 and Grade 12 students before and after the intervention. The chart indicates a significant increase in the frequency of tests, with more students reporting testing 'Every 3 months' post-intervention.]

4.3.3.7 Do you know doctors can test for breast cancer?

![Bar chart showing the percentage of students who knew doctors could test for breast cancer before and after the intervention. The chart indicates a substantial increase in knowledge, with a notable decrease in the number of students who did not know.]

62
4.3.3.8 What action would you take if you discovered a lump in your breast?
CHAPTER FIVE

DISCUSSION

5.1 Introduction

This chapter discusses the results that were obtained from the data collected in two schools. It also compares the results of this study with the results that were obtained from other similar studies.

5.2 Discussion

Breast Self Examination provides an inexpensive method for early detection of breast tumours, thus knowledge and consistent practice could protect women from morbidity and mortality due to breast cancer. This study investigated the knowledge and practice of Breast Self Examination among female high school learners. It also aimed to ascribe differences between the pre and post measurements to the experimental intervention.

More than half (62.9%) of the total sample were aware of Breast Self Examination. This is higher than 31.7% of women studied in Ibadan, Nigeria (Balogun & Owoaje, 2005); and 53.5% of adolescent girls studied in Indiana, USA (Hadranyi, 1995). In this study, association was also observed between level of education of participants and their awareness of Breast Self Examination. Older learners in higher grades were more knowledgeable about Breast Self Examination than those who were younger and doing lower grades. These findings are in consistence with the study by Hadranyi (1995). This might be due to the fact that the learning
programme, Life Orientation, has already been introduced to these older learners at school, and actually introduced health awareness and promotion to them.

Out of those learners who were aware of Breast Self Examination, 57.5% practiced Breast Self Examination. However, most of those who practiced Breast Self Examination were from lower grades. This could be attributed to the fact that most of these lower grade learners had answered that they knew women who had or had had breast cancer. This means that they had been exposed to such issues and seen the impact breast cancer had made on those women regarding their bodies and health.

Breast cancer awareness programme that was provided during the study had a great impact on the responses of the learners. Knowledge of Breast Self Examination had a significant improvement, which is consistent with the findings of the study done in Cairo, Egypt (Seif & Aziz, 2000). However, what is of great concern is that there were still learners who did not practice Breast Self Examination even after the awareness programme had been offered. This result could be attributed to health beliefs and other barriers for not performing Breast Self Examination. In a study done in younger women in Australia, it was found that young women did not feel at all at risk of developing breast cancer, and as such did not feel the need to undertake any early detection behaviours (Johnson & Dickson-Swift, 2008).

Moreover, according to Dundar et al. (2006), a woman who perceives that she is susceptible to breast cancer and that breast cancer is a serious disease would be more likely to perform regular breast examinations. Similarly, a woman who perceives more benefits from and fewer barriers to Breast Self Examination would be more likely to practice Breast Self Examination (Petro-Nustas & Mikhail, 2002). A woman who has an internal cue (body perception) or who
has been exposed to an external cue (e.g., the positive influence of a health care provider or the media) would also more readily adopt Breast Self Examination, as would a woman who wants to improve her health and who is confident of positive results (Champion, 1993).

The learners from a multiracial and urban school had more knowledge of these issues. This finding is in consistent with study in Pietermaritzburg, which found that urban respondents were significantly more aware of the Breast Self Examination technique and in favour of having screening tests for breast cancer (Pillay, 2002).

### 5.3 Résumé

Most of the learners knew about breast cancer and Breast Self Examination, although a few practiced Breast Self Examination. Older learners in higher grades had more knowledge of Breast Self Examination. The breast cancer awareness programme showed a significant impact in the increase of the learners’ level of knowledge of breast cancer and Breast Self Examination, however; there were still learners who did not practice Breast Self Examination after the programme. The next chapter will look into the conclusions and recommendations made about, as well as limitations of this study.
CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter is based on the conclusion made from the study conducted. It also focuses on the recommendations made for future studies as well as the limitations about the study.

6.2 Summary of the results per objective

Some of these young women had awareness of breast cancer and Breast Self Examination, some did not. However, even though they were aware, it does not necessarily mean that they practiced Breast Self Examination or knew the effects of breast cancer diagnosis. The breast cancer awareness programme that was offered to these learners showed an improvement in their knowledge and practice of Breast Self Examination. However, some learner did not practice Breast Self Examination even after the awareness programme.

6.3 Limitations of the research

This study was of significance to young women as it brought awareness to the health issues that some of them were not aware of. However like all research, the study had limitations that need to be acknowledged. A critical issue is that it was conducted on a small number of young women; which might be difficult to ensure that the results could be generalised to the whole population. Another limitation of the study is that the targeted population was only female learners. It somehow restricted the young men’s opportunity of knowing about these issues, so that they might be aware if they had somebody suffering from the condition.
6.4 Recommendations

6.4.1 Future research

Public health education is a factor that impacts on young women’s knowledge and understanding of breast cancer. Based on these young women’s responses, it has been concluded that current public health education is either not communicating its message or failing to reach enough women, resulting in confusion and misinformation.

Based on the above assumption as well as the knowledge that most breast awareness campaigns are aimed at older women, it is recommended that an important improvement may be to target women at young ages to educate them about what is normal and abnormal and what they should know and be aware of (Vahabi, 2005). The campaigns also need to continue exploring the young women’s current knowledge and involving them in breast health education programmes. Person, Johansson and EK-AC (1995) recommended that in order to make Breast Self Examination a habit, education about Breast Self Examination ought to be started for girls at school age.

6.4.2 Social sciences and mental health

Health education interventions need to be implemented continually in order to stress the importance of health promotion. The messages need to be consistent in order not to impede women’s ability to make informed choices about their breast health and limit the possibility of early detection and treatment. This would need to be approached in a manner that could increase knowledge and adherence without causing undue stress and anxiety (Breast Cancer Advocacy Coalition, 2008). Media and organisations should continue to remind women of breast health during October, which is international breast health awareness month (Cansa,
Younger men could also be included and be involved so as to hear their views about the issue and provide any kind of support whenever and wherever they can.

6.5 Conclusion

It is necessary for all governments and practitioners involved in women’s health to work together to establish and maintain health promotion initiatives targeted at young women so that they are well informed and can be proactive about protecting their health (Johnson & Dickson-Swift, 2008). Moreover, Breast Self Examination has been developed as an expression of self-awareness and autonomy.
References


World Conference on Breast Cancer.


## APPENDIX A: HIGH SCHOOLS PRE&POST TEST: CHI-SQUARE TESTS

Table 1: Have you heard of Cancer?

<table>
<thead>
<tr>
<th>Chi-Square Tests(^d)</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Exact Sig. (2-sided)</th>
<th>Exact Sig. (1-sided)</th>
<th>Point Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>7.198(^a)</td>
<td>1</td>
<td>.007</td>
<td>.014</td>
<td>.007</td>
<td></td>
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</tbody>
</table>

Table 2: Have you heard of breast cancer?

<table>
<thead>
<tr>
<th>Chi-Square Tests(^d)</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
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<td>1</td>
<td>.007</td>
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</tbody>
</table>

Table 3: Do you know of women who have or have had breast cancer?

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<thead>
<tr>
<th>Chi-Square Tests(^d)</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Exact Sig. (2-sided)</th>
<th>Exact Sig. (1-sided)</th>
<th>Point Probability</th>
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<tbody>
<tr>
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<td>.000(^a)</td>
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<td>1.000</td>
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Table 4: What happens to women with breast cancer?

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<th></th>
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<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Monte Carlo Sig. (2-sided)</th>
<th>Monte Carlo Sig. (1-sided)</th>
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Table 5: Do you know that you can do breast examination yourself to detect problems early?

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<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Exact Sig. (2-sided)</th>
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Table 6: Do you practice Breast Self Examination?

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<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
<th>Exact Sig. (2-sided)</th>
<th>Exact Sig. (1-sided)</th>
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<td>Pearson Chi-Square</td>
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<td>.210</td>
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Table 7: How often?

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<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
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Table 8: Do you know doctors can test for breast cancer?

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<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
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Table 9: What action would you take if you discovered a lump in you breast?

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<th>Chi-Square Tests</th>
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<th>Asymp. Sig. (2-sided)</th>
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<td>.009</td>
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</table>
Dear Sir/Madam

I am a Masters student who is currently doing Clinical Psychology at the University of Zululand. The Department is currently conducting a research project which is entitled: The investigation of knowledge and practice of Breast Self Examination among female high school learners.

I hereby request the permission to conduct the study at your school. This study is also aimed at offering awareness programme on breast cancer and Breast Self Examination to high school learners.

Your assistance will be highly appreciated.

Yours Sincerely
APPENDIX C: RESEARCH QUESTIONNAIRE TO PARTICIPANTS

BREAST CANCER AWARENESS AND BREAST SELF EXAMINATION QUESTIONNAIRE

I am a student at the University of Zululand and I am currently doing Masters in Clinical Psychology. The department of Psychology is conducting research titled: An investigation of knowledge and practice of Breast Self Examination among female high school learners. You are kindly requested to volunteer to participate in this study. You have the right to discontinue participation at any stage if you feel uncomfortable. All information will be treated with the strictest confidentiality and anonymity.

SECTION A: Biographical information

Date of Birth: DD MM YY

Race: African White Coloured Indian Other (Specify)

Home Language: English Afrikaans Zulu Xhosa Other (Specify)

Religion: 

Education: Grade 

Place of residence: Rural Urban

SECTION B: Knowledge and practices of Breast Self Examination

1. Have you heard of Cancer? Yes No
2. Have you heard of Breast Cancer?  
   ☐ Yes  ☐ No

3. Do you know of women who have or have had breast cancer?  
   ☐ Yes  ☐ No

4. What happens to women with breast cancer?  
   ☐ Die  ☐ Lose the breast  ☐ Can be successfully treated

5. Do you know that you can do breast examination yourself to detect problems early?  
   ☐ Yes  ☐ No

6. If yes, do you practice Breast Self Examination?  
   ☐ Yes  ☐ No

7. If yes, how often?  
   ☐ Daily  ☐ Once a week  ☐ Once a month  ☐ Every 3 months

8. Do you know that doctors can test for breast cancer?  
   ☐ Yes  ☐ No

9. What action would you take if you discovered a lump in your breast? (Please tick)
   ☐ Consult a doctor  ☐ Consult a traditional healer  ☐ Use a home remedy  ☐ Pray about the condition  ☐ Nothing

   Thank you for your time and your honesty
APPENDIX D: THE FIVE STEPS OF A BREAST SELF-EXAMINATION

Breast Self-Exam - Steps 1

**Step 1:** Begin by looking at your breasts in the mirror with your shoulders straight and your arms on your hips.

Here's what you should look for:

- Breasts that are their usual size, shape, and color
- Breasts that are evenly shaped without visible distortion or swelling

If you see any of the following changes, bring them to your doctor's attention:

- Dimpling, puckering, or bulging of the skin
- A nipple that has changed position or an inverted nipple (pushed inward instead of sticking out)
- Redness, soreness, rash, or swelling

Breast Self-Exam - Steps 2 and 3

**Step 2:** Now, raise your arms and look for the same changes.

**Step 3:** While you're at the mirror, look for any signs of fluid coming out of one or both nipples (this could be a watery, milky, or yellow fluid or blood).
Breast Self-Exam - Step 4

Step 4: Next, feel your breasts while lying down, using your right hand to feel your left breast and then your left hand to feel your right breast. Use a firm, smooth touch with the first few finger pads of your hand, keeping the fingers flat and together. Use a circular motion, about the size of a quarter.

Cover the entire breast from top to bottom, side to side — from your collarbone to the top of your abdomen, and from your armpit to your cleavage.

Follow a pattern to be sure that you cover the whole breast. You can begin at the nipple, moving in larger and larger circles until you reach the outer edge of the breast. You can also move your fingers up and down vertically, in rows, as if you were mowing a lawn. This up-and-down approach seems to work best for most women. Be sure to feel all the tissue from the front to the back of your breasts: for the skin and tissue just beneath, use light pressure; use medium pressure for tissue in the middle of your breasts; use firm pressure for the deep tissue in the back. When you've reached the deep tissue, you should be able to feel down to your ribcage.
Breast Self-Exam - Step 5

**Step 5:** Finally, feel your breasts while you are standing or sitting. Many women find that the easiest way to feel their breasts is when their skin is wet and slippery, so they like to do this step in the shower. Cover your entire breast, using the same hand movements described in Step 4.