A MODEL TO DEVELOP AND PROMOTE KNOWLEDGE AND PRACTICE OF BREAST SELF-EXAMINATION AMONG AFRICAN WOMEN IN RURAL KWAZULU-NATAL PROVINCE OF SOUTH AFRICA

Nelisha Sarmah (20430213)

Thesis submitted in fulfilment of the requirements for the Doctor of Radiography in the Faculty of Health Sciences at the Durban University of Technology

Supervisor : Prof M.N. Sibiya

Co-supervisor : Dr T.E. Khoza

Date : March 2024

Declaration

This is to certify that the work is entirely my own and not that of any other person unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Durban University of Technology or any other institution for assessment or any other purpose.

8 March 2024

Nelisha Sarmah
B. Tech Radiography, MBA

Date

Approved for final submission

8 March 2024

Prof. M.N. Sibiya
RN, RM, D Tech: Nursing

Date

8 March 2024

Dr. T.E. Khoza
PhD: Health Sciences

Date

Abstract

Background

Breast self-examination (BSE) is considered one of the screening methods used for the early detection of breast cancer in addition to mammography. BSE is a safe, easy, free, and painless method used to identify any abnormalities of the breast and it is highly recommended for breast cancer screening among women in low-resourced areas. Despite these recommendations, a low uptake of BSE in low-middle-income countries (LMIC) is of concern. To date, a lack of knowledge, awareness, cultural influences, and socio-demographic factors have been highlighted as an influence on the uptake of BSE globally. However, much uncertainty still exists from a South African viewpoint, considering the different sociocultural backgrounds.

Aim

This study aims to explore and describe knowledge, perceptions, and factors that influence BSE uptake among rural African women in the KZN province of South Africa, and ultimately develop a model to develop and promote the knowledge and practice of BSE.

Methodology

The research was guided by the Care-Seeking Behaviour (CSB) theoretical framework. The research objectives were achieved by employing a qualitative case study design and an interpretivist paradigm. The data collection process consisted of an in-depth semi-structured one-on-one interview. The sample was selected based on a purposive sampling approach. This study was conducted in the iLembe District of KZN province of South Africa, a predominantly rural district. Study participants were African women aged 20 or older who resided in the rural iLembe District of the province of KZN. Data saturation was achieved with 22 participants. After the data were collected, they were transcribed verbatim and analysed using deductive thematic analysis.

Findings

In this study, several factors were found to influence the practice of BSE among rural South African women. This included, knowledge and awareness, clinical and socio-demographic influences, preventative healthcare habits, sociocultural factors, breast cancer beliefs, healthcare perception, and delayed healthcare services. In this study, the researcher noted that participants with higher levels of education were more likely to practice BSE. In addition, several participants had various traditional interpretations of breast cancer. Furthermore, there were participants who reported using complementary and self-treatment practices as a habit for health-related concerns. The findings of this study also indicate that participants perception of breast cancer and breast cancer screening may influence their willingness to participate in BSE programmes. Moreover, it was found that social support from family, friends, and community members encourage women to discuss their breast health. A lack of confidence in conventional medical methods of preventative health practices (BSE) was also attributed to clinical and socio-demographic factors and delayed access to healthcare services. Based on the findings of this study, a model was developed to promote BSE knowledge and practice among rural African women in KZN.

Key words: African women, breast cancer, breast cancer awareness, breast self-examination, rural.

Dedication

The current research study is dedicated to my supportive parents who encouraged and inspired me to conduct this study. They have been instrumental in making this research possible through their love and support. Moreover, I wish to dedicate this research study to my late grandmother who inspired me to be confident and courageous when faced with life's challenges. Finally, I would like to dedicate this research study to God who gave me strength, wisdom, guidance, and good health during this research.

Acknowledgments

For the positive contributions to this research study, I would like to express my sincere gratitude to the following:

- Prof. M.N. Sibiya for the outstanding guidance and support throughout this process. It has been an honour and a privilege to work with you.
- Dr T.E. Khoza for the valuable feedback, support, and encouragement. Thank you for always making the time to assist.
- The KwaZulu-Natal Department of Health for permitting this study to be conducted.
- The clinic managers for allowing the gathering of the data at the respective clinics.
- The participants who voluntarily participated in this study.

Table of Contents

List of tables

List of figures

List of appendices

Glossary of terms

African: an individual who originates from Africa, usually a member of an indigenous ethnic group of African ancestry residing in the iLembe District of the KZN province (Collins English Dictionary 2005).

Breast cancer: a type of cancer that occurs in the breast when abnormal growth is observed in the breast cells (American Cancer Association 2021: 1).

Breast cancer screening: examining a woman's breast for signs or symptoms of cancer (Centers for Disease Control and Prevention 2022). Breast cancer screening includes both breast self-examination and mammography. Breast cancer screening plays a significant role in the early detection and treatment of breast cancer (Centers for Disease Control and Prevention 2022).

Conceptual framework: the use of one or more formal theories (partially or entirely) as well as other concepts and empirical findings from the literature (Walden University, 2023). Conceptual frameworks are often employed in qualitative studies because one theory may not fully explain the phenomena being investigated (Walden University, 2023).

Culture: a set of values, beliefs, or learned behaviours that contribute to a sense of belonging and identity within rural African communities in the KZN province (Lebron 2013: 126). Culture can also be defined as the shared symbols, norms, and values of a society (Lebron 2013: 126).

Gatekeeper: is an essential mediator for gaining access to study settings and participants in social research (Andoh-Arthur 2019: 1). They may be individuals within organisations who have the authority to grant or deny access to individuals or situations during organisational research (Andoh-Arthur 2019: 1). Gatekeepers

in this study referred to the Institutional Research Ethics Committee, KZN Department of Health, and the iLembe District manager.

Healthcare workers: individuals who provide medical care and services to patients, such as doctors; nurses; radiographers, mammographers, paramedics, community workers, etc (Joseph and Joseph 2016: 71).

Model: a schematic representation of reality or one's view of the world, constructed to make predictions about the world and/or gain a deeper insight (Wunsch 1994: 20). Models are intermediate between theory and data. The use of data allows theories and models to be confirmed or falsified (Wunsch 1994: 20).

Pamphlets: a booklet of information that is used in breast cancer promotional tools for distance learning and professional development programmes (Mohammadi *et al.* 2015: 1). It also serves as an educational medium that reinforces the knowledge and practice of BSE. A pamphlet is intended to change individuals' attitudes through the dissemination of knowledge and the teaching of new skills (Mohammadi *et al.* 2015:2).

Rural: geographically sparsely populated areas that rely on farming or natural resources, including villages and small towns (Department of Treasury 2011: 192). In the iLembe district municipality, rural areas are mainly devoted to traditional settlements and agriculture. These areas include large settlements in the former homelands and depend on migratory labour for their survival as well as government social grants (Department of Treasury 2011: 192).

Stakeholders: individuals and organisations with a vested interest in a particular clinical decision (Cottrell *et al*. 2014: 1). This study refers to stakeholders as individuals (tribal leaders, traditional healers, community health workers, healthcare professionals, school educators) as well as organisations (primary

healthcare facilities, and the Department of Health) who will participate in the promotion of BSE among rural African women in the iLembe District of the KZN province.

Stigmatisation: a combination of negative stereotypes, prejudiced attitudes, and discriminatory behaviour directed toward marked individuals (Fudge 2014: 6336). As a result of normative judgments, stigmatisation reduces the individual to a single characteristic that has been tainted and discounted instead of a complex whole.

Sub-Saharan Africa: a combination of the Eastern, Middle, Southern, and Western regions in Africa (Lockhat *et al*. 2014 1). The country of South Africa is located at the southernmost point on the African continent.

Theory: a set of statements or principles intended to explain a group of facts or phenomena, particularly those that have been repeatedly tested or are widely accepted that help predict events in the natural world, for example the care-seeking behaviour theory (Hayden 2019: 21).

Theoretical framework: a single formal theory that provides the basis for understanding and investigating the research problem in studies designed around a theoretical framework (Walden University 2023).

Traditional healers: individuals without formal medical training but are considered competent (by the local community) to provide healthcare using animal, plant, mineral, and other substances (Singh and Madhavan 2015: 1224). A traditional healer uses healing practices based on traditional cultural beliefs to treat a patient (Singh and Madhavan 2015: 1224).

List of abbreviations and acronyms

Acronym	Full word/sentence
ACS	American Cancer Society
BHGI	Breast Health Global Initiative
BISSA	Breast Imaging Society of South Africa
BSE	Breast Self-Examination
CANSA	Cancer Association of South Africa
CISNET	Cancer Intervention and Surveillance Modelling Network
CSB	Care seeking behaviour
CBE	Clinical Breast Examination
DoH	Department of Health
FNA	Fine- Needle Aspiration
GBCI	Global Breast Cancer Initiative
HBM	Health Belief Model
HPCSA	Health Professional Council of South Africa
IREC	Institution Research Ethics Committee
KZN	KwaZulu-Natal
LMIC	Low Middle-Income Countries
PHC	Primary healthcare
RSSA	Radiological Society of South Africa
SCT	Social Cognitive Theory
SSA	Sub-Saharan Africa
TPB	Theory of Planned Behaviour
TTM	Trans-Theoretical Model
WHO	World Health Organisation

CHAPTER 1: OVERVIEW OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND

It is anticipated by the year 2030 that more than 70% of the world's cancer burden would be in low and middle-income countries (LMIC) like South Africa and that by 2050 the prevalence of breast cancer would have doubled in these countries (Cumbera *et al.* 2017: 35, Lince-Deroche *et al.* 2017: 181). In South Africa, breast cancer affects women of all races, with a lifetime risk of 1 in 25; however, African women are mostly presenting at an advanced stage (Ansah 2015: 1, Cancer Association of South Africa [CANSA] 2020). The medical cost of managing, diagnosing, and treating breast cancer increases each year making this a costly and burdensome disease (Dewi *et al*. 2019: 2). Therefore, awareness surrounding breast cancer is crucial as early detection, often through screening, can detect the disease when it is most treatable.

Breast cancer screening methods include mammography and BSE (Amoran and Toyoba 2015: 185; Kirag and Kizilkaya 2019: 2; Veitcha *et al*. 2019: 649). Although mammography is the mainstay for early detection of breast cancer, it is not accessible to the majority of women in developing countries. It is financially and technically challenging to implement and sustain because it requires well-trained mammographers and radiologists, and investment in pathology and treatment centers (Amoran and Toyoba 2015: 185; Black and Richmond 2019: 6; Dadzi and Adam 2019: 3). Moreover, "brain drain" has also contributed to the delay in diagnosing and treating women with breast cancer in developing countries since healthcare professionals leave their current workplace in search of better living conditions elsewhere (Chidebe *et al.* 2023: 7).

The World Health Organization (WHO) has created the Global Breast Cancer Initiative (GBCI), a three-pillar initiative based on health promotion, timely diagnosis, and comprehensive treatment of breast cancer (WHO 2020:1). According to the WHO, every country should develop a cost-effective breast cancer prevention and early detection model and integrate it into its respective healthcare system (Bonsu and Ncama 2019: 5). Although the South African Department of Health (DoH) introduced the Breast Cancer Prevention and Control Policy in 2017 aimed to improve breast cancer awareness, early detection, and management, it lacked the resources to employ and sustain a national screening programme. Therefore, the DoH recommends clinical breast examination (CBE) and BSE for early detection of breast cancer.

BSE is the process of observing and palpating one's breasts to detect lumps, shapes, textures, sizes, and contours (Johnson 2019: 219). The uptake of BSE in LMICs is low (Udoh *et al*. 2020: 2). In South Africa, BSE is promoted through various awareness programmes (Pink Drive, Cuppa for CANSA, CANSA Active, and Government Online social campaigns) aimed at early breast cancer screening (Cancer Association of South Africa [CANSA] 2020). Due to limitations in resources, these awareness programmes are mostly urban. Consequently, women in rural areas are disadvantaged. And, while organisations such as the CANSA suggests that women over the age of 20 should practice BSE monthly and women over 40 should have mammograms every two to three years (Cancer Association of South Africa [CANSA] 2020; Ansah 2015: 24), this message is not transferred equally to all women in the country, particularly those who live in rural areas.

A previous South African study found that breast cancer screening education is either lacking or non-existent in some parts of South Africa and has contributed to the late detection of breast cancer (Ramathuba *et al.* 2015: 1). According to Donnelly *et al*. (2014: 1) more investigation needs to be performed around breast cancer to understand women's health behaviour and create awareness. Current

literature indicates that approximately 27 million people in South Africa, especially Africans, depend on traditional medicine for primary healthcare (PHC) needs (Abdullahi 2011: 116; Nzimande *et al*. 2021: 2). Traditional healing practices form part of the cultural and spiritual life of many South Africans (Nzimande *et al*. 2021: 6). The cultural beliefs may be seen as a combination of religious beliefs, socially accepted norms, and traditions. Research has shown that personal philosophies are directly influenced by the cultural values and belief systems of an individual, which are often reflected in their health-seeking behaviour (Gyasi *et al.* 2016: 6). A growing body of research suggests that cultural barriers influence BSE practice and overall healthcare (Udoh *et al*. 2020: 2; Van Den Berg 2016: 231).

The Health Belief Model (HBM) is a model commonly used by researchers to determine women's health behaviour around the knowledge and practice of BSE. It was found that a lack of knowledge, awareness, cultural influences, and socio-demographic factors influence the uptake of BSE globally. For example, 12% of women practice BSE in Kuwait, 18.1% in Nigeria, 37% in Ethiopia, and an unrecorded percentage in South Africa (Abay *et al.* 2018: 622). According to Khiyali *et al.* (2017: 2833), the advantage of using the HBM is that its constructs are simple and easy to implement. However, other researchers point out that the HBM had limitations. This limitation refers to the exclusion of socio-economic factors and habit as a construct (Lawal *et al.* 2017: 16). As a result, researchers are restricted in their exploration of factors that may influence the uptake of BSE. Dewi *et al.* (2019: 5) recommend using other health behaviour theories in future BSE research. Thus, this study explored and described the knowledge, perception, and factors influencing BSE among rural South African women using the Care-Seeking Behaviour (CSB) theoretical framework.

1.2 PROBLEM STATEMENT

Breast cancer is the most common cancer among women in South Africa (Ayeni *et al.* 2020: 25). Many women diagnosed at a tertiary hospital in South Africa are predominantly African women from rural areas and are three times more likely to be diagnosed late than women living in urban areas (Maphanga *et al.* 2023: 18). According to previous South African studies, 63.4% of breast cancer patients of African descent and are in stages III or IV of the disease (Kakudji *et al.* 2020: 9). The most common reason for consultation and findings at clinical examination was a breast mass, with 89.6% of tumours being invasive ductal carcinomas and 3.7% being invasive lobular carcinoma (Kakudji *et al.* 2020: 9). The late presentation of breast cancer in South Africa are associated with the high unemployment rate, lack of resources, lack of education, insufficient knowledge and awareness, and lack of family support (Kakudji *et al.* 2020: 9). Furthermore, the delay in seeking medical assistance at a hospital was over two months because rural South African women sought medical assistance from traditional healers (Bhuiyan e*t al.* 2022: 906). Consequently, most cancer patients in rural areas present at a late stage of the disease. The lack of domestic and donor funding has resulted in poor access to cancer prevention, screening, and diagnostic services as well as low levels of access to quality cancer treatment.

Inequalities in access to cancer prevention, screening, diagnosis, and treatment play a significant role in the high rates of cancer mortality in South Africa (Finestone and Wishnia 2022: 7). Most rural areas in South Africa are located a considerable distance from the nearest healthcare facility offering mammography screening. This results in increased travel costs, which are unaffordable since most rural residents come from low socio-economic backgrounds. Despite controversy concerning the indications for BSE, recommendations differ among screening task forces, medical academies, advocacy groups, and regional branches of the WHO. Globally, low breast cancer screening rates can be attributed to a lack of knowledge, a lack of awareness, cultural influences, and socio-economic factors.

Women's knowledge of breast cancer screening varies across nations probably due to their cultural beliefs and socio-economic levels (Udoh *et al.* 2020: 7). This study therefore sought to investigate the factors influencing BSE from a South African perspective. It also developed a model for promoting knowledge and practice of BSE. Therefore, the lack of breast cancer screening cannot be generalised to all countries or ethnic groups.

1.3 RESEARCH QUESTIONS

- To what extent are South African women in rural areas knowledgeable about BSE?
- What are the factors influencing the uptake of BSE among African women in the rural KZN province of South Africa?
- What are the general perceptions of BSE among African women in the rural KZN province of South Africa.?
- What model could be utilised by the DoH and health facilities to develop and promote the knowledge and practice of BSE?

1.4 AIM OF THE STUDY

This study aims to explore and describe knowledge, perceptions, and factors that influence BSE uptake among rural African women in the KZN province of South Africa, and ultimately develop a model to develop and promote the knowledge and practice of BSE.

1.5 RESEARCH OBJECTIVES

The objectives of the study were to:

- Assess the knowledge of BSE among African women in rural KZN province of South Africa.
- Explore and describe the factors influencing the uptake of BSE among African women in the rural KZN province of South Africa.

- Explore and describe the perception of breast cancer screening among African women in the rural KZN province of South Africa.
- Develop a model that can be utilised by the DoH and health facilities to develop and promote the knowledge and practice of BSE.

1.6 SIGNIFICANCE OF THE STUDY

This study intended to encourage the revision of breast cancer promotional guidelines in rural areas of South Africa. Using this knowledge, healthcare professionals including radiographers and mammographers, as well as relevant stakeholders, can improve their strategies to distributing BSE information among rural South African women. Further, the model developed in this study can be utilised by the South African DoH to enhance and strengthen its early detection strategies. The developed model in this study can be used by radiographers at rural healthcare facilities to promote BSE by employing the promotional tools prescribed in the model. The findings of this study are intended to encourage the development of culturally appropriate health education programmes involving traditional healers and influential community leaders in Africa. Recommendations are made for community stakeholders who are well-positioned within rural South African communities to disseminate the knowledge and practice of BSE. Other African countries can benchmark and improve their respective frameworks for the practice of BSE among women in disadvantaged communities to increase breast cancer awareness.

1.7 STRUCTURE OF THE THESIS

This thesis is presented in eight chapters, as outlined in Table 1.1.

Table 1.1: Structure of the thesis

CHAPTER	TOPIC	CONTENT DESCRIPTION
Chapter 1	Overview of the study.	This is an orientation to the study, that includes, research introduction and background, problem statement, research questions, aim, objectives, and significance of the study.
Chapter 2	Literature review.	An in-depth review of the literature on the topic under investigation.
Chapter 3	Theoretical framework.	Provides a rationale for the selected theory and its interrelationships.
Chapter 4	Research methodology.	Justifies the research design and method used for this study.
Chapter 5	Presentation of findings.	Present the findings of the study.
Chapter 6	Discussion of findings.	Discussion of the findings.
Chapter 7	A model to develop and promote the knowledge and practice of breast self-examination.	Present and describe the model that was developed.
Chapter 8	Limitations, conclusions, and recommendations.	Limitations, conclusions, and recommendations.

1.8 SUMMARY OF THE CHAPTER

This chapter provided an overview of the research study and its background. Breast cancer has a significant impact on South Africa and other African countries. It has been identified that South Africa faces a variety of breast cancer challenges. Thus, screening for breast cancer using BSE and mammography was highlighted. This study intended to investigate the knowledge, perceptions, and factors influencing the uptake of BSE among African women living in rural areas of the KZN province in South Africa, and to develop a model that can facilitate their knowledge and practice of BSE.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

A literature review presents a summary of sources explored while researching a particular topic (Ramdhani *et al.* 2014: 48). In this chapter, literature pertinent to the research topic were reviewed and gaps in knowledge and practices in the field of BSE were discussed. This chapter begins with the process of reviewing the literature. Following this, an overview of breast cancer is provided, followed by an introduction to BSE. This is followed by an extensive literature review on the global perspective on BSE; breast cancer and BSE challenges in Africa; and a discussion of South Africa and breast cancer. Thus, providing a holistic understanding of the study. Breast cancer screening interventions and health behaviours are then explained and lastly, the chapter concludes with a summary.

2.2 PROCESS OF REVIEWING THE LITERATURE

Literature reviews are intended to situate research within an existing body of knowledge (Fink 2014: 4). There were several keywords utilised during the literature search, including breast cancer; breast cancer screening; BSE; healthcare barriers; and the CSB Theory. Data was accessed from several sources using the above-mentioned keywords. These sources included books and journals from the institution's library, PubMed, Google Scholar, Science Direct, Web of Science, dissertations and theses, as well as websites and online databases. Initially, literature searches focused on breast cancer screening in South Africa, however, due to limited information provided, the search was extended to include factors related to BSE in Africa and around the world. Throughout the review of the literature, the researcher searched for sources that contributed meaningfully to the understanding of the research topic.

2.3 BREAST CANCER OVERVIEW

Breast cancer is a major public health concern across the globe, in both developed and developing nations (Lera *et al*. 2020: 2). A high incidence of breast cancer puts a significant strain on a country's health system and increases healthcare costs. It accounts for 10.9% of all cancer cases and 14% of female-related deaths, with more than one million cases detected each year (Lera *et al*. 2020: 2; Rafique *et al.* 2018: 4107). Previous researchers report that breast cancer is by far the most common cancer among women and the principal cause of cancer-related deaths in women (Ansah 2015: 19; Rafique *et al.* 2018: 4107). Breast cancer can be defined as a malignant growth, that starts at the lobules or inner lining of the milk ducts and spreads to other parts of the body (Ansah 2015: 19; Nizum 2011: 2).

Although the cause of breast cancer is unknown, there are identifiable risk factors that women should be aware of (Ansah 2015: 19). These include race, gender, age, family history, genetics, hormonal factors, and others (Ansah 2015: 19). A lump is regarded as one of the most common signs of breast cancer (Nizum 2011: 3). A lump may be discovered accidentally, via BSE or mammography. Other signs and symptoms include skin and nipple retraction; breast tenderness; bloody or serous nipple discharge; change in the size, shape, and texture of the breast, and lymph node enlargement. Screening for breast cancer plays a vital role in the early detection of the disease. In Chapter One, it was noted that although mammography is the gold standard for breast cancer early detection, it is not readily available to women living in low-resource settings, such as rural KZN provinces. For women in LMICs, where health resources are limited and sociocultural factors influence women's ability to discuss breast health, BSE is considered an effective screening tool for increasing breast cancer awareness and early detection (Dewi *et al.* 2019: 3).

2.4 INTRODUCTION TO BREAST SELF-EXAMINATION

According to Johnson (2019: 219) BSE involves “visualization and palpation of the breast by oneself for lumps, shape, texture, size, and contour”. The CANSA (2020) recommends that women 20 years and older have BSE once a month. It is recommended that BSE be performed 7-10 days following the start of menstruation when the breasts are least tender. It is recommended that women should seek medical advice if the following symptoms are observed during BSE (should seek medical advice if the following symptoms are observed during BSE (CANSA 2020, Pippin and Boyd 2023: 1):

- A lump or thickening of the tissue in the breast or in the armpit that does not shrink or lessen after the next menstruation.
- Change in the size, shape, or symmetry of the breast.
- Thickening or swelling of the breast.
- Dimpling, puckering, or indention in the breast.
- Skin irritation, redness, scaliness, or other changes in the breast skin or nipple.
- Discharge, tenderness, and retraction of the nipple.
- Any breast changes that may cause concern.

Guidelines for performing BSE include (Pippin and Boyd 2023: 1):

- A visual and palpable examination of the breast to detect abnormalities. Ensure that the evaluation is consistent and reproducible by following a methodical, systematic approach. The right breast should be examined by rolling to the left side and placing the right hand, palm up, on the forehead. In this maneuver, the breast lies flat against the thoracic wall, optimizing positioning. Small circles should be performed using the middle fingertip pad using light, medium, and deep pressure to investigate different depths of breast tissue. The outer half of the breast is examined by palpating up and down from the axilla to the nipple and vertically from the clavicle to just below the bra line. To avoid missing any tissue planes, the fingers must

remain in direct contact with the skin as they traverse the breasts. To assess the inner half of the breast, one must lie supine, remove the hand from the forehead, and place the inactive arm at a right angle on the examination surface. The same palpation technique is used to examine the inner breast, including the nipple and sternum. Similarly, the left breast is examined using the same positioning and maneuvers.

- Breast tissue should be inspected visually from three angles: at the side, above the head, and hunched over with hands on the hips. A mirror should be used to observe these positions from the direct view, the right profile, and the left profile. Although it is common for one breast to be larger than the other, new differences in size should be noted. It is important to evaluate the skin for rashes, erythema, puckering, dimpling, or texture anomalies that resemble orange peels. The nipples should be closely observed for any abnormalities, such as tenderness, discharge, or new inversions.

Radiographers and mammographers are encouraged to teach the correct BSE positioning technique to patients, colleagues, and healthcare workers presenting to the X-ray department. An illustration of a poster representing BSE can be found in Figure 2.1 (Health Governance Unit 2014: 1). BSE is considered a safe and cost-effective screening tool that can be performed at home to detect breast cancer in its early stages (Barnett 1993: 3; Kalliguddi *et al.* 2019: 568; Shallo and Boru 2019: 1). It is important, therefore, to disseminate this information to women in geographically disadvantaged communities to promote the knowledge and practice of BSE.

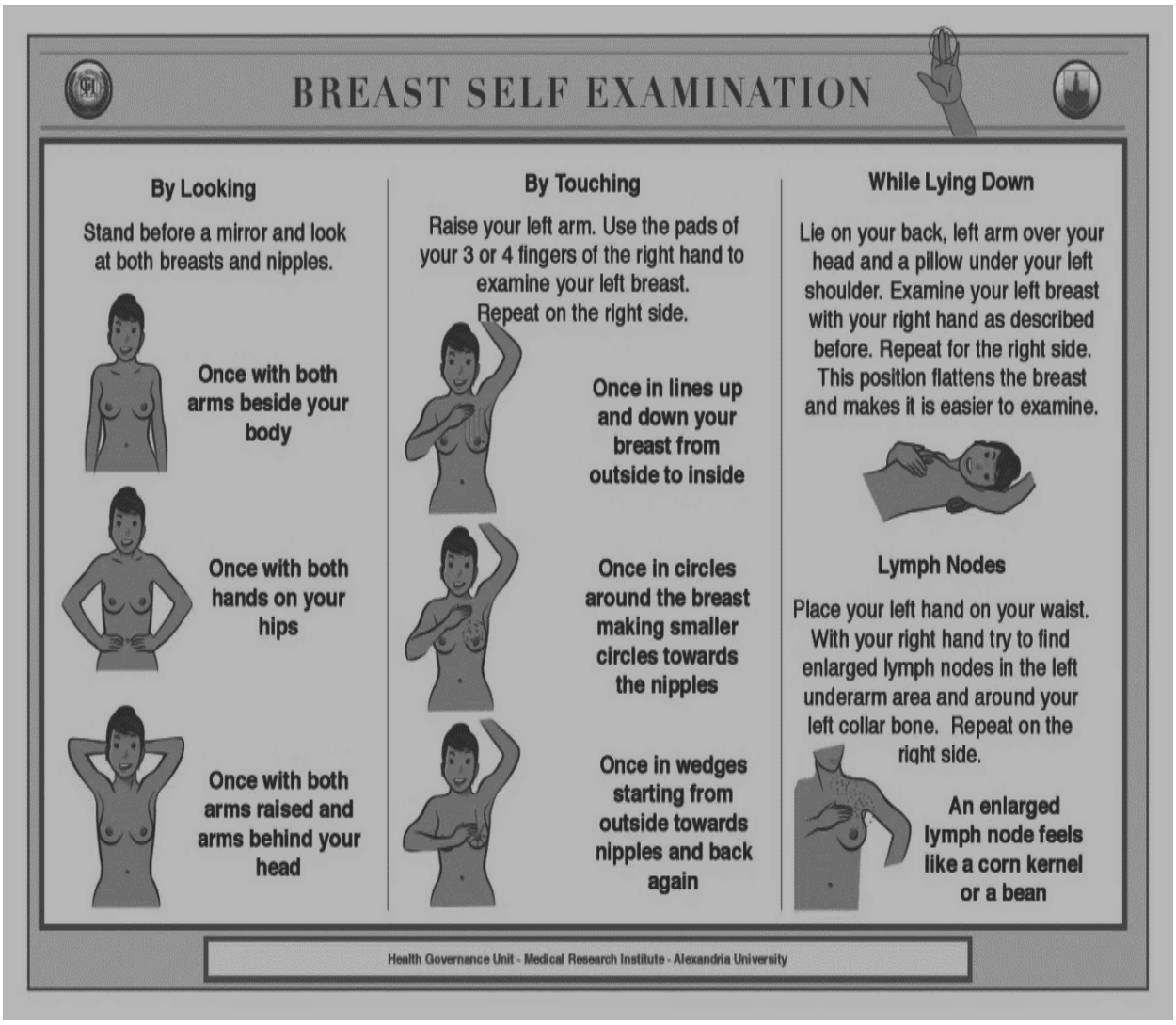


Figure 2.1: A poster illustrating the screening steps for BSE (Health Governance Unit 2014: 1).

2.5 BREAST CANCER AND BREAST SELF-EXAMINATION: A GLOBAL PERSPECTIVE

According to the WHO, 2.3 million women worldwide were diagnosed with breast cancer in 2020, and 685,000 died from this disease (WHO 2021). Breast cancer remains the most prevalent cancer among women worldwide as of the end of 2020, with 7.8 million women diagnosed in the past 5 years (WHO 2021). The American Cancer Society (ACS) promoted early detection campaigns in the 1930s with the

message that ‘early’ is the key to survival (Coleman 2017: 143). For women worldwide, earlier detection and screening offer the best probability of success, effectiveness, and practicality (Coleman 2017: 143). It has been reported that breast cancer education, self-examination, and CBE reduce the incidence, late presentation, and death rates of breast cancer among women (Coleman 2017: 143, WHO 2021).

According to the US Cancer Institute, monthly BSE starting at the age of 20 years is recommended to improve health outcomes, and early diagnoses, and raise health awareness (Bonsu and Ncama 2019: 5, CANSA 2020). The ACS and the International Agency for Research on Cancer strongly encourage women to become familiar with the normal appearance of their breasts to detect any abnormalities early (Ansah 2015: 24, Bonsu and Ncama 2019: 5). The ACS’s initial recommendations for BSE were to practice BSE monthly, below the age of 30 years; for pre-menopausal women to practice BSE monthly on day 5 to 7 after menstruation on the same day each month, and for post-menopausal and non-menstruating women to practice BSE on the same day each month (Ansah 2015: 29, CANSA 2020). The ACS revised these recommendations to discontinue routine BSE screening as part of routine cancer screening programmes.

While there is limited research available on the prevalence of BSE in developed countries, it is worth noting that prevalence rates in Canada, the United Kingdom, and the United States were 61%, 22.6%, and 46.8% respectively, which are noticeably lower than those in Asian and African countries (Bhardwaj and Fitzpatrick 2021: 198). It is speculated that these rates were overestimated due to higher educational levels (Bhardwaj and Fitzpatrick 2021: 198). Even though no statistically significant association had been observed, there is some evidence that women undergoing mammography are less likely to consider BSE (Bhardwaj and Fitzpatrick 2021: 198).

A growing body of evidence has led some international organisations, including the Canadian Task Force on Preventative Health Care, the United States Preventative Services Task Force, and the American College of Surgeons, to no longer recommend BSE as part of their routine screening tests (Albeshan *et al.* 2020: 196). In part, this recommendation was based on evidence of very low sensitivity of BSE (20%-30%), false-positive results, and no reduction in breast cancer death rates (Albeshan *et al*. 2020: 196). It is important to note that several breast cancer screening recommendations have been tested and developed in Western countries. As a result, most Western countries no longer recommend BSE for routine breast cancer screening (Albeshan *et al.* 2020: 199).

While it is possible to question whether BSE is necessary, it is worth noting that these recommendations may not be appropriate in countries where different characteristics of breast cancer exist, such as the age of diagnosis and prognosis, as well as different beliefs and attitudes relating to breast cancer and its associated screening methods (Albeshan *et al*. 2020: 199). In addition, the organisations mentioned above are based in high-income countries where economic activity is higher; the level of education is higher, screening services such as mammograms are easily accessible, and public awareness campaigns are distributed geographically. Thus, the situation of women afflicted by breast cancer in higher-income countries is not comparable to that of women from LMICs such as South Africa. And whilst, these organisations may not advocate for BSE as part of the routine breast cancer screening in developed countries, they do advocate its need for and importance of developing countries with limited resources.

According to the GBCI panel, one of the recommendations for LMICs is public awareness (Anderson *et al.* 2011: 393). Public awareness is essential to promote early detection of breast cancer through breast cancer screening (BSE and mammograms). The public may have misconceptions regarding the diagnosis and treatment of breast cancer. Therefore researchers (Anderson *et al.* 2011: 393)

advocate the need for qualitative research to identify community cultural beliefs and social barriers to early detection to provide guidelines for the design of early detection programmes. Failure to anticipate social barriers or cultural beliefs can damage otherwise well-designed programmes (Anderson *et al.* 2011: 393). It is therefore anticipated that the findings of this study would contribute to the global understanding of breast cancer screening.

2.6 BREAST CANCER AND BREAST SELF-EXAMINATION: CHALLENGES IN AFRICA

The burden of breast cancer is exponentially increasing, notably among women in Africa owing to the late diagnosis of the disease. An early detection rate, which is dependent on the uptake of screening, is associated with a higher survival rate and a better prognosis (Chutia *et al*. 2020: 2). In the subsequent sections, an overview of the incidence of breast cancer is presented, followed by a BSE review, and factors influencing BSE.

2.6.1 Incidence of breast cancer

Current reports indicate that breast cancer has become the most diagnosed cancer among women in Sub-Saharan Africa (SSA), where the incidence rates have more than doubled over the past two decades (Bona *et al.* 2021: 28860). Africa experiences a variation in breast cancer incidence, with 19.3 per 100 000 women per year in Eastern Africa, and 38.1 per 100 000 women per year in Southern and Western Africa (Abay *et al*. 2018: 1). The incidence of breast cancer in SSA is lower, however, the mortality rate is much higher (Black and Richmond 2018: 1; Esfahani *et al.* 2018: 277). Based on previous studies, less developed countries had a death rate of approximately 324,000 in comparison to 198,000 in more developed countries (Abay *et al*. 2018: 1; Baloushah *et al.* 2020: 2; Esfahani *et al*. 2018: 277).

With the scarcity of treatment centers in SSA, coupled with late-stage diagnosis, women in SSA face a poor prognosis, contributing to the increase in mortality (Black and Richmond 2019: 1). In a previous study, 32% of women in SSA were alive five years after diagnosis, compared to 81% of women in the United States (Dadzi and Adam 2019: 2). According to Black and Richmond (2019: 3), approximately 80% of women in SSA were diagnosed with late-stage breast cancer, compared to 15% of women in high-income countries. Future research should investigate the reasons why most women in Africa present with late-stage breast cancer.

2.6.2 Breast self-examination review

Early detection and treatment of breast cancer are less aggressive, less costly, and more effective, leading to higher survival rates and a better quality of life (Chutia *et al*. 2020: 2, Habtegiorgis *et al*. 2022: 2). Underuse of early detection methods, such as BSE, facilitates late-stage diagnosis (Habtegiorgis *et al.* 2022: 2). In some areas of Nigeria, BSE is considered an alternative to mammography and CBE due to its cost-effectiveness and simple technique (Udeze *et al*. 2020: 5). Considering that most breast cancers can be detected by a woman highlights the importance of BSE as a valuable screening tool (Bona *et al.* 2021: 28860, Habtegiorgis *et al*. 2022: 2). However, a lower percentage of African women practice BSE compared to 75% of women in the United States (Kassie *et al.* 2021:2). A Ugandan study revealed limited knowledge and practice of BSE in African countries such as Sudan, Nigeria, Ghana, Cameroon, and Kenya, resulting in the disease remaining a challenge on the continent (Udoh *et al*. 2020: 7). According to previous studies, the average patient ignores their initial symptoms for 1.5 years, resulting in a long delay between the onset of symptoms and seeking medical attention (Habtegiorgis *et al*. 2022: 2; Lera *et al.* 2020: 2). As a result, the lack of awareness programmes hinders the dissemination of knowledge and practice of BSE in Africa, leading to late-stage diagnosis (Kassie *et al.* 2021: 2, Lera *et a*l. 2020: 2).

2.6.3 Factors influencing breast self-examination

The subsections below provide an overview of frequently occurring themes identified in various studies conducted in Africa. As a result, these themes were identified as factors influencing BSE's uptake in Africa.

2.6.3.1 Knowledge and awareness

Women in developing countries lack the knowledge and skills to perform BSE (Dadzi and Adam 2019: 3). A survey conducted in Southwest Cameroon revealed that only 25% of women had adequate knowledge of BSE and 15% of those practiced it (Dadzi and Adam 2019: 3). Similar findings were noted in an Ethiopian study, where 45% of women knew about breast cancer and BSE, however, only 13.8% knew the technique to perform BSE (Bona *et al.* 2021: 28860). According to a previous study, women who had good knowledge of breast cancer were three times more likely to perform BSEs than women with poor knowledge of such practices (Habtegiorgis *et al.* 2022: 2). It was also observed that women who knew someone with breast cancer, or who had a family history of the disease were more likely to practice BSE compared to women who did not (Bona *et al*. 2021: 28860, Habtegiorgis *et al*. 2022: 2). Furthermore, women are better equipped to make informed decisions regarding breast cancer screening if they are provided with relevant and unbiased information (Ansah 2015: 30). Although BSE is an important screening method, it is rarely employed in resource-constrained settings, and women living in rural areas are likely to be unaware of BSE (Ansah 2015: 30, Dadzi and Adam 2019: 10).

BSE's poor performance has been attributed to a lack of skills, a lack of privacy, discomfort among women, and a lack of importance (Bona *et al*. 2021: 28860, Dadzi and Adam 2019: 3). Moreover, previous research has shown that most women do not practice BSE because they do not consider breast abnormalities to be a serious concern (Bona *et al*. 2021: 28860). To encourage women to practice

BSE studies have identified television, radio, and medical workers as good sources of information on BSE (Bona *et al.* 2021: 28860). Cancers that are detected through screening are more likely to be at an earlier stage in development than those detected by other means (Ansah 2015: 25).

2.6.3.2 Socio-demographic factors

As previously documented, education, income, age, and marital status are related to BSE conformance, as most women with lower socio-demographic status are unaware of breast cancer and the correct techniques of BSE (Baloushah *et al*. 2020: 2, Moey *et al.* 2020: 621). Researchers have found that younger women are more likely to perform BSE than their older counterparts due to their positive attitudes toward BSE (Moey *et al.* 2020: 621). Behavioural adoption of BSE appeared to be associated with marital status since married women are more conscious of their breasts and are more likely to perform BSE (Moey *et al.* 2020: 621). Literature suggests that educational level and stage of behavioural adoption of BSE are positively associated (Kardan-Souraki *et al*. 2019: 640; Moey *et al.* 2020: 621). Therefore, women with a higher level of education were more likely to acquire information regarding breast cancer and BSE. Women with higher incomes were also found to perform BSE more frequently than those with lower incomes, likely owing to their healthier lifestyles and greater awareness of their health (Baloushah *et al.* 2020: 2; Moey *et al*. 2020: 621).

2.6.3.3 Attitude, belief, and social barriers

Individuals' beliefs can influence their perceptions of illness, treatment, and lifestyle changes (Ansah 2015: 32). In many cultures, social stigma and norms can hinder women from talking about their breasts (Kalliguddi *et al.* 2019: 568). The reason for this is fear, a lack of awareness, and ineffective communication between family members and spouses (Dewi *et al.* 2019: 6, Kalliguddi *et al*. 2019: 568). Furthermore, women who are knowledgeable about breast cancer awareness and

BSE may not necessarily practice BSE due to social factors, which affect their health-seeking behaviours (Bashirian *et al*. 2019: 231, Kalliguddi *et al.* 2019: 568). In a study conducted to assess Egyptian women's practices and beliefs around BSE and breast cancer, it was found that participants did not practice BSE due to lack of privacy, lack of time, forgetfulness, and embarrassment (Sharaa 2013: 107). According to another study, the absence of BSE was due to strong cultural beliefs, ignorance of the severity of the disease, and the psychological impact it had on patients and their families (Dewi *et al.* 2019: 6).

Research suggests that different cultural groups perceive health differently (Ansah 2015: 32, Bashirian *et al*. 2019: 231). For many women, breast cancer screening and treatment are perceived as traumatic experiences and it is believed that having surgery can spread cancer, so it is considered harmful instead of helpful (Wright *et al.* 2019: 145). Another study found that embarrassment, fatalism, fear, and stigmatisation were barriers to breast cancer screening (Esfahani *et al.* 2018: 277). However, results from another study indicate that women with a positive attitude toward BSE are more likely to practice BSE than those with a negative attitude (Habtegiorgis *et al*. 2022: 7). In some studies, poverty and culture have been attributed to delayed breast cancer screening in developing countries (Esfahani *et al*. 2018: 277; Sharaa 2013: 107).

The research findings described above provide valuable insight into the factors that influence BSE adoption in other African countries. Nevertheless, there is no guarantee that these factors would also influence rural South African women's uptake of BSE as their sociocultural backgrounds are different. Therefore, through the application of the CSB theoretical framework and its constructs (belief, habit, and norm), the current research study provides a better understanding of rural South African women's perception of BSE and describes and explores factors influencing its uptake.

2.6.3.4 Cultural factors

Breast cancer screening is hindered most by cultural myths, with many women frightened to discuss their breast health openly (Esfahani *et a*l. 2018: 277, Orindi 2016: 10). Culture refers to a set of shared knowledge, beliefs, and/or practices that are inherited through social transmission over time (Hernandez and Gibb 2020: 12). Women in Western African communities were found to have poor outcomes due to cultural, religious, and mental factors that contributed to the delayed diagnosis and treatment of breast cancer (Nwagu *et al*. 2021: 1132). In Indonesia, modesty is viewed as a virtue, and therefore, it is believed that breasts are an intimate organ, and BSE should not be performed (Dewi *et al*. 2019: 6).

The unfortunate reality is that most women who seek treatment do so without support, and because of the patriarchal structure of most societies, they need constant permission and funding from husbands or male community leaders who are unaware of breast cancer and BSE (Dewi *et al*. 2019: 6, Nwagu *et al*. 2021: 1132). In rural north Ghana, many women must get permission from the Baga (a male leader of the community) before they can obtain medical care (Nwagu *et al*. 2021: 1132). Women in North-western Nigeria fear that surgery would harm their femininity and lead to rejection by their spouses, family, and friends (Nwagu *et al*. 2021: 1132). It was reported that 38% of women were divorced or separated within three years of their surgery (Nwagu *et al*. 2021: 1132). These are some of the societal factors that may delay diagnosis and lead to treatment discontinuation, resulting in poor long-term survival outcomes (Dewi *et al*. 2019: 6, Nwagu *et al.* 2021: 1132).

Some cultures, view cancer differently; some believe it is a white man's disease, while others believe that it is a curse from God or a result of the devil (Orindi 2016: 10). Younger women blame breast cancer on tragic luck (Orindi 2016: 8). Others prefer to pray or consult gods to understand why and who is behind their positive diagnoses (Orindi 2016: 10). While some women mistakenly believe that God can

cure them of breast cancer without any medical treatment. As a result, they do not perform BSE (Wright *et al*. 2019: 145). According to researchers, understanding cultural behaviours and women's responses to social pressures can provide a better understanding of the reluctance to practice BSE (Hernandez and Gibb 2020: 12, Orindi 2016: 8). Therefore, the researcher explored cultural behaviours and social pressures among rural South African women to better understand their perception of BSE.

2.6.3.5 External factors

External factors are those factors that are beyond women's control. Several factors are mentioned in the literature as influencing women's acceptance of screening, like affordability, geographic access, resources, and infrastructure (Black and Richmond 2019: 3, Lawal 2018: 63). Many countries in SSA lack radiotherapy facilities, and the ones that do have them only meet 18% of projected needs (Black and Richmond 2019: 3). As a result of the limited resources available in SSA, such as chemotherapy and radiotherapy facilities, women with advanced-stage breast cancer are more likely to undergo mastectomy (Black and Richmond 2019: 3). Breast cancer diagnostic testing and treatment incur out-of-pocket costs, including travel and accommodation expenses for women living in rural areas (Black and Richmond 2019: 3, Lawal 2018: 63). Therefore, many women are less likely to travel due to affordability concerns and seek alternative methods of treatment.

Women in rural areas reported disadvantaged social conditions of poverty, lack of resources, and limited access to healthcare supplies compared to women living in urban metropolitan areas (Black and Richmond 2019: 3, Wright *et al.* 2019: 143). This is primarily because women in rural areas have lower educational levels and are more likely to be unemployed than women in urban areas. In that regard, BSE is a beneficial screening tool that can be performed at home, which is convenient, inexpensive, and safe.

2.7 BREAST CANCER AND BREAST SELF-EXAMINATION: SOUTH AFRICA

The burden of breast cancer on the African continent is rising, notably in countries like South Africa. This section aids in understanding of the breast cancer burden in South Africa. In the subsequent sections, the policy, procedures, and guidelines of the DoH will be discussed as well as the barriers to BSE.

2.7.1 Department of Health policy, procedures and guidelines

According to the South African Cancer Registry, 19.4 million women aged 15 years and older are at risk of contracting breast cancer (Department of health 2017: 12). The Bill of Rights in the Constitution of South Africa explicitly states that every citizen has a right to access healthcare, which includes reproductive health services (Ansah 2015: 12). The National Cancer Registry (Department of Health 2020: 12) collects data on cancer morbidity in South Africa. The National Cancer Registry data from 2012 shows 8,203 new cases of breast cancer and a standardised incidence rate of 35.12 per 100,000 people per year (Department of Health 2020: 12).

In South Africa, the American guidelines for breast cancer screening were adopted until the Radiological Society of South Africa (RSSA) and the Breast Imaging Society of South Africa (BISSA) developed their recommendations and guidelines (Lipschitz 2018: 3). These recommendations and guidelines were inclusive of routine self and clinical examinations, along with annual mammography screenings for women between 40 and 70 years old. Although CANSA recommends women aged 40 to 54 have annual mammography screenings, and women aged 55 and over have biennial screenings (CANSA 2020, Lipschitz 2018: 3).

To promote breast cancer awareness in South Africa, the following role players were identified:

- The PinkDrive, South Africa's Breast Cancer Community Carer and Public Benefit Organisation, is driving South Africa's first PinkDrive mobile mammography unit and PinkDrive educational unit across the country, emphasising that ‘Early Detection Will Help Prolong A Life’ (Pinkdrive 2022).
- The government of South Africa has designated October as Breast Cancer Awareness Month. This initiative represents an ongoing nationwide campaign by both public and private healthcare structures to raise awareness of this debilitating illness (Department of Health 2020: 17).
- The DoH developed the breast cancer and control policy aimed at promoting early detection by promoting awareness among communities and educating community members on breast care and breast cancer management (Department of Health 2020: 17).
- The Health Profession Council of South Africa (HPCSA), in conjunction with the DoH, has ruled that radiographers may perform breast imaging examinations provided they have a Board-approved certificate or postgraduate qualification in mammography (HPCSA 2021).
- The CANSA encourages breast cancer screening through accessible information online and in local communities (Cancer Association of South Africa [CANSA] 2020).
- The availability of mammogram services in public tertiary hospitals and private practices illustrates the importance of breast cancer screening and awareness.

In South Africa, the CANSA advises women over 20 to practice BSE monthly (Ansah 2015: 24, Lipschitz 2018: 3). For breast cancer to be treated effectively and efficiently, early detection and accurate diagnosis are essential. Thus, women are encouraged to examine their breasts and report any abnormalities promptly to a healthcare facility for further investigation (Department of Health 2020: 27). In low-resource settings, breast health awareness has been advocated as a means of early detection. Although these (RSSA, BISSA, and CANSA) organisations

promote breast cancer awareness and screening, they do not provide recommendations or guidelines for the adoption of BSE by rural South African women.

2.7.2 Barriers to breast self-examination

Breast cancer screening and BSE have received relatively little research in South Africa. Currently, there has been no research conducted to identify the factors influencing the uptake of BSE among rural African women in South Africa. Using all relevant research available on this topic, the researcher identified themes that could serve as potential barriers to BSE. Based on the methodology design and population groups of existing research in South Africa, the findings could not be generalised to the current study population. This is due to various reasons outlined in the following sub-sections.

2.7.2.1 Knowledge, attitude, and practice

While breast cancer is prevalent in South Africa, research on breast cancer screening is sparse (Joffe *et al.* 2018: 3, Krombein and De Villiers 2006: 48). In addition, there is very little research on BSE despite its importance in resource-constrained countries. Many women in LMICs have advanced-stage breast cancer due to the lack of knowledge and fear of diagnosis (Joffe *et al.* 2018: 3). Researchers have found that women with inadequate knowledge and awareness of breast cancer are more likely to delay seeking medical attention (Joffe *et al*. 2018: 3, Moodley *et al*. 2016: 6). A study conducted in South Africa concerning the knowledge, attitudes, and practices of BSE among university students in the Western Cape, found that education and knowledge are strongly correlated with BSE (Ansah 2015: 3). While these findings are of significance, they cannot be generalised to all South African women since their socio-economic and cultural backgrounds differ greatly.

A previous study in South Africa investigated breast cancer awareness among rural and urban women (Pillay 2002: 105). The study found that most women had a knowledge deficit of breast cancer awareness, with most of the deficit attributed to women living in rural areas and those from disadvantaged backgrounds. Another study conducted in South Africa assessed the knowledge, attitude, and practice of breast cancer screening among coloured women in the Western Cape (Krombein and De Villiers 2006: 48). It was found that although most participants were familiar with breast cancer, 45% believed that screening should be reserved for those with symptoms (Krombein and De Villiers 2006: 48).

In the year 2015, Ramatuba *et al*. (2015: 2) conducted a study to assess the knowledge, attitudes, and practices related to breast cancer screening among African women in rural Makwarani communities. To understand the uptake of breast cancer screening among these women, Ramatuba *et al.* (2015: 2) employed a quantitative research methodology with a cross-sectional survey approach. In quantitative studies, researchers are restricted from probing further and extracting more information from the participants. Therefore, there is a lot that is unknown about the knowledge, attitudes, and practices of rural South African women concerning BSE.

2.7.2.2 Socio-demographic factors

The quality of healthcare in rural South Africa is adversely affected by demographic, economic, social, and cultural factors (Ramatuba *et al.* 2015: 2, Visagie and Schneider 2014: 2). Globally, poverty is associated with poor breast cancer outcomes (Ramatuba *et al*. 2015: 2). A delay in detecting advanced-stage breast cancer among South African women reflects poor healthcare, income, and health education (Gordon *et al*. 2020: 4, Lambert *et al*. 2020: 4). It was noted that time, travel, and costs are some factors that influence the health-seeking behaviours of women living in rural areas (Gordon *et al.* 2020: 4).

In a study conducted among women from rural Makwarani communities, it was found that women from low socio-economic status had a decreased likelihood of breast cancer screenings, a higher risk of receiving a late diagnosis, a disparate treatment plan, and a higher mortality rate (Ramatuba *et al*. 2015: 2). In another study, African women residing in the western regions of South Africa delayed seeking medical consultation for 8.5 months after developing a breast lump or breast symptom (Lambert *et al*. 2020: 4). According to Gordon *et al.* (2020: 4), women do not feel sick enough to seek medical attention. According to a recent study, 52.1% of women from rural areas enrolled in a KZN hospital had received only primary education, and a significant percentage of women were unemployed (Ayeni *et al*. 2020: 363). Therefore, BSE provides a cost-effective and easy-to-learn alternative to the early detection of breast cancer in rural South Africa.

2.7.2.3 Cultural influence and traditional medicine

Historically, many areas in South Africa, particularly in rural KZN, were traditional (Maphumulo 2020: 18, Pillay 2002: 105). As a result, it has been noted that up to 80% of the country's African population consults traditional healers. Women are seen as major users of these kinds of services, especially in rural areas (Pillay 2002: 105). Cultural values and ethnic diversity affect health beliefs, which can affect how rural women respond to western healthcare, including conditions such as breast cancer (Maphumulo 2020: 18, Ramatuba *et al*. 2015: 3). It was found that older women living in rural South Africa had a greater tendency to seek out traditional healers (rather than doctors) concerning breast lumps (Harries *et al.* 2020: 5). However, it is unclear how it affects African women's uptake of BSE.

It is generally assumed that chronic conditions in African communities are caused by witchcraft and evil spirits (Ramatuba *et al*. 2015: 3). In some cases, women delay seeking treatment because they fear stigmatisation regarding their daughters, believing that they might also suffer from breast cancer and not be considered suitable for marriage (Ramatuba *et al.* 2015: 3). In some cases, women

felt traditional healers were either fraudulent or unable to cure breast cancer and agreed medical doctors provided more help (Harries *et al.* 2020: 5, Lambert *et al*. 2020: 4). According to Harries *et al*. (2020: 5), women's inability to trust traditional healers may have been due to the perceived seriousness of the symptoms. Pillay (2002: 105) suggests that indigenous healers are well-positioned to encourage breast cancer screening, particularly in rural communities.

2.8 BREAST CANCER SCREENING INTERVENTIONS

Many countries have developed and implemented breast cancer screening interventions. In this context, models, applications, and networks are included. Further discussion will be provided in the following sections.

2.8.1 The cancer intervention and surveillance modelling network

Several models were identified that belonged to the Cancer Intervention and Surveillance Modelling Network (CISNET). Among these models was the MISCAN (Microsimulation Analytic Model), that originated from the Netherlands and was later evolved into the MISCAN-Fadia model, the Spectrum model, the Stanford University model, the Markov Model, and the UWBCS and MDAnderson Models (Koleva-Kolarova *et al.* 2015: 355). These models were developed to assess the potential harms and benefits associated with introducing regular breast cancer screening efforts (Koleva-Kolarova *et al.* 2015: 356). The modelling approach was largely determined by tumour progression. The purpose of these models was to examine the effects of implementing regular screening and appropriate therapies on mortality rates (Koleva-Kolarova *et al.* 2015: 356). The repeated application of these models in diverse settings, and their importance to key stakeholders (policymakers, healthcare providers, and patients) suggests a need to evaluate the perceived harm of breast cancer screening (Koleva-Kolarova *et al.* 2015: 356). Since this modelling network was developed based on the harms and benefits of mammographic screening, and the perceived harms of radiation with regular

breast cancer screening, it is not suitable for the current research topic and objectives. In addition, this modelling network originated in the Netherlands, a country with a different socio-economic background from South Africa. It is therefore unlikely that this modelling network would promote the knowledge and practice of BSE among rural South African women.

2.8.2 The Gail Model

The breast cancer risk assessment tool, also known as the Gail Model, has been widely used and validated among white women in some Western countries (Wang *et al.* 2018: 636). A Nigerian study found that there were no screening programmes or risk prediction models available for women living in SSA. As a result, researchers felt that it was imperative to develop a risk prediction model for women in SSA using data obtained from the indigenous population of Nigeria (Wang *et al.* 2018: 636). This model represented the risk characteristics and profile applicable to women in SSA. However, researchers felt that this model lacked information on several significant predictors, such as mammographic density, and the precise histology of benign breast diseases (Wang *et al.* 2018: 636). Despite this model's contribution to identifying breast cancer risk factors, this model does not apply to the current research objectives and the promotion of BSE.

2.8.3 The Peruvian Model

The Peruvian model was developed in Peru to provide women in semi-rural and rural areas with access to affordable and accessible breast cancer treatment (Bain *et a*l. 2018: 1). This model was intended for areas of Peru with little access to mammography. CBE was identified as a resource-appropriate screening modality in settings without access to mammography (Bain *et al.* 2018: 2). Through collaboration with colleagues in the Breast Health Global Initiative (BHGI) and the use of their resource-based guidelines, Path, a non-profit global health organisation, developed and piloted a targeted screening model with Peruvian

partners. As described by Bain *et al.* (2018: 2), the model comprised of five components:

1. Promotion of breast cancer screening by community health promoters to detect the disease in its early stages.
2. The provision of CBE by midwives in a primary care setting.
3. The use of ultrasound for the assessment of palpable masses detected by CBE.
4. Fine-needle aspiration (FNA) biopsy sampling by a general physician or gynaecologist at a local community hospital, followed by referral if positive.
5. Providing patient navigation services to ensure that women referred for tertiary care receive timely care.

It was through the innovative approach of having general physicians perform FNA sampling in these settings that the Peruvian government was able to decentralise services and detect breast cancer at an earlier stage in more rural and remote areas (Bain *et al.* 2018: 2). This Peruvian Model further encouraged the implementation of The School for Breast Health as a center of excellence, focusing specifically on training health professionals to detect and treat breast cancer at an early stage (Bain *et al.* 2018: 2). Although an early detection model is recommended for rural communities without mammography, the components of this model would benefit rural women in Peru, and not rural women in South Africa. South Africa's rural areas are affected by brain drain, lack of resources, unemployment, and lack of adequate healthcare services and infrastructure. This makes it difficult to implement this model effectively.

2.8.4 Motivational interviewing

Motivational interviewing is described as a means of communicating with individuals to address motivational issues that inhibit positive behaviour change (Toomey 2011: 1). Motivational interviewing was intended to improve BSE behaviour. The style of counselling embodies respect for the individual's autonomy

and is based upon the assumption that everyone can change (Toomey 2011: 34). As a result, individuals are more likely to recognize problems, decide to change their behaviour, and commit themselves to do so. In this regard, motivational interviewing has been demonstrated to be an effective method for increasing BSE adoption (Toomey 2011: 1). This technique was, however, applied to college students who are economically better off than their rural counterparts. Moreover, due to time constraints, the need to hire trained personnel, and the high cost involved, it is not feasible to reach many women geographically in rural South Africa. Consequently, motivational interviewing would not be a cost-effective method of promoting BSE in rural South Africa.

2.8.5 The breast cancer risk factor application (App)

The breast cancer risk factor application was developed in India to assess the risk of developing breast cancer in women (Mudaranthakam *et al*. 2021: 5). Women can use this app to assess their risk based on their age, BMI, smoking status, alcohol intake, contraceptive usage, and the age of their first pregnancy. Using the patient's data, the App would provide personalized recommendations based on national standards and population-specific data, thereby identifying a patient's overall risk and guiding them in making informed decisions regarding regular breast cancer screening (Mudaranthakam *et al*. 2021: 5). Among the limitations of this App is the fact that those who did not attend screening were not asked about their reasons for not attending, which would have been beneficial for the development of the application (Mudaranthakam *et al*. 2021: 5). This may be challenging to develop a mobile app in rural South Africa since it requires access to an electronic device which may not be feasible for everyone.

2.9 HEALTH BEHAVIOUR MODELS AND THEORIES

Health behaviours are any actions undertaken by an individual with the intent of maintaining or improving health, preventing health problems, and achieving a positive body image (Ansah 2015: 5). Several factors have been identified around the world that influence the knowledge and practice of BSE among women. Among the factors identified were social and cultural factors, socio-economic status, lack of knowledge, misconceptions, and negative attitudes (Pirzadeh *et al.* 2017: 299). Due to the differences in socio-economic and cultural backgrounds among women, these findings cannot be generalised to all women. Therefore, health behaviour theories and models can be used to understand women's health behaviour in different countries and ethnic groups towards breast cancer screening

The HBM is one of the oldest and most used theoretical frameworks for predicting the behaviour of women in adopting breast cancer screening practices. According to the HBM, health behaviour is influenced by an individual's perceptions, expectations, values, and beliefs. The likelihood of an individual adopting a health behaviour is increased if they perceive that they are predisposed to circumstances that may pose severe impediments (Moey *et al.* 2021: 1694). In contrast, the theory of planned behaviour (TPB) also known as the theory of reasoned action (TRA) assumes that an individual's intention to engage in the behaviour determines their adoption of the behaviour (Moey *et al.* 2021: 1694). According to a Malaysian study, women are more likely to continue screening for breast cancer when they believe it leads to early detection of breast cancer (Moey *et al.* 2021: 1694).

Following the trans-theoretical model (TTM), individuals create change when their perceived benefits outweigh their perceived barriers (Ghahremani *et al.* 2016: 5137). Consequently, individuals' attitudes toward benefits and barriers are crucial in determining whether they adopt health behaviours. An Iranian study utilizing the TTM found that educational interventions are effective in promoting BSE (Ghahremani *et al.* 2016: 5137). While social cognitive theory (SCT) has made

significant progress in understanding why people perform certain health behaviours (Rejeski and Fanning 2019: 1009). Furthermore, there has been a significant impact on behavioural change interventions, providing interventionists with clear targets for improving efficacy beliefs, supporting self-regulation, minimizing external barriers, and enhancing positive outcome expectations (Rejeski and Fanning 2019: 1009).

The CSB theory was developed to explain and predict preventative health behaviours (Gochman 1997: 82). Further, it has been used to explain why people participate in health promotion programmes by incorporating external factors that may affect screening behaviour. Additionally, this theory can be used to identify socio-demographic factors that influence women's health behaviour toward preventative screening programmes, such as mammogram screening to detect breast cancer at an early stage (Lauver 1992: 284). Health behaviour models and theories should be examined more closely by measuring the key constructs, applying and testing existing models and theories, and developing new models and theories (Painter *et al*. 2008: 362). As a result, researchers would be able to examine more deeply the complex and multidimensional health issues impacted by health behaviours. The next chapter will provide a detailed understanding of the health behaviour models and theories mentioned as well as the study's selected theoretical framework and its application to this study.

2.10 SUMMARY OF THE CHAPTER

Breast cancer is a major public health concern, both in developed and developing countries. BSE plays an important role in the early detection of breast cancer. The factors influencing BSE uptake among women from different socio-economic backgrounds were discussed. The screening interventions presented illustrate the various initiatives taken by different countries or organisations to enhance breast cancer early detection. To further understand the need for selecting the most appropriate theoretical framework for the current study, health behaviours models

and theories were introduced. A discussion of the theoretical framework will follow in the next chapter.

CHAPTER 3: THEORETICAL FRAMEWORK

3.1 INTRODUCTION

This chapter describes the theoretical framework used in this study. In the first section, an overview of the concept theoretical framework is introduced, and its functionality is described in detail. A variety of health behaviour models and theories were then presented to determine which model or theory was most suitable for achieving the research objectives. The CSB theoretical framework was selected as the theoretical framework for this study, and its application was discussed. A summary concludes this chapter.

3.2 THEORETICAL FRAMEWORK OVERVIEW

Theories can be described as sets of statements or principles intended to explain a group of facts or phenomena, particularly those that have been repeatedly tested or are widely accepted that help predicts events in the natural world (Hayden 2019: 21). In the context of health promotion and disease prevention, the word theory refers to a set of propositions that combine to explain health behaviour or provide a method for guiding health promotion practices (DiClemente *et al*. 2002: 8). It is a means of explaining phenomena and can serve as the basis for further investigation as well as practical application (Baumgartner *et al*. 2002: 18). Theoretical perspectives explain behaviour and thus can offer suggestions for changing that behaviour.

Identifying the reasons individuals engage in unhealthy behaviours can help researchers develop interventions or models designed to assist in changing individual behaviour and adopting healthier lifestyles if they choose to do so (Hayden 2019: 22). Along with theories, there are also models. Essentially, a model is a combination of ideas or concepts that can be drawn from any number

of theories. Models facilitate the understanding of a given issue in a certain context, which a single theory alone may not be able to achieve (Hayden 2019: 22). Theory and model are instrumental in explaining, predicting, and understanding health behaviour (Hayden 2019: 21). Understanding health behaviour determinants and the process of change serves as the foundation for developing interventions to improve public health and the evaluation of their effectiveness (Hayden 2019: 21). Additionally, the theory drives research, governing the variables or factors to be studied, how they should be measured, and how they might be combined (Hayden 2019: 21). In the process of the development and evolution of a theory, constructs emerge when the concept becomes less nebulous and more concrete. Hayden (2019: 22) defines constructs as the methods by which concepts are integrated into a given theory.

3.3 HEALTH BEHAVIOUR MODELS AND THEORIES

An effective approach to changing health behaviours is based on the use of the most appropriate model or theory. The following sub-sections are an overview of some of the most used health behaviour models and theories.

3.3.1 Health belief model

The HBM has been widely used as a conceptual framework in health behaviour research, both to explain the change in health-related behaviours and to guide interventions (Glamz *et al*. 2015: 99). Through the decades, the HBM has been developed, compared, and contrasted with other frameworks and used to inform interventions for improving health behaviour (Glamz *et al*. 2015: 99). The HBM consists of several constructs that can help predict when and why individuals will act to prevent, detect, or control medical conditions (Glamz *et al*. 2015: 100). Among these constructs are perceived susceptibility, perceived severity, perceived benefits and barriers to engaging in certain behaviours, cues to action, and self-efficacy (Glamz *et al.* 2015: 100). According to Glamz *et al*. (2015: 100), the

fundamental premise of the HBM is that people are more likely to engage in health behaviour if they believe that:

1. Their health is at risk (they are susceptible to disease).
2. There is a possibility that they may suffer serious consequences because of the condition.
3. Taking action (behaviour) may reduce either the severity of the condition or the susceptibility to it.
4. There are several benefits to taking action.
5. Its perceived barriers (or costs) are largely outweighed by its benefits and do not present substantial obstacles to action.

The HBM has been praised for its simplicity and ease of use (Khiyali *et al.* 2017: 2833). However, it does not incorporate a wide range of constructs, such as socio-economic factors and habits (Lawal *et al.* 2017: 123). Even though the HBM constructs would be able to provide valuable insight into the knowledge, perception, and factors influencing BSE practice among rural South African women, they limit the researcher's ability to examine socio-economic factors and habits that may also influence BSE knowledge and practice. Therefore, the researcher intended to select a model or a theory that incorporates similar constructs as the HBM but includes additional constructs such as habit and socio-economic factors. As a result, the HBM was not employed in this study.

3.3.2 Trans-theoretical model

The TTM of behavioural change is one of the behavioural change models that suggest that changing behaviour is not a coincidence, but rather a process, and different people are at different stages of readiness and change (Hashemzadeh *et al*. 2019: 83; Hayden 2019: 283). Five stages are involved in this process:

- Precontemplation: individuals in this stage do not intend to take any action soon.

- Contemplation: individuals at this stage are aware of the consequences of their behaviour and are contemplating possible changes.
- Preparation: at this stage, individuals are committed to making changes. The individual will be able to easily acknowledge their problematic behaviour and will commit to changing it.
- Action: individuals are actively involved in the process of changing their behaviour during the action stage. As a result, they are open to receiving assistance from others.
- Maintenance: the ability to avoid being tempted to return to the previous behaviour determines the success of this stage.

The constructs of the TTM can be used to determine whether promotional initiatives are effective in changing rural South African women's preventative healthcare behaviours and influencing their adoption of breast cancer screening over traditional practices. Since the TTM's constructs focus on the change in behaviour patterns, it would not be useful for describing and exploring the knowledge, perceptions, and factors influencing the uptake of BSE among rural South African women.

3.3.3 Theory of planned behaviour

The TPB proposes that behaviour is based on intentions. One's intention is the degree to which one is prepared to engage in a particular behaviour or the probability that one will engage in a particular behaviour (Hayden 2019: 103). It is more likely that people will perform a particular action if they plan or aim to perform it. This theory consists of four key elements. These include attitude, social norms, perceived behavioural control, and intention (Hayden 2019: 114). According to the TPB, women adopt health behaviours based on their intention to do so. For example, a woman's intention to have a mammogram drives their actual participation in a mammography screening programme (Walker *et al*. 2007: 192). The TPB contains fewer constructs and is believed to be effective in predicting

individual behaviour in healthcare research (Alhamad and Donyai 2021: 7). The constructs of this model may be useful in describing knowledge, perceptions, and factors influencing BSE practice among rural South African women. However, it contains fewer constructs than other health behaviour models. As a result, it may have been difficult for the researcher to identify additional factors that influence BSE practice. Hence, the researcher sought either a model or a theory that included similar constructs to the TPB and additional constructs. This was to gain a deeper understanding of rural South African women's knowledge and practice of BSE.

3.3.4 Social cognitive theory

The SCT is a theoretical framework that argues that there is a continuous interaction between the social environment (for example, watching others behave), internal stimuli (such as cognitive processes and feelings), and behaviour (Hayden 2019: 438). The SCT has been used to explain aggressive behaviours and can be adapted to explain how individuals learn to bully, for example, through observational learning and reinforcement (Hayden 2019: 438). The theory suggests that behavioural, personal, and environmental factors interact with each other so that changing one changes them all (Hayden 2019: 409). The SCT is based on the assumption that individuals can learn from observing others (Hayden 2019: 438). According to this theory, attention, memory, and motivation play an important role in learning. However, this theory would be limited in describing and exploring factors such as habit and belief that may influence BSE uptake among rural South African women. As a result, this theory was not employed in this study.

3.3.5 Care-seeking behaviour theory

The CSB Theory was developed to explain why women from various cultural backgrounds and ethnicities participate in or do not participate in health-promoting programmes (Lawal *et al.* 2017: 124). The CSB Theory has a wider range of constructs than the health behaviour models and theories explained above.

Moreover, some of its constructs are similar to those found in some health behaviour theories and models discussed previously. For example, a perceived threat with benefit in the HBM is the same as decisional balance in the TTM, affect and belief in the theory of CSB, or attitude in the TPB (Lawal *et al.* 2017: 4). A further construct with commonality across the models and theories is self-efficacy. It is referred to as self-efficacy in the HBM and the TTM, but as perceived behavioural control in the TPB and as an external factor in the CSB theory (Lawal *et al.* 2017: 5). Lastly, the subjective norm construct in TPB is similar to the norm construct in CSB (Lawal *et al.* 2017: 5). Thus, the CSB Theory served as the theoretical framework for this study due to its wide range of constructs and similarity with other important theories and models related to health behaviour. The next section will provide a detailed discussion of the CSB theoretical framework.

3.4 THE CARE-SEEKING BEHAVIOUR (CSB) THEORETICAL FRAMEWORK

The theoretical framework for a research study is described by Grant and Osanloo (2014: 12) as the foundation upon which all knowledge is built (metaphorically and literally). The rationale serves as the basis for the problem statement, the purpose, and the significance of the study, as well as the research questions. By utilizing the CSB theoretical framework, the researcher intended to address the research questions presented in Chapter 1. The CSB theoretical framework is depicted diagrammatically in Figure 3.1 (Gochman 1997: 83). In Figure 3.1, three main constructs of the CSB theoretical framework were identified. Among these constructs are clinical and socio-demographic constructs as well as psychological constructs (affect, belief, habit, norm) as well as facilitating (barrier) constructs.

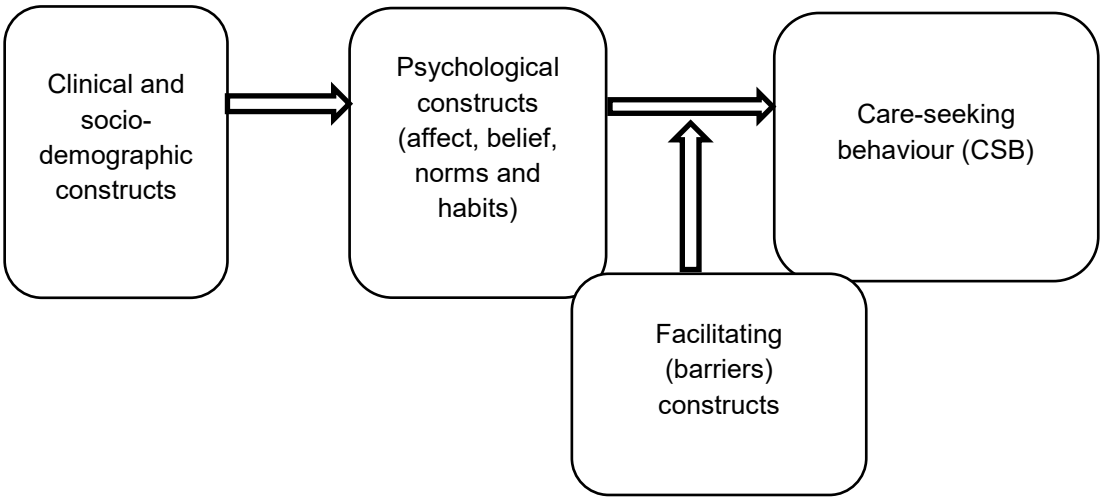


Figure. 3.1: The care-seeking behaviour (CSB) theoretical framework (Gochman 1997: 83).

The CSB Theoretical Framework attempts to develop interventions that facilitate the desired health behaviour, such as participation in health screenings (BSE) or early detection programmes (Ying 2019: 13). Following is a more detailed explanation of the CSB theoretical framework constructs that underpins this study:

- **Clinical and socio-demographic constructs**: clinical factors include symptom severity, while socio-demographic factors include educational attainment, income, geographical location, occupation, age, race, and socio-economic status (Ying 2019: 14). Clinical and socio-demographic factors directly influence CSB by influencing psycho-social factors such as affect, beliefs, norms, and habits (Lawal *et al*. 2017: 124; Ying 2019: 14). It is anticipated that the application of the construct clinical and socio-demographic factors should provide an insight into the factors that may influence the uptake of BSE among rural South African women, such as education, geographical location, employment, affordability, and socio-economic status. A previous study utilizing the CSB theoretical framework found that women with higher incomes and higher levels of education were more likely to engage in preventative health behaviours (Donnelly *et al.* 2015: 3). Furthermore, another study found that the CSB theoretical framework was well suited for the opinions of women, however, it was limited

by the absence of socio-demographic characteristics (Lawal *et al.* 2017: 125). As a result, findings from previous studies cannot be applied to all women with different ethnic backgrounds or socio-demographic profiles.

- **Affect:** refers to a feeling of anxiety that could be caused by embarrassment or a diagnosis, which can result in the individual refraining from engaging in preventative health practices (Lauver 1992: 284, Peprah *et al.* 2019: 2). Contrary to this, anxiety and intense emotional reactions related to breast changes have also been linked positively to intentions to seek care and prompt action taken to address breast symptoms (Lauver 1992: 284). It is also possible that individuals may be discouraged from seeking healthcare services due to a feeling associated with care-seeking, such as treatment concerns. Women continue to adhere to herbal and traditional medicine and generally display hostile attitudes toward the modern healthcare system, which is often viewed as culturally insensitive (Peprah *et al*. 2019: 2). A previous study (Heit 2001: 7) found that women who sought medical advice about breast cancer symptoms were less likely to develop high levels of anxiety than those who delayed seeking treatment.

- **Belief**: reflects the overall value or importance of CSB (Ying 2019: 13). There is a belief that the act of seeking medical care would either result in good or bad outcomes (Heit 2001: 9). According to Lawal *et al.* (2017: 61), most studies indicate that cultural factors heavily influence women's beliefs. Breast cancer screening is more likely to be undertaken by women who believe that practicing preventative health behaviours will reduce their chances of developing the disease (Lawal *et al.* 2017: 124).

Individuals may refrain from seeking medical treatment due to a negative perception of treatment options, and the belief that others cannot assist them (Heit 2001: 9). As an example, a woman may believe that having a mammogram will reduce their risk of breast cancer. Alternatively, women may also believe that

having a mammogram will result in breast cancer (Lawal *et al.* 2017: 124). An individual's belief would determine whether a woman would undergo mammography screening. According to a previous study (Lawal *et al.* 2017: 124), women are more likely to undergo mammograms if they believe the positive outcome will outweigh the negative outcome.

- **Habit**: refers to the way one acts when one is experiencing symptoms, for example, whether one seeks medical attention promptly (Lauver 1992: 284). In this regard, habit reflects one's usual CSB and past experiences relating to care-seeking (Lauver 1992: 284). It has been shown that habits are related to screening behaviours for breast cancer and the intent to seek medical attention for breast cancer symptoms. In this way, the factors of expectations, values, norms, and habits can have a direct influence on one's behaviour in seeking healthcare (Lauver 1992: 285). As a result of this construct (habit), healthcare behaviours from previous experiences can be reproduced, especially when similar circumstances are present (Gyasi *et al.* 2016: 3).

  According to Heit (2001: 11), women with preventative habits are 4.8 times more likely to comply with screening recommendations such as mammograms compared with women without such habits. Consequently, women with preventative habits were twice as likely to have breast cancer screening. Furthermore, intention to seek medical care and promptness in addressing symptoms like breast cancer are related to habits (Heit 2001: 11). People who are in contact with healthcare providers are more likely to discuss and engage in preventative health practices.

  There is evidence that suggests that women's habits toward adopting healthier behaviours, such as regular participation in mammography screening, as well as their socio-economic characteristics directly influence

women's behaviour toward breast cancer screening (Lawal *et al.* 2017: 125). Even though evidence suggests the influence habit has on mammography screening, this cannot be applied to BSE because these two screening methods have their specific advantages and disadvantages. There are no available data to indicate that habit influences BSE uptake among rural South African women.

- **Norm:** consists of the perception of morally acceptable behaviour towards seeking healthcare (Ying 2019: 13). The CSB theoretical framework asserts that norms include social norms, which reflect the beliefs of others regarding seeking healthcare; personal norms, which represent one's views about seeking medical assistance; and interpersonal norms which reflect an agreement between individuals to seek medical assistance (Lauver 1992: 285). Individuals' health philosophies regarding what is morally righteous behaviour to seek healthcare and their willingness to act on beliefs held by others influence their motivation to access healthcare (Peprah *et al* 2019: 2).

  Information shared between families, friends, as well as community members leads to the creation of social networks and advertisements in mass media, which influence healthcare decision-making (Gyasi *et al*. 2016: 3; Peprah *et al.* 2019: 2). A large part of the motivation to access care lies in the individual's own paradigmatic or personal health philosophies about what constitutes morally correct behaviour in seeking care, as well as the degree to which one is prepared to act based on the beliefs of others (Gyasi *et al.* 2016: 3). For example, rural communities are close-knit, and negative experiences can be passed on by word-of-mouth, which can produce reluctance to seek medical attention and the mistrust of conventional medicine among multiple individuals in the community, resulting in decreased uptake of healthcare (Ying 2019: 13). A previous study, found that women with strong social normative beliefs about breast cancer had twice as

high screening rates as women with weaker social normative perceptions (Heit 2001: 19).

- **Facilitating (barriers) constructs** are those which are objective, external, and beyond the control of the individual for example, transportation, insurance, and geographic location (Ying 2019: 14). Thus, facilitating barriers may enable the initiation of CSB when they are present. As an example, transportation to a doctor's appointment can represent a barrier to CSB when it is not available (Ying 2019: 14). Conditions that facilitate access to care are the opposite of those that would impede it. In other words, the presence of facilitating barriers may indicate the presence of barriers to care and vice versa (Lauver 1992: 285).

According to Lauver (1992: 285), although psychological constructs could directly influence CSB, they are insufficient by themselves and are usually influenced by facilitating circumstances, leading to decisions that influence CSB. Literature indicates that transportation, medical insurance, geographical location, and affordability are some of the factors that need to be considered (Lawal *et al*. 2017: 63, Ying 2019: 1). In addition, individuals living far from PHC facilities and without access to medical insurance are less likely to practice preventative health habits (Heit 2001: 12).

3.5 APPLYING THE CSB THEORETICAL FRAMEWORK IN THE STUDY

The CSB Theory has been used by several researchers to analyse individual healthcare behaviours (Lawal *et al*. 2017: 63, Ying 2019: 1, Peprah *et al.* 2019: 2). Therefore, this study will utilize CSB theory as its theoretical framework to help achieve the research objectives outlined in Chapter 1. It is suggested that the CSB theoretical framework will add value to the exploration of women's health behaviour towards BSE because it provides insights into socio-demographic

factors, psychological factors (affect, belief, habit, norm), and facilitating (barrier) factors.

According to the literature review, early detection of breast abnormalities is crucial to the treatment and prevention of breast cancer (Dadzi and Adam 2019: 3). Additionally, the literature review found that several factors influence breast cancer screening in several countries. These factors include knowledge and awareness, socio-demographic factors, social barriers, cultural beliefs and practices, and external factors. Through the application of the CSB theoretical framework, this study provides a wide range of factors influencing BSE uptake among rural South African women. During the structuring of the interview questions, the constructs of this framework were referred to. Chapter 4 will provide a more detailed explanation of this. The CSB theoretical framework was applied as follows:

- Clinical and socio-demographic factors were included to gain a better understanding of the symptom severity, level of education, and employment, of rural South African women. In addition, this study examined the knowledge of rural South African women regarding the terms breast cancer and BSE.
- Affect: was used to gain a better understanding of women's anxieties and concerns related to breast cancer and BSE practices. Additionally, the factor “affect” provided a better understanding of how participants perceived the risks and benefits associated with breast cancer.
- Belief: was included to explore rural South African women's traditional and health beliefs. This provided a deeper understanding of the traditional interpretation of breast cancer among rural African people, as well as their traditional diagnosis and treatment of this disease. In contrast, their health beliefs were used to assess their willingness to practice BSE and attend awareness programmes.
- Habit: was utilized to better understand rural South African women's preventative health behaviour when faced with health problems. In this way,

it was possible to understand whether rural South African women were willing to participate in BSE screening programmes or whether they were willing to learn about breast cancer screening.

- Norm: was categorised into the social, personal, and interpersonal norms. Social norm was used to analyse customs and traditions that represent a person's feelings about what others do or think regarding BSE practice. Personal norms were investigated to understand how women perceive and comprehend BSE. Interpersonal norms were examined to determine the level of agreement and interactions among people regarding whether to practice or not to practice BSE.
- Facilitating barriers was aimed at identifying external factors that might adversely affect rural South African women's ability to receive timely healthcare and participate in breast cancer screening programmes.

The research questions outlined in Chapter 1 was addressed in part by applying the CSB theoretical framework.

3.6 SUMMARY OF THE CHAPTER

In this chapter, the theoretical framework and its functionalities were explored. In addition, several health behaviour theories and models were discussed. This study utilized the CSB theoretical framework. In the next chapter, the research methodology will be discussed.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

This chapter describes the research methodology used in this study. This chapter begins with the research design. Following this, the researcher presents research paradigms, research settings, sampling processes, data collection processes, data analysis, trustworthiness, ethical considerations, and a summary.

4.2 RESEARCH DESIGN

A research design consists of the plans and procedures for collecting and analysing data. It starts with broad assumptions and leads to detailed methods for data collection and analysis (Creswell 2022: 22). The research design is described by Moule and Goodman (2017: 168) as a road map for engaging with research participants to achieve the outcomes necessary to address the research aim and objectives. To explore the factors influencing rural South African women's adoption of BSE, a qualitative case design was used. Qualitative research is derived from sociological research, which collects descriptive data, including people's own written or spoken words and observable behaviour and subsequent analysis (Yin 2016: 9).

Most of the studies presented in this literature review used questionnaires and a quantitative research design to collect data, limiting participant responses and preventing further research. Health problems do not all lend themselves to being studied quantitatively. Some health problems are better explored with qualitative research design, which is best suited to exploring participants' viewpoints (Lawal 2017: 48). According to Oladimeji *et al*. (2015: 7), future qualitative studies should examine breast cancer awareness, knowledge, and practice of BSE using an interview-based design to obtain in-depth descriptive data. The rationale for using

a qualitative research design is that there is little information available on the practice of BSE in South Africa and it was therefore important for the researcher to explore and understand the factors influencing the use of BSE among rural South African women by utilising the CSB theoretical framework. The qualitative design, according to Yin (2016: 8), focuses on finding insights into individuals' experiences, and how they interpret those experiences, or how their perceptions of the world differ from those of others. Qualitative research allows researchers to gain insight into the views and perspectives of participants, which is useful for comprehending how participants interpret their experiences and attitudes.

Qualitative research is described as a body of information derived through words to gain a deeper understanding of a particular experience or perception (Taylor *et al.* 2016: 9). Qualitative research aims to understand the meaning that people attach to things in their lives. Using qualitative design, researchers examine settings and people holistically and do not reduce people, settings, or groups to variables, but rather view them (Taylor *et al.* 2016: 9). If researchers where to reduce people's actions and words to numerical equations, they may lose sight of the human side of social interaction (Taylor *et al.* 2016: 9). Studying people qualitatively provides an opportunity to know them personally and become familiar with their daily struggles in society. Through this inquiry, there is much to learn about concepts such as beliefs, experiences, habits, and challenges which are not easily accessible through other approaches (Taylor *et al.* 2016: 9). However, quantitative research presents data through numbers and may provide limited information about the perception of BSE among rural South African women. Thus, explanations of the factors responsible for the low uptake of BSE cannot be easily explained using statistical measures and would leave the researcher with numerous unanswered questions on the matter.

The purpose of qualitative research is to discover and comprehend the explanations offered by individuals and groups concerning issues and allow the topic to be explored in-depth (Creswell 2022: 4). The solution to the problem can be found through an interactive process of gathering data from the participants and interpreting it. The researcher employed the qualitative approach to answer questions such as 'how', 'what', and 'where', all of which had relevance to the research questions posed to the participants (Leedy and Ormrod 2015: 141). Thus, this design enabled the researcher to obtain extensive information about the problem and provided insight into it.

According to Creswell (2022: 175), qualitative design refers to the process of building themes out of collected data to make a meaningful report of a problem in a study. Even though the interview guide questions were based on existing theories and evidence on the topic, the qualitative approach allows participants to express their own opinions, outside the scope of existing theories. In qualitative studies, Leedy and Ormrod (2015: 136) state that initial themes are derived from the broad research questions regarding the phenomenon. Further themes develop as participants respond to more specific questions until a saturation point is reached (Leedy and Ormrod 2015: 137).

When conducting a qualitative study, Creswell (2022: 17) suggests that the researcher selects one of the five most prevalent methods of investigation, that is, phenomenology, narrative, case study, grounded theory, or ethnography. The phenomenological approach emphasises the critical importance of experiencing events in the real world as they occur (Yin 2016: 17). Moreover, the narrative approach develops a narrative rendering of the findings from a real-life setting and participants, which accentuates the sense of ‘being there’ (Yin 2016: 17). Case studies situate a phenomenon in its real-world context (Yin 2016: 17). However, a grounded approach assumes that the natural occurrences of social behaviour within real-world contexts can best be analysed by constructing bottom-up

principles and categories (Yin 2016: 17). Finally, the ethnographical approach involves a long-term study on the ground that reveals everyday norms, routines, and rituals in detail (Yin 2016: 17). A case study qualitative research design was utilised in this study.

4.2.1 Case study

A case study is an empirical inquiry in which a contemporary phenomenon in its real-life context is investigated, particularly when the boundaries between the phenomenon and the context are not evident (Yin 2017: 13). Case studies are intensive investigations of a single case or a limited number of cases that bring together observational data and provide insight into a larger audience of cases (Gerring 2017: 28). Furthermore, the case study is intended to shed light on a specific case or cases, as well as to shed light on many related cases (a population). Moreover, the method is more suitable as the research questions call for an 'in-depth' and comprehensive description of the social phenomenon (Yin 2016: 4).

Using a case study design, the researcher sought to understand the factors underlying the uptake of BSE amongst South African women in rural settings holistically, a flexible method that is most appropriate to study a phenomenon within its natural context. The purpose of such studies is to construct a detailed description of the setting or the phenomenon under investigation using observations and interviews (Yin 2017: 61). Through a qualitative case study design, the researcher was able to generate insights into the perceptions of participants regarding their knowledge, attitude, belief, and practice of BSE. A case study design is appropriate when the study aims to provide answers to 'how' and 'why' questions when the participants' behaviour cannot be manipulated, and the need to cover contextual conditions is unclear, as well as the separation between the phenomenon and context (Yin 2017: 6).

A case study may be categorised as either explanatory, exploratory, or descriptive (Yin 2017: 3). Explanatory case studies are used to answer questions that seek to explain the presumed causal links in real-life interventions, which are too complex to be adequately explored in surveys or experiments (Yin 2017: 5). An exploratory case study is conducted when there is no obvious, definitive set of outcomes for the intervention being evaluated (Yin 2017: 6). A descriptive case study describes an intervention or phenomenon in the real-life context in which the intervention or phenomenon occurred (Yin 2017: 5). This study provided a wealth of insight, information, and real-life perspectives through its exploratory research approach, as well as detailed descriptions of what influences BSE uptake among South African women in rural areas.

There are three types of case studies: intrinsic, instrumental, and multiple case studies (Stake 1995: 3). 'Intrinsic cases' are those that are zealously focused on an individual, institution, or unit and rely solely on the experiences of this group. Intrinsic case studies are used when attempting to gain a better understanding of a particular situation or case, whether in all its particularity and ordinariness (Stake 1995: 3). Thus, the researcher generally suppresses other interests and focuses on the stories and accounts of persons ‘living the case’, which must be explored. Instrumental case studies are those that examine a case to provide insight into an issue or to broaden a generalisation (Stake 1995: 3). This type of case is presumed to be of secondary significance and serves only to facilitate understanding of another issue. Therefore, the case in this type serves as a means or an anchor for elucidating the other interests that are interwoven in it or surrounding it. In contrast, a multiple case study involves several cases being studied together as a means of studying a phenomenon, institution, individual, or population (Stake 1995: 5).

In this study, a multiple case study design was implemented to explore the entire case, assessing the phenomenon by combining informative and contextual data. Interpreting the data facilitated a deeper understanding of how information is

exchanged and permitted the collection of data that would not otherwise have been possible. The application of a multiple-case design allowed the researcher to analyse each case and provide a unit of analysis to be analysed within a case. Additionally, throughout the aggregate of cases, a multiple-case design allowed more robust and compelling evidence across cases (Yin 2017: 4). Based on a previous study, an analysis of the similarities and differences between cases should be conducted using a qualitative case study approach with a multiple-case study method supported by robust and compelling evidence (Smith 2014: 54). In addition, researchers should work with small case numbers, nested in their context, and studied in-depth. In this way, a multiple case study design provides a variety of perspectives on real-life scenarios and can be used to provide more in-depth descriptions of various cases. During this study, the researcher followed qualitative case study selection principles, which recommend choosing a smaller number of cases nestled within contexts and examined in depth.

4.2.2 The background of the case study

According to Flyvbjerg (2018: 219), the Chicago School of Sociology and Education was the first in the United States to use case study research. One of the earliest qualitative methodologies used in the research was the case study. Currently, case studies constitute a large portion of the research presented in textbooks and scientific articles in a variety of fields such as psychology, history, education, and medicine. Most of the current knowledge about the empirical world has been derived from case study research, and many of the most treasured classics of each discipline are case studies (Flyvbjerg 2018: 302). Sociologists have in the past discredited case studies as a scientific methodology (Yin 2016: 5; Merriam 2019: 1; Stake 1995: 2). In recent years, however, interest has been resurgent in case study research as qualitative research design has become more widely accepted. It has been observed that case studies are particularly valuable in practice-oriented fields, particularly in the social sciences (Yin 2017: 3). Case

study research, though it has a long history and is widely used, has received little attention among the various methods used in social science research (Yin 2017: 3).

According to Creswell (2022: 9), case studies are viewed through the lens of a interpretivist worldview, where people comprehend the world in which they live and work through the experiences they have of the phenomenon under study. Consequently, the interpretive path of methodological development around case studies has given way to multisite and extended case examples. These methods are ways of describing and explaining how everyday practices in specific places interact with larger structures and processes. A key goal is to distinguish the general from the unique, to move from the micro to the macro scale, and to take into consideration the present and past in anticipation of the future, all founded on pre-existing theory (Denzin and Lincoln 2018: 604).

Cases may be regarded as empirical units or as theoretical constructs and can be categorised as either specific or general (Denzin and Lincoln 2018: 602). In addition, a case can be used to promote the research interests of the investigator (Denzin and Lincoln 2018: 602). In this way, a researcher determines the type of case study that will be used based on the nature of the research problem and the questions asked. A case study allows researchers to investigate complex social units consisting of multiple variables that may be useful in understanding the phenomenon (Merriam 2019: 50). Consequently, case studies contribute to advancing a field's knowledge base by offering insights and illuminating meanings that expand its readers' experiences. Therefore, case studies contribute significantly to the advancement of a field's knowledge base (Merriam 2019: 51-54). As a result of its strengths, case study research is particularly suitable for several applied fields, such as education, social work, administration, and health (Merriam 2019: 51-54). A qualitative case study uses a variety of data sources to facilitate the exploration of a phenomenon within its context. In this regard, the

issue is not treated as a single issue, but as a collection of issues from different perspectives (Baxter and Jack 2008: 544).

4.3 RESEARCH PARADIGM

Research paradigms describe how a community of researcher's views research based on shared assumptions, concepts, values, and practices (Johnson and Christensen 2017: 31). The four main paradigms of research in social science are positivist, interpretivism, critical, and postmodernist (O'Donoghue 2018: 9). Quantitative research is well suited to the positivist paradigm since it is based on the concept of cause and effect. A qualitative research approach is suited to the three remaining paradigms since they are based on exploration and understanding (O'Donoghue 2018: 9). This study adopted the interpretivism paradigm and its application to this study will be discussed in detail in the next section. Research paradigms contain four primary components that reflect the researcher's beliefs regarding reality (ontology), knowledge (epistemology), obtaining knowledge (methodology), and values (axiology). The next section discusses the interpretivist paradigm, followed by the four primary components (ontology, epistemology, methodology, and axiology) of this paradigm.

4.3.1 Interpretivism

Interpretivism refers to a research approach that emphasizes the significance of people's personalities and their participation in social and cultural activities (Previn and Mokhtar 2022: 420). By choosing a paradigmatic research approach, a researcher's worldview is philosophically related to underlying assumptions about reality (Previn and Mokhtar 2022:420). Interpretivist researchers are concerned with understanding what something means (O'Donoghue 2018: 10). Several assumptions underlie the interpretivist paradigm. Assumptions are primarily based on everyday activities, freedom, meaning, interaction, and negotiation. Interpretivism holds that society is composed of everyday activities (O'Donoghue

2018: 14). Individual actions are not only meaningful to themselves but also to those around them (O'Donoghue 2018: 14). Using an interpretive research approach, participants were able to speak about the phenomenon from their perspective (O'Donoghue 2018: 14).

Interpretivist researchers possess the advantage of utilising their diverse viewpoints on phenomena to describe objects, people, and events. In addition, they can deeply understand them in their sociocultural contexts. This is because interpretivist researchers believe they share a common belief system in their community (Previn and Mokhtar 2022: 420). An interpretivist approach focuses on understanding complex human behaviour and social settings. The interpretivists hold that most of our knowledge is acquired through social constructions such as language, consciousness, shared meanings, documents, and other artifacts that have meaning in the lives of people (O'Donoghue 2018: 20). Consequently, researchers have their own understanding, interpretation, and world view regarding the phenomenon in question, because of their own cultural and historical influences. Researchers need to understand, analyse, and interpret the societal world from the perspective of participants. In addition, they need to realise that their backgrounds will impact the interpretation of the phenomenon being studied. The researcher ensured that the information shared reflected the views of the participants. Thus, the researcher clarified the participants' responses and asked probing questions.

Additionally, an interpretivist researcher examines the perspectives that inform empirical observation, the actions that individuals take considering these perspectives, and the patterns that result from the interaction between perspectives and actions over time (O'Donoghue 2018: 20). Through semi-structured or open-ended interviews, the researcher served as the primary source of data, using guiding questions to gain a deeper understanding of the phenomenon (O'Donoghue 2018: 20). Furthermore, the researcher was able to

collect a large amount of data from a small sample size. The researcher made every effort to understand the perspectives and views of each participant. This was achieved through probing questions, repeating answers, and actively listening to the participant.

The researcher sought to understand rural South African women's health behaviour concerning BSE knowledge and practice in this study. As a result, it was necessary to understand the social environment of participants. It was necessary to relate their experiences or understanding of breast cancer to their cultural and religious values and beliefs. There can be no meaningful understanding of these aspects without an understanding of the thoughts, feelings, beliefs, and values in which participants function. This includes their communities, homes, and the larger society in which they live. Consequently, the researcher interacted with participants face-to-face to gain a better understanding of knowledge, perception, and factors influencing BSE uptake.

Interpretivism is a value-laden approach because the results of a study cannot be generalised to settings other than the context in which it was conducted, and different researchers take different perspectives on findings (De Villiers 2005: 5). Interpretivism allows researchers to collect rich, detailed data from participants. This was achieved by providing in-depth insights into participants' cultural beliefs and practices, including their attitudes and perceptions regarding breast cancer and BSE. The researcher established clear communication with the participants by using the study information sheet to explain the research study to them. Through active listening and respecting the perspectives of the participants, the researcher established trust and rapport with all the participants. Following is a discussion of the four components of the interpretivist paradigm.

4.3.1.1 Epistemology

Epistemology is defined as the branch of philosophy concerned with knowledge and its truth (Johnson and Christensen 2017: 32). Epistemology focuses on how knowledge is acquired about a phenomenon that stems from a researcher's view of the world. The researcher and participants are regarded as creators of knowledge in this study. A knowledge base is created based on the experiences and perspectives of 22 rural South African women in the KZN province. As a result of an interpretivist paradigm, epistemology is subjective, since the researcher and the participants were engaged in generating understandings together. Interpretivism was chosen as the epistemological perspective most appropriate for this study since it was concerned with the lived experiences of rural South African women concerning breast cancer screening. Additionally, the researcher sought to gain a deeper understanding of the participants' cultural beliefs, practices, habits, and perceptions. Using an interpretivist epistemology, rich, in-depth data was collected through the analysis of in-depth life stories.

4.3.1.2 Ontology

The concept of ontology refers to a view concerning the nature of reality (Johnson and Christensen 2017: 32). This approach identifies the fundamental concepts behind the data analysed to interpret its meaning (Kivunja and Kuyini 2017: 26). The definition of ontology implies that the researcher questions the existence of things in the world (Kivunja and Kuyini 2017: 26). The interview guides explored the everyday experiences of rural South African women, which provided an opportunity for participants to share their stories, which can be viewed as a form of social construction. Further, the researcher was able to investigate the thoughts, values, prejudices, perceptions, perspectives, emotions, and perspectives of interviewees by utilising the key method of interactive interviews, which allows researchers to analyse and address matters that cannot be observed (Previn and

Mokhtar, 2022:420). Thus, this study collected valuable data that should serve as a basis for future research.

Using an ontological approach, the researcher was able to understand and question the cultural beliefs and values of rural South African women. In addition, the researcher was able to gain a better understanding of the healthcare challenges rural South African women face because of sociocultural, socio-demographic, and external factors, as well as the lack of knowledge and awareness about breast cancer screening among women, their families, and communities. According to Snape and Spencer (2014: 20), key ontological questions in social research include whether a social reality exists independently of human interpretation, whether there is a common, shared social reality or if there are multiple context-specific realities; and whether social behaviour is governed by 'laws' that are immutable or generalisable. The society in which an individual resides influences and constrains the way that individual acts and thinks. Accordingly, individuals may attribute different meanings to the same situation based on their subjective understanding. Conversely, different reactions can result from similar expressed views, resulting in a state of constant revision and a variety of interpretations of social reality that may only be accessed by researchers through participants.

4.3.1.3 Methodology

Methodology is the set of techniques and processes used to collect and analyse data related to particular research questions or hypotheses, and it represents the link between paradigm-related questions and the methods (O'Donoghue 2007:11). Through the application of an interpretivism paradigm in this study, in-depth data regarding the phenomenon was obtained using a qualitative case study design (sections 4.2 and 4.2.1). Using the purposeful sampling method (section 4.5), 22 participants and four rural clinics were identified. The data collection process (section 4.6) consisted of semi-structured interviews, while the data analysis from

the one-on-one interviews was carried out using deductive thematic analysis (section 4.7.1).

4.3.1.4 Axiology

Axiology refers to the consideration that values and ethics play in the conduct of research (Johnson and Christensen 2017: 32). This study followed ethical considerations and guidelines to ensure that the participants' anonymity, confidentiality, rights, and dignity were respected and that they were not harmed by their participation in the study. In section 4.9, the ethical principles and their application to this study are outlined in detail. In addition, the research study adhered to the principle of trustworthiness and its five major categories (credibility, dependability, confirmability, transferability, and authenticity) to ensure its integrity. Section 4.8 provides a more detailed discussion of trustworthiness.

4.4 RESEARCH SETTING

Research setting refers to uncontrolled situations in which the researcher is unable to manipulate the environment (Brink 2022: 54). In this study, data were collected at local clinics within the four municipalities of the iLembe District. A population of 678,048 is estimated for the iLembe District of KZN province, an increase of 1.7% from 2011 to 2019 (iLembe District Municipality 2020: 8). In this district, 52% of the population is female and 48% is male (iLembe District Municipality 2020: 8). The iLembe District comprises four Local Municipalities: Mandeni, KwaDukuza, Ndwedwe, and Maphumulo (iLembe District Municipality 2020: 8). iLembe is predominantly a rural District Municipality. In this district (iLembe District Municipality 2020: 8) there are currently no tertiary hospitals; however, there are three district hospitals and 34 clinics. The iLembe District was selected for this study because it is predominantly rural, 52% of its population is female, and many women from rural areas of South Africa attend these clinics (iLembe District Municipality 2020: 8). One clinic was chosen in each of the four municipalities of the iLembe district to serve as the research setting for this study.

A map of the KZN province of municipalities is depicted in Figure 4.1. The province is divided into one metropolitan municipality (the eThekwini Metropolitan Municipality) and ten district municipalities for local government purposes (Municipalities of South Africa 2024). In turn, the district municipalities are divided into forty-three local municipalities. There is a corresponding shade of colour for each district municipality and its local municipalities on the map. An enlarged view of the iLembe District municipality can be seen in Figure 4.2.

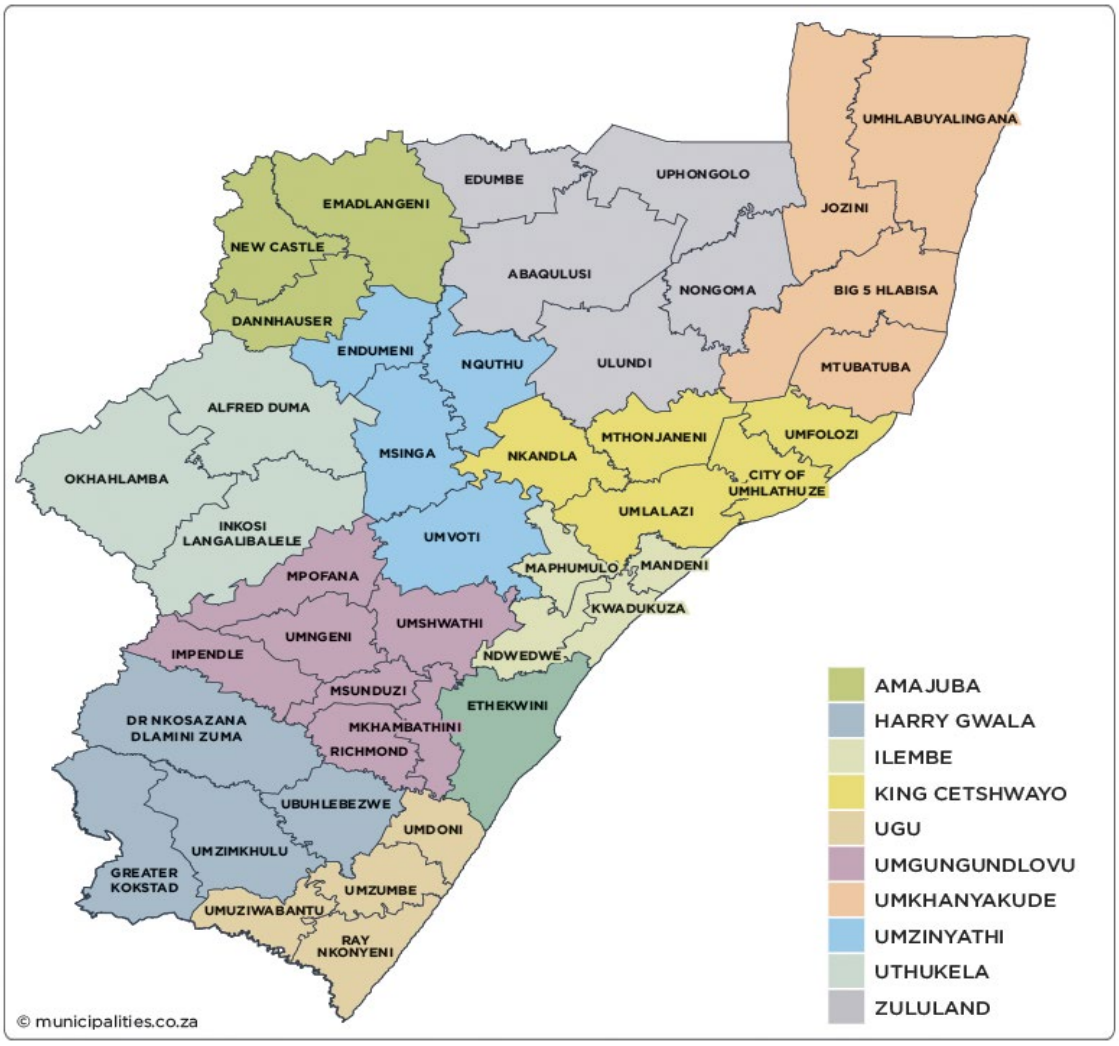


Figure 4.1: The map showing the KZN province of municipalities
Source: Municipalities of South Africa (2024)

Figure 4.2: The map showing iLembe District in KZN
Source: iLembe District Municipality 2020

4.5 SAMPLING PROCESS

Johnson and Christensen (2017: 251) describe the sampling process as comprising the identification of the population to be studied and the selection of the appropriate sampling frame. The term 'population' refers to the broader group to which the researcher generalises the findings of the study (Johnson and Christensen 2017: 250). The term sample is used for a group of elements taken from a wider population, while the term element refers to a basic unit taken from the population (Johnson and Christensen 2017: 250). In contrast, a sample frame refers to everything within a population (Johnson and Christensen 2017: 250). The sampling frame is considered larger than the sample because some participants may choose not to participate or may not be available. Vanderstoep and Johnston (2016: 27) state that sampling is extremely important since, in most cases, it is not

feasible to examine the entire population. The sample population for this study consisted of African women living in rural areas of the iLembe District province of the KZN province. The four municipal clinics were considered a good sample because of the many rural South African women in attendance. The researcher did not limit participants to one area or municipality but interviewed people from a wider variety of rural communities.

There are two sampling methods for selecting participants for a study: random sampling and non-random sampling. Random or probabilistic sampling is a method in which each member of the sample frame has an equal chance of being selected for the research study (Vanderstoep and Johnston 2016: 27). A non-random (non-probability) sample is one in which the participants do not have an equal opportunity to be selected as a participant in the study (Vanderstoep and Johnston 2016: 27). There are three types of non-probability sampling: purposive, convenient, and snowball sampling (Yin 2016: 88). This study selected a purposive sampling strategy.

Purposive sampling is based on the notion that finding the best cases leads to the best data. Research, therefore, is a direct outcome of the cases sampled (Leavy 2017: 79). The purpose of this sampling strategy is to ensure that 'information-rich cases' are selected to effectively address the research objectives and questions (Leavy 2017: 79). A central element of a research design is sampling, whereby purposeful strategies are employed to achieve rich data. As a result, the more positioned the participants concerning the topic, the richer the data will be (Leavy 2017: 79). Most qualitative research uses purposeful sampling strategies. A good qualitative researcher engages in deliberate sampling, which means selecting data in a manner that is consistent with the research aim, objectives, and questions (Tracy 2019: 134). The use of purposeful sampling is often employed by qualitative researchers, who aim to gain a deep understanding of a small sample (Leavy 2017: 79). When selecting specific research units, the purpose is to select those

that will provide the most relevant and abundant data, based on the topic of research (Yin 2016: 88).

The size of a qualitative sample is deemed sufficient when data saturation is reached. Data saturation occurs when an additional respondent does not significantly contribute to new knowledge and understanding (Vanderstoep and Johnston 2016: 188). It is the purpose of qualitative research to provide a range of perspectives or information on a topic (Vanderstoep and Johnston 2016: 188). Researchers who aim to generalise their findings to a large population require a large sample size, whereas qualitative researchers generally emphasise quality over quantity (Tracy 2019: 138). Furthermore, insufficient interviews could lead to shallow and stale contributions. Too many data points will result in a paralysing amount of information, which discourages transcription and exploration (Tracy 2019: 138). For qualitative research, Leedy and Ormrod (2015: 137) assert the possibility of studying 1-25 individuals. A total number of 22 participants made up the sample size for this research study. The concept of information power was introduced by Malterud *et al*. (2015: 1744) as a pragmatic guiding principle, arguing that the more information power the sample provides, the smaller the sample size should be, and vice versa. Moreover, the interviewer noted that no new concepts emerged from subsequent interviews and saturation had been reached after 22 interviews.

4.5.1 Sampling of clinics

Site selection plays a vital role in research as it is the location where the researcher will recruit participants, interview them, and gather in-depth data (McMilan and Schumacher 2014: 350). The four municipal clinics from the iLembe District of the KZN province were selected using a purposive sampling process. In many cases, the clinics selected were among the closest PHC facilities for rural women participating in the study. Moreover, the majority of rural South African women were from low socio-economic backgrounds, thus private clinics within these

municipalities were not selected. In addition, stakeholder purposeful sampling involves selecting a sample of participants based on their involvement in the phenomenon under investigation. In addition, it consists of individuals who share a characteristic or set of characteristics. Furthermore, data was collected by interviewing participants at the selected clinics. A natural setting was selected because it represented a real-life scenario in which African women volunteered to participate in the study while waiting in the clinic's administration area. The researcher felt it was appropriate to choose one clinic from each of the four municipalities of the iLembe District because they were easily identifiable, there were several options to choose from and a large sample group attended these clinics. For this reason, the researcher selected the following PHC facilities (clinics) for this study: Maphumulo, Mandeni, KwaDukuza, and Ndwedwe Clinics.

4.5.2 Sampling of participants

Sampling is a method that involves selecting a group of people or other elements that are representative of the population under study (Tracy 2013: 134). In this study, the sampling plan served as a tool that facilitated the selection of the participants for the interview. This study used a purposive sampling technique. The researcher exercised their judgment when selecting a sample that possesses the characteristics they are interested in, which in this case were rural South African women. In the following section, the sample inclusion and exclusion criteria are outlined.

The researcher recruited participants from the waiting areas of each clinic. There was ample time for the researcher to speak with participants and explain the participant information letter (Appendix 4a) in the clinics due to the long lines and the long waiting times. Through the interview process, the researcher was able to obtain rich data from participants. Researchers conducting qualitative interviews typically develop a sampling plan at the beginning of their study. The research questions determine the types of populations and individuals that can provide the

most accurate information about the phenomenon of interest (Tracy 2019: 138). A qualitative interview reveals subjectively lived experiences and viewpoints from a participant's perspective (Tracy 2019: 138). The rationale for choosing the sample size was to ensure there is no bias in this study because the researcher was interested in understanding a particular phenomenon in a particular context. According to the researcher, saturation was reached at 22 participants and no new information would have been gleaned from additional interviews. All interviews were audio-recorded.

4.5.2.1 Inclusion criteria

- Rural African women they are the least represented in literature and often present with advanced-stage breast cancer (Oluwatosin *et al*. 2020: 363).
- Women that are 20 years and older. Research studies recommend monthly BSE commencing at the age of 20 years to improve health outcomes and early diagnosis and contribute to the awareness of breast cancer (Sideeq *et al.* 2017: 3288). The women referred to in this study are adults who were born with the sex of a female.
- Residing in the iLembe District municipality.

4.5.2.2 Exclusion criteria

- All other races residing within the study population were excluded from this study because it is a minority group with different socio-economic and cultural barriers.
- All African women below the age of 20 years.
- Not residing in the iLembe District municipality.

4.6 DATA GATHERING PROCESS

Once the researcher obtained ethical clearance (Appendices 1, 2b, 3b) from all the relevant gatekeepers for this study, the researcher sought permission from the Medical Managers at each clinic (Mandeni, Maphumulo, Ndwedwe, and

KwaDukuza). As a result, the data gathering process began. Data gathering refers to the process of physically gathering data for a research study (Johnson and Christensen 2017: 225). Researchers gather data using a variety of methods, including tests, questionnaires, interviews, focus groups, observations, and secondary sources. This study utilised an interview approach to gather data. A research interview is a process in which a researcher asks a participant (interviewee) question about the study (Johnson and Christensen 2017: 228). Data were gathered through face-to-face interviews using semi-structured questions, outlined in the interview guide (Appendix 6b). It has been suggested that interviews are an effective tool for improving data since they provide researchers with the opportunity to ask interviewees to refute, defend, or elaborate upon observations and hearsay (Tracy 2019: 138). Furthermore, face-to-face interviews offer the advantage of obtaining in-depth responses from a variety of participants, as well as clarification of unclear questions (Tracy 2019: 138).

The researcher escorted by a translator approached women waiting in the clinic administration area. The researcher and translator distributed participant information sheets to as many women as possible in this area. If a participant was interested in participating in this study or in receiving more information about the study, they were requested to meet with the researcher outside the administrative area where their privacy would be assured. Thus, potential participants and the researcher were able to discuss the study in private. The translator's services were not required at this point of the data-gathering process because participants communicated in English and did not require a translator. Those participants who met outside the administration area and verbally agreed to participate in the research study were discreetly escorted or directed to an area within the clinic where they signed the written consent form and conducted the interviews.

To ensure participant anonymity, the researcher selected an area away from clinic staff and patients. The participants were informed that the interview would take 30 minutes to an hour. This time frame was agreed upon by all participants. The interviews were conducted within the prescribed time frame. In keeping with ethical requirements, permission from participants was sought to record interviews. The participants signed a written consent form and agreed to have their interviews recorded by the researcher. They were then allowed to clarify any questions they had. While engaging with community members, all participants adhered to the South African DoH COVID-19 Infection Prevention and Control Guidelines, which included always wearing masks, maintaining a social distance, and sanitizing hands.

During the interview, the translator was only present if the participants requested their services. The participants' names were not used in the recorded interviews to maintain their privacy. Based on the order of the interviews, a code number was assigned to each participant. The first participant interviewed was P1, followed by P2, P3 to P22. To protect their privacy, participants remained anonymous. English and isiZulu were the languages used during the interview. Twenty-one participants conducted the interview in English without the assistance of a translator. One participant requested a translator's assistance to clarify a probing question. The researcher used the interview guide (Appendix 6b) as a guide for asking questions. Each question was thoroughly covered, and the quality of the interviews was not compromised. The following considerations were used to accomplish this:

- The researcher audio-recorded the interviews.
- The researcher-maintained flexibility by following up on issues raised by the participant and varying the order of questions as necessary.
- The researcher used language that was understandable and relevant to the participant.
- The researcher made an impression of actively listening to the participants, maintaining eye contact, and showing interest in their responses.

- The researcher ensured that the interview took place in a quiet, private area of the clinic.

A repeat of the data gathering process was required if new themes were identified. Qualitative data collection continued until saturation was achieved. The term data saturation refers to the point where there is no longer any new information available (Hesse-Biber 2017: 200). These interviews continued until no new information or themes were identified. All interviews were transcribed by the researcher. A translator was required to assist with the transcription of one of the interviews. Once the data were transcribed, the researcher reviewed the data to identify developing themes without losing the connection between the concepts and the context in which they were formed.

4.7 DATA ANALYSIS

In data analysis, raw data is extracted, compiled, and modelled to provide constructive information that can be used to formulate conclusions, predict outcomes, and support decisions (Johnson and Christensen 2017: 29). Creswell (2022: 183) asserts that gathering and analysis of data include preparing the data for analysis, performing several analyses, understanding the data, and interpreting the data. In qualitative research, information is gathered and analysed primarily through textual materials such as transcripts of interviews, field notes, and documents, which provide a glimpse into individuals' experiences of others and themselves during social action or reflective states (Saldaña 2011: 3). Thus, data can be defined as bits of information that can range from a single fact to a brief description of the local surroundings to lengthy passages that convey an understanding of human behaviour (Saldaña 2011: 26).

Qualitative research studies often include interviews with participants. This method of data collection has the advantage of providing a valuable opportunity to learn about an individual's views, feelings, opinions, attitudes, values, beliefs, and experiences as well as information regarding their lives (Saldaña 2011: 26). A deeper understanding of the social world can be gained by discerning patterns and creating meanings that capture the essence of living. This study employed thematic analysis as the method of data analysis.

4.7.1 Thematic analysis

The thematic analysis involves identifying, analysing, and reporting patterns (themes) within the data (Guest *et al.* 2014: 11). The report provides an in-depth overview and description of the data comprehensively as well as interprets various aspects of the research topic. According to Kongsamutr (2010: 76), the thematic analysis includes the analysis of repeating words or phrases, case studies, or evidence that answers the research question. Additionally, themes can also be derived from previous relevant research that has been reviewed, myths/evidence in the study area, the researcher's gut feeling, or the opinions of the subjects being observed or interviewed (Kongsamutr 2010: 76). According to Guest *et al.* (2014: 11), codes are developed to symbolize the identified themes, and these codes are applied or linked to raw data to provide a summary marker for analysis.

In most cases, thematic analysis is the most effective method for capturing the complex meanings contained within a textual data set (Guest *et al.* 2014: 11). Rubin and Rubin (2012: 226) claim that analysis is exciting because at the end of the analysis researchers discover themes and concepts expressed throughout the interviews. The description of themes developed in the process of analysis is a passive account that omits the active role the researcher must play in identifying patterns/themes, selecting those that are of interest, and reporting them. Performing a thematic analysis is dependent on the assumption that the information reported is accurate and reliable. Therefore, thematic analysis is used

to provide new understandings of conceptual or theoretical concepts or to address a specific research question (Guest *et al*. 2014: 13).

In thematic analysis, the researcher extracts themes and patterns from the data set. These themes are associated with the study's research questions. The themes may be extracted from the dataset inductively, deductively, or both. Using inductive approach, the data determines the research themes (Proudfoot 2023: 311). While deductive approach involves predetermined themes that the researcher anticipate finding based on existing knowledge or established evaluation questions (Proudfoot 2023: 311). In this study, thematic analysis was conducted using a deductive approach. From this point on, the deductive method of thematic analysis will be explained.

By utilizing a deductive method of thematic analysis, the researcher began with a theoretical basis. A deductive approach is considered researcher-driven because the researcher analyses the data through the lens of the theoretical framework employed in a study (Proudfoot 2023: 311). The CSB theoretical framework was employed in this study. Using the theoretical framework, the researcher understood what to expect from the raw data. The researcher was therefore able to recognize themes in the raw data that would otherwise be overlooked by an inductive approach. Deductive thematic analysis has six phases (Proudfoot 2023: 311):

- **Phase 1: Familiarisation with the data**

  The process of familiarising oneself with the data is the repetitive reading of the contents multiple times to locate meaning, patterns, and so on (Braun and Clark 2023: 16). The familiarisation of the data in this study was achieved through the following steps taken by the researcher:

  1. The researcher was the interviewer in the data gathering process therefore the researcher was already familiarised with the data.

2. The interview was audio recorded and as an analytical interest the researcher would write keywords on a page if necessary.
3. The researcher transcribed the interview using Microsoft Word and not a software package considering the small sample size. The raw data was transcribed verbatim into text. This meant that the interview was not corrected for grammar or language errors. The researcher felt where necessary, notes should be written and attached to the transcribed interview for later review.
4. The researcher then read the transcripts whilst listening to the audio recording of the interview and made corrections where necessary, either through notes, missed words, or grammatical corrections highlighted in brackets. These corrections did not disturb the verbatim of the text as it was highlighted and in brackets.
5. This process continued until the researcher felt that there was nothing more to learn.

- **Phase 2: Generating initial codes**

Coding refers to a process of noting what is interesting, assigning a label, and organizing it into a suitable file (Creswell 2022: 173). The process of coding involves arranging text into chunks, or segments, before bringing meaning to the information (Creswell 2022: 173). During the coding phase, the researcher considered the research questions, and each transcript was read line by line and important words, sentences, or sections were highlighted. There were either one or more codes associated with these highlighted texts. There was no limit to the number of codes that were used. In addition to identifying codes that were relevant to the study's theoretical framework, the researcher also searched for other codes that would be useful in answering the research questions. There were no duplicate codes, and if the codes shared a similar meaning related to the research study, they were combined.

The deductive coding process is like the inductive coding process; however, a codebook was used. Using the theoretical framework of this study, a codebook was created by the researcher before the data gathering process. The codebook contains labels for each element (construct/factor) of the theoretical framework applied in this study. The construct coding process described here was used to code all constructs in the codebook. Psychological constructs, for example, are one of the constructs included in the CSB theoretical framework. This construct consists of four elements (factors), namely belief, affect, habit, and norm. The first element of the construct is belief, which was identified as the first label. As per the researcher's understanding, a definition (beliefs are based on participants' perceptions, values, and practices) and description (traditional practices, traditional healers, healthcare trust) were provided for this label. Once all constructs were included in the codebook and labelled, defined, and described accordingly the researcher began the data gathering process. During the coding phase of deductive thematic analysis, the researcher referred to the codes in the codebook as a guide. Furthermore, there was no restriction on the researcher's ability to identify other codes not included in the theoretical framework.

- **Phase 3: Searching for themes**

In this phase, the codes collected in phase 2 were summarized. During this phase, interpretative analysis began, which is the process of developing the arguments for the phenomenon being studied. Initially, the researcher reviewed all the codes, revised the codes, or combined the codes. The codes were then grouped into themes. Themes are considered as the category of describing closely related codes (Proudfoot 2023: 318). Themes are only significant when they are used to answer the research questions. The researcher reviewed the verbatim text to ensure accurate code linking to

themes. A deductive approach was used by the researcher to guide the themes that were developed based on the CSB theoretical framework.

- **Phase 4: Reviewing themes**

In this phase, coherent patterns were found between codes within a theme and the theme was validated against the dataset. Accordingly, the researcher read the text already assigned to a theme and determined whether the correct text was associated with the theme. Following this, the researcher considered whether each code was a finding. Specifically, if there was sufficient data to support it and if it contributed to answering the research questions. Next, the researcher examined each theme to determine whether it had sufficient data to support its status as a main theme or a sub-theme. Where necessary, themes were demoted to sub-themes and consolidated into a new theme to consolidate critical findings.

- **Phase 5: Defining and naming themes**

The purpose of this phase was to create a master description of the main themes and sub-themes. It was important for the researcher to ensure that the main themes were descriptive enough to be used as a stand-alone heading and that they were supported by sufficient data. As a result, the researcher was able to identify the essence of each theme and its relation to the theoretical framework of the study.

- **Phase 6: Producing the report**

In the final phase, the researcher completed the analysis and drafting of the final report based on a set of fully developed themes. The write-up of this study provides sufficient evidence of the themes that exist within the data. In

other words, it provides enough data extracts to support the prevalence of the theme.

4.8 TRUSTWORTHINESS

Trustworthiness or research rigor refers to the degree of confidence in the data, interpretation, and methods employed in the study to ensure its quality (Pilot and Beck 2014: 5). It is recommended that researchers establish protocols and procedures for a study to be considered worthy of consideration by readers. Additionally, the trustworthiness of a qualitative research study and its transparency is crucial to its usefulness and integrity (Babbie and Mouton 2022: 275). In qualitative research, validity strategies refer to a set of procedures (member checking, triangulation, etc) that qualitative researchers use to demonstrate the accuracy of their findings and convince readers of their trustworthiness (Creswell 2022: 250). Guba describes five major categories, namely credibility, dependability, confirmability, transferability, and authenticity, which are commonly used to determine trustworthiness (Lincoln and Guba 1985: 129). Terrell (2022: 13) outline for trustworthiness in qualitative research provides a means for establishing these categories. The credibility of the research is the basis for determining its trustworthiness. Here was the rationale for achieving trustworthiness:

1. Prolonged engagement: It refers to the amount of time spent with subjects, context, and data. It is recommended that a broad timeline be used to establish credibility (Terrell 2022: 13). The researcher accomplished this by spending 30 minutes and an hour with the participants. The researcher also spent a few hours transcribing interviews, reading the transcriptions, and listening to the audio recordings several times. As a result, an extended engagement was ensured.
2. Persistent observation: The focus is less on the length of the engagement and more on the depth or quantity of observation (Terrell 2022: 13). This can be accomplished with a sample size. Further, persistent observation allows

for a deeper understanding of data because a greater number of variances have been considered. To achieve persistent observation, 22 participants from various communities were interviewed on different days.

3. Triangulation: In most cases, this term is associated with three sources of data (interviews, focus groups, and documents), however, it may be established through other means, such as multiple sites, multiple researchers, or multiple types of information (Terrell 2022: 13). It is recommended that researchers consider both primary and secondary data when conducting their research. The primary data is analysed, and the secondary data serves as a means of triangulating the understanding of the primary data (Terrell 2022: 13). In this study, triangulation was achieved by interviewing participants from different research sites. A comparison was also made between the data gathered and the findings of studies conducted in other African countries among rural and low-resource women. Even though there was only one researcher, the data was also reviewed by the research supervisors for their opinion.
4. Peer debriefing: Research peers help verify the researcher's interpretation and understanding of the data. This adds credibility to the research through verification of the data or the expert opinion of peers (Terrell 2022: 13). The research supervisors of this study reviewed the interpretation of the research and provided their expert opinion.
5. Negative case analysis: The objective of qualitative research is to provide a detailed, rich description of a phenomenon. A negative case analysis challenges the researcher's interpretation of the data (Terrell 2022: 13). It provides nuance and richness to the understanding of data. This further contributes to the credibility of the research. The researcher achieved this by comparing the findings of this study to those of previous studies and identifying the differences and similarities between them.
6. Referential adequacy: It refers to the process in which the researcher isolates a portion of the data, analyses the other portion of the data, and

identifies similarities that are present in both portions of the data (Terrell 2022: 13). This was achieved using deductive analysis in the data analysis section. Before gathering the data, a codebook was developed. Based on the theoretical framework of the study, the codes identified from the transcripts matched those in the codebook.

7. Member checking: According to Guba and Lincoln, this form of credibility is the most important since it emphasizes the voice of the participants (Polit and Beck 2018: 179). In member checking, the researcher ensures that they have understood the participants correctly and that they are accurately interpreting their voices (Pilot and Beck 2014: 5). In most cases, this is achieved during data gathering or after data analysis. The researcher achieved this during data gathering, either by clarifying questions, asking follow-up questions, or summarizing what was stated to the participants. The lack of time and financial resources of participants, as well as transportation, network connectivity, and distance, were barriers to meeting after the data analysis. Therefore, member checks were performed during the interview.
8. Audit trail: Researchers use journals to evaluate their thinking concerning the phenomenon in an asynchronous manner (Terrell 2022: 13). The audit trail performed by the researcher in this study was used to examine the study's procedures and verify its credibility by presenting a detailed account of all aspects of the research process, including raw notes, edited notes, interview guides, interview recordings, transcripts, and guidelines for analysing the data.
9. Reflexivity: Through reflexivity, researchers self-consciously critique, appraise, and evaluate how their subjectivity and context influence the research process (Francisco *et al.* 2023: 242). There are four types of reflexivity: personal, interpersonal, methodological, and contextual. The concept of personal reflexivity refers to how the researcher's prior experiences and motivations may have influenced their decisions throughout the project (Francisco *et al.* 2023: 242). In interpersonal

reflexivity, relationships surrounding research influence the context, people involved, and outcomes (Francisco *et al.* 2023: 242). In methodological reflexivity, researchers consider the implications and nuances of their methodological decisions critically (Francisco *et al.* 2023: 242). Contextual reflexivity refers to the process of situating a particular project within a cultural and historical context.

During this study, reflexivity was achieved using a reflexive journal and peer debriefings. Peer debriefing has already been discussed in this section under point 4. The researcher referred to the reflexivity journal as a "research book". In this book, thoughts, feelings, observations, and reflections were included throughout the research process. As an example, the researcher conducted the research in remote rural areas, where safety was initially a concern. Additionally, the researcher was concerned about participant privacy at the research settings. As a result, the researcher was able to keep track of feelings, observations, and concerns and take appropriate action when necessary. In addition, the researcher had previously worked in a rural area in a different district many years ago. As a result, the researcher was able to gain some insight into the sociocultural background of rural South African women.

4.8.1 Credibility

Lincoln and Guba define credibility as confidence in the truthfulness of data and interpretations of them (Polit and Beck 2018: 559). It is therefore important to conduct the study in a manner that makes it believable, as well as to demonstrate the credibility of the findings (Polit and Beck 2018: 559). The credibility of an interpretive description study is evident when the reader can recognize the logic exhibited in the study's conceptual structure and narrative form (Thorne 2016: 214). Qualitative data can be made credible by ensuring that multiple perspectives are utilized throughout the data collection process. It may be accomplished through

the triangulation of data, investigators, or theories; participant validation or member checks; or the rigorous methods used to gather the data. The following methods were used to establish the credibility of this study:

1. Triangulation: through triangulation, the researcher ensured credibility by triangulating individuals, data, and investigators. Multiple participants representing a variety of rural communities (municipalities) were included to ensure the validity of the person triangulation. Data triangulation was achieved by comparing international and South African literature with the data obtained from the participants in this study. A triangulation of investigators refers to the use of two or more researchers during the data analysis phase when decisions are made regarding coding, analysis, and interpretation (Polit and Beck 2018: 566). It was achieved by the experienced research supervisors providing feedback and verifying codes and themes against the data set.
2. Audit trail: the researcher's audit trail was used to examine its credibility. The audit trail provided a detailed account of the entire research process, including raw notes, edited notes, interview guides, audio recordings, transcripts, and analysis guidelines.
3. Member checking: during the data collection process, this was accomplished by clarifying questions to participants, asking follow-up questions based on their responses, or providing a summary of what participants said. This was done to ensure that the researcher's interpretation of the participant's response was accurate, and that the researcher understood the context of the participant's response.

4.8.2 Transferability

Brink (2022: 119) defines transferability as the extent to which research results can be used in other settings. The term "transferability" in qualitative research refers to the degree to which the results can be generalised or applied to other situations. For readers to be able to assess the applicability of findings to other contexts,

comprehensive descriptive data is required (Polit and Beck 2018: 561). Transferability requires a thorough report and detailed descriptions of the fieldwork. The following methods were used in this study to achieve transferability:

1. A detailed description of the research methodology was provided. A detailed description of the sample, a description of the research environment, a detailed data collection process, the inclusion/exclusion criteria for participants, and the number and duration of interviews were among the sections that were included.
2. The raw data from each interview was recorded for future reference. These include tape recordings, transcripts, research notes, and codebooks.

4.8.3 Dependability

Dependability is defined as the reliability of data over time and in a particular environment. It provides insight into whether the study's conclusions would remain the same if it were repeated with the same or similar participants and in the same or similar environment (Polit and Beck 2018: 234). The concept of dependability refers to the ability of reviewers to audit decisions, choices, and analyses. To achieve this, it is necessary to maintain complete records of all phases of the research process, including the formulation of the problem, the selection of research participants, field notes, interview transcripts, data analysis decisions, and so on, in an accessible manner. The following factors contributed to the dependability of this study:

1. The research study was carefully documented, and an audit trail was kept. The audit trail ensured that an independent individual would reach the same conclusion as the researcher. A detailed methodological description, including an in-depth description of the data gathering process and the data analysis, provides readers with a clear and accurate understanding of the steps taken throughout the research process. A record of the raw data was also maintained.

2. The experienced research supervisors provided their expert opinions during the data analysis phase. During the coding of transcripts, formulation of themes, and interpretation of findings, they provided input.

4.8.4 Confirmability

Lincoln and Guba (1985: 129) define confirmability as whether the data presented are representative of the opinions expressed by the participants without being influenced by the researcher's bias. Data confirmation is assured when data are checked and rechecked throughout the data gathering and analysis process. This is to ensure that the results are repeatable by others (Polit and Beck 2018: 559). It was possible to confirm the findings of this study by avoiding research bias during the data collection process. To ensure the validity of the study, the researcher conducted in-depth interviews with participants and wrote detailed descriptions of their experiences to confirm that the findings reflected those of the participants. A refined coding system was then used to categorise and compare the responses. The themes that emerged from the data were supported by excerpts and direct quotes. It was necessary to consult the research supervisors to gain their expert opinion on the data analysis process, as well as review the codes, themes, and interpretation of the findings.

4.8.5 Authenticity

Authenticity refers to presenting all perspectives in a fair and balanced manner (Lapan *et al.* 2012: 29). Authenticity is established through several processes that ensure that the findings are credible not only regarding the participants' experiences but also regarding the larger implications of the research (Shannon and Hambacher, 2014: 2). There are five dimensions of authenticity to consider according to Lincoln and Guba (1985):

- Fairness involves an assessment of whether all viewpoints are represented fairly (Shannon and Hambacher 2014: 2). Authenticity is demonstrated by

presenting multiple perspectives and a depth of understanding that fairly reflects these perspectives. The following processes are crucial to ensuring fairness: prolonged engagement, persistent observation, reflexivity, and member checking (Shannon and Hambacher 2014: 2). These processes were discussed in points 1, 2, 9, and 7 respectively in the section trustworthiness.

- Ontological authenticity is assessed by determining the degree to which participants become more aware of the complexity of the social environment, while educative authenticity is assessed by evaluating whether participants gained a greater understanding and respect for other perspectives (Shannon and Hambacher 2014: 2). This implies that a study is not simply a convenience study, but one of significance and intention. Participants were asked to clarify their understanding of breast cancer and BSE. Consequently, participants inquired and learned about the correct BSE technique and indicated their willingness to participate in breast cancer awareness programmes in their community.
- It can be difficult to assess catalytic and tactical authenticity since action towards change and empowerment must be demonstrated because of engagement in the inquiry process (Shannon and Hambacher 2014: 2). As a result, the researcher asked participants how they would encourage more women to practice BSE. Consequently, participants were involved in developing recommendations for future awareness programmes.

4.9 ETHICAL CONSIDERATIONS

Ethical considerations are guidelines researchers should follow when conducting research. The purpose of ethical considerations in research is to ensure that participants' rights are protected and that they are not harmed because of participating in research. To begin the research process, the researcher sought ethical clearance from a variety of gatekeepers. The researcher obtained ethical clearance from the Institutional Research Ethics Committee (IREC) in Appendix 1.

Gatekeeper permission was sought and granted by the KZN DoH (Appendices 2a and 2b) and the District Manager of iLembe District (Appendices 3a and 3b). Following the receipt of ethics clearance and gatekeeper's approval, the researcher was able to begin gathering data. Before the interview, the participants read, accepted, and signed the participant information letter (Appendices 4a and 4b) and the consent form (Appendices 5a and 5b). In addition, a translator was provided. Participants were also informed that participation was voluntary, and they could withdraw at any time.

As per the Protection of Personal Information Act (or POPI Act) of South Africa, all personal information of participants is protected. POPI Act is a piece of legislation that protects any personal information that is processed either by private or public bodies (Kandeh *et al.* 2018: 3). POPI Act ensures that South African institutions handle personally identifiable information responsibly when collecting, processing, storing, and transmitting it. It holds them accountable if they abuse or compromise the information in any way. Participants were provided with a participant information sheet explaining how their information would be collected, processed, and stored. The hard copies of participant information, including the audio recordings, are kept in a secure locker. At the same time, the electronic data is stored on a password-protected computer and will be destroyed after five years. Moreover, the researcher is responsible for maintaining the confidentiality and integrity of participant personal information. If participants' personal information is breached, the Information Regulator will be notified. Additionally, only the researcher has access to the information collected from the participants.

Interviews were conducted in a private, safe, and comfortable environment. Interviews were recorded with the participants' permission. During the interviews, participants were free to express their opinions regarding the phenomenon. All personal information was kept strictly confidential and presented anonymously. As a result, all participants were assigned a participant number. Thus, their identity

was preserved. Participants in the study were not compensated for their participation.

4.9.1 Principles of ethics

According to Hammersley and Traianou (2012: 26), ethics are a set of principles that embody or articulate what is good or right. The principles can be general or specific to a particular field or perspective. The four ethical principles are autonomy, beneficence, non-maleficence, and justice. These can be summarized as follows:

4.9.1.1 Autonomy

The principle of autonomy is an integral part of social research ethics, and it is used to support the requirement that informed consent be obtained from individuals before conducting research as well as the right of participants to withdraw at any time during the research (Hammersley and Traianou 2012). The autonomy of people can only be respected when these conditions are met, and this is essential for ethical conduct in research (Hammersley and Traianou 2012: 85). In addition, the principle of autonomy can be used to support more radical views suggesting that research should not be conducted on people, but with people so that they may exercise control over the decisions involved in the research process (Hammersley and Traianou 2012: 85).

All participants were asked to consent to the presence of a translator during the interview. The researcher trained the translator before participating in the data gathering process. The translator was trained on the interview process, including anonymity and confidentiality. The interviews were conducted in English. There were twenty-one participants who did not require the services of a translator. Therefore, a translator was not present at these interviews. One participant, however, required translator services during the interview. Having trained the

translator extensively, the researcher did not see the necessity of requiring the translator to sign a confidentiality declaration. Furthermore, participants were identified using a code, as indicated earlier. While participants in this study provided informed consent, they were free to withdraw from the study at any time. Detailed information about this can be found in the participant information sheet (Appendices 4a and 4b). No participants withdrew from the study.

4.9.1.2 Beneficence

Based on the principle of beneficence, researchers should endeavour to maximize the positive effects of their studies on science and humanity, while minimizing the risk of harm to individuals (Lapan *et al*. 2012: 23). The participant information sheet provided information regarding the potential harms and benefits associated with participation. The IREC approved this study, ensuring the adherence to ethical principles and guidelines. This ensured that there were no identifiable risks for participants. Additionally, the findings of this study are expected to benefit individuals, communities, and the rural healthcare system in South Africa.

Additionally, the model developed in this study is intended to provide a proactive and sustained engagement with community stakeholders, through promotional initiatives and tailored workshops that demonstrate respect for their traditions and norms (CIOMS 2016: 22-25). It is imperative to engage the community when conducting research involving minorities or marginalized groups. This includes individuals suffering from stigmatising illnesses such as HIV and cancer, as well as individuals who may be discriminated against (CIOMS 2016: 22-25). Through transparent data gathering and analysis processes, this study intends to develop confidence and trust among individuals and communities, raising public awareness through the interpretation of results.

4.9.1.3 Non-maleficence

According to this principle, harm should be avoided (Hammersley and Traianou 2012: 62). Researchers must take all reasonable steps to ensure that participants do not experience any harm, pain, complications, or discomfort during the study (Hammersley and Traianou 2012: 62). The researcher ensured that no physical harm was caused to the participants by providing a safe and comfortable environment for the interview. In addition, participants were informed of their right to discontinue the interview process if any question caused emotional or mental distress. Participants were either escorted or directed to the interview rooms according to their level of comfort. Furthermore, participants were asked to consent to the presence of a translator. In this manner, participants' rights, safety, and privacy were safeguarded. Furthermore, the administration areas were equipped with wheelchairs should any participant require assistance. There were no participants who appeared to be distressed visually. Having previously worked in rural KZN province, the researcher has some experience communicating in isiZulu.

4.9.1.4 Justice

In research, justice refers to the process of ensuring that participants can benefit from the results of the study (Lapan *et al.* 2012: 27). A key objective of this principle is to ensure that groups that are hard to reach are not excluded from participating in research that may benefit them (Lapan *et al*. 2012: 27). To ensure justice, the researcher sought out African women (least represented in literature) living in rural South Africa (geographically remote areas) to participate in this study.

For qualitative research, samples are generally small to support the depth of case analysis fundamental to this mode of inquiry. Additionally, qualitative samples are purposeful, in that they are chosen based on their capacity to provide richly textured information relevant to the phenomenon that is being investigated (Vasileiou *et al*. 2018: 5). Using information power as a pragmatic guiding principle,

Vasileiou *et al*. (2018: 5) suggest that the more information power the sample provides, the smaller the sample size must be (Vasileiou *et al*. 2018: 5).

The minimum sample size recommended for qualitative studies is 12 to achieve data saturation (Vasileiou *et al.* 2018: 5). In this study, the sample size was determined by thematic saturation, which occurs at a point when participants' comments and themes are repetitive and do not contribute to the findings. This study used a sample size of 22 participants. There was a significant repetition of concepts in the last few interviews, suggesting adequate sampling. As a result, this allowed for considerable reflection, dialogue, and time spent on each transcript. In addition, it allowed for a more latent level of analysis, instead of a superficial descriptive one, which identified underlying ideas.

This study utilized a semi-structured interview to ensure that the interview guide reflected the scope of the study, the nature of the topic, and the design of the study. The interview questions were structured to influence the richness of the data generated. In addition, a high degree of consensus had emerged among those interviewed. While it is always difficult to determine when 'theoretical saturation' has occurred, the researcher considered the number sufficient for this small in-depth study.

4.9.1.5 Confidentiality and anonymity

The term confidentiality refers to the agreement with an individual or organisation regarding what steps will be taken (and what will not be taken) with their data (Miles *et al.* 2019: 71). Participants interested in participating in the research study were requested to meet the researcher outside the waiting room alone for a private confidential discussion. Although the participants' native language is isiZulu, all of them understood and spoke English. The POPI Act serves as a legal basis for the protection of participants'' personal information, including audio recordings,

transcripts, and research notes. In this way, participants' personal information is protected, and their privacy is respected.

4.10 SUMMARY OF THE CHAPTER

In this study, a qualitative case study design was chosen. Data gathering was conducted through in-depth interviews. Additionally, the inclusion and exclusion criteria for qualitative research were discussed. A deductive thematic analysis approach was used to analyse the data. In Chapter 5, the researcher presents the findings of this study.

CHAPTER 5: PRESENTATION OF FINDINGS

5.1 INTRODUCTION

This Chapter presents the research findings of the one-on-one interviews with participants. The chapter begins by describing the participants. Afterward, the key findings are presented, which have been grouped into categories, divided into themes, and further subdivided into subthemes. The chapter concludes with a summary.

5.2 DESCRIPTION OF PARTICIPANTS

Data was gathered at four clinics (Mandeni, Maphumulo, Ndwedwe, and KwaDukuza) within the iLembe District Municipality of the KZN province. In total, 22 participants were interviewed individually (n=22). Participants were all rural African women over the age of 20 years who consented to participate in this study. Based on the demographic data gathered from the participants, the researcher describes their demographics.

5.2.1 Demographics of participants

Using a purposive sampling technique, the researcher identified 22 individuals (n=22) who met the inclusion criteria for the study (section 4.5.2.1). A description of each participant's demographic profile is presented in Table 5.1. All the participants were African women from rural areas of the iLembe District in the KZN province. Participants ranged in age from 20 to 65 years, with most between the ages of 20 and 30. Six of the participants received tertiary education, and the remainder (n=16) attended high school. Among the participants, eleven were employed full-time (n=11), four were employed part-time (n=4), and six were unemployed (n=6). In terms of marital status, most participants were single (n=17), with four married (n=4), and one widowed (n=1). Most of the women in this study resided in the Ndwedwe district (seven), while six lived in KwaDukuza, four in Maphumulo, and five in Mandeni. On

average, there were two children per woman; however, there were five women who had no children, four who had one child, seven who had two children, three who had three children, and three who had more than three children.

Table 5.1 Demographics of Participants

Participants	Age	Level of education	Marital status	Employment status	Number of children	Municipal residence
P1	31-40	H/S	M	FT	None	Ndwedwe
P2	20-30	H/S	S	U/E	1	Ndwedwe
P3	20-30	H/S	S	U/E	3	Ndwedwe
P4	31-40	H/S	S	U/E	3	Ndwedwe
P5	20-30	T/E	S	PT	None	Ndwedwe
P6	31-40	T/E	M	FT	More than 3	Ndwedwe
P7	20-30	H/S	S	U/E	None	Ndwedwe
P8	20-30	T/E	S	FT	1	KwaDukuza
P9	41-50	T/E	W	FT	3	KwaDukuza
P10	31-40	H/S	S	PT	More than 3	KwaDukuza
P11	31-40	H/S	S	FT	1	KwaDukuza
P12	41-50	H/S	S	U/E	None	KwaDukuza
P13	51-65	T/E	S	FT	2	KwaDukuza
P14	41-50	H/S	M	FT	2	Maphumulo
P15	20-30	T/E	S	FT	2	Maphumulo
P16	31-40	H/S	S	PT	2	Maphumulo
P17	20-30	H/S	S	FT	None	Maphumulo
P18	41-50	H/S	S	PT	2	Mandeni
P19	41-50	H/S	M	U/E	More than 3	Mandeni
P20	41-50	H/S	S	U/E	1	Mandeni
P21	31-40	H/S	S	FT	2	Mandeni
P22	20-30	H/S	S	FT	2	Mandeni

*Key: P = Participant, H/S = High School, T/E = Tertiary Education, S = Single, M = Married, W = Widowed, FT = Full-time Employed, PT = Part-time Employed, U/E = Unemployed.

5.3 THE KNOWLEDGE AND PRACTICE OF BSE AMONG RURAL SOUTH AFRICAN WOMEN IN KZN PROVINCE

The objectives of the study were to:

- Assess the knowledge of BSE among African women in the rural KZN province of South Africa.
- Explore and describe the factors influencing the uptake of BSE among African women in the rural KZN province of South Africa.
- Explore and describe the perception of breast cancer screening among African women in the rural KZN province of South Africa.
- Develop a model that can be utilised by the DoH and health facilities to promote the knowledge and practice of BSE.

These objectives were achieved by asking participants the following questions in the one-on-one interviews:

1. What is your understanding of the words ‘breast cancer’ and ‘breast self-examination’?

   Probing questions:
   Can you explain how you think a breast self-examination is done?
   How often do you do a breast self-examination? Explain.

2. How would you feel if you found a lump in your breast? Explain.

   Probing questions:
   What would you do if the lump is painful? And what will you do if the lump is not painful?
   If you have a health problem or get sick, what do you normally do?

3. Do you think it is easy or difficult to talk to your family, friends, and community about breast problems? Explain.

   Probing questions:
   If a woman has breast cancer, how do you think people (family, friends, and community) will treat her?

Do you think your family, friends, and community will understand and practice breast self-examination? Explain.

4. Describe your traditional belief and understanding of breast cancer.

   Probing questions:
   In your community are women encouraged to do breast self-examination? Explain.
   If you have a health problem, who will you consult first, a traditional healer or healthcare provider? Explain.

5. What are the problems you face when you need medical care?

   Probing questions:
   Will you experience any problems if you practice breast self-examination? Explain.

6. In your opinion how do you think we can encourage women in your community to practice breast self-examination?

   Probing questions:
   If there is a programme in the community to teach women about breast cancer and BSE, will you go? Explain.
   Does the clinic you go to give you any information on breast cancer and breast self-examination? Explain.

Eight themes were constructed from the interviews, and these are presented in Table 5.2 together with the categories and sub-themes.

Table 5.2: Table of categories, themes, and sub-themes

Category	Themes	Sub-themes
1. Insight into breast cancer and breast self-examination.	1.1 Knowledge and awareness.	1.1.1 Breast cancer knowledge. 1.1.2 Breast cancer misconception. 1.1.3 Breast self-examination knowledge. 1.1.4 Lack of breast self-examination knowledge.
2. Clinical and socio-demographic construct	2.1 Clinical and socio-demographic influences.	2.1.1 Breast lump knowledge and misconception. 2.1.2 The influence of education on BSE knowledge and practices 2.1.3 The influence of employment on health-seeking behaviour
3. Habit.	3.1 Preventative healthcare habits.	3.1.1 Clinics and hospitals. 3.1.2 Self-treatment practices for medical symptoms. 3.1.3 Complementary practices.
4. Affect.	4.1 Sociocultural factors	4.1.1 Fear. 4.1.2 African cultural stigmatisation. 4.1.3 Social support for African women. 4.1.4 Positive attitude on BSE practices.
5. Belief.	5.1 Breast cancer beliefs.	5.1.1 Traditional beliefs. 5.1.2 Healthcare beliefs.
6. Norm.	6.1 Healthcare perception.	6.1.1 Personal norm. 6.1.2 Social norm. 6.1.3 Interpersonal norm.
7. Facilitating barriers.	7.1 Delayed healthcare services.	7.1.1 Health practitioner's conduct. 7.1.2 Educative material. 7.1.3 Resources and infrastructure. 7.1.4 Rural transport services. 7.1.5 Individual healthcare affordability.
8. Suggestion.	8.1 Facilitators of Breast Self-Examination.	8.1.1 Community engagement. 8.1.2 Health Education.

5.3.1 Category: Insight into breast cancer and breast self-examination

To assess the knowledge, perceptions, and factors influencing the uptake of BSE, it was important to determine whether participants were able to define breast cancer and BSE. Although this category does not form part of the CSB theoretical framework, it provides the basis on which the other constructs can be built.

5.3.1.1 Theme 1: Knowledge and awareness

Based on the literature review, it was found that many rural South African women are presenting with advanced-stage breast cancer. Thus, it was important to assess knowledge and awareness of breast cancer and BSE.

Sub-theme 1.1.1: Breast cancer knowledge

Participants were asked to describe their understanding of the term breast cancer. Several participants were able to define the term breast cancer.

"Breast cancer is a disease in the breast where the cells grow and divide abnormal." (P#12; high school, unemployed).

"*Breast cancer is where you have carcinogens or cancer in your breast or where you have a tumour in your breast."* (P#13; tertiary education, full-time employed).

In addition, many women identified breast cancer as a lump in their breast.

"…. breast cancer is the lump that grows inside our breast." (P#11; high school, full-time employed).

Sub-theme 1.1.2: Breast cancer misconception

Although all women recognised breast cancer as a disease affecting the breast, many misconceptions still exist regarding the disease. There is a common misconception that breast cancer is incurable.

"It's something that is not curable…." (P#2; high school, unemployed).

A second misconception identified was that breast cancer requires the removal of a woman's breast.

"Cutting one boob and they leave one or maybe sometimes cutting all." (P#10; high school, part-time employed).

"…. cut your breast completely." (P#20; high school, unemployed).

To describe their understanding of breast cancer, one participant used the word "danger".

"I think it's danger." (P#4; high school, unemployed).

Another participant referred to breast cancer as a disease similar to other diseases.

"*Breast cancer is just like normal disease like other diseases."* (P#21; high school; full-time employed).

However, some participants believed breast cancer symbolised death.

"…. it's not good, it can kill you." (P#20; high school, unemployed).

"…. I'll think I am going to die." (P#10; high school, part-time employed).

Sub-theme 1.1.3: Breast self-examination knowledge

The most common explanation for BSE was that it involved searching for a lump in the breast. Two participants described looking for other changes in the breast, such as skin texture, abnormal discharge from the nipples, and changes in the size of the breast.

"Breast self-examination is when you examine your breasts to check for any painful lumps you might notice on your breast, or any abnormalities you see on the breast." (P#5; tertiary education, part-time employed).

"I will just put my hand round and round in circular motions, massaging the breast to check if there is any lumps, not only for lumps, even discharge and cracks…" (P#18; high school, part-time employed).

Although some participants had difficulty describing the term BSE, they found it easier to describe the technique of performing BSE.

"You have to check it when you're not having your menses and you wake up in the morning and you stand in front of your mirror and then you must look at your breast, whether there any change in your colour skin or if there's any swelling, if they are both equal, and then you lift up your one arm from the breast you want to check and then, in a circular motion, you go around your breast outside your nipple, and then you end up in the nipple to check if there's any nodules." (P#13; tertiary education, full-time employed).

Two participants were aware of the frequency of BSE practice.

"It must be done at least once a month after your menses." (P#13; tertiary education; full-time employed).

"Once a month." (P#14; high school; full-time employed).

Sub-theme 1.1.4: Lack of breast self-examination knowledge

Participants were asked to describe their understanding of BSE. Several participants in this study demonstrated a lack of knowledge of BSE as noted on the excerpts below:

"No, I don't have an idea." (P#2; high school, unemployed).

"We don't know anything about breast exams." (P#10; high school, part-time employed).

Many participants were not aware of the term BSE but were aware of the importance of examining their breasts.

"I don't know but the important thing is to always check your breast." (P#7; high school, unemployed).

Most participants were unaware of the frequency of BSE practices.

"As many times as you like, if you feel like doing it." (P#3; high school; unemployed).

"Not sure about how often but I usually do it maybe after three months then I will check..." (P#5; tertiary education, part-time employed).

In this stage of the interview, the researcher explained the terms breast cancer, BSE, BSE technique, and frequency of performing BSE to the participants.

5.3.2 Category: Clinical and socio-demographic constructs

This study presents the first construct of the CSB theoretical framework. There is considerable insight to be gained from the use of clinical and socio-demographic factors in understanding how they influence the knowledge and practice of BSE.

5.3.2.1 Theme 2: Clinical and socio-demographic influences

This chapter presents the clinical and socio-demographic factors influencing BSE under three subthemes. These include breast lump knowledge and misconception, the influence of education on BSE knowledge and practices, and the influence of employment on health-seeking behaviours.

Sub-theme 2.1.1: Breast lump knowledge and misconception

Breast lumps were identified by several participants as an indication of breast cancer. Furthermore, several participants had a general understanding, awareness, and misconception of breast lumps. The term breast lumps were understood by several participants.

"If you find a lump in your breast you will have to first see if it's painful. If it's a painful lump one usually knows our breast already have lumps. So, you would go to the clinic to see, to consult if it is an unusual lump or is it a normal lump." (P#5, tertiary education, part-time employed).

According to some participants, lumps or changes in the breast were considered indicators of breast cancer, but this is not always the case.

"…If you got a lump, which means you got a breast cancer." (P#14; high school, full-time employed).

"...if there is something on your breast, probably it might be cancer." (P#20; high school, unemployed).

The participants were asked what they would do if they discovered a painful or painless lump in their breast.

".. to be honest I would ignore it." (P#10; high school, part-time employed).

"If it's not painful there's nothing I can do, but if it's painful I will contact to a doctor." (P#15; tertiary education, full-time employed).

Sub-theme 2.1.2: The influence of education on BSE knowledge and practices

The majority of participants living in rural areas had a high school education, while 6 participants had a tertiary education. There was a greater understanding of breast cancer and BSE among women with higher educational levels as opposed to those with lower educational levels.

"…. breast cancer I think is maybe a tumour or is the lump around your breast." (P#9; tertiary education, full-time employed).

Contrary to this, participants with a high school education had varying levels of knowledge regarding breast cancer and BSE.

"Breast cancer develop in your breast, so not that I am really sure what it is, but it's something to do with your breast." (P#22; high school, full-time employed).

"I think it is a lump on the breast." (P#17; high school, full-time employed).

Furthermore, participants with a high school education and tertiary education believed that a woman with a higher level of education would have a greater understanding and knowledge of breast cancer and BSE.

"The educated ones, they will understand what is breast cancer and others that don't have knowledge about it, they think someone whose got breast cancer is bewitched." (P#18; high school, part-time employed).

"Of course, they will understand if they're well educated." (P#6; tertiary education: full-time employed).

Sub-theme 2.1.3: The influence of employment on health-seeking behaviour

The study found that unemployed women have difficulty accessing healthcare due to financial difficulties. Financial constraints forced some participants to consume affordable medications that may not be appropriate for their health condition.

"Finance and transport are *a problem sometimes, especially if it is not month end. During the month is hard but I try my best to get to the clinic."* (P#19; high school, unemployed).

"If I'm getting sick with normal sickness, I am just buying the Grandpa or the Disprin because we are affording those treatment." (P#16, high school, part-time employed).

5.3.3 Category: Habit

As part of the CSB theoretical framework, habit was identified as a factor under the psychological construct. According to the findings of this study, rural South African women exhibit preventative healthcare habits (theme), which can further be classified as clinics and hospitals (sub-theme), self-treatment practices for medical symptoms (sub-theme), and complementary practices (sub-theme).

5.3.3.1 Theme 3: Preventative healthcare habits

The importance of understanding women's healthcare habits cannot be overstated, especially if one is experiencing medical symptoms. Understanding the participants' habits was intended to identify whether women are inclined to seek preventative healthcare, such as BSE.

Sub-theme 3.1.1: Clinics and hospitals

Several participants indicated that they would consult their healthcare provider or facility if they discovered a lump in their breast.

"I will see a doctor." (P#4; high school, unemployed).

"Obviously I will go to the clinic to seek for medical help." (P#6; tertiary education, full-time employed).

In addition, some participants stated that they preferred to consult with a health facility for any health-related illness or symptom. This indicates that participants were more inclined to adopt healthcare habits.

"I'll go to my doctor, and I think my doctor will help me with medical care..." (P#8; tertiary education, full-time employed).

Some participants, however, preferred not to attend a healthcare facility when they were ill. Thus, they were less inclined to adopt healthcare habits.

"…. I do not like going to the clinic..." (P#10; high school, part-time employed).

Sub-theme 3.1.2: Self-treatment practices for medical symptoms

Some participants chose to self-treat breast lumps or general illnesses, using painkillers, home remedies, or other self-help strategies.

"*I will stamp it with hot water.*" (P#12; high school, unemployed).

".... if it's something painful, I get some pain-killers and use them and see if the pain goes away." (P#20; high school, unemployed).

There were participants in this study who preferred self-treatment options to healthcare consultations and treatment.

"I will just make what the people tell me I must make and drink, like ginger……fresh turmeric roots." (P#12; high school, unemployed).

"…. I am taking Medlemon…." (P#15; tertiary education, full-time employed).

Sub-theme 3.1.3: Complementary practices

Several participants in this study supported complementary practices as a means of treating health-related illnesses and symptoms, including the use of traditional herbs.

"I use traditional herbs." (P#2; high school, unemployed).

"I am scared to see doctor, but I use herbs." (P#3; high school, unemployed).

5.3.4 Category: Affect

Affect has been identified as a psychological construct in the CSB theoretical framework. Based on the findings of this study, other factors may influence rural South African women's health behaviours regarding BSE. This includes

sociocultural factors (theme), including fear (sub-theme), African cultural stigmatisation (sub-theme), and positive attitudes toward BSE practices (sub-theme).

5.3.4.1 Theme 4: Sociocultural factors

Using the construct "affect" from the CSB theoretical framework, the researcher identified four sociocultural factors that influence knowledge and practice of BSE.

Sub-theme 4.1.1: Fear

Several participants in this study expressed fear about developing breast cancer, while others were concerned about finding a lump in their breast.

"I will be heartbroken…. As you can see my breast is small, imagine if I can find the lump…. I will be scared." (P#8, tertiary education, full-time employed).

"…. cancer is something that you should be afraid of…. It's not just a disease, it's very dangerous." (P#18; high school, part-time employed).

Fear also arose from the participants' perception of breast cancer as a disease that cannot be cured.

"This illness is like we scared to have it because we think that it's not curable, and you're going to die." (P#3; high school, unemployed).

Several other participants were fearful that a breast lump indicated a need for surgery.

"…. because it grows then you go to the surgery and cut." (P#15; tertiary education, full-time employed).

Sub-theme 4.1.2: African cultural stigmatisation

The concept of stigmatisation was frequently referred too during the interviews. Participants' responses were of concern. In the opinion of several participants, rural South African women who are diagnosed with breast cancer are heavily stigmatised.

"They will mistreat her. They will see her as a different person like she's not qualified to be a woman." (P#2; high school, unemployed).

"…. when I say community I mean women, ladies, she'll be such a shame, to male she'll be such a, no one will ever want to marry her and with her family, she'll be a disgrace." (P#10; high school, part-time employed).

Others, however, believe that breast cancer is not stigmatised.

"They won't treat her any differently because it's not a stigma." (P#5, tertiary education, part-time employed).

"…. it is a disease, and it is not a shame." (P#19; high school, unemployed).

One participant, however, expressed concern about the stigmatisation of HIV among Africans. The participant believed that women diagnosed with breast cancer were compared and stigmatised with HIV-positive women.

"…. if you have cancer, there's this other stigma of HIV. They immediately when you start losing weight and you look sickly, then they go around talking about you, that you've contracted AIDS." (P#13; tertiary education, full-time employed).

Sub-theme 4.1.3: Social support for African women

According to this study, social support received by rural South African women from their families, friends, and communities plays an important role in their preventative health behaviours. Women who have a good support network are more likely to be able to communicate their breast-related concerns. When

questioned about the ease of discussing breast problems with family, friends, and community members, several participants responded as follows:

"It's easy to talk to them, they understand." (P#4; high school, unemployed).

"They will support her. On my side they will support me." (P#8; tertiary education, full-time employed).

Sub-theme 4.1.4: Positive attitude toward BSE practices

All participants in this study expressed a positive attitude toward learning and practicing BSE. As a result, participants were willing and motivated to attend workshops and training programmes on breast cancer as well as BSE.

"I want to learn more. I want to know more." (P#3; high school, unemployed).

"Yes, I will go because I will learn more and I will understand more about breast cancer." (P#11; high school, full-time employed).

Further, participants' positive attitudes were reflected in their confidence in performing BSE.

"…. it's my body…I would not have any problem or the experience about it." (P#1; high school, full-time employed).

"No, I won't because I usually do it myself." (P#3; high school, unemployed).

5.3.5 Category: Belief

Using the construct "belief" from the CSB theoretical framework, the researcher identified two breast cancer beliefs (theme) that influence knowledge and practice of BSE. Among them were traditional beliefs (sub-theme), and healthcare beliefs (sub-theme).

5.3.5.1 Theme 5: Breast cancer beliefs

Participant beliefs regarding breast cancer were a dominant theme during the interviews. Based on the literature review, traditional, religious, and health beliefs may influence an individual's decision to seek medical care. The attitudes of individuals toward BSE are influenced by their beliefs.

Sub-theme 5.1.1: Traditional beliefs

The results of this study indicate that several participants have traditional beliefs towards breast cancer. Traditionally, breast cancer is mostly believed to be a manifestation of witchcraft, punishment, and sin in African cultures.

"If you get sick, they will consult your late grandfathers. Okay, they will consult your grandparents. Maybe they will say, maybe we have to slaughter a cow. There is a problem, or there's a mistake you're committed, or there's a sin you committed before of which you don't know about, or maybe you have a miscarriage, and you haven't noticed and the child will come for you. So, they will ask you to do those things, so, you get fine." (P#3; high school, unemployed).

"Well, from my tradition, cancer is not very understood, like I said they think if you've got cancer, then you will die immediately. They immediately when you got cancer, they want to try lots of things, especially traditional things, because they feel once you go for radiotherapy and for chemotherapy, then you definitely are on the death bed. And they want to try every traditional trick to stop that before you even go for treatment." (P#13; tertiary education, full-time employed).

"Mostly, they think of witchcraft. They think maybe you are cursed, maybe something you've done, something in the past that you are not supposed to do now, and God is punishing you, things like that." (P#20; high school, unemployed).

In the opinion of one participant, cancer can be divided into two types: a "real cancer" and a "not real cancer". In the case of these two types of cancer, a traditional healer will diagnose the disease and either treat the patient or refer them to a medical facility.

"If I want to know first of all, I go to my traditional healer. Then the traditional healer is going to tell me it's a real cancer, so must go to the doctor. If there is not a real cancer, he can give me herbs to eat so that it can go away. But if it's a real cancer he must or she must tell me, go to the hospital they going to treat you." (P#16; high school, part-time employed).

According to others, breast cancer is a medical condition that has neither a cultural nor a traditional interpretation:

"…. there is a lump and that there's no cultural point of view." (P#5; tertiary education, part-time employed).

"My culture! It is a medical disease." (P#6; tertiary education, full-time employed).

Additionally, some participants did not believe in traditional healers.

"Not that I am undermining the traditional healers…. but I think the best way is to start with the doctor." (P#18; high school, part-time employed).

"I will just go to a doctor or a clinic or hospital because I don't believe in traditional healers." (P#19; high school, unemployed).

Sub-theme 5.1.2: Healthcare belief

Several participants held strong healthcare beliefs as opposed to traditional beliefs. Furthermore, some participants preferred to consult a healthcare practitioner for breast-related issues rather than a traditional healer.

"It is a health problem because if it was a spiritual one, I would consult a traditional healer." (P#5; tertiary education, part-time employed).

"You see in my culture they used to say you must go and consult a traditional healer… I don't think the traditional healer will help you when you have a breast cancer. So, you must just go straight to the clinic or to hospital." (P#11; high school, full-time employed).

In the opinion of one participant, if there was a history of breast cancer in the family, there was a high probability that someone else would also develop the disease.

"…. we believe that if in the family there is one person who got cancer, maybe when the time goes on, they will have the same problem." (P#9; tertiary education, full-time employed).

Many participants expressed trust, comfort, and belief in healthcare practitioners and facilities.

"I prefer healthcare provider because I've seen people mixing treatment and dying with mixing treatment with traditional medicine and dying in numbers, and I've seen people start treatment surviving cancer." (P#13; tertiary education, full-time employed).

"Healthcare provider first. Because they're able to even run the test, more tests to see what's wrong with you." (P#18; high school, part-time employed).

However, one participant expressed a lack of trust in healthcare facilities. This participant believes that if they sought treatment at a healthcare facility for breast-related issues, their breasts would be removed.

"I will go for a traditional healer to look for a solution because I can go to a doctor and get my breast cut off, but if I went to see a traditional healer first, they will send me a solution." (P#3; high school, unemployed).

5.3.6 Category: Norm

Using the construct "norm" from the CSB theoretical framework, the researcher identified three healthcare perceptions (theme) that influence knowledge and practice of BSE. Among them were personal norm (sub-theme), social norm (sub-theme), and interpersonal norm (sub-theme).

5.3.6.1 Theme 6: Healthcare perception

Several factors influence preventative healthcare habits, including individuals' health philosophies regarding morally righteous behaviour and their willingness to act on those beliefs.

Sub-theme 6.1.1: Personal norm

A participant's norm reflects how they perceive and understand BSE and how they seek healthcare. In some cases, participants indicated that they had no difficulties practicing BSE and were confident in their abilities.

"It's my body, I would not have any problems or the experience about it." (P#1; high school, full-time employed).

Participants reported uncertainty regarding the BSE technique.

"I don't know if I'm doing it the correct way. That's the problem." (P#5; tertiary education, part-time employed).

On the other hand, another participant reported practicing BSE but found that mass media, specifically Google, was useful for addressing breast health issues.

"…. I once did it, and it was so painful, and I go on Google. I google and search, and they asked what kind of bra I am wearing. So, I wrote, I wear bra with the underwire and they say you must stop wearing and try to wear the one that is comfortable with no wire. So, I went for those bras and the pain stops." (P#3; high school, unemployed).

One participant emphasised the importance of seeking support from family and friends following a breast cancer diagnosis.

"It's not an easy one just to expose something that's within your body. So we go to clinics, but if we see that it's something that might hurt you, then you find someone that you can trust, a mother or aunt or somebody that you stay with and you explain to them

even though they will never understand what it is because, in our culture, many people do not understand what is breast cancer..." (P#1; high school, full-time employed).

Sub-theme 6.1.2: Social norm

Social norms were examined to determine society's perception of preventative healthcare and BSE. Many participants expressed a lack of awareness and knowledge regarding BSE among their family, friends, and community members.

"They know nothing about it." (P#1; high school, full-time employed).
"We don't know anything about breast exams." (P#10; high school, part-time employed).

Participants agreed that increased awareness of BSE among family, friends, and communities would encourage more women to become involved.

"They will understand that if there could be someone to explain to them what breast cancer is and how its cure." (P#3; high school, unemployed).

"If they learn about it I think they will. There are a lot of things that they didn't know, now they try it at home." (P#10; high school, part-time employed).

Several participants expressed their difficulty in discussing breast-related issues, as well as the negative stereotypes associated with women with breast cancer in society.

"Because some don't understand like the old people. They only believe in traditional things. So, it's not easy to talk to them. And some will just treat you like you're cursed or something." (P#2; high school, unemployed).

"No one knows anything about this from where I'm from, because I'm from the location, but I am working I've seen it. So, I do understand a little bit. So, it will be hard for me to talk about it with my family, because my family does not understand anything about this." (P#10; high school, part-time employed).

Moreover, participants reported having difficulty communicating breast-related issues with their family, friends, and communities due to a belief that breast cancer is associated with death.

"*No, it's not easy. I don't think it's easy because our families once you tell them about the word. Once they hear the word cancer, they think that someone is dying. Someone is going to die."* (P#11; high school, full-time employed).

Others, however, disagreed, stating that breast-related issues are more socially acceptable and easier to discuss because they do not carry a stigma.

"…. it's not a difficult issue because breasts are not like maybe we going to say we talking about sensitive topics like STIs were people don't want to talk about them with breast it's just fine." (P#5; tertiary education, part-time employed).

"My friends, yes it's easy. For family it's just my brothers so I don't think they'll understand. But yeah, I am free for community, maybe church. The neighbours no." (P#8; tertiary education, full-time employed).

Sub-theme 6.1.3: Interpersonal norm

An individual's interpersonal norms reflect their understanding of the need for medical treatment. Women who are encouraged to practice BSE are more likely to adhere to it.

"If we have someone who know about it, like for instance, I know about the examination. So, if I teach my family obviously, they will practice about it." (P#1; high school, full-time employed).

"They will understand if you teach them." (P#11; high school, full-time employed).

Some participants indicated, however, that the lack of knowledge and awareness among women prevents them from practicing BSE in their communities.

“They never see a person that does that.” (P#2; high school, unemployed).

“I think because they don't know about breast cancer and nobody told them about it.” (P#14; high school, full-time employed).

Moreover, the traditional beliefs regarding breast-related problems limit the acceptance of preventative healthcare in rural South African communities. This is noted in the excerpt below:

“They will think that maybe she's possessed…” (P#3; high school, unemployed).

The language barrier has also been reported as a barrier to BSE practice in rural communities as noted below:

“Due to language barrier, they might not understand that, it would need to be explained in their language.” (P#5; tertiary education, full-time employed).

A participant expressed concern about the discrimination experienced by women with breast cancer in rural South African communities and this is noted in the quote below:

“Obviously black people always discriminate others, so they discriminate them.” (P#7; high school, unemployed).

In addition, another participant raised the issue of discomfort associated with communicating breast-related problems in a setting that includes men. The quote below confirms this:

“It is not a very comfortable subject for many and it's difficult to try and talk to the community especially in a group because it's not only females around, it's also males and it's difficult to get them to respond on their feelings when there's an opposite gender around.” (P#13; tertiary education, full-time employed).

5.3.7 Category: Facilitating barriers

Based on the construct "facilitating barriers" from the CSB theoretical framework, the researcher identified five factors that contributed to the delay in healthcare services in rural areas of South Africa. These included health practitioners' conduct (sub-theme), educative material (sub-theme), resources and infrastructure (sub-theme), rural transport services (sub-theme), and individual healthcare affordability (sub-theme).

5.3.7.1 Theme 7: Delayed healthcare services

The barriers to timely healthcare must be considered when improving the early detection of breast cancer. A large body of literature indicates that delayed healthcare services has contributed to the development of advanced-stage breast cancer.

Sub-theme 7.1.1: Health Practitioners' conduct

Participants expressed deep dissatisfaction with healthcare facilities, particularly nurses, and reported embarrassing and rude behaviour. The experiences of two participants were shared.

"…. from my side I had a problem before where I had to go to the nurse, and she had to scream which room I must go to. For an example, I wanted to have an abortion and then I asked which room they do that. She said: 'the abortions are done in room number 10" and everyone started looking at me..' (P#10; high school, part-time employed).

"…. sometimes, you feel like I want to go to clinic but I can't go there because they didn't help me. They're going to embarrass me instead of helping me. What I want to do the information I want like. When you have HIV positive when you default, they embarrass you. Why you default? They did not ask you, your side, why you default the pills then you explain. They just embarrass you. So that's the problem we end up don't go to the clinic to take our medications." (P#16; high school, part-time employed).

Sub-theme 7.1.2: Educative material

The participants noted a lack of educational materials regarding breast cancer and BSE in rural healthcare facilities.

"From my understanding, they only give it if it's breast cancer week. If not, there's nothing. Yes, or maybe when a patient comes to consult concerning their breast then, that's when they get it." (P#5; tertiary education, part-time employed).

"…. no! Because I've been into clinics because I have a lot of children and I've been into a lot of clinics and I don't know nothing about breast cancer even now." (P#10; high school, part-time employed).

Sub-theme 7.1.3: Resource and infrastructure

A lack of healthcare resources and inadequate infrastructure have presented challenges to many rural women in the KZN province. The level of dissatisfaction expressed by participants varied. As noted below, the first participant discussed the disparity between rural and urban healthcare systems and the challenges associated with providing healthcare in rural areas:

"Yes, we do face problems. Urban areas are different, townships are different. But us in a rural area, it's very difficult because the clinics do not come. Okay. They're not always there. It's always a mobile clinic that comes once after two months. After two weeks, sorry, pardon me. After two weeks. It's very hard. It's not as easy as it is. It's not as sophisticated as it is in the urban area. So, it's very difficult, because you might get sick today but be treated on Friday. So, it's not something that you can guarantee." (P#1; high school, full-time employed).

There was a significant amount of dissatisfaction expressed by participants regarding the long lines and waiting times at rural health facilities articulated in the excerpt below:

"The people at large the thing they raise their concern about is clinic long queues…" (P#13; tertiary education, full-time employed).

"Long queues, clinics have a tendency of not like taking their job seriously. They don't mind sitting around and chatting while we are sitting and waiting for their help. So that's a big challenge." (P#20, high school, unemployed).

In addition, participants expressed concern about the poor quality of services provided by allied health professionals, namely paramedics.

"…. when you call the ambulance to come, they take so long and end up they didn't come to you. When they come, they don't take you, they said you are so, your right. They want to take you to hospital when you are not stand up or walk or something. But if you call the ambulance, you are walking but you are sick, they didn't take you to the hospital." (P#16; high school, part-time employed).

Sub-theme 7.1.5: Rural transport services

In rural areas, transportation can be a significant challenge for many residents. Due to a lack of transportation facilities in rural areas, many people seek delayed healthcare services.

"Transport. They don't give to me on time because where I live it's in a rural area so there is less transport." (P#2; high school, unemployed).

Sub-theme 7.1.6: Individual healthcare affordability

Low-income households may have difficulty accessing healthcare, which may lead to delayed treatment. The participants indicated that financial constraints prevented them from seeking medical care when they were ill.

"The problem I have when I need medical is a money. Sometimes I'm sick, I don't have the money." (P#16; high school, part-time employed).

5.3.8 Category: Suggestions

In Table 5.2, suggestions were the last category identified. While this category does not pertain to any construct within the CSB theoretical framework, gaining

the suggestions of participants was critical for the promotion of BSE in rural South Africa.

5.3.8.1 Theme 8: Facilitators of breast self-examination

This category was divided into two sub-themes, namely community engagement and health education.

Sub-theme 8.1.1: Community engagement

To facilitate community involvement and understanding of breast cancer and BSE practices, several suggestions were made regarding awareness campaigns, programmes, workshops, and meetings.

"…. organising programmes or campaigns, breast cancer campaigns, get women to get together and educate them." (P#18; high school, part-time employed).

"In my opinion especially where there are more women, I think that when they are gatherings in the community or maybe large family gatherings, we can ask for the slots to market the breast examination and speak more about cancer." (P#13; tertiary education, full-time employed).

Sub-theme 8.1.2: Health education

According to several participants, educating women about BSE and breast cancer would increase their awareness of the disease and their use of it.

"To teach them. To have a meeting. Give health education. It's the only way we can help them." (P#6; tertiary education, full-time employed).

"I think that they must come and educate the people from the community." (P#14; high school, full-time employed).

According to one participant, breast cancer screening programmes should be as effective as HIV programmes, since there is always information about the disease and people are always promoting it.

"We can encourage it by bringing, you know those mobile things. Not just only on breast week. You see as people are being educated on HIV, should also be educated more like that. Because with HIV everyone knows it. Yes, they know what to do even though it is still a stigma but with breast cancer because it's not really taken as a stigma, no one sees the importance that much of teaching it to people." (P#5; tertiary education, part-time employed).

To promote breast cancer screening, participants suggested distributing brochures and pamphlets to patients at healthcare facilities. Additionally, it was recommended that speakers be made available to educate the community about breast health.

"They give us pamphlets to read and also do health education…. they can health educate us and then give us pamphlets to go to read at home." (P#9; tertiary education, full-time employed).

"To be honest with you I think they do especially because when you are sitting like on those places or waiting areas, you see posters written and there are pictures. It really depends on an individual if you take the information or not, but there are no like someone who is talking to the people. They just place the posters. The problem is some people are not educated in the rural areas. They can't read English. They can't even read isiZulu or isiXhosa because they didn't go to school." (P#21; high school, full-time employed).

5.4 SUMMARY OF THE CHAPTER

According to data analysis, eight categories and eight themes were developed. The themes were further divided into sub-themes in which the research findings were presented and supported by direct quotations. In the next chapter, these findings will be interpreted and discussed.

CHAPTER 6: DISCUSSION OF FINDINGS

6.1 INTRODUCTION

This chapter discusses the findings of the study. This chapter begins with a discussion of the demographic profile of the participants. A discussion of the themes and sub-themes will follow, including their link to the CSB's theoretical framework and existing literature. Afterward, the findings are discussed in terms of the study's objectives. This chapter will conclude with a summary.

6.2 DEMOGRAPHIC PROFILE OF PARTICIPANTS

There were 22 participants (n=22) in this study who participated in the one-on-one interviews. Participants were all African women aged 20 years and older living in the rural iLembe District of the KZN province. Rurality is viewed by the South African government as a means of living, thinking, and being that revolves around the land, livestock, and community (Hlalele 2014: 463). Many women in Africa reside in rural areas (Patel 2020: 2). According to a previous report being poor is not just defined by a lack of income or unemployment. However, it is an accumulation of many aspects, including education, access to basic utilities, healthcare, and basic infrastructure services including drinking water, sanitation, electricity, and security (Patel 2018: 1). Earning a certain threshold of income may still not be enough to meet these basic needs.

A previous South African study found that those who live in rural areas, are African, and are women who are disproportionately affected by unemployment (Wilkinson *et al.* 2019: 2). Another study showed that rural women have a lower probability of finding secure employment than urban women (Patel 2020: 2). According to the findings of this study, several rural women do not work full-time. Previous studies have revealed that women with higher incomes also perform BSE more frequently than those with lower incomes, likely owing to their healthier lifestyles and increased awareness of their health (Baloushah *et*

al. 2020: 2; Moey *et al.* 2020: 621). The findings of this study indicate that some participants were familiar with BSE definition, technique, and frequency, while others were not.

In many African countries, education and access to basic infrastructure and services are lacking (Patel 2018: 1). In South Africa, rural areas are perceived to be under-resourced and marginalized (Du Plessis and Mestry 2019: 1). According to this study's research findings, the majority of participants (n = 16) had a high school education, while six had a tertiary education (n = 6). In the iLembe District of the KZN province, 57.3% of students completed Grade 9 or higher, while 32.4% matriculated (iLembe District Municipality 2020: 19). This finding is in line with the study findings, which indicate that many participants had high school education. In the literature, there is evidence that educational level and stage of behavioural adoption of BSE are positively associated (Kardan-Souraki *et al*. 2019: 640; Moey *et al.* 2020: 621). As a result, these findings are consistent with the findings of this study, where most of the women with a high school education had difficulty defining the terms "breast cancer" and "BSE" and were unsure of the correct technique for performing BSE.

It has been reported by Statistics South Africa (2018: 1) that majority of black South Africans are not married. Using many data sets over time, it has been consistently shown that people speaking isiZulu have the highest proportion of ‘never married’ individuals, followed by people speaking isiNdebele, whereas English speakers had lower proportions of such individuals (Statistics South Africa 2018: 1). Furthermore, most of the individuals who were not married were from the provinces of KZN and Eastern Cape. These results are consistent with current research findings which indicate that most of the participants were single from the KZN province. In a previous study, women's adoption of BSE was linked to their marital status because married women were more conscious of their breasts and therefore more likely to practice BSE (Moey *et al.* 2020: 621). Although most of the women in this study were single, BSE knowledge and practice varied among them. As a result, this study cannot confirm that married women practice BSE at a higher rate.

In this study, it was observed that there were two children per woman. This is consistent with a previous study that found that there have been 2.4 births per woman in South Africa over the last two decades (Biney *et al*. 2021: 1). A previous study found that breast-feeding women were 2.43 times more likely to examine their breasts than those who did not breast-feed (Lera *et al.* 2020: 5). Most of the participants in this study had at least one child, except for five participants who did not have any children. Participants with children had varying levels of knowledge and practice regarding BSE. This research findings cannot confirm that breast-fed women are likely to practice BSE.

6.3 THEMES AND SUB-THEMES

The findings of this study led to the development of eight themes. A discussion of the themes and sub-themes will follow in the following sections.

6.3.1 Knowledge and awareness

Under the category of insight into breast cancer and breast self-examination (Table 5.2), knowledge and awareness were identified as a theme. While this category was not identified as a construct of the CSB theoretical framework, it was important to understand the participants' foundational knowledge of the phenomenon. Participants were asked to define breast cancer and BSE as well as describe their understanding of these terms. In section 5.3.1.1, the participants' responses were presented. These responses or findings are further discussed and compared with existing literature in the following sections.

6.3.1.1 Breast cancer knowledge

All participants viewed breast cancer as a disease of the breast. Few participants were able to accurately define the term breast cancer. According to one participant, breast cancer is the proliferation and division of abnormal cells in the breast. The ACS (2021: 1) defines breast cancer as cells that grow uncontrollably in one or both breasts. This definition is consistent with the explanations made by some participants in this study. According to Nizum

(2011: 3), a lump is regarded as one of the most common signs of breast cancer. It was noted that most of the participants in this study used the word lump to describe or define the term breast cancer. These findings were consistent with the findings from a previous study conducted in the Limpopo Province of South Africa, which reported approximately 60% of women identified a breast lump as an indication of breast cancer (Ramathuba *et al*. 2015: 5).

Other signs and symptoms of breast cancer include skin and nipple retraction; breast tenderness; bloody or serous nipple discharge; change in the size, shape, and texture of the breast, and lymph node enlargement (Nizum 2011: 3). There were, however, a few participants who were able to identify breast size, nipple discharge, and changes in the skin as symptoms of breast cancer. It was reported in a previous study that there is a lack of knowledge on breast cancer signs and symptoms, which are generally associated with a delayed diagnosis (Akuoko *et al.* 2017: 8). There is alignment between these findings and those of the current study in that most participants lacked knowledge of the signs and symptoms of breast cancer. Therefore, many participants described BSE as an examination aimed at identifying breast lumps.

6.3.1.2 Breast cancer misconception

An empirical study found that African women had several misconceptions concerning breast cancer based on their access to information (Rayne *et al.* 2018: 813). According to previous research, many women expressed that they would rather die with both breasts than risk losing their femininity by removing both breasts (Rayne *et al.* 2018: 813). These findings are consistent with those reported in this study. According to some participants, breast cancer indicates the removal or "cutting" of a woman's breast, along with feelings of inferiority. It is commonly believed that breast cancer is incurable (Akuoko *et a*l. 2017: 10). This finding is consistent with the opinion expressed by some participants in this study, who indicated that breast cancer is incurable. According to previous research, many women believe that death is imminent when diagnosed with

breast cancer (Akuoko *et al*. 2017: 10). Similarly, some participants in the current study believed breast cancer was synonymous with death.

It is a common misconception in SSA countries that breast cancer is caused by witchcraft and punishment (Akuoko *et al*. 2017: 10; Elewonibi and BeLue 2019: 555; Orindi 2016: 10). These misconceptions are consistent with the views expressed by some participants in this study. According to some participants, breast cancer is a manifestation of witchcraft, sin, and punishment. As part of the theme, breast cancer beliefs (section 6.3.5), these misconceptions will be discussed in greater detail. Many of these misconceptions are due to a lack of knowledge and awareness about breast cancer among women in low-resource settings (Akuoko *et al*. 2017: 10). As a result, the findings of this research study can be used to raise public awareness about breast cancer through the presentation and interpretation of the findings, as well as the development of a model.

6.3.1.3 Breast self-examination knowledge

Johnson (2019: 219) states that BSE involves 'visualising and palpating the breast for lumps, shape, texture, size, and contour'. According to the current study, some participants were familiar with the term BSE, while others found it easier to describe the process of BSE rather than define the term. Many individuals have explained BSE in terms of 'feeling for a lump' or 'looking for a lump'. There were a few participants in this study who reported looking for changes in the texture of their skin, abnormal discharge from their nipples, and changes in the size of their breasts. In this study, more than half of the participants indicated that they had some knowledge of BSE. The findings of previous studies indicate that 78.4% of Malaysians, 67% of Jordanians, 47% of Cameroonians, and 72.1% of Western Turkish citizens were aware of BSE (Lera *et al.* 2020: 5). A difference in percentages can be attributed to differences in participants' socio-economic and demographic characteristics. The findings of this study were, however, lower than those of a Nigerian study that found that 97% of women had heard of BSE (Dadzi and Adam 2019: 8).

It is recommended that women aged 20 and older practice BSE every month (Erdem and Tokta 2016: 2, Lera *et al.* 2020: 2). According to the current study, few women knew the prerequisite frequency of BSE. In a previous study, it was reported that only 14% of respondents knew of the correct time for performing BSE (Kifle *et al.* 2016: 107). These results are inconsistent with those of the Ethiopian study, in which 41.9% of female students knew the correct time at which BSE should be performed (Kifle *et al*. 2016: 107). This difference may be due to the different sources of information available in each setting. This indicates that more education as well as adequate and accessible information are needed around the skill and frequency of BSE.

6.3.1.4 Lack of breast self-examination knowledge

It is believed that a lack of knowledge about BSE prevents women from practicing BSE, thus reducing the likelihood of early detection of the disease (Lera *et al*. 2020: 5). A previous study found that women who recognised BSE as an early breast cancer detection method were 6.36 times more likely to practice BSE than women who were not aware of any method to detect breast cancer (Lera *et al*. 2020: 5). The findings of this study revealed that some participants did not know about BSE. Consequently, some participants did not practice BSE.

Some studies indicate a low level of awareness and knowledge regarding BSE (Akuoko *et al.* 2017: 10, Kifle *et al*. 2016: 106). A previous study reported that 13.4% of women performed BSE, out of which nearly half (41.2%) practiced it regularly every month, while the rest practiced it at different intervals (Kifle *et al*. 2016: 106). Many participants in this study indicated various times during which they practiced BSE. In contrast, only a very small number of participants suggested that it should be performed once every month following a woman's menstrual cycle. The results are like those of Joyce *et al.* (2020: 5), who reported that 58.6% of respondents were aware of BSE, 24.3% reported that BSE should be practiced once a month, 46.7% did not know how often the test

should be conducted and 11.8% believed that the test should be conducted a week after the menstrual cycle.

Furthermore, a previous study reported that although BSE was perceived positively, practice rates were disappointing (Ahmed *et al.* 2018: 5). Only one-third of the participants conducted BSE, a result replicated in studies conducted in Nigeria and Cameroon, which revealed practice rates of 19% and 35%, respectively. According to Bhardwaj and Fitzpatrick (2021: 198), there is scant research on the prevalence of BSE in developing countries. Therefore, this research study has contributed to the body of knowledge about BSE.

6.3.2 Clinical and socio-demographic factors

Clinical and socio-demographic factors was the first construct identified of the CSB theoretical framework. A clinical indicator in this study was the severity of symptoms, whereas socio-demographic factors included education, income, geographical location, occupation, age, and race (Lauver 1992: 284). The most common clinical indicator in this study was breast lumps. As a result, breast lump knowledge and misconceptions were identified as a sub-theme. This study examined the socio-demographic characteristics of African women living in rural KZN province between the ages of 20 and 65. The majority of participants reported having a high school education and not being employed full-time. Therefore, education and employment were identified as the two sub-themes under socio-demographic factors to be discussed.

6.3.2.1 Breast lump knowledge and misconception

This study found that some participants were knowledgeable about breast lumps. Some participants indicated that a breast lump was not necessarily cancerous, but could be caused by an abscess, a menstrual cycle, or a tumour. As a result, these participants were optimistic that they could identify a lump in their breasts and receive medical treatment at clinics and hospitals. While some participants exhibited positive preventative health behaviours through the

identification of breast lumps, others believed that a breast lump was an indication of breast cancer.

According to a previous study, 60% of women identified breast lumps as cancer (Ramathuba *et al*. 2015: 5). A separate study found that a lack of access to healthcare and misconceptions about breast lumps were associated with a prolonged delay in seeking medical assistance (Akuoko *et al.* 2017: 13). In this study, some participants indicated that they would not seek medical assistance if they discovered a breast lump and would ignore the lump. It has been reported that African women in the western region of South Africa delayed seeking medical attention for 8.5 months following the development of breast lumps or symptoms (Lambert *et al*. 2020: 4). In contrast, another study revealed that patients ignore their initial symptoms on average for 1.5 years (Lera *et al.* 2020: 2). As a result, many studies reports that there is a long delay between breast symptoms and medical treatment (Lambert *et al.* 2020: 4; Lera *et al*. 2020: 2; Habtegiorgis *et al*. 2022: 2).

An inadequate understanding of breast symptoms and misconceptions results in delayed diagnosis or treatment of breast cancer (Azemfac *et al.* 2019: 8). Based on the identified misconceptions about breast lumps in this study and evidence from existing literature, there appears to be a lack of awareness on breast cancer and BSE. There is a need for BSE as an alternative screening tool among women in rural South Africa. Using the CSB theoretical framework, the researcher identified breast lumps and misconceptions as one of the factors influencing BSE knowledge and practice.

6.3.2.2 The influence of education on BSE

There were two groups of educated women identified in this study. One group had a tertiary-level education while the other had a high school-level education. Among the two groups of educated women reported in this study, the researcher observed varying levels of knowledge about BSE. Participants with a tertiary level of education were found to be more knowledgeable and more

likely to practice BSE. In contrast, participants with a high school education expressed conflicting opinions regarding the practice of BSE. Some individuals were knowledgeable, while others were not. A previous study indicated that improving African women's knowledge and understanding of BSE will play an important role in improving the behaviour related to breast cancer and facilitating early detection and management (Akuoko *et al*. 2017: 1).

A previous study in rural Uganda found that low levels of education are associated with a lack of knowledge and practice of BSE, especially in populations characterised as economically disadvantaged and uneducated (Joyce *et al*. 2020: 5). Consequently, rural populations may experience an increase in the incidence and mortality of breast cancer. Several researchers are of the view that the level of education and stage of behavioural adoption of BSE are positively associated (Kardan-Souraki *et al*. 2019: 640, Moey *et al.* 2020: 621). According to some participants in this study, women with higher levels of education are more likely to practice BSE. As a result, they are regarded as being more knowledgeable than women without education.

A recent study observed a positive correlation between the level of education and the stage of behavioural adoption of BSE (Moey *et al.* 2020: 630). This is because women with higher education are more likely to obtain information on breast cancer on their own. By gathering information, they become more knowledgeable about the benefits of early detection of breast cancer. As a result, higher education increases the practice of breast self-exploration by increasing the knowledge and skills needed to perform BSE (Moey *et al.* 2020: 630).

6.3.2.3 The influence of employment on healthcare

In this study, most of the participants were not full-time employed. Participants who were not full-time employees reported difficulties accessing healthcare due to financial constraints. Participants indicated that they would delay seeking healthcare because they lacked the funds for transportation to their local clinics.

Other participants reported practicing self-treatment options due to their inability to afford medical care. In a previous study, employed participants were 3.13 times more likely to practice BSE than unemployed participants (Lera *et al*. 2020: 5). These findings are consistent with those found in studies conducted in Nigeria, Benghazi, Libya, and Southern Ethiopia (Lera *et al*. 2020: 5). Employment and working conditions may expose these women to a broader range of media, friends, and colleagues that may facilitate the exchange of ideas and experiences as well as the initiation of BSE practices (Lera *et al*. 2020: 7). In contrast to previous studies, several participants indicated that clinics and healthcare practitioners were the primary sources of information regarding BSE and breast cancer, as opposed to media, friends, and colleagues. The researcher found that socio-demographic factors (education and employment) influence both knowledge and practice of BSE as well as habitual and preventative health behaviours of rural South African women.

6.3.3 Preventative healthcare habits

The psychological construct of the CSB theoretical framework includes the factor "habit" as shown in Figure 3.1. In this study, the term "habit" referred to the behaviour of an individual in response to symptoms and the experience of seeking medical care in the past (Lauver 1992: 284). A preventative healthcare habit was identified as the theme. This was further divided into three sub-themes: clinics and hospitals, self-treatment practices for medical symptoms, and complementary practices.

6.3.3.1 Clinics and hospitals

Several participants in this study preferred to visit a health facility (clinics and hospitals) when they were experiencing a health-related problem. This included general health issues and breast-related conditions. When asked what they would do if they discovered a lump in their breast, many participants indicated that they would seek medical assistance from hospitals and clinics. In some instances, participants expressed their trust in the health system and health practitioners to provide the most effective treatment when faced with a health

problem. There were, however, participants who chose to engage in complementary and self-treatment practices rather than seek professional medical attention due to misconceptions.

Heit (2001: 11) reported that women with preventative habits were 4.8 times more likely to comply with screening recommendations such as mammograms compared to women without such habits. Therefore, women who practice preventative habits were twice as likely to undergo breast cancer screenings. Habits are associated with the search for medical treatment and the promptness with which symptoms such as breast cancer are addressed (Heit 2001: 11). Preventative health practices are more likely discussed and practiced by individuals who are in contact with healthcare providers. Consequently, women who consult healthcare facilities and practitioners for health-related issues are more inclined to adopt BSE. It is important to note that habit enables women to receive a timely and accurate diagnosis, which has a far better prognosis than women presenting at a later stage to a health facility with advanced-stage breast cancer.

A study conducted in India reported that many individuals had a positive attitude toward health facilities and intended to visit a physician immediately if they felt a breast lump (Kalliguddi *et al*. 2019: 571). This finding is consistent with the findings of this study, where several participants reported consulting with health facilities regarding medical issues, including breast lumps.

6.3.3.2 Self-treatment practices for medical symptoms

Traditional, complementary, and alternative medicine is an umbrella term that encompasses a range of healthcare practices (indigenous or imported) that are delivered outside of traditional healthcare systems (James *et al*. 2018: 1). An African setting may entail a combination of indigenous medicine (traditional bone setting), herbal medicines and complementary and alternative medicine products for example, acupuncture and chiropractic (James *et al.* 2018: 1). Self-treatment practices are widespread in SSA, with a considerable number of its

population relying on them to maintain their health or prevent and treat communicable diseases and non-communicable diseases.

Several participants in this study elected not to consult a traditional healer or a health practitioner when faced with breast lumps or general health-related symptoms. As a result, they preferred to engage in alternative self-treatment methods. In the case of breast-related problems, such as a breast lump, one participant indicated that they would apply hot water to the breast or consume a ‘painkiller’ to alleviate their pain. In addition, natural ingredients such as ginger, turmeric roots, and herbs have also been reported as self-treatment options. Participants described consuming or considering taking medication such as Medlemon, Disprin, and Grandpa for medical symptoms because these medications are affordable and can be obtained without a prescription. Yeika *et al.* (2021: 863) argue that self-medication can provide some benefits to both individuals and the healthcare system when used properly. By eliminating the need to queue for medical consultations, scarce medical resources are not used to treat minor illnesses, doctors are less burdened, and healthcare costs are reduced. It should be noted that, despite these potential benefits of self-medication, many undesired outcomes may result from inappropriate self-medication, such as a delayed diagnosis of carcinogenic breast lumps.

In some cases, women used alternative self-treatment options as a result of their inability to afford the cost of transportation, their geographical distance from healthcare facilities, their distrust of the healthcare system due to a negative experience, or their belief that these alternative self-treatment practices would adequately solve their medical symptoms. This preventative behaviour poses a barrier to early diagnosis of breast cancer, resulting in women presenting at a later stage for treatment. Most people in SSA practice alternate or self-treatment methods because of their low socio-economic status, which is characterised by unemployment and unskilled labour (James *et al.* 2018: 1). The findings suggest that low socio-economic status in society influences the decision to use alternative treatment practices, given that these practices are less expensive than biomedicine. Moreover, the use of self-

treatment options for medical symptoms suggests that rural South African women may be willing to practice BSE since it is also less expensive and can be performed at the convenience of their home.

6.3.3.3 Complementary practices

It is estimated that about 80% of the South African population has access to traditional medicine, predominantly in rural areas. It is sometimes the only option available (Mchunu 2018: 22). Generally, African traditional treatment is a combination of information, expertise, and practices based on principles of thought, opinion, views, and values and is employed by indigenous Africans to preserve health, identify or treating physical and emotional well-being. In this study, it was determined that several participants regularly consult traditional healers for health-related issues. Some participants expressed their distrust of healthcare practitioners and their trust in the consumption of traditional herbs.

According to a study conducted in Western Africa, many women prefer herbal medicine and traditional practices to established screening and treatment methods (Nwagu *et al.* 2021: 1132). Another study reported that only 29% of women who identified breast cancer signs and symptoms claimed to seek medical attention, whereas the remaining 46% opted to receive traditional treatment (Akuoko *et al*. 2017: 12). In comparison with the findings in this study, these findings were relatively higher. In this study, several participants indicated that they would seek medical assistance rather than traditional medicine, citing their trust in the healthcare system and health practitioners. A study conducted among Malian women found that those who mixed traditional and western medicine had a poorer survival rate for breast cancer (Nwagu *et al.* 2021: 1132). According to one participant in this study, they have observed people mixing traditional medicine with medical treatment and dying in large numbers as a result. Therefore, these findings are consistent with those of previous studies. In this study, participants' habits are shaped by their strong traditional beliefs. Rural African communities are highly influenced and dominated by traditional

practices, which are not only barriers to orthodox treatment but may delay seeking treatment (Akuoko *et al.* 2017: 12).

In this study, the researcher identified three patterns of preventative healthcare habits using the habit construct from the CSB theoretical framework. Based on this construct, it was possible to identify a connection between participants' healthcare habits and the practice of BSE. Those participants who consult with clinics and hospitals regularly may have an increased chance of becoming aware of and practicing BSE through health education at health facilities. Participants' habit of seeking cost-effective alternate medical treatments suggests that rural South African women may be willing to adopt BSE given the absence of geographical and financial constraints. Complementary practices are an indication of cultural influence on rural South African women, indicating the need for a tailored culturally sensitive breast cancer awareness initiative.

6.3.4 Sociocultural factors

According to Figure 3.1, the psychological construct of the CSB theoretical framework includes the factor "affect". In this study, the term "affect" referred to the feeling of anxiety resulting from embarrassment following a diagnosis, resulting in individuals not engaging in preventive health behaviour (Lauver 1992: 282). Additionally, it was described as an emotional response to engaging in health-related activities. Under this construct, sociocultural factors were identified as a theme. This was further divided into four sub-themes: fear, African cultural stigmatisation, social support for African women, and positive attitudes toward BSE.

6.3.4.1 Fear

The emergence of fear is an unpleasant emotional state characterised by physiological, cognitive, affective, and behavioural responses to perceived threats (Dewi *et al*. 2019: 6). In this study, it was found that participants feared the possibility of developing breast cancer or discovering a lump in their breasts. Due to the misconception that breast cancer is incurable, participants

expressed a fear of death. Due to the stigma attached to this disease, most women fear practicing breast cancer screening methods out of fear of discovering a breast lump or being diagnosed with the disease (Orindi 2016: 41). It is further compounded by the psychological stress and social rejection that would ensue if breast cancer were diagnosed, which is why most women do not participate in breast screening (Orindi 2016: 41).

It has been suggested that fear may contribute to women's failure to seek treatment for breast cancer (Akuoko *et al*. 2017: 12). Among these fears were the fear of cancer diagnosis, the fear of being examined by a physician, and the fear of being stigmatised in the event of a positive diagnosis. Furthermore, several women indicated that they feared mastectomy and death after being diagnosed with breast cancer, preventing them from consulting their physicians or reporting to a health center (Akuoko *et al*. 2017: 12). These findings are consistent with the views expressed by participants in this study who feared stigmatisation and believed that their breasts would be 'cut off'. As a result, some participants indicated that they would rather die than feel any less like a woman and have their breasts removed out of fear of rejection by society.

Women in certain communities' view breast cancer screening as a death sentence and are therefore unwilling to know the status of their breast health (Orindi 2016: 41). In part, this is due to the fear associated with the outcome of the screening and the stress associated with the diagnosis of breast cancer. Iranian women have reported that they fear discovering something wrong and that it would be better not to know (Orindi 2016: 41). Lauver (1992: 284) suggests that anxiety and intense emotional reactions associated with breast changes can also positively influence the intention to seek healthcare and prompt action to address breast symptoms. While some participants indicated they would rather die than have their breasts removed, they also indicated their willingness to learn and practice BSE. Furthermore, they were willing to attend breast cancer workshops to avoid having their breasts removed and to detect breast cancer early. Peprah *et al*. (2019: 2) argue that individuals may be hesitant to seek healthcare services due to concerns regarding treatment. This

finding is consistent with the views expressed by participants in this study who expressed concerns regarding healthcare treatment, infrastructure, and services. A more detailed explanation will be provided under the theme of delayed healthcare services.

Using the construct “affect” participants' feelings of fear were better understood. Although fear can negatively affect women's practice of BSE, it can also serve as a motivational factor to promote BSE.

6.3.4.2 African cultural stigmatisation

Across a variety of health conditions, stigmatisation serves as a barrier to health-seeking behaviour, engagement in care, and treatment adherence (Stangl *et al*. 2019: 1). In addition to enabling a variety of forms of discrimination, stigmatisation contributes to social inequalities by denying individuals or groups full social acceptance, reducing their opportunities, and fuelling social inequalities (Stangl *et al.* 2019: 1). Throughout the interview process, the concept of stigmatisation frequently emerged from participant responses. In the opinion of several participants, rural African women diagnosed with breast cancer are stigmatised by their fellow Africans. The majority of participants expressed a concern that family, friends, and members of the community do not treat women diagnosed with breast cancer fairly. According to some participants, these women are viewed as a shame to society or as being possessed.

According to studies conducted in Ethiopia and Uganda, the public stigma associated with breast cancer led to internalised stigmatisation, which subsequently delayed care engagement (Meacham *et al.* 2016: 1206). A study among African American women shows that fatalism, stigmatisation, and privacy are some of the key factors influencing non-attendance in regions where national screening programmes exist (Mutebi and Edge 2016: 5). These are accentuated in low-resource environments where facilities do not exist. A study of 81 women with breast cancer in Nigeria showed that married African

women have significant emotional, physical, and social problems following primary treatment of breast cancer (Mutebi and Edge 2016: 5). Of the 81 patients included in the study, 38.3% had divorced or separated three years after therapy compared with the national average of 2.6%. According to some of the participants of this study, African men are reluctant to marry women with breast cancer and view women without breasts as less of a woman. There are similarities between these findings and the social stigmatisation that women in other countries experience.

According to Orindi (2016: 41), women are apprehensive about breast cancer screening because they fear a positive diagnosis, given that breast cancer is heavily stigmatised within communities. This fear is further exacerbated by the psychological stress and social rejection associated with breast cancer diagnosis. As a result, many women do not attend breast screenings (Orindi 2016: 41). Some women indicated that they preferred to have their health be a secondary concern rather than have their families stigmatised as a result of their breast cancer diagnosis (Akuoko *et al.* 2017: 11). It should be noted, however, that some of the participants in this study believed breast cancer is not a stigma, and women will not be treated negatively due to their diagnosis. The difference in opinions suggests that there is a need to raise public awareness about sociocultural stigmatisation in rural African communities.

A concern was raised regarding the stigmatisation of HIV among Africans. Based on the experience of one participant, women suffering from breast cancer are compared and stigmatised in the same way as those suffering from HIV. When a woman loses weight due to breast cancer diagnosis and treatment, they are compared to women who are HIV-positive and appear visually ill. Several processes are affected by stigmatisation, including social relationships, resource availability, stress, and psychological and behavioural responses, resulting in poorer health outcomes (Stangl *et al*. 2019: 1). To reduce stigmatisation and promoting cancer care engagement, interventions aimed at reducing fear of breast cancer may be beneficial (Meacham *et al.* 2016: 1206). Several ways are suggested to reduce fear, one of which is to

elevate the role of cancer survivorship and advocacy programmes. As a result, cancer may be associated with less fear and death if more women are exposed to the positive stories of survivors (Meacham *et al.* 2016: 1206).

By applying the construct “affect”, the researcher was able to gain a better understanding of the level of stigmatisation in rural areas of South Africa. The interpretation of the findings suggests that women with breast cancer are highly stigmatised and are less likely to practice BSE due to a fear of social repercussions. In contrast, participants who believe women with breast cancer are not stigmatised may be able to speak freely about breast-related problems and engage in BSE more freely.

6.3.4.3 Social support for African women

Misinformation about the nature of breast cancer causes many women with the disease to be poorly received by their communities (Nwagu *et al.* 2021: 1132). Therefore, women commonly relegate health concerns to their roles as family caregivers, blaming their discomfort and pain on their roles. Since many Western African societies are patriarchal, those who seek treatment often do so without emotional support and financial support; and the patients would need permission and financial assistance from their husbands or community leaders who are unaware of breast cancer (Nwagu *et al.* 2021: 1132). In this study, the social support received by African women from their families, friends, and community members was found to influence their preventative health behaviours. A woman who has a good support network is more likely to communicate their concerns regarding breast cancer. Also, a strong social support network may encourage more women to practice BSE in addition to helping to raise breast cancer awareness.

In Nigeria, a study found that most women heard about cancer screening from aunts, siblings, and friends as well as church members (Elewonibi and BeLue 2019: 548). Furthermore, women indicated that their families served as a source of motivation and encouragement for them to continue to attend

screenings to remain healthy (Elewonibi and BeLue 2019: 548). In this study, some participants indicated that they would encourage their family, friends, and members of their community to practice BSE and that they would teach them as they possess knowledge of this practice.

While some participants in this study reported cultural stigmatisation among Africans, many others reported that they had supportive family, friends, and community members and would not have difficulty communicating breast-related issues. These findings are in line with those of an Iranian study that found that social support from colleagues, friends, and family has a significant impact on information access, individual encouragement, and the adoption of preventative behaviours (Bashirian *et al.* 2019: 231). According to Bashirian *et al*. (2019: 231), the increase in self-efficacy and social support can help individuals overcome perceived barriers to breast cancer screening (emotional, logical, and financial).

According to researchers, religious influence can be both supportive and obstructive. Religious leaders in communities could help educate women about the benefits of screening or encourage against this practice (Elewonibi and BeLue 2019: 554). Since a large percentage of rural African women consult traditional healers in South Africa, this can be a valuable opportunity for future researchers to explore the knowledge and attitude of traditional healers towards the practice of BSE.

6.3.4.4 Positive attitude toward BSE practices

A person's attitude can be described as a degree of favour or disfavour expressed towards them (Shuyang 2021: 593). It can also be described as an overall and lasting feeling of positive or negative sentiment toward a specific person, object, or issue. Individuals' attitudes are affected by the knowledge and beliefs they hold (Cobley and Schultz 2013: 277; Dorwrick 2001: 140). While there was a lack of knowledge about BSE, it was encouraging to note that many participants expressed a positive attitude concerning their

willingness to learn and practice it. A similar pattern of behaviour was observed among females in other parts of the world, such as Nigeria and Shahroud (Ahmed *et al.* 2018: 5). Conversely, nearly half of the female students in Jordan (45.5%) indicated that they would examine their breasts if they felt it would be beneficial to them (Ahmed *et al.* 2018: 5). These findings are in line with the findings of the current study, which reported participants' willingness to learn and practice BSE to assist in the early detection of breast cancer, thereby improving survival rates. Women with a positive attitude toward BSE are more likely to practice BSE than those with a negative attitude (Habtegiorgis *et al*. 2022: 7).

According to Abolfotouh *et al*. (2015: 9), women who perceive more benefits from and fewer barriers to BSE are more likely to practice it. In this study, several participants indicated that they would not encounter any obstacles to practicing BSE. While some participants practiced BSE, they were uncertain whether they were performing it correctly, thus they demonstrated a desire to learn more. A previous study found that most women know the importance of early detection of breast cancer to increase their chances of survival (Lera *et al.* 2020: 4). This study found that this was not the case since some participants had never heard of BSE before participating in this study.

Another study found that women who perceived themselves as susceptible to breast cancer and believed it to be a severe disease were more likely to practice regular BSE (Abolfotouh *et al.* 2015: 9). Many participants expressed a fear of discovering a breast lump or being diagnosed with breast cancer. Consequently, they expressed a positive attitude toward attending breast cancer workshops and programmes to gain an understanding of BSE. Participants indicated that these workshops or training programmes would help eliminate misconceptions about breast cancer. Several participants also expressed a positive attitude toward sharing their BSE knowledge with their families and friends. According to a previous study, women who believe in BSE behaviours are 1.94 times more likely to practice them (Didarloo *et al.* 2017:

862). Therefore, there is a need for people to develop a positive attitude toward preventative health behaviour.

Using the CSB theoretical framework, the researcher identified that, despite participants' differing levels of understanding and beliefs regarding BSE, they all demonstrated a positive attitude towards their willingness to learn BSE and attend BSE programmes.

6.3.5 Breast cancer beliefs

The next construct in the CSB theoretical framework utilised in this study was belief. Belief can be defined as the expectation that seeking medical care will result in positive or negative outcomes (Heit 2001: 9). Several studies have found that women's beliefs influence their preventative health behaviour (Dewi *et al.* 2019: 6; Heit 2001: 9). Additionally, the lack of breast cancer screening has previously been linked to cultural beliefs and practices. Furthermore, an individual's belief may play a role in determining how the individual perceives BSE (Ansah 2015: 2). By applying the construct of belief in this study, two prominent themes were generated, namely traditional beliefs and healthcare beliefs.

6.3.5.1 Traditional beliefs

There is evidence that suggests that traditional myths are one of the barriers to breast cancer screening, which results in many women reluctant to discuss their breast health openly (Orindi 2016: 10). In a previous study conducted in Western African communities, it was found that cultural, religious, and mental factors contributed to a delay in the diagnosis and treatment of cancer for women (Nwagu *et al.* 2021: 1132). A Nigerian study found that some women were able to cope with the reality of a positive diagnosis using religious and cultural beliefs (Elewonibi and BeLue 2019: 551). Many women, however, believed breast cancer was caused by evil spirits, curses, or promiscuity, and that only spiritual intervention could cure it (Elewonibi and BeLue 2019: 555). Thus, women were less likely to practice breast cancer screening (Elewonibi

and BeLue 2019: 555). The participants in this study had cultural beliefs or interpretations of breast cancer. Most participants believed that breast cancer was a manifestation of witchcraft, punishment, and sin. The findings of this study are consistent with those of previous studies.

In this study, some participants indicated that women with breast cancer had committed a sin and were being punished consequently. This finding confirms the findings of a previous study which indicated that rural women reported witchcraft, evil spirits, and punishment from the gods as contributing factors to breast cancer (Akuoko *et al*. 2017: 10). According to several other studies, chronic health conditions in African communities can be attributed to witchcraft and evil spirits (Elewonibi and BeLue 2019: 551; Ramatuba *et al.* 2015: 3). In addition, women's perceptions and behaviours were also affected by the power of prayer and God's influence (Elewonibi and BeLue 2019: 551). Moreover, some women believe that they can be healed through prayer and God and that conventional treatment is not required. While others believed that their faith would prevent them from becoming ill.

It is believed that societal factors are responsible for many women delaying diagnosis and discontinuing treatment (Nwagu *et al.* 2021). Among these factors is the fear of surgery and the belief in being rejected by society. Participants believe that breast cancer will result in the "cutting" or removal of the breast, which will result in rejection by society, including family, friends, and their spouses. In addition, a previous study found that 38% of women separated or divorced within three years of having surgery (Nwagu *et al*. 2021: 1132). According to this study, some participants believe that a woman with breast cancer or a lump in their breast may not be suitable for marriage. Among the words used to describe women with breast cancer were disgrace, shame, and embarrassment. In this study, several participants expressed their fear of finding a breast lump and their reluctance to practice BSE.

A traditional healer is one of the most socially acceptable healthcare providers in communities because they share the same culture as the members of the community and are often considered the first provider sought by the community in cases of illness or culture-specific health problems (Mchunu 2018: 23). In this study, several participants held different beliefs regarding traditional healers. In some cases, participants reported looking for refuge in traditional healers and traditional treatments to avoid illness. Similarly, a previous study also found that rural women frequently use the services of traditional healers (Pillay 2002: 105) While other participants expressed a lack of confidence in the ability of traditional healers to cure illnesses with traditional herbs and rituals. Interestingly, these findings contradict those of a previous study which found that rural women were more likely to seek treatment from traditional healers (rather than doctors) when experiencing breast lumps (Harries *et al*. 2020: 5). One participant, however, reported seeing women mixing conventional medicine with traditional medicine with fatal consequences (Chapter 5, sub-theme 5.1.2).

According to a previous study, women are more likely to participate in breast cancer screenings if they believe that practicing preventative health behaviours will reduce their risk of developing breast cancer (Lawal *et al.* 2017: 124). There are, however, some African countries where women consider it inappropriate to touch their breasts. Consequently, women may be less likely to perform BSE and delay the diagnosis of any breast-related problems (Nwagu *et al.* 2021: 1132). In this study, it was found that all participants were willing to learn and practice BSE despite cultural beliefs and practices.

6.3.5.2 Healthcare beliefs

A person's health belief influences their perception of their health. Many participants in this study expressed trust in healthcare practitioners over traditional healers. According to several participants, traditional healers are not equipped with the knowledge and expertise necessary to treat women with breast cancer. According to a previous study, most women doubt the ability of

traditional healers to treat breast cancer and their ability to replace conventional allopathic medicine (Harries *et al*. 2020: 7). These findings are consistent with those expressed by some participants in this study. Furthermore, the current study found that participants' health beliefs were also influenced by their healthcare experiences. The negative experience can increase women's disbelief in Western medicine and preventative health awareness (Elewonibi and BeLue *et al.* 2019: 555). To identify the factors negatively affecting participants' health beliefs and trust, the facilitating barrier construct was used in this study. In the section on delayed healthcare services, this will be discussed.

The perception of healthcare by an individual is influenced by their sociocultural background, beliefs, attitudes, and level of understanding (Ahmed *et al.* 2011: 183). Health philosophies and individuals' willingness to act upon their beliefs influence motivation to access healthcare (Peprah *et al.* 2019: 2). Thus, women who are more likely to seek medical assistance from a health facility for medical issues are more likely to adopt preventative healthcare practices, such as BSE. This study found that women who trust and believe in the healthcare system were more likely to practice BSE than women who adhere to traditional beliefs. The model developed in this study is intended to facilitate the early detection of breast cancer among African women living in rural areas by enhancing prevention-based healthcare practices, such as BSE.

6.3.6 Healthcare perception

The next construct in the CSB theoretical framework utilised in this study was norm. The construct norm referred to the perception of morally acceptable behaviour toward receiving healthcare (Ying 2019: 13). The theme identified under this construct was healthcare perception, and the subthemes identified were personal norms, social norms, and interpersonal norms. Using this construct, the researcher explored BSE acceptance norms among rural African communities. Moreover, the sub-themes provided insight into the perspectives

of rural African women, their families, friends, and communities concerning the knowledge and practice of BSE.

6.3.6.1 Personal norm

An individual's norm represents their perception of seeking medical treatment and their understanding and perception of BSE. A woman's breasts are a symbol of their womanhood, they are a social definition of femininity, and therefore practicing BSE implies having breast cancer (Hanson *et al.* 2019: 147). As a result, losing a breast would convey to society that these women are less than women and that their femininity has been diminished. While some participants expressed feelings of fear or feeling less than a woman if their breasts were removed, they did not believe that practicing BSE was an indication of breast cancer.

Furthermore, participants in this study expressed uncertainty regarding the method of performing BSE. Thus, demonstrating individuals' challenges in practicing BSE as well as their willingness to learn. According to several studies, women are uncertain about the correct technique used in BSE practice (Dadzi and Adam 2019: 8, Lera *et al.* 2020: 6). Therefore, the correct technique for performing BSE must be taught. Additionally, radiographers at rural health facilities could fill this possible gap by training community health workers, nurses, and other allied health workers to ensure that more women are taught the correct technique for performing BSE.

Furthermore, some participants expressed confidence in the technique of practicing BSE in this study. The findings of this study are consistent with those of a previous study which indicated that women did not face barriers to practicing BSE (Lera *et al*. 2020: 6). There were some participants, however, who expressed complete confidence and trust in mass media (Google) to provide guidance and advice on breast-related problems. Based on previous research findings, women who use electronic media as a source of information are 1.59 times more likely to practice BSE (Lera *et al.* 2020: 7). As compared

to other sources of information, it is probably more accessible. Other participants, however, were comfortable seeking advice and support from family and friends for breast-related problems. Women are encouraged to be "breast aware", to identify breast cancer symptoms accurately and seek treatment promptly (Ali *et al*. 2019: 5). The application of the construct norm revealed that there are personal challenges that women face when practicing BSE. This included information on technique, support, informative material, and the individual's perception of what is correct.

6.3.6.2 Social norm

The cultural and social context of breast cancer management in Africa presents unique challenges and opportunities (Nwagu *et al.* 2021: 1132). In rural communities, for example, negative experiences can be passed around through word-of-mouth, causing individuals in the community to be reluctant to seek medical attention and mistrust conventional medicine (Ying 2019: 13), leading to decreased access to healthcare. This sub-theme explored the perception of society towards preventative healthcare and BSE.

Several participants in this study indicated that their family, friends, and community members are unaware of or uninformed about BSE. Raising community awareness about BSE may improve knowledge and practice of BSE. According to a previous study, women with positive social norms about breast cancer are twice as likely to be screened for the disease as those with negative social norms (Heit 2001: 10). Further, in some parts of Africa, traditional and herbal medicine is revered by community elders over conventional medicine. As a result, it is unlikely that they will encourage the practice of BSE and conventional healthcare treatments. It is more likely that they will advocate for herbal, religious, or alternative approaches over conventional medicine (Akuoko *et al*. 2017: 14). These findings are consistent with the current study, in which participants stated that elders in their communities and families held traditional views regarding breast cancer. There are negative stereotypes associated with women who have breast cancer or

breast-related problems in rural African communities, including the belief that they are cursed, destined to die, and punished. It was therefore difficult for participants to communicate breast-related problems or BSE. In terms of screening involvement and presentation, women's attitudes were influenced by their source of information (Akuoko *et al*. 2017: 14). It is therefore believed that increasing awareness of BSE in rural African communities would reduce misconceptions about breast cancer and improve the overall attitude towards it.

Some participants in this study felt that breast-related issues are more socially acceptable and easier to discuss because they are not stigmatised. Furthermore, some participants noted that women who were knowledgeable about BSE would encourage their friends and family to practice it and were confident that the practice would be accepted by society. A study conducted among rural Nigerian women revealed that women received breast cancer information from family, friends, and neighbours, who provided advice, knowledge, and encouragement (Akuoko *et al.* 2017: 14). According to Akuoko *et al.* (2017: 14), the more knowledgeable society is concerning breast cancer, the more likely they are to encourage individuals to seek medical attention. These findings are consistent with the views expressed by some participants in this study. Further, participants expressed the need for health education in rural South African communities to increase women's awareness and practice of BSE. Based on the construct norm, the social interpretation of breast cancer, social beliefs, and stereotypes were identified. It also identified the need for community awareness in rural South African communities. These findings were useful in the development of the model in this study.

6.3.6.3 Interpersonal norm

Interpersonal norms were examined to determine the level of agreement and interaction among people regarding whether to practice BSE. This study revealed that participants expressed a level of discomfort communicating breast-related issues in an environment where men are present. A previous

study found that gender norms and values determine the status of women in their domestic and social environments, as well as influence their access to healthcare (Akuoko *et al.* 2017: 14). African women traditionally had to seek permission from their spouses before receiving treatment at the hospital or attending health education forums (Akuoko *et al*. 2017: 14). When it comes to balancing family responsibilities and health, women tend to put their health at the bottom of the priority list. This presents a barrier to the early detection and diagnosis of breast cancer. It is not uncommon for women in such circumstances to avoid practicing BSE, ignore breast-related symptoms, prioritise family responsibilities over their health, and wait for permission before seeking medical advice (Akuoko *et al*. 2017: 14).

This study also found many participants who expressed a positive attitude toward the knowledge and practice of BSE in African communities. In their opinion, women who know about BSE are more likely to teach their family, friends, and community members about it. This finding is consistent with that of a previous study conducted in Jordan which found that family, friends, and neighbours were the main sources of information about breast cancer (Lera *et al.* 2020: 6). The application of the interpersonal norm found that South African communities are strongly influenced by traditional beliefs and practices. This makes them reluctant to promote preventative healthcare practices such as BSE (Nwagu *et al.* 2021: 1132). Additionally, participants reported that rural South African communities encourage discrimination at times, particularly when a woman is suffering from breast cancer. As a result, many women refrain from practicing BSE due to the fear of discovering a breast lump and being socially rejected by their family, friends, and the community at large.

6.3.7 Delayed healthcare services

The next construct in the CSB theoretical framework utilised in this study was facilitating barriers. Facilitating barriers are those that are objective, external, and beyond the individual's control (Ying 2019: 14). This study considered the facilitating barriers reported by participants to be pertinent for further

discussion. Improving early detection of breast cancer requires considering all barriers to timely healthcare, regardless of their size. As a result, delayed healthcare services were identified as a theme. This theme was further subdivided into five sub-themes: health practitioners' conduct, educative material, resources and infrastructure, rural transport services, and individual healthcare affordability.

6.3.7.1 Health practitioners' conduct

The negative attitudes and behaviours of health professionals undermine the quality of care and the effectiveness of promotional campaigns and compromise the basic right of women to dignified and respectful healthcare (Mannava *et al.* 2015: 2). Participants in this study reported negative experiences with healthcare practitioners, especially nurses. In chapter five of this study (sub-theme 7.1.1), two participants shared their negative experiences. The unprofessional conduct of nurses towards patients was among the negative comments relayed by several participants. Among these were the rude behaviour of nurses, the lack of patient privacy, the embarrassment of patients, the stigmatisation of HIV-positive patients, and the lack of information. The severity of this situation has led many participants to delay seeking healthcare services and discontinue their respective treatments.

In a previous study, women reported negative experiences at healthcare facilities, which included insufficient information and counselling, insufficiently trained staff, and judgmental attitudes toward them (Harries *et al.* 2020: 7). There is a strong correlation between these findings and the findings of this study. The poor conduct of healthcare workers poses a barrier to the knowledge and practice of BSE. Health professionals are encouraged to conduct themselves in a professional, culturally sensitive, and compassionate manner. This would ensure more women are comfortable discussing their breast health and BSE. Furthermore, it would reassure patients that healthcare facilities are safe, confidential, and non-judgmental with their best interests at heart.

6.3.7.2 Educative material

In Southwest Cameroon, a study found that it is necessary to develop community-based strategies to ensure equitable and improved distribution of health information to populations living in remote areas, who face greater barriers to accessing formal healthcare (Azemfac *et al*. 2019: 9). Many participants in this study reported a lack of educational materials at healthcare facilities. In addition, they indicated that breast cancer screening information is only available during breast cancer month. According to another participant, they frequently visit healthcare facilities but are unaware of BSE. Thus, the lack of educational material on BSE is a barrier to the early detection of breast cancer among rural South African women. According to a previous study (Azemfac *et al*. 2019: 9), a model should be developed to facilitate the dissemination of breast cancer knowledge in low-resource settings. Using innovative educational tools and stakeholder engagement, the current study developed a model to improve the knowledge and practice of BSE among rural African women in the KZN province.

6.3.7.3 Resources and infrastructure

Rural women in South Africa have been strongly associated with late presentation of breast cancer due to a lack of trained medical professionals, screening technologies, lack of resources, distance to the nearest health facility, lack of transportation services, and treatment facilities in many hospitals (Bhuiyan *et al*. 2022: 906; Nwagu *et al*. 2021: 1133). Participants in this study indicated that healthcare services are inequal between rural and urban areas, resulting in women traveling a considerable distance to obtain medical care. There is also a lack of quality services provided by paramedics and other allied health professionals, which is further exacerbated by the long queues at medical facilities. The findings of this study are consistent with those of previous studies which reported patients being referred to several doctors located far from their homes, causing a delay in treatment and an increase in transportation costs. Additionally, the lack of services and infrastructure in rural African

communities frequently results in patients being transferred to other health facilities (Nwagu *et al.* 2021: 1133).

In the current study, participants reported that mobile clinics visit rural areas every two weeks and provide a limited range of services. This leads to healthcare and treatment delays. A previous study has shown that patients and their families living in remote areas are adversely affected by the lack of healthcare professionals and services (Nwagu *et al*. 2021: 1133). The lack of resources and infrastructure contributes to the delay in breast cancer diagnosis and treatment among rural African women. Therefore, preventative healthcare practices among rural African women are essential, as is the knowledge and application of BSE in breast cancer detection.

6.3.7.4 Rural transport services

Many people living in rural areas face significant transportation challenges, according to the current study (Chapter 5, section 7.1.5). Many hospitals and clinics in rural areas are often not easily accessible without adequate transportation, and because most people are unable to afford transportation fees, they rely on traditional medicine for their health and the health of their children (Mchunu 2018: 24). The distance to the nearest clinic in rural areas can be as much as eight kilometers, with people having to either walk or hire a car for sixty rand or more (Mchunu 2018: 24). The lack of transportation facilities in rural areas causes several people to seek delayed healthcare services. As a result, women who are screened for breast cancer do not honour referrals for mammograms due to high transportation costs (Akuoko *et al.* 2017: 14). Considering that BSE is a safe technique that can be performed at home without transportation costs, should be encouraged as an alternative method for breast cancer screening in rural South African communities.

6.3.7.5 Individual healthcare affordability

Rural areas have been associated with a high cost of transportation and limited access to healthcare (Akuoko *et al.* 2017: 14). The rate of unemployment and poor living conditions of rural Africans in South Africa compels people to use herbal medicine, as many cannot afford to go to the hospital (Mchunu 2018: 24). Access to healthcare may be limited in households with low incomes, which may lead to treatment delays. Due to financial constraints, participants were unable to seek medical attention when they were ill and will wait till month's end to seek medical treatment. In addition, the high cost of medicine makes it difficult for people to consult healthcare providers. Thus, participants reported purchasing non-prescription medication when they were ill since it was an affordable alternative to visiting a hospital. BSE is a suitable alternative for women who cannot afford mammography screening or reside in an area with limited access to healthcare services.

6.3.8 Facilitators of breast self-examination

Facilitators of BSE are identified as a theme in Table 5.3 under the category of suggestions. In this theme, participants provided recommendations aimed at improving the knowledge and practice of BSE among rural South African women. One of the objectives of the GBCI panel for LMICs is to raise public awareness of breast cancer (Anderson *et al.* 2011: 393). To detect breast cancer early, it is essential to educate the public on the benefits of early detection, regardless of the screening method used, namely BSE and mammograms (Anderson *et al.* 2011: 393). The findings of this study identified two sub-themes that encourage the promotion of BSE, namely community engagement and health education.

6.3.8.1 Community engagement

Through its first pillar of health promotion and early detection, the GBCI aims to address barriers to early cancer diagnosis. This pillar of the initiative's three-pronged approach aims to reduce the stigma associated with breast health and

increase public awareness of the signs and symptoms of breast cancer. One such initiative is community engagement, which is defined as the process of collaborating with and through groups of people associated by geographical proximity, special interest, or similar situations to address issues affecting the well-being of these individuals (Schlake 2015: 1). More recently, community engagement has been defined as the involvement and participation of individuals, groups, and organisations within the boundaries of a community's social boundary or catchment area in decision-making, planning, design, governance and the delivery of services (Gilmore *et al.* 2020: 1).

There is a substantial correlation between survival rates and patients' awareness of breast health, as well as their knowledge of and access to quality screening services and specialised diagnostic and treatment centers (Lince-Deroche *et al.* 2017: 182). In the current study, participants offered numerous suggestions regarding the need for awareness campaigns, programmes, workshops, and meetings to facilitate community involvement and understanding of breast cancer and BSE. Awareness campaigns contribute to increased awareness of breast conditions, including cancer, increased access to care, as well as reduced stigma concerning breast cancer (Lince-Deroche *et al*. 2017: 182). In this study, participants emphasized the importance of engaging communities in discussions about breast health and BSE. This was to ensure positive change within rural South African communities. According to participants in this study, every rural South African woman who is taught BSE will actively encourage their family, friends, and neighbours to learn BSE. This will further encourage a dialogue about breast health and the early detection of breast cancer. In addition, community engagement serves as a means of respecting those communities that are rooted in culturally significant beliefs.

6.3.8.2 Health education

The BHGI is dedicated to developing evidence-based, economically feasible, and culturally appropriate guidelines to improve breast cancer outcomes in nations with limited healthcare resources (Akuoko *et al*. 2017: 11). As a result

of these guidelines, breast cancer education programmes can be developed in African countries to increase awareness of the disease by making use of the limited resources available (Akuoko *et al*. 2017: 11). Several participants in this study suggested health education as a facilitator for BSE. The WHO defines health education as a combination of learning experiences that aim to enhance the knowledge of individuals and communities to improve their health (WHO 2020). Health education is designed to enhance knowledge, attitudes, and skills to positively influence the health behaviours of individuals and communities. Health education is a communication activity designed to promote positive health and prevent or diminish ill health in individuals and groups by instilling the beliefs, attitudes, and behaviours of those in power as well as those within the community at large (Downie *et al*. 1990: 3).

As a means of promoting health, health education is regarded as an important tool. A previous study found that there was a difference between awareness scores and knowledge scores at the beginning and end of educational intervention (Ali *et al.* 2019: 10). After implementing an educational intervention using a pamphlet, both awareness and knowledge scores significantly improved. Based on these positive findings, a well-structured and educational pamphlet could be used as one of many health education methods to promote health awareness and knowledge among women (Ali *et al*. 2019: 10). It was found that participants in the current study recommended brochures and pamphlets be distributed within rural South African women to raise awareness of BSE. Several participants mentioned that some rural African women were illiterate and unable to read; therefore, it was recommended that provisions be made for these women. Participants also suggested that breast cancer awareness campaigns be promoted similarly to HIV programmes. This is due to the effectiveness and efficiency of the programme in the past. The model developed in Chapter 7 was designed from the standpoint of health education to promote awareness and practice of BSE among rural South African women.

6.4 DISCUSSION OF FINDINGS IN RELATION TO THE STUDY OBJECTIVES

In this study, four objectives were set, three of which have been met. The next step will be to discuss these objectives in relation to the findings of this study. A discussion of the fourth objective will be provided in the next chapter.

Objective 1: To assess the knowledge of BSE among African women in the rural KZN province of South Africa.

The first objective of this study was achieved during the one-on-one interview when participants were asked to define and describe their understanding of BSE. Some participants confidently defined BSE described BSE's technique and explained BSE's frequency with confidence. However, others could not define the term BSE. They could not correctly describe the technique of practicing BSE and were unsure of the frequency of practicing BSE. According to the current literature review, SSA countries have differing degrees of knowledge about BSE. According to research conducted in countries such as Malaysia, Jordan, Cameroon, and Turkey, more than half of the participants knew about BSE (Lera *et al*. 2020: 5). In line with the findings of the current study, these findings were consistent. As reported in the current literature, varying percentages of BSE knowledge and awareness can be attributed to differences in socio-economic and demographic characteristics in the study population (Lera et al. 2020: 5).

While some participants were knowledgeable about BSE, they were unclear about the appropriate technique and frequency for performing BSE. These findings were similar to those of previous studies that identified a large percentage of women lacking the knowledge and skills to perform BSE and were uncertain of its frequency (Joyce *et al*. 2020: 5). As a result, more training programmes are needed. In an earlier section of this chapter (section 6.3.2.1), the researcher highlighted that breast lumps were indicative of breast cancer

among participants in the current study and past studies. Furthermore, women were unaware of other breast cancer signs and symptoms that need to be considered when performing BSE. According to this study, rural South African women lack general knowledge and awareness of BSE. Hence the development of a model to promote the knowledge and practice of BSE would be beneficial.

Objective 2: To explore and describe the factors influencing the uptake of BSE among African women in the rural KZN province of South Africa.

The second objective was achieved through one-on-one interviews during which participants were asked about their perceptions, actions, cultural interpretations, and suggestions regarding breast cancer and BSE. Using the constructs (clinical and sociodemographic factors, affect, habit, belief, norm, facilitating barriers) outlined in the CSB theoretical framework, the researcher identified various factors influencing the uptake of BSE among South African women in rural KZN province. As reported in the current study, women's knowledge and practices of BSE are influenced by their education and employment. Women with higher education and full-time employment demonstrated a clear understanding, a positive attitude, and a better practice of BSE. The presence of a breast lump was a clinical factor that influenced the practice of BSE.

According to this study, ‘affect’ is an important determinant of women's uptake of BSE. In the current study, it was identified that women who are fearful of developing breast cancer may be reluctant to engage in BSE due to a positive diagnosis. Cultural stigmatisation of rural South African women with breast cancer leads to social rejection and gives them the impression that they are possessed, punished, or embarrassed. As a result, the role of social support in the practice of BSE is equally as important. It is also important to note that women's preventative habits influence the practice of BSE. It was determined that rural South African women adhere to complementary practices and self-

treatment practices for medical symptoms; therefore, preventative practices, such as BSE, are not easily accepted and practiced.

Traditional beliefs are deeply ingrained in the lives of rural South African women, and there is no exception regarding breast cancer. In many cases, women noted that traditional beliefs about breast cancer require traditional practices. Consequently, women are less likely to engage in BSE as an early detection method. Women are more likely to consume herbs than to follow a medical regimen. Therefore, there is a strong correlation between the construct of the 'norm' and the perception women have of BSE practice among family, friends, and community members. Women in rural South African communities are more likely to be aware of BSE and to practice it because they have family, friends, and community members who encourage and teach the practice.

Facilitating barriers were identified as one of the many constructs influencing the practice of BSE. There were several considerations, which included the conduct of health practitioners, rural transportation services, affordability, educational materials as well as resources and infrastructure. It is important to note that although the researcher explored all factors extensively and compared them to previous studies and existing literature, this study revealed a positive response in terms of willingness and encouragement to learn and practice BSE.

Objective 3: To explore and describe the perception of breast cancer screening among African women in the rural KZN province of South Africa.

Women generally perceive BSE as a search for a lump in the breast, which connotes breast cancer and death. BSE is a method of identifying other abnormalities in the breast in addition to the common breast lump. There is, however, a lack of awareness and knowledge of breast cancer signs and symptoms which results in fewer women having the ability to identify anything further. To learn more about women's perceptions of breast cancer screening in rural KZN province, several questions were asked. The first step was to determine whether women in their communities were encouraged to practice

BSE. It was found that there was a mixed response to the question. Some participants stated that women were not encouraged to engage in breast cancer screening due to the lack of knowledge or awareness programmes. Others, however, believed that some clinics encouraged women to examine their breasts to detect any abnormalities. Even though there were women in this study that had traditional beliefs, complementary practices, or alternative self-treatment options for breast cancer diagnosis and treatment, they all showed a positive attitude toward breast cancer screening and were willing to participate in training programmes to become proficient at performing BSE. Although some participants had a negative perception of breast cancer, they did not have a negative perception of BSE. As a result, participants proposed that more health education be provided in rural communities in KZN focusing on BSE practices. This would thereby enhance the knowledge and practices of BSE.

Objective 4: To develop a model that can be utilised by the DoH and health facilities to promote the knowledge and practice of BSE.

The model developed will be discussed in Chapter 7.

6.5 SUMMARY OF THE CHAPTER

In this chapter, the demographic profile of participants was discussed. Following this, each theme and sub-theme was discussed using the CSB theoretical framework. By comparing existing literature, the researcher identified or refuted findings regarding knowledge, perception, and factors influencing BSE uptake. The first three objectives of this study were discussed. Based on the suggestions made by participants and the current literature review, the researcher recognized the need for promotional campaigns, health education, and community engagement. The fourth objective, which entails the development of a model to develop and promote BSE knowledge and practice, will be discussed in the next chapter.

CHAPTER 7: A MODEL TO DEVELOP AND PROMOTE THE KNOWLEDGE AND PRACTICE OF BREAST SELF-EXAMINATION AMONG AFRICAN WOMEN IN RURAL KWAZULU-NATAL PROVINCE

7.1 INTRODUCTION

In this chapter, the researcher developed a model to promote knowledge and practice of BSE among African women in the rural KZN province. This model was developed using Chinn and Kramer's model development process. This study utilized the CSB theoretical framework, including all its constructs. The chapter begins with the development process of a model. Following this, a description of the model is presented, followed by a summary.

7.2 PROCESS OF MODEL DEVELOPMENT

Chinn and Kramer (2011: 157) define a model as a symbolic representation of an empirical experience, such as a diagram, a pictorial representation, a mathematical representation, or a physical representation. In contrast, Walker and Avant (2011: 61) define a model as a device that is used to represent something other than itself. According to Chinn and Kramer (2018: 178), many approaches can be used, and the choice of a particular approach is based on the purpose of developing a theory or model, which includes the basis of knowledge or assumptions, as well as the underlying philosophical views on knowledge.

Model development, according to Walker and Avant, includes identifying a concept, determining its analytical purpose, defining that concept, defining its uses, identifying critical attributes, constructing the cases, defining the antecedents and consequences, and defining empirical references (Lee 2011: 39). In contrast, Chinn and Kramer (2011: 162-182) develop theories and models by first constructing conceptual meaning, and then structuring and

contextualizing them. Conceptual meaning is constructed by selecting a concept and formulating definition criteria. As part of the structuring and contextualizing process, it is necessary to identify the assumptions of the model, clarify its context, and develop relationship statements (Chinn and Kramer 2011: 163). The final product includes a description of the model, including its purpose, concepts, definitions, relationships, and assumptions. The fourth objective of this study was achieved using Chinn and Kramer's model development process. Chinn and Kramer recommend a four-step process: identifying and defining concepts; identifying assumptions; clarifying the context within which the model is placed; and designing relationship statements. The following section describes the process of developing a model.

7.2.1 Identifying and defining concepts

The concept is the building block of any theory or model (Walker and Avant 2011: 59). It provides a clear understanding of the model's focus and meaning (Chinn and Kramer 2018: 178). Concepts serve as symbols of meaning. Therefore, it is a symbolic construction that allows people to classify and categorize reality (Mouton and Marais 1990: 126). It is necessary to identify concepts that will form the basis of a model (Chinn and Kramer 2018: 179). According to Chinn and Kramer (2018: 179), concepts can be derived from experiences, clinical practice, research, literature knowledge, and formal conceptualization processes. The current study described the knowledge, perceptions, and factors influencing the practice of BSE among rural African women. Thus, these factors, coupled with a lack of awareness and practice of BSE, formed the basis for the model. According to Chinn and Kramer (2018: 179), cultural history assumptions can also influence the conceptual structure of model development, and time can also determine the relationship between concepts. In model development, time frames can be classified into four types, namely antecedent, consequential, intervening, and concept analysis (Chinn and Kramer 2018: 179).

It is important to recognise that antecedent concepts are those experiences that are identified as occurring before other concepts (Chinn and Kramer 2018: 179). This study found that sociocultural factors (habit, belief, norm, affect) influenced the knowledge and practice of BSE. Additionally, the low educational level of women living in rural areas contributed to the lack of awareness and practice of BSE. Based on the findings of this study and the current literature, the rural healthcare system is overburdened, under-resourced, and provides substandard care. As a result, rural African women in KZN province either practice complementary practices, self-treatment options or consult traditional healers, depending on their cultural beliefs. Due to this, BSE knowledge and practice are neither promoted nor readily adopted by rural South African women.

Chinn and Kramer (2018: 179) define consequent concepts as those that follow other concepts. Consequences may also be indicative of causation. For instance, when a person experiences uncertainty, the consequence of that experience may be considered a consequence of uncertainty (Chinn and Kramer 2018: 179). The term consequent concepts were used to refer to factors that either increase or decrease the knowledge and practice of BSE in this study. This study suggests that fear, stigmatisation, misconceptions, a lack of social support, traditional beliefs, a low educational level, poor rural healthcare systems, and habits decrease the knowledge and practice of BSE. A higher level of education, positive social support, good healthcare habits, and increased community involvement increase the knowledge and practice of BSE.

Intervening concepts can be useful for shifting from a view of causation to one of influence (Chinn and Kramer 2018: 179). Intervening concepts impact the relationship between antecedent experiences, the event itself, and its consequences. According to the preceding paragraph, consequential concepts have a positive as well as a negative effect on BSE practice. These consequent concepts have been shown to influence rural South African women's BSE practice.

Concept analysis refers to the process of determining a concept's semantic structure (Walker and Avant 2011: 59). Concept analysis was used to determine the attributes that define the concept. A concept's attributes refer to those characteristics that appear repeatedly in the literature and are frequently associated with the concept, providing the greatest insight into the concept (Walker and Avant 2011: 59). In this case, the attributes refer to specific characteristics of the conceptions that influence the knowledge and practices associated with BSE among rural South African women.

7.2.2 Identifying assumptions as part of the model

Chinn and Kramer (2018: 180) define assumptions as underlying givens that are assumed to be true. It is possible to challenge an empirical model both philosophically and empirically. Models are based on philosophical assumptions. If these assumptions are challenged, the existence of the entire model would also be in question on philosophical grounds (Chinn and Kramer 2018: 180). A model's value is also affected by assumptions that are empirically testable but not included in the model context. Therefore, the philosophical assumption for the design of this model was:

- The promotion of knowledge and practice of BSE is expected to contribute to the early detection of breast cancer among women in low-resource settings.
- Rural African women's health behaviours towards BSE can be determined using the CSB theoretical framework.
- Using this model, BSE can be promoted among women in countries with similar socio-economic and cultural backgrounds.
- Due to the researcher's different sociocultural background, the participants' views may have been exaggerated in the one-on-one interviews.

7.2.3 Clarifying the context within which the model is placed

The theoretical connections are positioned within the context of the model and used in practice so that the applicability of the model depends on the broadness or narrowness of the context (Chinn and Kramer 2011: 179). In this study, the suggested model is intended for rural African women in the KZN province. However, the context of the model can also be applied to rural African women in other provinces of South Africa with similar sociocultural and economic backgrounds. Those involved in the implementation and evaluation of this model will be PHC facilities under the supervision of the DoH. The DoH strives to improve health status through the prevention of illness, diseases, and healthy lifestyles. Furthermore, they act as the decision-making body regarding healthcare policies, procedures, and guidelines. Considering that PHC facilities serve as the first line of healthcare services in rural communities, they are most suitable for the implementation and evaluation of this model. Moreover, this study gathered data from PHC facilities, and therefore the model would be most appropriate for implementation and evaluation within these facilities.

7.2.4 Designing relationship statements

Developing statements is a fundamental part of designing a model (Walker and Avant 2011: 60). According to Chinn and Kramer (2011: 180), statements can either be relational or non-relational. A relational statement implies that there is some connection between two or more concepts while confirming causality or association. In associational statements, similar concepts, and casual statements are grouped to determine the cause-and-effect relationship (Walker and Avant 2011: 60). In a non-relational statement, concepts are affirmed, and a model's meaning is clarified (Chinn and Kramer 2011: 180). According to this model, the following statements were developed and found to have a causal relationship with BSE knowledge and practice:

BSE knowledge and practice improves when:

- The South African rural healthcare system is improved through its services, infrastructure, and health professionals.
- An increase in education will lead to an improvement in sociocultural behaviour patterns and promotional initiatives.
- Promotional breast initiatives will be improved through the inclusion and collaboration with influential community stakeholders.

There is a lack of knowledge and practice of BSE when:

- Poor rural healthcare system increases complementary practices and habits.
- The lack of education leads to several misconceptions regarding breast cancer practices.
- Key stakeholders are excluded during promotional initiatives.
- There is a lack of social support.
- The traditional wellness approach (habit, belief, norm) is preferred to conventional healthcare.

7.3 STRUCTURAL DESCRIPTION OF THE MODEL

Previous sections explained how the concepts relate to improving BSE practice and knowledge among rural African women in the KZN province. The model is structured as a representation of the relationship between the concepts (Chinn and Kramer 2011: 190). Models are structured to explain central relationships between concepts. They explain their order of existence, and how they are interconnected to each other. As a result of examining all the various definitions of the concepts, a list of essential and related attributes was compiled. The purpose of this step was to identify, analyse, and synthesize the attributes that would be used for the definition of the main concepts. Having finalised the model construction, a list of central and related concepts was developed to define the concept of improving BSE practice and knowledge in the context of the study. The characteristics were then used to construct relationship statements.

In this model, the factors influencing BSE knowledge and practice are illustrated in Figure 7.1. Furthermore, the promotion of BSE is suggested to increase BSE knowledge and practice among rural South African women. This study developed a model referred to as The BSE Development and Promotional Model. According to its name, the model has many functions and is not limited to teaching the positioning of BSE. From identifying common areas of concern to the consequent concepts and intervening concepts, the model provides a comprehensive approach. Moreover, it recognizes the importance of working with key stakeholders within rural South African communities to develop and promote BSE.

7.3.1 Factors that increase BSE knowledge and practice

The knowledge and practice of BSE increase when improvements are made to the rural healthcare system, educational level, preventative healthcare habits and beliefs, social support, attitude, and promotional initiatives offered by the DoH. Improved rural healthcare systems would enable more women to practice preventative healthcare habits through improved infrastructure and services. It is through the professional conduct of health professionals that more women are encouraged to seek medical assistance for health-related problems. Several participants expressed dissatisfaction with nurses' unprofessional conduct, long queues, and lack of resources and services in healthcare facilities during the one-on-one interviews. A better rural healthcare system, through adequate services and infrastructure, encourages women to form stronger health beliefs and habits and not rely on traditional beliefs and practices to treat breast problems. Professionalism on the part of healthcare workers will promote trust and confidence among rural South African women.

Improved healthcare systems and a higher education level can positively influence rural South African women's breast cancer screening behaviour. There were four sociocultural factors identified: habit, belief, norm, and affect. BSE is more likely to be practiced by women who have a habit of consulting healthcare facilities for health-related issues. Furthermore, women who have a

strong sense of trust and a positive experience with healthcare facilities are more likely to adhere to BSE practices and be willing to participate in breast cancer screening initiatives. A positive attitude towards healthcare habits and beliefs would increase women's confidence in the practice of BSE as well as their knowledge of it. The support of family, friends, and community workers is expected to increase BSE knowledge and practice since women would be able to discuss the health of their breasts in this context.

There were six participants with tertiary education in this study, with the majority having high school education. In recent literature, the disparity between rural and urban areas has been highlighted. According to many participants, women with a higher level of education were more likely to know and practice BSE, whereas women with a lower level of education were more likely to have misconceptions regarding breast cancer. Health education provided by the DoH, radiographers, and other healthcare professionals would create opportunities for breast cancer screening in a socio-economic and culturally diverse setting.

Promotional initiatives approved by the DoH would increase BSE knowledge and practice among rural South African women. The promotion initiative would use radiographers, mammographers and healthcare professionals' knowledge and expertise to implement BSE programmes, workshops and campaigns involving key stakeholders in the community. Radiographers and mammographers were included to enhance the knowledge and practice of BSE among rural South African women. Most PHC facilities do not offer mammography services. However, their expertise is greatly needed during training workshops and promotional campaigns. To promote BSE and regular mammograms, mammographers and healthcare professionals at PHC facilities should work closely together. Stakeholders in the community are recognised as influential and trusted members of the community. Among them are community health workers, healthcare professionals, tribal leaders, traditional healers, and school educators. Through community engagement efforts, stakeholders would be invited to breast cancer screening workshops, where they would receive

health education. The educational materials that would be used at these workshops include posters, pamphlets, audio visual screens, and training on BSE practices. It is expected that the promotional initiatives will increase the knowledge and practice of BSE among rural South African women. Through the educational tools provided, it is anticipated that the trained key stakeholders will return to their communities and promote BSE knowledge and practice. This study did not evaluate the effectiveness of this model at a PHC facility.

7.3.2 Factors that decrease BSE knowledge and practice

In this model, the rural healthcare system, sociocultural factors (habit, belief, norm, and affect), and education level were identified as factors reducing BSE practice and knowledge. Several participants in the one-on-one interview confirmed the poor state of the rural healthcare system. Many participants expressed concern regarding the lack of services and infrastructure, as well as healthcare professionals' poor conduct. Consequently, women are less likely to seek healthcare. It is therefore less likely they will develop knowledge and practice of BSE or participate in promotional initiatives related to breast cancer screening. There is a greater tendency for women to practice complementary and self-treatment habits as opposed to visiting a healthcare facility.

A lack of education and a poor healthcare system in rural areas negatively affect the sociocultural factors presented in this model. Therefore, the level of BSE knowledge and practice decreases. Additionally, this leads to a greater reliance on traditional healers for healthcare advice and treatment. Traditional beliefs among rural South African women create several misconceptions regarding breast cancer, resulting in feelings of fear, a lack of support, and high levels of stigmatisation. Lack of education further exacerbates this situation. A lack of support from family, friends, and community members also contributes to the decline of BSE practices. In part, this is due to women's fear of discussing breast health. Through participation in promotional initiatives with key stakeholders and educational materials on BSE, the decrease in BSE knowledge and practice can be increased.

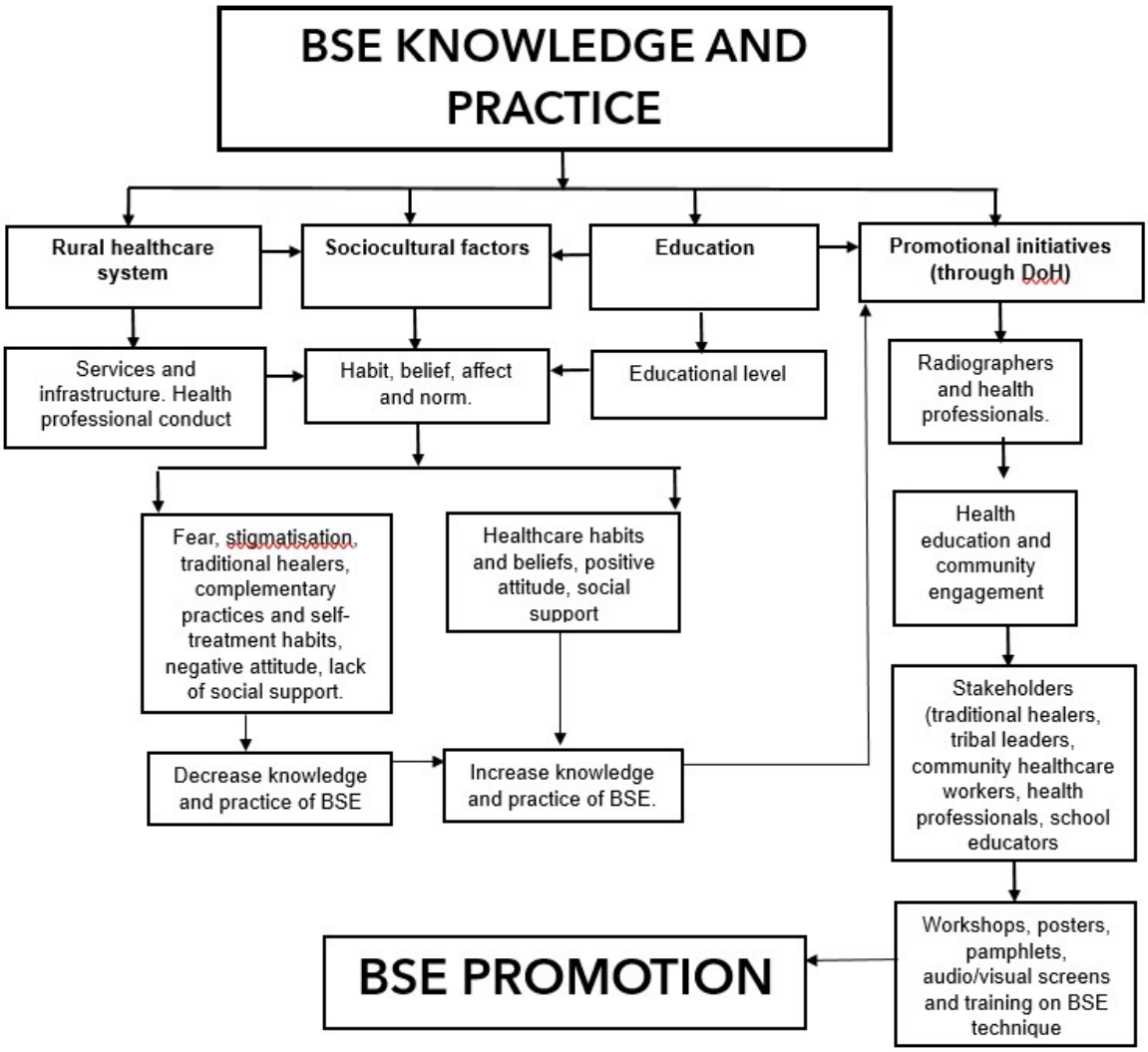


Figure 7.1: The BSE development and promotional model

7.4 SUMMARY OF THE CHAPTER

The BSE development and promotional model was developed in this chapter. The model was designed and developed using the Chinn and Kramer model development process. In Chapter 8, the limitations, conclusions, and recommendations of the study are presented.

CHAPTER 8: LIMITATIONS, CONCLUSION AND RECOMMENDATIONS

8.1 INTRODUCTION

This study aimed to explore and describe knowledge, perceptions, and factors that influence BSE uptake among rural African women in the KZN province of South Africa, and to develop a model to develop and promote the knowledge and practice of BSE. This was achieved by gathering data through one-one-interviews and the development of the model for BSE promotion for rural South African women. This chapter concedes the limitations, concludes the study, and lastly provides recommendations based on the findings of the study.

8.2 LIMITATIONS OF THE STUDY

Limitations are obstacles or constraints that undermine or reduce the credibility of a study's findings. This may relate to the research design, sample, or methods used in the study (Burns and Grove 2011: 48). Study limitations need to be identified so that precautionary measures can be applied to reduce any potential negative impact (De Vos *et al.* 2011: 288).

The limitations experienced in this study were:

- There was no evaluation of the model developed in this study. Therefore, it is uncertain whether this model would be effective in promoting BSE awareness among rural African women in the KZN province.
- In the KZN province, rural African women's cultural beliefs and practices influence their knowledge and practice of BSE. Since the socio-economic background of urban African women differs from rural African women, the findings cannot be generalised.
- Due to the translator's extensive training in the interview process, including confidentiality and anonymity, there was no signed confidentiality declaration form.

8.3 CONCLUSIONS FROM THE STUDY

Based on the study objectives, conclusions were drawn from the study. The study objectives were to describe and explore the knowledge, perceptions, and factors influencing BSE knowledge and practice among rural African women in the KZN province. The findings of this study were used to develop a model. Based on the CSB theoretical framework, this study identified possible themes and subthemes that may influence rural South African women's knowledge and practice of BSE. Based on this study, socio-demographic factors such as knowledge and employment influence rural South African women's preventative health behaviours and attitudes toward breast cancer and BSE. It was observed that participants with a high level of education were better able to comprehend the terms and techniques associated with BSE. However, several other participants held certain misconceptions about breast cancer and were hesitant to practice BSE. Misconceptions regarding breast cancer included the belief that it is fatal, leads to the removal of both breasts, and it is incurable. Consequently, raising awareness of BSE among rural South African women could help resolve several misconceptions.

According to this study, several sociocultural factors influence African women's knowledge and practice of BSE in rural South Africa. This included habits, beliefs, norms, and affects. Participants who reported consulting healthcare professionals for health-related concerns or breast-related problems were observed to display healthcare habits. Some participants reported confidence in the health system's ability to diagnose and treat illness. Other participants, however, employed complementary practices or self-treatment options to address their health concerns. There were several factors contributing to this, including a lack of education, healthcare costs, cultural beliefs, and a negative healthcare experience. The participants reported that breast cancer is seen as a punishment or a curse in their culture. It requires animal sacrifice, herb consumption, and prayer to the ancestors to be cured. Consequently, these cultural beliefs emphasize the concept of affect, which is associated with anxiety. Several participants indicated that they were afraid to talk about their

breast health for fear of stigmatisation and lack of social support. Thus, rural South African women's knowledge and practice of BSE may vary depending on their healthcare habits and beliefs, and social support.

According to participants, members of their families, friends, and communities are unaware of BSE, and raising awareness will have a positive impact on how society views breast cancer and BSE practices. Furthermore, participants expressed concern that many elders within rural communities consider traditional healers and traditional interpretations of diseases as sacred. This may contribute to their unwillingness to practice BSE. However, participants also indicated that rural South African women with BSE knowledge are likely to teach their family, friends, and community members. It was also found that attitude played an important role in predicting rural South African women's willingness to practice BSE. The researcher observed a positive attitude towards willingness to learn and practice BSE.

This study reported that rural healthcare systems in South Africa face several challenges. Participants reported a lack of resources, poor quality services, inadequate infrastructure, and unprofessional behaviour by healthcare workers as some of the challenges they faced. Additionally, rural PHC facilities provide limited healthcare services to the community. Therefore, patients are referred to other healthcare facilities. Due to the high unemployment rate in rural areas, many women cannot afford transportation to a healthcare facility. Thus, women delay seeking medical treatment.

Several participants reported a lack of educational material at PHC facilities as a barrier to their understanding of BSE and their inability to practice it. As a result, many participants suggested that health education and community engagement could increase BSE awareness and understanding. To enhance breast cancer campaigns in rural communities in South Africa, the DoH and health professionals from PHC facilities are encouraged to collaborate with influential community stakeholders. To improve the effectiveness of BSE promotional campaigns, radiographers with expertise in diagnostic imaging

should provide training on BSE positioning to all key stakeholders. To encourage more women to have regular mammograms, rural PHC facilities should work closely with mammographers to provide training workshops within their communities on mammogram guidelines and indications. The BSE development and promotional model was developed to improve breast cancer early detection among rural African women in the KZN province. Through various promotional initiatives and stakeholder involvement, this model encourages the promotion of BSE. This study contributed to the attainment of the Sustainable Development Goal 3, which focuses on reducing premature mortality from noncommunicable diseases, such as cancer, by preventing, treating, and promoting health.

8.4 RECOMMENDATIONS

The recommendations, based on the findings of the study, relate to radiography practices, DoH breast cancer initiatives, and future research.

8.4.1 Radiography practices

- Radiographers and mammographers must be included in breast cancer screening campaigns, workshops, and training sessions. As diagnostic imaging specialists, their expertise would be valuable for training individuals on the correct technique (positioning) required to perform BSE. Furthermore, mammographers can also provide valuable information regarding mammography screening guidelines and indications.
- Radiographers should pursue a second qualification in mammography as there is a shortage of qualified mammographers in South Africa. Additionally, this will facilitate the screening of more women for mammograms as well as the practice of BSE.
- Radiographers working in rural healthcare facilities in South Africa should implement breast cancer screening programmes within their departments.

8.4.2 DoH breast cancer initiatives

- For early detection of breast cancer, the DoH should implement robust screening efforts (BSE and mammography), particularly those that target marginalized communities.
- The DoH should work with the private sector to improve breast cancer awareness campaigns and establish mammography stations or mobile vans in rural areas.
- Considering the current brain drain from rural communities, the DoH should create incentives to encourage multidisciplinary healthcare professionals to work in rural settings.

8.4.3 Future research

- The BSE development and promotional model should be implemented in rural PHC facilities in the KZN province and evaluated for its efficacy in promoting BSE awareness.
- This study focused exclusively on African women living in rural areas and cannot be generalised to African women residing in urban areas. Future research should examine BSE knowledge and practice among South African women living in rural and urban areas in the KZN province.
- There is a need to assess the knowledge, attitude, and practice of BSE among rural health professionals since they are at the forefront of breast cancer awareness campaigns.
- Mammographers and radiographers should be evaluated for their role in rural breast cancer screening. Identifying areas of strengths and weaknesses within rural radiography practices will assist in enhancing the scope of radiography in rural areas and its contribution to the rural healthcare system.

REFERENCES

Abay, M., Tuke, G. Zewdie, E., Abraha, T.H., Grum, T. and Brhane, E. 2018. Breast self-examination practice and associated factors among women aged 20-70 years attending public health institutions of Adwa town, North Ethiopia. *Biomedical Central Research Notes,* 11: 622. Available: https://doi.org/10.1186/s13104-018-3731-9 (Accessed 23 August 2020).

Abolfotouh, M.A., BaniMustafa, A.A., Mahfouz, A.A., Al-Assiri, M.H., Al-Juhani, A.F. and Alaskar, A.S. 2015. Using the Health Belief Model to predict breast self-examination among Saudi women. *Biomedical Central Public Health*, 15(1163): 1-12. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4657230/ (Accessed 8 November 2022).

Ahmed, A., Zahid, I., Ladiwala, Z.R., Sheikh, R. and Memon, A.S. 2018. Breast self-examination awareness and practices in young women in developing countries: A survey of female students in Karachi, Pakistan. *Journal of Education and Health Promotion*, 7(90): 5. Available: https://pubmed.ncbi.nlm.nih.gov/30079361/ (Accessed 9 June 2021).

Akuoko, C.P., Armah, E., Sarpong, T., Quansah, D.Y., Amankwaa, I. and Boateng, D. 2017. Barriers to early presentation and diagnosis of breast cancer among African women living in sub-Saharan Africa. *PLoS ONE*, 12(2): 1-18. Available: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0171024 (Accessed 8 June 2021).

Albeshan, S.M., Hossain, S.Z., Mackey, M.G. and Brennan, P.C. 2020. Can breast self-examination and clinical breast examination along with increasing breast awareness facilitate earlier detection of breast cancer in populations with advanced stages at diagnosis? *Clinical Breast Cancer*, 20(3): 194-200

Available: https://www.clinical-breast-cancer.com/article/S1526-8209(20)30031-8/fulltext#relatedArticles (Accessed 11 December 2021).

Ali, A.N., Ji Yuan, F., Ying, C.H. and Ahmed, N.Z. 2019. Effectiveness of intervention on awareness and knowledge of breast self-examination among the potentially at-risk population for breast cancer. *Asian Oncology Research Journal*, 2(1): 1-13. Available: https://www.researchgate.net/publication/337990808_Effectiveness_of_Intervention_on_Awareness_and_Knowledge_of_Breast_Self-Examination_among_the_Potentially_at_Risk_Population_for_Breast_Cancer (Accessed 6 November 2022).

Alhamad, H. and Donyai, P. 2021. The Validity of the Theory of Planned Behaviour for Understanding People's Beliefs and Intentions Toward Reusing Medicines. *Pharmacy (Basel)*, 9(1): 58. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8006004/ (Accessed 8 June 2022).

American Cancer Association (ACS). 2021. What is breast cancer? Atlanta, GA: American Cancer Society. (Online). Available: https://www.cancer.org/cancer/breast-cancer/about/what-is-breast-cancer.html (Accessed 8 January 2023).

American Cancer Society (ACS). 2022. American Cancer Society Recommendations for the Early Detection of Breast Cancer. Available: http://www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/american-cancer-society-recommendations-for-the-early-detection-of-breast-cancer.html (Accessed 20 January 2022).

Amoran, O.E. and Toyoba, O.O. 2015. Predictors of breast self-examination as cancer prevention practice among women of reproductive age-group in a rural town in Nigeria. *Nigerian Medical Journal,* 56(3): 185-189. Available: https://www.nigeriamedj.com/article.asp?issn=0300-

1652;year=2015;volume=56;issue=3;spage=185;epage=189;aulast=Amoran (Accessed 19 July 2020).

Anderson, B.O., Cazap, E., Saghir, N.S., Yip, C., Khaled, H.M., Otero, I.V., Adebamowo, C.A., Badwe, R.A. and Harford, J.B. 2011. Optimisation of breast cancer management in low-resource and middle-resource countries: Executive Summary of the Breast Health Global Initiative Consensus, 2010. *The Lancet Oncology*, 12(4): 387-398. Available: https://www.fredhutch.org/content/dam/www/research/divisions/public-health-sciences/epidemiology/bci-25/publications/Optimization%20of%20Breast%20Cancer%20Management.pdf (Accessed 8 May 2022).

Andoh-Arthur, J. 2019. *Gatekeepers in Qualitative Research*. London: SAGE Publications.

Ansah, M.B. 2015. Female students' knowledge, beliefs, attitude and practice of breast self-examination in a university in the Western Cape. M. Tech: Nursing. Cape Peninsula University of Technology. Available: http://etd.cput.ac.za/handle/20.500.11838/2260 (Accessed 8 June 2020).

Ayeni, O.A., Norris, S.A., Joffe, M., Cubasch, H., Nietz, S., Buccimazza, I., Singh, U., Čačala, S., Stopforth, L., Chen, W. C., McCormack, V.A., O'Neil, D.S., Jacobson, J.S., Neugut, A.I., Ruff, P. and Micklesfield, L.K. 2020. The multimorbidity profile of South African women newly diagnosed with breast cancer. *International Journal of Cancer*, 147(2): 361-374. Available: https://doi.org/10.1002/ijc.32727 (Accessed 9 February 2022).

Azemfac, K., Christie, A., Carvalho, M.M., Nana, T., Fonje, A.N., Halle-Ekane, G., Dicker, R., Chichom-Mefire, A. and Juillard C. 2019. A community-based assessment of knowledge and practice of breast self-examination and prevalence of breast disease in Southwest Cameroon. *Journal of Cancer Epidemiology*, 2019(2): 1-11. Available:

https://downloads.hindawi.com/journals/jce/2019/2928901.pdf (Accessed 10 February 2020).

Babbie, E. and Mouton, J. 2022. *How to succeed in your master's and doctoral studies: A South African Guide and Resource Book.* 2nd edition. Pretoria: Van Schaik.

Bain, C., Constant, T.H., Contreras, I., Vega, A.M., Jeronimo, J. and Tsu, V. 2018. Model for Early Detection of Breast Cancer in Low-Resource Areas: The Experience in Peru. *Journal of Global Oncology*. Available: http://ascopubs.org/doi/full/10.1200/JGO.17.00006 (Accessed 2 June 2022).

Baloushah, S., Salisu, W.J., Elsous, A., Ibrahim, M.M., Jouda, F., Elmodallal, H. and Moghadam, Z.B. 2020. Practice and barriers toward breast self-examination among Palestinian women in Gaza city, Palestine. *The Scientific World Journal*, 2020(7484631): 1-7. Available: https://pubmed.ncbi.nlm.nih.gov/32292294/ (Accessed 12 February 2021).

Barnett, S.G. 1993. African-American women's health beliefs about breast cancer and breast self-examination. Master Degree: Science. San Jose State University. Available: https://scholarworks.sjsu.edu/etd_theses/608/ (Accessed 9 June 2020).

Bashirian, S., Barati, M., Shoar, L.M., Mohammadi, Y and Dogonchi, M. 2019. Factors affecting breast self-examination behaviour among female healthcare workers in Iran: The role of social support theory. *Journal of Preventative Medicine and Public Health*, 52(4): 224-233. Available: http://pubmed.ncbi.nlm.nih.gov/31390685/ (Accessed 4 May 2021).

Baumgartner, T., Strong, C.H. and Hansley, L.D. 2002. *Conducting and reading in health and human performance*. New York: McGraw Hill.

Baxter, P. and Jack, S. 2008. Qualitative case study methodology: study design and implementation for novice researchers. *The qualitative report,* 13(4): 544-559.

Bhardwaj, N. and Fitzpatrick, P. 2021. Breast self-examination among older women in Ireland: The Irish Longitudinal Study on Ageing – TILDA. *European Journal of Public Health,* 31(3): 198. Available: https://watermark.silverchair.com/ckab164.524.pdf?token (Accessed 17 March 2022).

Bhuiyan, M.M.; Maele, M.M.; Mavhungu, R.; Ooko, F. 2022. Breast cancer: Factors influencing late-stage presentation at the Mankweng Hospital breast cancer clinic, Polokwane, Limpopo Province, South Africa. *South African Medical Journal, 12*: 906-910. Available from: https://www.ajol.info/index.php/samj/article/view/2419151/ (Accessed 8 July 2023)

Biney, E., Amoateng, A. and Ewemooje, O. 2021. Patterns of fertility in contemporary South Africa: Prevalence and associated factors. *Cogent Social Sciences*, 7(1): 1-23. Available: https://www.tandfonline.com/doi/pdf/10.1080/23311886.2020.1858575?needAccess=true (Accessed 10 November 2022).

Black, E. and Richmond, R. 2019. Improving early detection of breast cancer in sub-Saharan Africa: Why mammography may not be the way forward. *Globalization and Health*, 15(3): 1-11. Available: https://globalizationandhealth.biomedcentral.com/track/pdf/10.1186/s12992-018-0446-6 (Accessed 3 February 2020).

Bona, L.G., Negera, D.G. and Kereba, A.T. 2021. Breast self-examination and health seeking behaviour of women in Leku Town, Sidama region, Southern Ethiopia. *Biomedical Journal of Scientific and Technical Research*, 36(5):

28860. Available: https://biomedres.us/fulltexts/BJSTR.MS.ID.005911.php (Accessed 21 January 2022).

Bonsu, A.B. and Ncama, B.P. 2019. Integration of breast cancer prevention and early detection into cancer palliative care model. *PLoS ONE*, 14(3): e0212806. Available: http://www.doi.org/10.1371/journal.pone.0212806 (Accessed 2 May 2021).

Braun, V. and Clarke, V. 2023. Toward good practice in thematic analysis: Avoiding common problems and be(com)ing a knowing researcher. *International Journal of Transgender Health*, 24 (1): 1 6. Available: DOI: 10.1080/26895269.2022.2129597 (Accessed 10 February 2024).

Brink, H. 2022. *Fundamentals of research methodology for health care professionals.* 3rd edition. Cape Town: Juta.

Burns, S. M. and Grove, S. K. 2011. *Understanding nursing research*. 3rd edition. Philadelphia: Saunders.

Cancer Association of South Africa (CANSA). 2020. Women's health. *Cancer Association of South Africa*. (Online). Available: https://cansa.org.za/womens-health/ (Accessed 22 October 2020).

Centres for Disease Control and Prevention. 2022. What Is Breast Cancer Screening? Available: https://www.cdc.gov/cancer/breast/basic_info/screening.htm (Accessed 3 July 2023).

Chidebe, R.C.W., Orjiakor, T.C., Lasebikan, N., Joseph, A., Toland, S. and Simons, A. 2023. Brain drain in cancer care: The shrinking clinical oncology workforce in Nigeria. JCO Global Oncology, 9(9): 7 Available from: http://doi.org/10.1200/GO.23.00257 (Accessed 23 January 2024).

Chinn, P.L. and Kramer, M.K. 2011. Integrated Theory and Knowledge Development in Nursing. 7th edition. Missouri: Mosby.

Chinn, P.L. and Kramer, M.K. 2018. *Knowledge development in nursing: theory and process*. 9th edition. Missouri: Mosby.

Council for International Organizations of Medical Sciences (CIOMS). 2016. *International ethical guidelines for health-related research involving humans*. Geneva.

Chutia, N., Malakar, S., Abdel-Rafee, G.; Matareek, A., Omotoso, E., Matariek, G. and Omotoso, O. 2020. Practice of Breast Self-Examination and Knowledge of Breast and Cervical Cancer Screening: A bi-national Survey in Africa. Available: https://www.researchgate.net/publication/34719778610 (Accessed 9 May 2022), P.2.

Cobley P. and Schultz P.J. 2013.*Theories and models on communication*. Berlin: Water de Gruyter.

Coleman, C. 2017. Early detection and screening for breast cancer. *Seminars in Oncology Nursing*, 33(2): 142-143. Available: https://pubmed.ncbi.nlm.nih.gov/28365057/ (Accessed 12 March 2022).

Collins English Dictionary. 2005. *Collins COBUILD Advanced Learner's Dictionary.* HarperCollins Publishers. Available from: https://www.collinsdictionary.com/dictionary/english/african (Accessed 23 January 2024).

Cottrell, E., Whitlock, E. and Kato, E. 2014. Defining the benefits of stakeholder engagement in systematic reviews. *Agency for Healthcare Research and Quality (US).* Available from: https://www.ncbi.nlm.nih.gov/books/NBK196176/ (Accessed 27 October 2023).

Creswell, J.W. 2022. *Research design: Qualitative, quantitative and mixed methods approaches.* 6th edition. London: SAGE.

Cumbera, S.N.; Nchanjib, K.N. and Tsoka-Gwegwenia, J.M. 2017. Breast cancer among women in Sub-Saharan Africa: Prevalence and a situational analysis. *Southern African Journal of Gynaecological Oncology*, 9(2): 35-37. Available: https://doi.org/10.1080/20742835.2017.1391467 (Accessed 18 November 2020).

Dadzi, R. and Adam, A. 2019. Assessment of knowledge and practice of breast self-examination among reproductive age women in Akatsi South district of Volta region of Ghana. *PLoS ONE*, 14(12): 2-10. Available: https://doi.org/10.1371/journal.pone.0226925 (Accessed 8 July 2020).

Denzin, N.K. and Lincoln, Y.S. 2018. *The SAGE Handbook of Qualitative Research.* 5th edition. Thousand Oaks, CA: SAGE.

Department of Health (DoH). 2020. *Breast Cancer Prevention and Control Policy*. Pretoria: Government Printer.

Department of Treasury. 2011. *Local government budgets and expenditure review: Delivering municipal services in rural areas*. Pretoria: Government Printer.

De Villiers, M.R. 2005. Three approaches as pillars for interpretive Information Systems research: development research, action research and grounded theory. University of South Africa. Available: http://uir.unisa.ac.za/bitstream/handle/10500/13199/SAICSIT%202005.pdf?sequence=1&isAllowed=y (Accessed 20 January 2024).

De Vos, A. S., Delport, C. S. L., Fouche, C. B. and Strydom, H. 2011. *Research and grassroots: a premier for the caring profession*. 4th edition. Pretoria: Van Schaik Publishers.

Dewi, T.K., Massar, K., Ruiter, R.A.C. and Leonard, T. 2019. Determinants of breast self-examination practice among women in Surabaya, Indonesia: an application of the Health Belief Model. *Biomedical Central Public Health*, 1-8. Available: https://doi.org/10.1186/s12889-019-7951-2 (Accessed 22 October 2020).

Diclemente, R.J., Crosby, R.A. and Kegler, M.C. 2002. *Emerging theories in health promotion practice and research*. San Francisco, CA: Jossey-Bass.

Didarloo, A.; Nabilou, B. and Khalkhali, H.R. 2017. Psycho-social predictors of breast self-examination behaviour among female students: an application of the health belief model using logistic regression. *Biomedical Central Public Health*, 17(1): 861. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5670517/ (Accessed 10 July 2021).

Donnelly, T.T., Al Khater, A., Al Kuwari, M.G., Al-Bader, S.B., Al-Meer, N., Abdulmalik, M., Singh, R., Chaudhry, S. and Fung T. 2014. Do socio-economic factors influence breast cancer screening practices among Arab women in Qatar? *Biomedical Journal Open,* 5 (e005596): 3. Available: https://dx.doi.org/10.1136/bmjopen-2014-005596 (Accessed 10 September 2019).

Dorwrick C. 2001. *Medicine in Society: behavioural sciences for medical students*. London: OUP.

Downie, R., Fyfe, C. and Tannahill, A. 1990. *Health promotion: Models and values.* Oxford, United Kingdom: Oxford University Press.

Du Plessis, P. and Mestry, R. 2019. Teachers for rural schools – A challenge for South Africa. *South African Journal of Education*, 39(1): 1. Available: http://www.sajournalofeducation.co.za/index.php/saje/article/view/1774/902 (Accessed 9 November 2022).

Elewonibi, B. and BeLue, R. 2019. The influence of socio-cultural factors on breast cancer screening behaviours in Lagos, Nigeria. *Ethnicity and Health*, 24(5): 544-559. Available: https://doi.org/10.1080/13557858.2017.1348489 (Accessed 10 May 2021).

Erdem, O and Tokta, E. 2016. Knowledge, attitudes, and behaviours about breast self-examination and mammography among female primary healthcare workers in Diyarbakjr, Turkey. *Biomedical Research International*, 1-7 Available: http://dx.doi.org/10.1155/2016/6490156 (Accessed 10 September 2020).

Esfahani, M.S., Taleghani, F., Noroozi, M. and Tabatabaeian, M. 2018. An educational intervention on based information, motivation and behaviour skills model and predicting breast self-examination. *Journal of Preventative Medicine and Hygiene, 59*: 277-281. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6319121/ (Accessed 10 September 2021).

Fink, A. 2014. *Conducting research literature reviews: from the Internet to paper*. 4th edition. Thousand Oaks, CA: SAGE.

Finestone, E.; Wishnia, J. 2022. Estimating the burden of cancer in South Africa. *South African Medical Journal*, 6(7). Available from: https://sajo.org.za/index.php/sajo/article/view/220/616/ (Accessed 21 August 2023.

Flyvbjerg, B. 2018. *Case study.* In: Denzin, N.K. and Lincoln, Y.S. (eds). *The SAGE Hand-Book of Qualitative Research. 5*th edition. Thousand Oaks, CA: SAGE.

Francisco, M., Olmos-Vega, Stalmeijer, R.E., Varpio, L. and Kahlke, R. 2023. A practical guide to reflexivity in qualitative research. *Medical Teacher*, 45(3): 241-251. DOI: 10.1080/0142159x.2022.2057287 (Accessed 21 January 2024).

Fudge, S.A. 2014. Stigmatization. In: Michalos, A.C. (eds) Encyclopedia of quality of life and well-being research. *Springer Dordrecht*. https://link.springer.com/referenceworkentry/10.1007/978-94-007-0753-5_2871#citeas (Accessed 8 June 2022), p. 6336.

Gerring, J. 2017. *Case study research: Principles and practices.* 2nd edition. United Kingdom: Cambridge University Press.

Ghahremani, L., Mousavi, Z., Kaveh, M.H., Ghaem, H. 2016. Self-Care education programs based on a trans-theoretical model in women referring to health centers: breast self-examination behavior in Iran. *Asian Pacific Journal of Cancer Prevention*, 1(17): 5137. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5454648/ (Accessed 8 January 2024).

Gilmore, B., Ndejjo, R., Tchetchia, A., De Claro, V., Mago, E., Diallo, A.A., Lopes, C. and Bhattacharyya, S. 2020. Community engagement for COVID-19 prevention and control: a rapid evidence synthesis. *Biomedical Journal Global Health,* 5(e003188): 1-2. Available: https://gh.bmj.com/content/5/10/e003188.citation-tools (Accessed 27 December 2022).

Glamz, K., Rimer, B.K. and Viswanath, K. 2015. *Theory, research, and practice*. 5th edition. San Francisco: Jossey-Bass.

Gochman, D.S. 1997. *Handbook of Health Behaviour Research IV. Relevance for Professionals and Issues for the Future*. New York and London: Plenum Press.

Gordon, T., Booysen, F. and Mbonigaba, J. 2020. Socio-economic inequalities in the multiple dimensions of access to healthcare: the case of South Africa. *Biomedical Central Public Health*, 20 (289): 1-13. Available:

https://click.endnote.com/viewer?doi=10.1186%2Fs12889-020-83 (Accessed 9 September 2021).

Grant, C. and Osanloo, A. 2014. Understanding, selecting, and integrating a theoretical framework in dissertation research: Creating the blueprint for 'House'. *Administrative Issues Journal: Connecting Education, Practice and Research*, 4: 12-22. Available: http://dx.doi.org/10.5929/2014.4.2.9 (Accessed 10 June 2022).

Guest, G., MacQueen, K.M. and Namey, E.E. 2014. *Applied thematic analysis.* London: SAGE.

Gyasi, R.M., Asante, F., Abass, K.; Yeboah, J.Y., Adu-Gyamfi, S. and Gyasi, P.A. 2016. Do health beliefs explain traditional medical therapies utilisation? Evidence from Ghana. *Cogent Social Sciences*, 2(1): 1-14. Available: http://dx.doi.org/10.1080/23311886.2016.1209995 (Accessed 4 May 2021).

Habtegiorgis, S.A., Getahun, D.S., Telayneh, A.T., Birhanu, M.Y., Feleke, T.M., Mingude, A.B. and Getacher, L.C. 2022. Ethiopian women's breast cancer self-examination practices and associated factors. A systematic review and meta-analysis. *Cancer Epidemiology*, 78(102): 1-7. Available: https://pubmed.ncbi.nlm.nih.gov/35272259/ (Accessed 8 February 2022).

Hammersley, M. and Traianou, A. 2012. *Ethics in qualitative research: controversies and contexts.* London: SAGE.

Hanson, V., Adejumo, O. and Van Wyk, B. 2017. Knowledge and practice of breast self-examination among rural women in South-West Nigeria: Implications for development of women empowerment programme. *African Journal of Nursing and Midwifery,* 19(1): 147. Available: https://unisapressjournals.co.za/index.php/AJNM/article/view/950/1069 (Accessed 8 June 2021).

Harries, J., Scott, S.E., Walter, F.M., Mwaka, A.D. and Moodley, J. 2020. Women's appraisal, interpretation and help-seeking for possible symptoms of breast and cervical cancer in South Africa: a qualitative study. *Biomedical Central Women's Health*, 20 (251): 5. Available: http://bmcwomenshealth.biomedcentral.com/articles/10.1186/s12905-020-01120-4 (Accessed 10 March 2022).

Hashemzadeh, M., Rahimi, A., Zare-Farashbandi, F., Alavi-Naeini, A.M., Daei, A. 2019. Transtheoretical Model of health behavioral change: A systematic review. *Iranian Journal of Nursing and Midwifery Research*, 24(2): 83-90. doi: 10.4103/ijnmr.IJNMR_94_17 (Accessed 22 January 2024)

Hayden, J. 2019. *Introduction to Health Behaviour Theory*. 3rd edition. New Jersey: Jones and Bartlett Learning.

Health Governance Unit. 2014. Breast self-examination poster. *Medical Research Institute*. Alexandria University. Available: http://www.healthgovernanceunit.com/images/insert/1/Breast%20self%20examination%20poster%20-%20English%20(1).pdf (Accessed 10 March 2022).

Health Profession Council of South Africa (HPCSA). Professional board for Radiography and Clinical Technology Scope of Practice: Diagnostic Radiography. Available: www.hpcsa.co.za (Accessed 6 June 2022).

Heit, M. 2001. A Model for Explaining Differences in Incontinence Care-Seeking (Medics) Project. Degree of Master of Science, University of Louisville. Available: https://doi.org/10.018297/etd/600 (Accessed 12 December 2019).

Hesse-Biber SN. 2017. *The practice of qualitative research*. 3rd ed. SAGE Publication: Thousand Oaks: Sage.

Hesse-Biber, S.N. and Leavy, P. 2011. *The practice of qualitative research*. 2nd edition. SAGE Publications: London.

Hlalele, D. 2014. Rural education in South Africa: Concepts and Practices. *Mediterranean Journal of Social Sciences*, 5(4): 462-468. Available: https://www.mcser.org/journal/index.php/mjss/article/view/2235 (Accessed 2 October 2022).

Hernandez, M. and Gibb, J.K. 2020. Culture, behaviour and health. *Evolution, Medicine, and Public Health*, 2020(1): 12-13. Available: https://click.endnote.com/viewer?doi=10.1093%2Femph%2Feoz036&tok (Accessed 23 January 2022).

iLembe District Municipality. 2020. Profile and analysis district development model. (Online). Available: https://ilembe.gov.za/ (Accessed 15 May 2021).

James, P.B., Wardle, J. and Steel, A. 2018. Traditional, complementary and alternative medicine use in Sub-Saharan Africa: a systematic review. *Biomedical Journal Global Health*, 2018 (3): 1-8. Available: https://pubmed.ncbi.nlm.nih.gov/30483405/ (Accessed 8 November 2018).

Joffe, M., Ayeni, O., Norris, S.A., McCormack, V.A., Ruff, P., Das, I., Neugut, A.I., Jacobson, J.S. and Cubasch, H. 2018. Barriers to early presentation of breast cancer among women in Soweto, South Africa. *PLoS ONE*, 13(2): 3. Available https://doi.org/10.1371/journal.pone.0192071 (Accessed 8 June 2021).

Johnson, O.E. 2019. Awareness and practice of breast self-examination among women in different African countries: A 10-year review of literature. *Nigerian Medical Journal*, 60(5): 219-225. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6900901/ (Accessed 8 February 2020).

Johnson, R.B. and Christensen, L. 2020. *Educational research: quantitative, qualitative and mixed approaches.* 5th edition. Thousand Oaks, CA: SAGE.

Joseph, B. and Joseph, M. 2016. The health of the healthcare workers. *Indian Journal of Occupational and Environmental Medicine,* 20(2): 71-72. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5299814/ (Accessed 12 January 2023).

Joyce, C., Ssenyongaa, L.V. and Iramiotb, J.S. 2020. Breast self-examination among female clients in a tertiary hospital in Eastern Uganda. *International Journal of Africa Nursing Sciences*, 12(2020): 5. Available: https://www.sciencedirect.com/science/article/pii/S2214139119301271 (Accessed 8 June 2022).

Kakudji, B.K., Mwila, P.K., Burger, J.R., Du Plessis, J.M. 2020. Epidemiological, clinical and diagnostic profile of breast cancer patients treated at Potchefstroom regional hospital, South Africa, 2012–2018: An open-cohort study. *Pan African Medical Journal, 36*: 9. Available from: https://doi.org/10.11604/pamj.2020.36.9.21180 (Accessed 5 December 2022).

Kalliguddi, S., Sharma, S. and Gore, C.A. 2019. Knowledge, attitude, and practice of breast self-examination amongst female IT professionals in Silicon Valley of India. *Journal of Family Medicine and Primary Care*, 8(2): 568. Available: https://journals.lww.com/jfmpc/pages/default.aspx (Accessed 3 June 2021).

Kandeh, A.T., Botha, R.A. and Futcher, L.A. 2018. Enforcement of the Protection of Personal Information (POPI) Act: Perspective of data management professionals. *South African Journal of Information Management*, 20(1): 3. https://doi.Org/10.4102/sajim.v20i1.917 (Accessed 1 February 2024).

Kardan-Souraki, M., Moosazadeh, M. and Hamzehgardeshi, Z. 2019. Factors related to breast cancer screening in women in the Northern Part of Iran: A cross-sectional study. *Macedonian Journal of Medical Sciences*, 7(4): 637- 642. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6420934/ (Accessed 10 April 2021).

Kassie, A.M., Abate, B.B., Kassaw, M.W. and Shiferaw, W.S. 2021. Breast self-examination practice among female university students in Ethiopia: A systematic review and meta-analysis. *Cancer Control*, 28(1): 2. Available: https://pubmed.ncbi.nlm.nih.gov/34169755/ (Accessed 2 January 2022).

Khiyali, Z., Aliyan, F., Kashfi, S.H., Mansourian, M. and Jeihooni, A.K. 2017. Educational intervention on breast self-examination behaviour in women referred to health centres: Application of Health Belief Model. *Asian Pacific Journal of Cancer Prevention*, 18(10): 2833-2836. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5747411/ (Accessed 2 June 2021).

Kifle, M.M., Kidane, E.A., Gebregzabher, N.K., Teweldeberhan, A.M., Sielu, F.N., Kidane, K.H., Weldemenkerios, S.H. and Tesfay, M.G. 2016. Knowledge and practice of breast self-examination among female college students in Eritrea. *American Journal of Health Research*, 4(4): 104-108. Available: http://www.sciencepublishinggroup.com/j/ajhr (Accessed 9 October 2022).

Kirag, N. and Kizilkaya, M. 2019. Application of the Champion Health Belief Model to determine beliefs and behaviours of Turkish women academicians regarding breast cancer screening: A cross sectional descriptive study. *Biomedical Central Women's Health*. Available: https://doi.org/10.1186/s12905-019-0828-9 (Accessed 23 October 2020).

Kivunja, C. and Kuyini, A.B. 2017. Understanding and applying research paradigms in education contexts. *International Journal of Higher Education*, 6(5): 34. Available: http://www.ijhe.sciedupress.com (Accessed 8 April 2020).

Koleva-Kolarova, R.G., Zhan, Z., Greuter, M.J.W., Feenstra, T.L. and Geertruida, H. 2015. Simulation models in population breast cancer screening: A systematic review. *The Breast,* 24 (2015): 354-363. Available: http://dx.doi.org/10.1016/j.breast.2015.03.013 (Accessed 3 June 2022).

Kongsamutr, N. 2010. Airline key change drivers and business environmental analysis in the Southeast Asia: strategic planning perspectives. PHD Engineering: Cranfield University.

Krombein, I.W. and De Villiers. P.J.T. 2006. Breast cancer – early detection and screening in South African women from the Bonteheuwel Township in the Western Cape: Knowledge, attitudes and practices. *South African Family Practice*, 48(5): 48. Available: https://www.ajol.info/index.php/safp/article/view/1323 (Accessed 5 June 2021).

Lambert, M., Mendenhall, E., Kim, A.W., Cubasch, H., Joffe, M. and Norris, S. 2020. Health system experiences of breast cancer survivors in urban South Africa. *SAGE Publication Journals*, 16(1): 4. Available: https://uk.sagepub.com/en-gb/journals-permissions (Accessed 14 March 2022).

Lapan, S.D.; Quartarol, M.T. and Riemer, F.J. 2012. *Qualitative research: an introduction to methods and designs.* San Francisco: Jossey-Bass.

Lauver, D. 1992. A Theory of Care-Seeking Behaviour. *The Journal of Nursing Scholarship,* 24(4): 281-288.

Lawal, O., Murphy, F., Hogg, P. and Nightingale, J. 2017. Health behavioural theories and their application to women's participation in mammography screening. *Journal of Medical Imaging and Radiation Sciences*, 48(2): 122-127. Available: https://www.jmirs.org/article/s1939-8654(16)30186-2/fulltext (Accessed 12 September 2019).

Lawal, O.A. 2018. The 'fear factor': Nigerian women and practitioners' views on the factors affecting attendance in mammography screening. PhD Medical Imaging: University of Salford.

Leavy, P. 2017. *Research design: quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches.* New York: The Guildford Press.

Lebron, A. 2013. What is Culture? *Merit Research Journal of Education and Review,* 1(6): 127. Available: https://meritresearchjournals.org/er/content/2013/July/Lebr%F3n.pdf (Accessed 8 June 2023).

Lee, M.K. 2011. Development of Data Models for Nursing Assessment of Cancer Survivors Using Concept Analysis. *Healthcare Informatics Research*, 17(1): 38-50. Available: https://www.researchgate.net/publication/51549015_Development_of_Data_Models_for_Nursing_Assessment_of_Cancer_Survivors_Using_Concept_Analysis/figures?lo=1&utm_source=google&utm_medium=organic (Accessed 5 January 2023).

Leedy, P.D. and Ormrod, J.E. 2015. *Practical research planning and design*. 11th edition. New Jersey: Merrill.

Lera, T., Beyene, A., Bekele, B. and Abreha, S. 2020. Breast self-examination and associated factors among women in Wolaita Sodo, Ethiopia: A community-based cross-sectional study. *Biomedical Central Women's Health*, 20: 2. Available: https://bmcwomenshealth.biomedcentral.com/articles/10.1186/s12905-020-01042-1 (Accessed 22 October 2020).

Lince-Deroche, N., Van Rensburg, C., Masuku, S., Rayne, S., Benni, C. and Holele, P. 2017. Breast cancer in South Africa: developing an affordable and achievable plan to improve detection and survival. *South African Health Review, 20th edition*. Available: http://www.heroza.org/wp-content/uploads/2017/09/Lince-Deroche-van-Rensburg-Masuku-et-al.-Breast-cancer-in-South-Africa.-SAHR-2017.pdf (Accessed 13 November 2020).

Lincoln, Y.S. and Guba, E.G. 1985. *Naturalistic Inquiry*. Thousand Oaks: SAGE.

Lipschitz, S. 2018. Screening mammography with special reference to guidelines in South Africa. *South African Journal of Radiology,* 22(2): 1-7. Available: https://sajr.org.za/index.php/sajr/article/view/1370/2153 (Accessed 28 August 2019).

Lockhat, Z.I., Van Rensburg, L.J. and Du Toit, H. 2014. Challenges of cancer imaging in Africa. *Cancer Imaging*, 14(Suppl 1): 1.

Malterud, K., Siersma, V.D. and Guassora, A.D. 2015. Sample size in qualitative interview studies: guided by information power. *Qualitative Health Research*, 26: 1753-1760. Available: http://dx.doi.org/10.1177/1049732315617444 (Accessed 18 January 2024).

Mannava, P.; Durrant, K., Fisher, J., Chersich, M. and Luchters, S. 2015. Attitudes and behaviours of maternal health care providers in interactions with clients: a systematic review. *Globalisation and Health*, 11(36): 2. Available: https://globalizationandhealth.biomedcentral.com/articles/10.1186/s12992-015-0117-9 (Accessed 2 November 2022).

Mapanga, W.; Norris, S.A.; Craig, A.; Ayeni, O.A.; Chen, W.C.; Jacobson, J.S.; Neugut, A.I.; Ruff, P.; Cubasch, H.; O'neil, D.S.; *et al.* 2023. Drivers of disparities in stage at diagnosis among women with breast cancer: South African breast cancers and HIV outcomes cohort. *PLoS ONE*, 18: e0281916. Available from: https://doi.org/10.1371/journal.pone.0281916 (Accessed 21 June 2022).

Maphumulo, L.S. 2020. Understanding the developmental role of traditional leaders in the modernised democratic system in the rural area of Maphumulo, KwaZulu-Natal, South Africa. Honours Degree: School of Built Environment and Development Studies.

Mchunu, T. 2018. An exploration into the understanding and management of the symptoms of low back pain by the Traditional healers from the Warwick Muti Market in Durban. Masters Degree Chiropractic: Durban University of Technology.

McMilan, J.H. and Schumacher, S. 2014. *Research in education: evidence-based inquiry.* 7th edition. England: Pearson Cop.

Merriam, S.B. 2019. *Qualitative research in practice: Examples for discussion and analysis. 2nd edition.* California: Jossey- Bass.

Meacham, E., Orem, J., Nakigudde, G., Zujewski, J. and Rao, D. 2016. Exploring stigma as a barrier to cancer service engagement with breast cancer survivors in Kampala, Uganda. *Psycho-Oncology*, 2016(25): 1206-1211. Available: https://onlinelibrary.wiley.com/journal/10991611 (Accessed 8 November 2022).

Merriam, S.B. 2019. *Qualitative research: a guide to design and implementation.* San Francisco: Jossey-Bass.

Miles, M.B., Huberman, A.M. and Saldaña, J. 2019. *Qualitative data analysis: A methods sourcebook.* 4th edition. London: SAGE.

Moey, S., Mutalib, A.M., Mohamed, N.C. and Saidin, N. 2020. The relationship of socio-demographic characteristics and knowledge of breast cancer on stage of behavioural adoption of breast self-examination. *American Institute of Mathematical Sciences Public Health*, 7(3): 620-633. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7505780/ (Accessed 13 September 2021).

Moey, S.F., Che Mohamed, N. and Lim, B.C. 2021. Health beliefs on the behavioral adoption of mammography screening moderated by knowledge and marital status: A path analytic model. *Malaysian Journal of Public Health*

Medicine, 21(2): 257-266. Available: https://doi.org/10.37268/mjphm/vol.21/no.2/art.983 (Accessed 23 September 2022).

Mohammadi, A., Mojtahedzadeh, R., Emami, A. and Dehpour, M. 2015. Pamphlet as a tool for continuing medical education: performance assessment in a randomised controlled interventional study. *Medical Journal of the Islamic Republic of Iran,* 29(252): 1. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4715387/ (Accessed 8 June 2023).

Moodley, J., Cairncross, L. and Naiker, T. 2016. Understanding pathways to breast cancer diagnosis among women in the Western Cape Province, South Africa: a qualitative study. *Biomedical Journal*, 6(e009905): 6. Available: https://bmjopen.bmj.com/content/6/1/e009905 (Accessed 10 June 2021).

Moule, P. and Goodman, M. 2017. *Nursing research: An introduction*. 3rd edition. London: SAGE.

Mudaranthakam, D.P., Park, M., Thompson, J., Alsup, A.M., Krebill, R., Hinton, L.C., Hu, J., Gajewski, B., Godwin, A., Mayo, M.S., Wick, J., Harlan-Williams, L., He, J. and Gurley-Calvez, T. 2021. A framework for personalised mammogram screening. *Preventative Medicine Reports,* 23(2021): 1-4. Available: https://doi.org/10.1016/j.pmedr.2021.101446 (Accessed 2 June 2022).

Municipalities of South Africa. 2024. KwaZulu-Natal Municipalities. *MEDIA's Government Newsletter*. Available: https://municipalities.co.za/provinces/view/4/kwazulu-natal (Accessed 26 January 2024).

Mutebi, M. and Edge, J. 2016. Stigma, survivorship and solutions: Addressing the challenges of living with breast cancer in low-resource areas. *South African Medical Journal*, 104 (5). Available: http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S0256-95742014000500030 (Accessed 9 November 2022).

Nizum, N.A. 2011. A study on breast cancer awareness and knowledge among rural female population of Bangladesh. Bachelor Degree: Pharmacy. East West University. Available: http://dspace.ewubd.edu:8080/bitstream/handle/123456789/1620/Nurunnahar_Akter_Nizum.pdf?sequence (Accessed 17 June 2021).

Nwagu, G.C., Bhattarai, S., Swahn, M., Ahmed, S. and Aneja, R. 2021. Prevalence and mortality of triple-negative breast cancer in West Africa: Biologic and sociocultural factors. *Journal of Global Oncology*, 7: 1129-1140. Available: https://ascopubs.org/doi/full/10.1200/GO.21.00082 (Accessed 13 February 2022).

Nzimande, S., Moshabela, M. and Zuma, T. 2021. Barriers and facilitators of traditional health practitioners' regulation requirements: a qualitative study. *Journal of Global Health Reports*, 5: e2021014. Available: http://www.doi.10.29392/001c.21402 (Accessed 2 June 2021).

O'Donoghue, T. 2018. *Planning your qualitative research project: an introduction to interpretivist research in education. 2nd edition.* London: Routledge.

Oladimeji, K.E., Tsoka-Gwegweni, J.M., Igbodekwe, F.C., Twomey, M., Akolo, C., Balarabe, H.S., Atilola, O., Jegede, O. and Oladimeji, O. 2015. Knowledge and beliefs of breast self-examination and breast cancer among market women in Ibadan, South West, Nigeria. *PLoS ONE*. Available: http://10.1371/journal.pone.0140904 (Accessed 10 July 2020).

Oluwatosin, A.A., Norris, S.A., Joffe, M., Cubasch, H., Niet, S., Buccimazza, I., Singh, U., Cacala, S., Stopforth, L., Chen, W.C., McCormack, V.A., O'Neil, D.S., Jacobson, J.S., Neugut, A.I., Ruff, P. and Micklesfield, L.K. 2020. The multimorbidity profile of South African women newly diagnosed with breast cancer. *International Journal of Cancer*, 147(2): 361-374. Available: http://www.doi.10.1002/ijc.32727 (Accessed 2 February 2021).

Orindi. O.T. 2016. Factors that influence the uptake of breast cancer screening among secondary school students: a case of Kisii South Sub-County, Kenya. Master Degree: Jaramogi Oginga Odinga University of Science and Technology. Available: http://ir.jooust.ac.ke/bitstream/handle/123456789/910/Orindi%20_Factors%20that%20influence%20the%20uptake%20of%20breast%20cancer%20screening (Accessed 10 June 2020).

Ormston, R., Spencer, L., Barnard, M. and Snape, D. 2014. The foundations of qualitative research. In J. Ritchie, J. Lewis, C. M. Nicholls, & R. Ormston (eds.), Qualitative research practice: *A Guide for Social Science Students and Researchers*. 2nd edition. Los Angeles, CA: Sage.

Painter, J.E., Borba, C.P., Hynes, M., Mays, D. and Glanz, K. 2008. The use of theory in health behaviour research from 2000 to 2005: a systematic review. *Annals of Behavioural Medicine*, 35(3): 358-362. Available: https://pubmed.ncbi.nlm.nih.gov/18633685/ (Accessed 10 June 2021).

Patel, J. 2020. Despite perceptions of gender equality, Africa's rural women bear brunt of economic exclusion. *The Institute for Justice and Reconciliation*. Available: https://www.afrobarometer.org/wp-content/uploads/2022/02/ad397-africas_rural_women_bear_brunt_of_economic_exclusion-afrobarometer_dispatch-9oct10.pdf (Accessed 10 November 2022).

Patel, N. 2018. Figure of the week: Understanding poverty in Africa. The Brookings Institute, (online). Available: http://www.brookings.edu/articles/figure-of-the-week-understanding-poverty-in-africa/ (Accessed 7 February 2024).

Peprah, P., Agyemang-Duah, W., Arthur-Holmes, F., Budu, H.I., Abalo, E.M., Okwei, R. and Nyonyo, J. 2019. 'We are nothing without herbs': a story of herbal remedies use during pregnancy in rural Ghana. *Biomedical Central Complementary Medicine and Therapies*, 19(65): 1-9. Available: https://doi.org/10.1186/s12906-019-2476-x (Accessed 8 June 2021).

Pervin, N. and Mokhtar, M. 2022. The Interpretivist Research Paradigm: A Subjective Notion of a Social Context. International Journal of Academic Research in Progressive Education and Development, 11(2), 419-428.

Pillay, A.L. 2002. Rural and urban South African women's awareness of cancers of the breast and cervix. *Ethnicity Health*, 7(2): 103-114. Available: https://pubmed.ncbi.nlm.nih.gov/12511197/ (Accessed 8 January 2022).

Pinkdrive. 2022. *Breast health info*. Available: https://pinkdrive.co.za/ (Accessed 2 June 2022).

Pippin, M. and Boyd, R. 2023: Breast self examination. *National Centre for Biotechnology Information.* Available from: https://www.ncbi.nlm.nih.gov/books/NBK565846/ (Accessed 9 January 2023).

Pirzadeh, A., Mostafavi, F., Ghofarnipour, F. and Mansourian, M. 2017. The Application of the transtheoretical model to identify physical activity behavior in Women. *Iranian Journal of Nursing and Midwifery Research,* 22(4): 299. Available: http://dx.doi.org/10.4103/1735-9066.212979 (Accessed 27 June 2022).

Polit, D.F. and Beck, C.T. 2018. *Essentials of nursing research: Appraising evidence for nursing practice*. 9th edition. Philadelphia: Williams and Wilkins.

Proudfoot, K. 2023. Inductive/deductive hybrid thematic analysis in mixed methods research. *Journal of Mixed Methods Research,* 17(3): 308-329. Available: http://journals.sagepub.com/doi/epub/10.1177/15586898221126816 (Accessed 21 September 2023).

Rafique, S., Waseem, Z. and Sheerin, F. 2018. Breast cancer awareness, attitude and screening practices among university students: Intervention needed. *Biomedical Journal of Scientific and Technical Research,* 4(5): 4107. Available: https://www.researchgate.net/publication/327689551_Breast_cancer_awareness_attitude_and_screening_practices_among_university_students_intervention_needed (Accessed 2 November 2020).

Ramathuba, D.U., Ratshirumbi, C.T. and Mashamba, T.M. 2015. Knowledge, attitudes and practices toward breast cancer screening in a rural South African community. *Curationis,* 38(1): 1-10. Available: https://www.ncbi.nlm.nih.gov/pubmed/26017152 (Accessed: 19 July 2019).

Ramdhani, A., Ramdhani, M.A. and Amin, A.S. 2014. Writing a literature review research paper: A step-by-step approach. *International Journal of Basics and Applied Sciences*, 3(1): 48. Available: https://digilib.uinsgd.ac.id/5129/1/08IJBAS%283%29%281%29.pdf (Accessed 13 March 2022).

Rayne, S., Schnippel, K., Benn, C., Kruger, D., Wright, K. and Firnhaber, C. 2018. The effect of access to information on beliefs surrounding breast cancer in South Africa. *Journal of Cancer Education*, 33: 802-813. Available: https://link.springer.com/content/pdf/10.1007/s13187-017-1234-3.pdf (Accessed 8 July 2022).

Rejeski, W.J. and Fanning, J. 2019. Models and theories of health behavior and clinical interventions in aging: a contemporary, integrative approach. *Clinical Interventions in Aging*, 30(14):1007-1019. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6549388/ (Accessed 25 January 2024).

Rubin, H.J. and Rubin, I.S. 2012. *Qualitative interviewing: the art of hearing data.* Thousand Oaks, CA: SAGE.

Saldaña, J. 2011. *Fundamentals of qualitative research: understanding qualitative research.* New York: Oxford University Press.

Schlake, R.M. 2015. Community Engagement: Nine Principles. *Cornhusker Economics: Institute of Agriculture & Natural Resources.* (Online). Available: https://www.researchgate.net/publication/309572230_Community_Engagement_Nine_Principles (Accessed 27 December 2022).

Shallo, S.A. and Boru, J.D. 2019. Breast self-examination practice and associated factors among female healthcare workers in West Shoa Zone, Western Ethiopia 2019: A cross-sectional study. *Biomedical Central Research Notes,* 12(637): 2. Available: http://doi.org/10.1186/s13104-019-4676-3 (Accessed 10 May 2021).

Shannon, P. and Hambacher, E. 2014. Authenticity in Constructivist Inquiry: Assessing an Elusive Construct. *The Qualitative Report*, 19(26): 1-13. Available: https://scholars.unh.edu/cgi/viewcontent.cgi?article=1069&context=educ_facpub (Accessed 20 January 2024).

Sharaa, H.M. 2013. Beliefs and reported practices related to breast self-examination among sample of Egyptian women. *Academic Journal of Cancer Research*, 6(2): 99-110.

Shuyang, Z. 2021. The influence of affects on attitude formation and change and its implications on teaching and learning. *Advances in Social Science, Education and Humanities Research*, 561: 593. Available: https://www.atlantis-press.com/article/125958083.pdf (Accessed 19 November 2022).

Sideeq, K., Ayoub, T. and Khan, S.M.S. 2017. Breast self-examination: assessing its knowledge attitude and practice among ethnic Kashmiri females. *International Journal of Community Medicine and Public Health*, 4(9): 3288-3292. Available: file:///C:/Users/Nelisha/Downloads/1694-7034-2-PB%20(1).pdf (Accessed 10 September 2020).

Singh, A. and Madhavan, H. 2015. Traditional vs. non-traditional healing for minor and major morbidities in India: Uses, cost and quality comparisons. *Tropical Medicine and International Health*, 20(9): 1224. Available: https://onlinelibrary.wiley.com/doi/epdf/10.1111/tmi.12540 (Accessed 6 September 2022).

Smith, A. 2014. A qualitative multiple case study investigating information exchange at lung cancer consultations. PhD Nursing: University of Stirling.

Stake, R.E. 1995. *The art of case study research.* New York: SAGE.

Stangl, A.L., Earnshaw, V.A., Logie, C.H., Van Brakel, W., Simbayi, L.C., Barré, I. and Dovidio, J.F. 2019. The Health Stigma and Discrimination Framework: a global, crosscutting framework to inform research, intervention development, and policy on health-related stigmas. *Biomedical Central*, 17(31): 1. Available: https://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-019-1271-3 (Accessed 8 November 2022).

Statistics South Africa. 2018. An exploration of nuptiality statistics and implied measures in South Africa. Available: www.statssa.gov.za (Accessed 10 November 2022).

Taylor, S.J., Bogdan, R. and De Vault, M.L. 2016. *Introduction to qualitative research methods: A Guidebook and Resource.* 4th edition. New Jersey: Wiley.

Terrell, S.R. 2022. *Writing a proposal for your dissertation: Guidelines and examples*. 2nd edition. New York: The Guilford Press.

Thorne, S. 2016. *Interpretive description: Qualitative research for applied practice*. 2nd edition. New York: Routledge.

Toomey, K.J. 2011. Breast self-examination among college-aged females: an intervention study. M. Arts: Appalachian State University.

Tracy, S.J. 2019. *Qualitative research methods.* United Kingdom: Wiley-Blackwell.

Udeze, C.N., Ezenwa, M.O. and Abamara, N.C. 2020. Effect of cancer education on the practice of breast self-examination among adult women in Nigeria. *Cogent Psychology*, 7(1): 1. Available: https://www.tandfonline.com/doi/full/10.1080/23311908.2020.1823616 (Accessed 9 April 2021).

Udoh, R.H., Tahiru, M., Ansu-Mensah, M., Bawontou, V., Danquah, F.I. and Kuupiel, D. 2020. Women's knowledge, attitude, and practice of breast self-examination in sub-Saharan Africa: a scoping review. *Archives of Public Health*, 78(84). Available: http://www.doi.org/10.1186/s13690-020-00452-9 (Accessed 3 January 2021).

Van Den Berg, V.L. 2016. Still lost in translation: language barriers in South African health care remain. *South African Family Practice*, 58(6): 229-231. Available: http://www.doi.org/10.1080/20786190.2016.1223795 (Accessed 8 June 2021).

Vanderstoep, S.W. and Johnston, D.D. 2016. *Research methods for everyday life: blending qualitative and quantitative approaches.* San Francisco: Jossey-Bass.

Vasileiou, K., Barnett, J. and Thorpe, S. 2018.Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. *Biomedical Central Medical Research Methodology*, 18(148): 5. Available: https://doi.org/10.1186/s12874-018-0594-7 (Accessed 4 February 2024).

Veitcha, D., Goossensa, R., Owenb, H., Veitchc, J., Molenbroeka, J. and Bochnerd, M. 2019. Evaluation of conventional training in Clinical Breast Examination (CBE). *Work*, 62: 647-656. Available: https://www.researchgate.net/publication/333181832_Evaluation_of_conventional_training_in_Clinical (Accessed 7 February 2020).

Visagie, S. and Schneider, M. 2014. Implementation of the principles of primary health care in a rural area of South Africa. *African Journal of Primary Health Care and Family Medicine,* 6(1): 1-10. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4502891/ (Accessed 10 February 2022).

Walden University. 2023. Theoretical and conceptual framework. Available from: http://academicguides.waldenu.edu/library/theory (Accessed 23 January 2024).

Walker, J., Payne, S., Smith, P. and Jarrett, N. 2007. *Psychology for Nurses and the Caring Professions*. 3rd edition. New York: McGraw- Hill.

Walker, L.O. and Avant, K.C. 2019. *Strategies for theory construction in nursing*. 5th edition. New York: Pearson.

Wang, S., Ogundiran, T., Ademola, A., Olayiwola, O.A., Adeoye, A., Sofoluwe, A., Morhason-Bello, I., Odedina, S., Agwai, I., Adebamowo, C., Obajimi, M., Ojengbede, O., Olopade, O.I. and Huo, D. 2018. Development of a Breast Cancer Risk Prediction Model for Women in Nigeria. *Cancer Epidemiol Biomarkers Prevention*, 27(6): 636-642. Available: http://aacrjournals.org/cebp/article-pdf/27/6/636/2284433/636.pdf (Accessed 3 June 2022).

Weber, R. 2004. The Rhetoric of Positivism Versus Interpretivism: A Personal View. Management Information System Quarterly, 28(1): 3. Available: https://www.researchgate.net/publication/215439779_The_Rhetoric_of_Positivism_Versus_Interpretivism_A_Personal_View (Accessed 27 September 2022).

Wilkinson, A., Pettifor, A., Rosenberg, M., Halpern, C.T., Thirumurthy, H., Collinson, M.A. and Kahn, K. 2017. The employment environment for youth in rural South Africa: A mixed-methods study. *Development Southern Africa*, 34(1): 17-32. Available: https://www.tandfonline.com/doi/abs/10.1080/0376835X.2016.1259986?journalCode=cdsa20 (Accessed 10 November 2022).

World Health Organization (WHO). 2020. *Cancer control: Knowledge into action*. Geneva: WHO.

World Health Organization (WHO). 2020. *Health education*. Geneva: WHO.

World Health Organization (WHO). 2021. *Breast cancer*. Geneva: WHO.

Wright, N., Akinyemiju, T., Subhedar, P., Rida, P. and Aneja, R. 2019. Targeting risk factors for reducing the racially disparate burden in breast cancer. *Frontiers in Bioscience (Scholar edition)*, 1(11): 136-160. Available: https://pubmed.ncbi.nlm.nih.gov/30844741/ (Accessed 9 February 2020).

Wunsch, G. 1994. Theories, models and data. *Demographie*, 36(1): 20-9. Available from: http://pubmed.ncbi.nlm.nih.gov/12346076/#:~:text=Generally%2C%20models%20are%20schematic%20representations,or%20falsify%20theories%20and%20models (Accessed 23 January 2023).

Yeika, E.V., Ingelbeen, B., Kemah, B.; Wirsiy, F.S., Fomengia, J.N. and Van Der Sande, M.A. 2021. Comparative assessment of the prevalence, practices and factors associated with self-medication with antibiotics in Africa. *Tropical Medicine and International Health*, 26(8): 862-881. Available: https://www.researchgate.net/publication/351309220_Comparative_Assessment_of_the_Prevalence_Practices_and_Factors_Associated_with_Self-medication_with_Antibiotics_in_Africa (Accessed 8 November 2022).

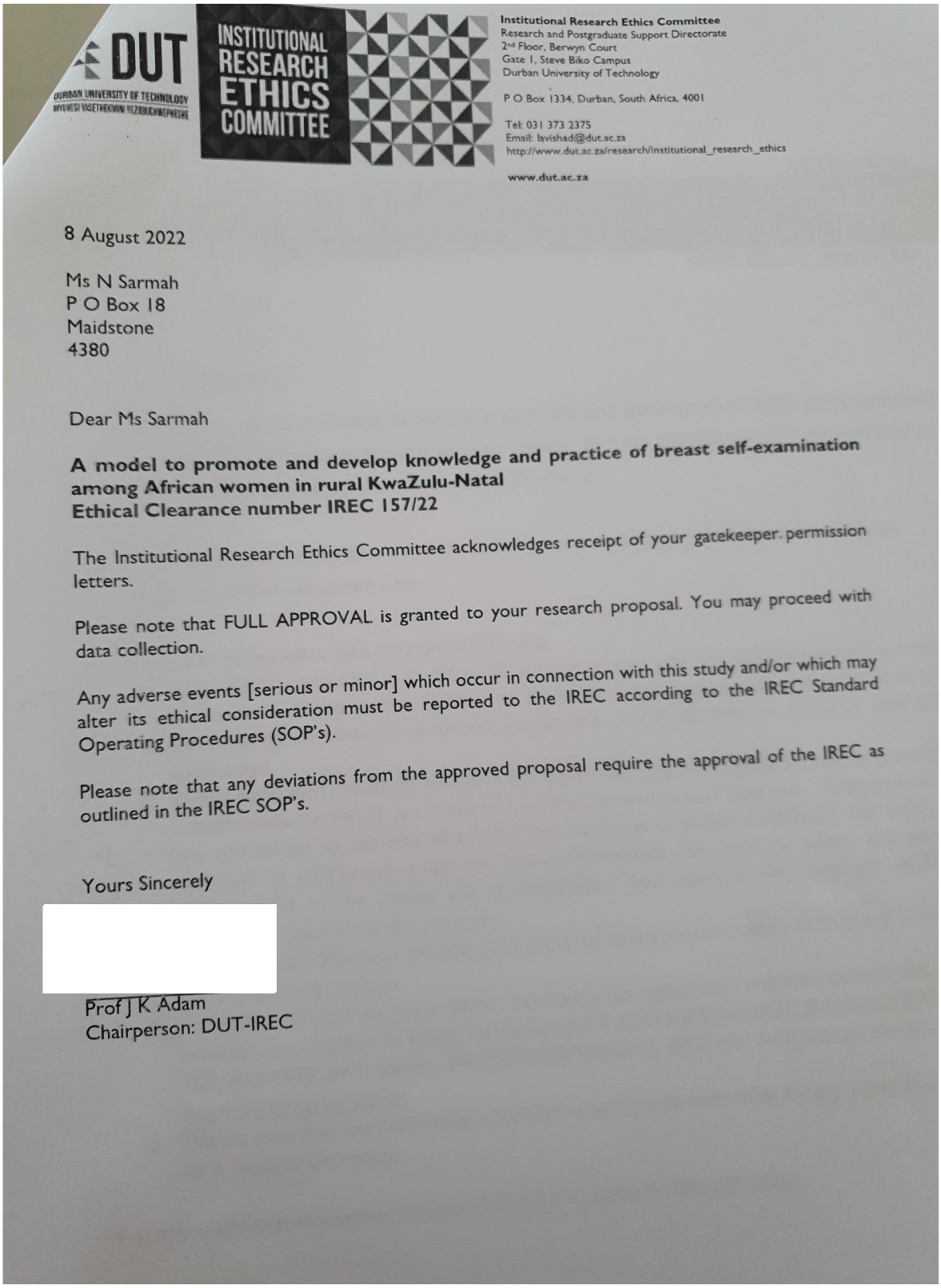
Yin, R.K. 2017. *Case study research: Design and methods. 6th* edition. California: SAGE.

Yin, R.K. 2016. *Qualitative research from start to finish. nd edition.* New York: The Guilford Press.

Ying, T. 2019. Barriers in health care in Hmong men and women with cardiac diseases. *Doctoral Projects*, (online). Available: https://scholarworks.sjsu.edu/etd_doctoral/109 (Accessed 19 April 2022).

APPENDICES

Appendix 1: University Ethics clearance



DUT
DURBAN UNIVERSITY OF TECHNOLOGY

INSTITUTIONAL RESEARCH ETHICS COMMITTEE

Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Berwyn Court
Gate 1, Steve Biko Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2375
Email: lavishad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

8 August 2022

Ms N Sarmah
P O Box 18
Maidstone
4380

Dear Ms Sarmah

A model to promote and develop knowledge and practice of breast self-examination among African women in rural KwaZulu-Natal
Ethical Clearance number IREC 157/22

The Institutional Research Ethics Committee acknowledges receipt of your gatekeeper. permission letters.

Please note that FULL APPROVAL is granted to your research proposal. You may proceed with data collection.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the IREC according to the IREC Standard Operating Procedures (SOP's).

Please note that any deviations from the approved proposal require the approval of the IREC as outlined in the IREC SOP's.

Yours Sincerely

Prof J K Adam
Chairperson: DUT-IREC

Appendix 2a: Letter of permission to the KwaZulu-Natal Department of Health

P O Box 18
Maidstone
4380
[Date]

Department of Health
KwaZulu-Natal Province
Health Research and Knowledge Management
Email: hrkm@kznhealth.gov.za

Request for Permission to Conduct Research

Dear Dr E. Lutge

I am Nelisha Sarmah, a student at the Durban University of Technology pursuing a Doctorate of Health Sciences in Radiography degree. The proposed research topic is: A model to promote and develop knowledge and practice of breast self-examination among African women in rural KwaZulu-Natal.

I am hereby seeking your consent to recruit participants for the above mention research at the local clinics of Ndwedwe, Mandeni, Maphumulo and KwaDukuza Municipality.

I have provided you with a copy of my proposal which includes a copy of the data collection tool, consent form to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

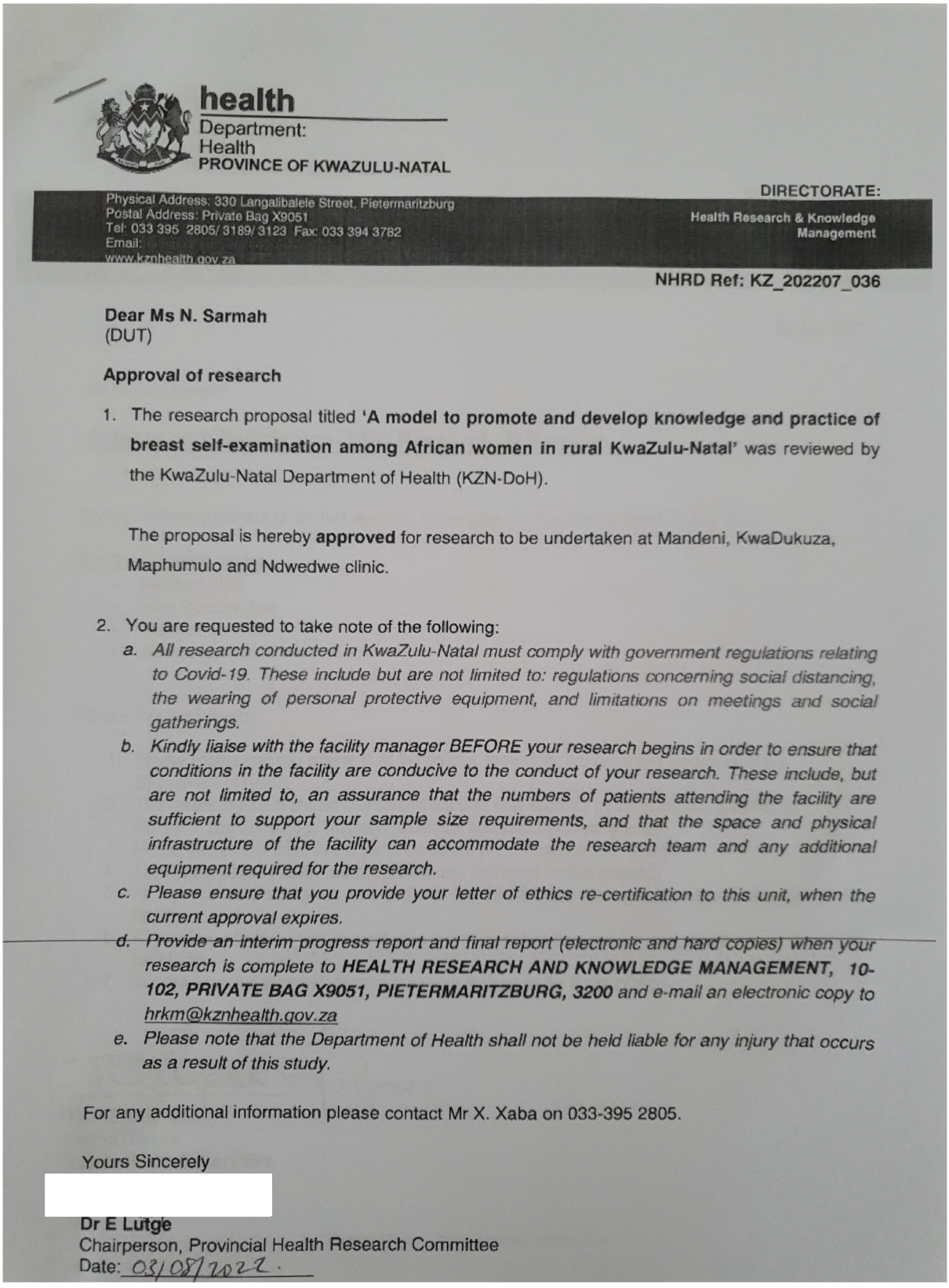
If you require any further information, please do not hesitate to contact my supervisor, Prof M.N. Sibiya and her email address is nokuthulas@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

……..
Nelisha Sarmah
Durban University of Technology
Cell: 079 369 9034
Email: nelishas@yhoo.com

Appendix 2b: Approval letter from the KwaZulu-Natal Department of Health



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address: 330 Langalibalele Street, Pietermaritzburg
Postal Address: Private Bag X9051
Tel: 033 395 2805/ 3189/ 3123 Fax: 033 394 3782
Email:
www.kznhealth.gov.za

DIRECTORATE:
Health Research & Knowledge Management

NHRD Ref: KZ_202207_036

Dear Ms N. Sarmah
(DUT)

Approval of research

1. The research proposal titled **'A model to promote and develop knowledge and practice of breast self-examination among African women in rural KwaZulu-Natal'** was reviewed by the KwaZulu-Natal Department of Health (KZN-DoH).

   The proposal is hereby **approved** for research to be undertaken at Mandeni, KwaDukuza, Maphumulo and Ndwedwe clinic.

2. You are requested to take note of the following:
   a. *All research conducted in KwaZulu-Natal must comply with government regulations relating to Covid-19. These include but are not limited to: regulations concerning social distancing, the wearing of personal protective equipment, and limitations on meetings and social gatherings.*
   b. *Kindly liaise with the facility manager BEFORE your research begins in order to ensure that conditions in the facility are conducive to the conduct of your research. These include, but are not limited to, an assurance that the numbers of patients attending the facility are sufficient to support your sample size requirements, and that the space and physical infrastructure of the facility can accommodate the research team and any additional equipment required for the research.*
   c. *Please ensure that you provide your letter of ethics re-certification to this unit, when the current approval expires.*
   d. *Provide an interim progress report and final report (electronic and hard copies) when your research is complete to* ***HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200*** *and e-mail an electronic copy to hrkm@kznhealth.gov.za*
   e. *Please note that the Department of Health shall not be held liable for any injury that occurs as a result of this study.*

For any additional information please contact Mr X. Xaba on 033-395 2805.

Yours Sincerely

Dr E Lutge
Chairperson, Provincial Health Research Committee
Date: 03/08/2022.

Appendix 3a: Letter of permission to the iLembe District Manager

P O Box 18
Maidstone
4380
20 July 2022

iLembe District Manager
iLembe House
59-61 Mahatma Ghandi Street,
Kwa-Dukuza
4449

Request for Permission to Conduct Research

Dear Geoffrey Kumalo,

I am Nelisha Sarmah, a student at the Durban University of Technology pursuing a Doctorate of Health Sciences in Radiography degree. The proposed research topic is: A model to promote and develop knowledge and practice of breast self-examination among African women in rural KwaZulu-Natal.

I am hereby seeking your consent to recruit participants for the above mention research at the local clinics of Ndwedwe, Mandeni, Maphumulo and KwaDukuza Municipality.

I have provided you with a copy of my proposal which includes a copy of the data collection tool, consent form to be used in the research process, as well as a copy of the approval letter which I received from the Institutional Research Ethics Committee (IREC).

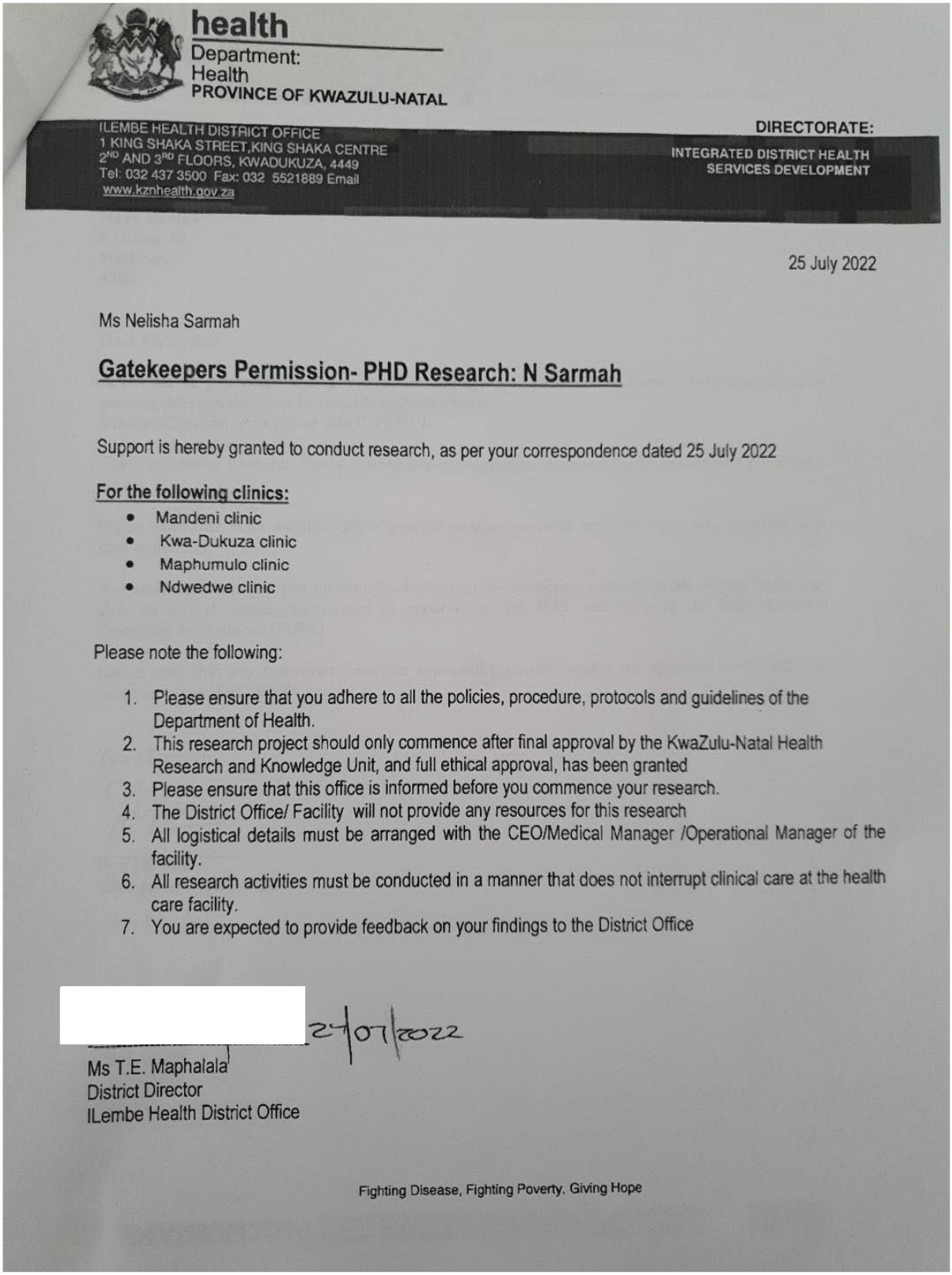
If you require any further information, please do not hesitate to contact my supervisor, Prof M.N. Sibiya and her email address is nokuthulas@dut.ac.za

Thank you for your time and consideration in this matter.

Yours sincerely,

……..
Nelisha Sarmah
Durban University of Technology
Cell: 079 369 9034
Email: nelishas@yhoo.com

Appendix 3b: Approval letter from the iLembe District Manager



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

ILEMBE HEALTH DISTRICT OFFICE
1 KING SHAKA STREET,KING SHAKA CENTRE
2ND AND 3RD FLOORS, KWADUKUZA, 4449
Tel: 032 437 3500 Fax: 032 5521889 Email
www.kznhealth.gov.za

DIRECTORATE:
INTEGRATED DISTRICT HEALTH SERVICES DEVELOPMENT

25 July 2022

Ms Nelisha Sarmah

Gatekeepers Permission- PHD Research: N Sarmah

Support is hereby granted to conduct research, as per your correspondence dated 25 July 2022

For the following clinics:

- Mandeni clinic
- Kwa-Dukuza clinic
- Maphumulo clinic
- Ndwedwe clinic

Please note the following:

1. Please ensure that you adhere to all the policies, procedure, protocols and guidelines of the Department of Health.
2. This research project should only commence after final approval by the KwaZulu-Natal Health Research and Knowledge Unit, and full ethical approval, has been granted
3. Please ensure that this office is informed before you commence your research.
4. The District Office/ Facility will not provide any resources for this research
5. All logistical details must be arranged with the CEO/Medical Manager /Operational Manager of the facility.
6. All research activities must be conducted in a manner that does not interrupt clinical care at the health care facility.
7. You are expected to provide feedback on your findings to the District Office

24/07/2022

Ms T.E. Maphalala
District Director
ILembe Health District Office

Fighting Disease, Fighting Poverty, Giving Hope

Appendix 4a: Participant letter of information (English)

Title of the Research Study: A model to promote and develop knowledge and practice of breast self-examination among African women in rural KwaZulu-Natal.

Principal Investigator/s/researcher: Ms Nelisha Sarmah (PhD: Health Sciences Candidate).

Co-Investigator/s/supervisor/s: Prof M.N. Sibiya (D Tech: Nursing) and Dr. T.E. Khoza (PhD).

Brief Introduction and Purpose of the Study: Breast cancer is diagnosed at an advanced stage among African women in South Africa, thereby increasing the number of deaths. Early diagnosis of breast cancer affords women the opportunity for more treatment choices and a greater prognosis. Therefore, regular breast self-examination plays an important role in early detection of breast cancer. However, very few women practice breast self-examination in South Africa. In order to promote the knowledge and practice of breast self-examination it is important to understand the factors influencing the uptake of breast self-examination.

Purpose of the Study: The aim of the study is to develop a model to promote the knowledge and practice of breast self-examination among African women in rural areas.

Good morning,
I am a PhD: Health Sciences student at DUT.

I would like to invite you to participate in the factors influencing breast self-examination among African women in rural areas.

Outline of the Procedures: You are invited to participate on a one-on-one interview that will take approximately 20-30 minutes. The interview session will be conducted at a venue, date and time that is convenient for you. I will facilitate the interview discussion. For record purposes, I kindly request to audio-record the interview discussion.

Risks or Discomforts to the Participant: In participating in this study, there is no anticipated risk. However, it is possible that some questions may be uncomfortable. You have the option of withdrawing from this study so that you do not have to feel uncomfortable. Your identity will not be shared during the study.

Explain to the participant the reasons he/she may be withdrawn from the Study: You may be withdrawn from the study due to non-compliance, illness, and the information shared is irrelevant to the topic. You may be withdrawn from the study should you choose not to answer the semi-structured interview questions or if the questions asked makes you feel uncomfortable. You are entitled to withdraw from the study at any time. Kindly contact the principal researcher (Nelisha Sarmah) on 079 369 9034 to terminate your participation in this study. Thereafter all information you have shared will be discarded appropriately, that is paper documents shredded and voice-recordings deleted of devices. Your identity will not be disclosed and will be kept confidential.

Benefits: The results of the study will provide a model and guidelines that can be used by healthcare facilities to promote breast self-examination among African women in rural areas. The research outcomes may significantly reform health systems in Africa.

Remuneration: Your participation is voluntary, and no remuneration will be provided.

Costs of the Study: You will not bear any costs for participating in this study.

Confidentiality: The data collected will be disseminated in a manner that will ensure confidentiality of the participants. The participants will not be identified by their names, codes will be used instead. Data collected will be kept in a protected locker and electronic data will be kept in password protected hardware and shredded after 5 years.

Results: This study will help African women living in rural areas, understand and practice breast self-examination to detect breast cancer at an early stage. The results of the study will also be available through your local clinics in the form of pamphlets that will assist you in practicing breast self-examination and helping you better understand its importance. These pamphlets will also be presented to the KwaZulu- Natal Department of Health for approval, and if approved, they will be distributed to all rural clinics in KZN to be made available to more women.

Research-related Injury: There is no anticipated research-related injury by participating in the study.

Storage of all electronic and hard copies including tape recordings: Hard copies including tape recordings will be kept in a protected locker and electronic data will be kept in a password protected computer and will be shredded after 5 years.

Persons to contact in the Event of Any Problems or Queries: Please contact the Supervisors: Prof M.N. Sibiya, 031-373 2284, nokuthulas@dut.ac.za and Dr. T.E. Khoza, 031-373 2875, thandokuhlek@dut.ac.za, and the researcher Nelisha Sarmah, 079 369 9034, and nelishas@yahoo.com or the Institutional Research Ethics Administrator on 031 373 2375. Complaints can be reported to the Director: Research and Postgraduate Support Dr L Linganiso on 031 373 2577 or researchdirector@dut.ac.za

Appendix 4b: Participant letter of information (IsiZulu)

Isihloko Socwaningo: Uhlelo lokugqugquzela nokuthuthukiswa kolwazi lokuzihlola amabele kwabesifazane abasemakhaya.

Umholi/umcwaningi: Ms Nelisha Sarmah (PhD: Health Sciences Candidate).

Umphenyi/umphathi: Prof M.N. Sibiya (D Tech: Nursing) and Dr. T.E. Khoza (PhD).

Isingeniso nenhloso yesifundo: Isifo somdlavuza webele uyaluza ukutholakala kubantu besifazane base South Africa. Ngakho izinga lokufa kwabantu liyenyuka. Ukutholakala ngokushesha. Komdlavuza webele kunganika abesifazane ithuba lokushesha baqale ukuzinakekola. Bambalwa abesifazane abazihlolayo amabole abo. Kubalulekile ukuhlala uzihlola.

Inhloso yesifundo: Ihloso ukufundisa kanye nolwazi lokuzihlola umdlavuza wamabele kwabesifazane abahlala emakhaya.

Sanibona,
Ngingu dokotela osafunda e DUT.

Ngizothando ukuthi nizibandakanye okugqugquzeleni abesifazane ukuthi bakwazi ukuzihlola umdlavuza webele.

Ukucaciswa Kwenqubo: Uyamenywa ukuba uze kwingxoxo ehleliwe engaba imizuzu engamashumi amabili kuya kwamathathu. Ingxoxo ingaba sendaweni usuku ne sikhathi esihambelana nawe. Ngiyacela ukuba iqoshwe ingxoxo yethu.

Ubungosi babahlanganyeli: abukho ubungozi obulindelekile, kodwa ingaba khona imibuzo engase ingakuphathi kahle, kodwa uvumelekile ukuhoxa engxoxweni. Angeko udalulwe ukuthi ungubani.

Izizathu ezingabangelo ukuthi umuntu aphume esifundweni: uma ucwaningo luthinta ukuvezwa komzimba noma izinhlelo ezinobungozi.

Ukuhlomula: izincwajana eziqukethu ulwazi ngokuzihlolela umdlavuza wamabele.

Izinzuzo: Uyavolontiya akukho umholo ozotholakala.

Izindleko kwamagama abantu: akukhokhwa lutho.

Izimfihlo: akazukudalulwa amagama abantu, kuzobekwa kahle endaweni evalekayo konke okunolwazi oluyimfihlo.

Imiphumela: uhlaka lomsebenzi oluzosiza ukuze kugqugquzelwe ukuzihlola umdlavuza webele. Kuzoletha ulwazi kakhulu kubantu besifazane abasemakhaya.

Ubungozi ongahlangabezana nabo: abukho ubungozi obukhona.

Ukubekwa kwamaphepha kubalwa namarekhodi engxoxiswano: amaphepha noku qoshiwe kuzogcinwa endaweni evikelekile.

Umuntu ozothintana naye uma kunenkinga/ imibuzo: Abaphathi: Prof M.N. Sibiya, 031-373 2284, nokuthulas@dut.ac.za and Dr. T.E. Khoza, 031-373 2875, thandokuhlek@dut.ac.za, and the researcher Nelisha Sarmah, 079 369 9034, and nelishas@yahoo.com or the Institutional Research Ethics Administrator on 031-373 2375. Complaints can be reported to the Director: Research and Postgraduate Support Dr L Linganiso on 031-373 2577 or researchdirector@dut.ac.za

Appendix 5a: Consent form (English)

Full Title of the Study: A model to promote and develop knowledge and practice of breast self-examination among African women in rural KwaZulu-Natal.

Names of Researcher/s: Ms Nelisha Sarmah.

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Ms Puseletso Ruth Mlotshwa about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____,
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____
Full Name of Participant	**Date**	**Time**	**Signature / Right Thumbprint**

I, Nelisha Sarmah herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Nelisha Sarmah	_____	_____
Full Name of Researcher	**Date**	**Signature**

_____	_____	_____
Full Name of Witness (If applicable)	**Date**	**Signature**

_____	_____	_____
Full Name of Legal Guardian (If applicable)	**Date**	**Signature**

Appendix 5b: Consent form (IsiZulu)

Isihloko Socwaningo: A model to promote and develop knowledge and practice of breast self-examination among African women in rural KwaZulu-Natal.

Umholi/umcwaningi: Nelisha Sarmah.

Isitatimende sesivumelwano somhlanganyeli kulolucwaningo:

- Ngiyaqinisekisa ukuthi ngazisiwe umcwaningi, u Nelisha Sarmah ngohlobo, izinzuzo, ubungozi bocwaningo - Research Ethics Clearance Number: _____,
- Nginikeziwe, ngayifunda, ngayiqonda imininingwane ebhalwe ngenhla mayelana nocwaningo.
- Ngiyaqonda ukuthi imiphumela yocwaningo (isifundo), okubalwa kuyo ubulili bami, iminyaka yami, usuku lokuzalwa, ama-inishela ami noxilongo kuzocwaningwa/ kuzasetshenzwa ngokuyimfihlo.
- Ngokubuka izidinga zocwaningo, ngiyavuma ukuthi imininingwano eqoqiwe ingacwaningwa nge computer.
- Noma inini ngingahoxa ekubeni ingxenye yocwaningo yalesifundo ngaphandle kokubandlululwa.
- Ngibe nesikhathi esanele sokubuza imibuzo yingakho ngizivumela ngokwami ukuthi ngilungiselelwe ukubamba iqhaza kulesifundo.
- Ngiyaqonda ukuthi okutholakalayo okusha okusemqoka kulolucwaningo okuthinta mina ngizokwaziswa.

_____	_____	_____	_____
Igama Lobambiqhaza Isithupha Sokudla	**Usuku**	**Isikhathi**	**Ukusayina/**

Mina, Nelisha Sarmah ngiyaqiniseka ukuthi umbambi qhaza obhalwe ngenhla wazisiwe ngokugcwele ngohlobo nobungozi balesisifundo.

Nelisha Sarma _____	_____	_____
Igama lomcwaningi	**Usuku**	**Ukusayina**
_____	_____	_____
Igama lafakazi (If applicable)	**Usuku**	**Ukusayina**
_____	_____	_____
Igama lombheki osemthethweni (If applicable)	**Usuku**	**Ukusayina**

Appendix 6a: Demographic data for interviews

SECTION A: DEMOGRAPHIC DATA

Please answer the following questions in the spaces provided by placing X in the most appropriate option.

1.1 Please indicate your age?

20 – 30 years	
31 – 40 years	
41 – 50 years	
51 – 65 years	

1.2 Level of education

Primary school	
High school	
Tertiary (university) education	
No school education	

1.3 Marital status

Single	
Married	
Divorced/ Separated	
Widowed	
Cohabiting	

1.4 Employment status

Full-time employed	
Part-time employed	
Not employed	

1.5 Please indicate the number of children you have?

1	
2	
3	
More than 3	
None	

1.6 Please indicate the municipality you reside?

iLembe	
Mandeni	
KwaDukuza	
Maphumulo	

Appendix 6b: Interview guide

SECTION B: INTERVIEW QUESTIONS

1.1 What is your understanding of the words “breast cancer” and “breast self-examination”?

Probing questions: If yes, can you explain what you think it means?

If no: the researcher will explain:

Breast cancer is a disease in the breast where the cells grow and divide abnormally and uncontrollably to form a tumour or growth.

Breast self-examination is a method women use to examine their breast for any abnormal changes.

Can you explain how you think a breast self-examination is done?

How often do you do breast self-examination? Explain.

1.2 How would you feel if you found a lump in your breast? Explain.

Probing questions: what would you do if the lump is painful? And what will you do if the lump is not painful?

If you have a health problem or get sick, what do you normally do?

1.3 Do you think it is easy or difficult to talk to your family, friends and community about breast problem? Explain.

Probing questions: If a woman has breast cancer, how do you think people (family, friends, community) will treat her?

Do you think your family, friends and community will understand and practice breast self-examination? Explain.

1.4 Describe your traditional belief and understanding towards breast cancer?

Probing questions: In your community are women encouraged to do breast self-examination? Explain.

If you have a health problem, who will you consult first, a traditional healer or healthcare provider? Explain.

1.5 What are the problems you face when you need medical care?

Probing questions: Will you experience any problems if you practice breast self-examination? Explain.

1.6 In your opinion how do you think we can encourage women in your community to practice breast self-examination?

Probing questions: If there is a programme in the community to teach women about breast cancer and breast self-examination will you go? Explain.

Does the clinic you go to give you any information on breast cancer and breast self-examination? Explain.

Thank you for taking time to participate in the study.

Appendix 7: Sample of the interview transcript

Participant 13

SECTION A: DEMOGRAPHIC DATA

Participant 13 is between the age of 51-65, has a tertiary level of education, is single with two children and is full-time employed, residing in the KwaDukuza municipality of the iLembe District of KZN

SECTION B: INTERVIEW GUIDE

Researcher: Thank you for participating. I would like to confirm that you have agreed for the interview, and you signed the consent form?
Participant: Yes.

Researcher: What is your understanding of the words breast cancer and breast self-exam? What do you think it is?
Participant: Breast cancer is where you have carcinogens or cancer in your breast or where you have a tumour in your breast.

Researcher: Okay and breast self-exam? What do you think that is?
Participant: It's where you check yourself to see if there's any breast nodule.

Researcher: Okay, and can you explain how you think breast exam is done? How would you examine your breast if you were checking your breasts? What do you think?
Participant: You have to check it's when you're not having your menses and you wake up in the morning and you stand in front of your mirror and then you must look at your breast, whether there any change in your colour skin or if there's any swelling if they are both equal, and then you lift up your one arm from the breast you want to check and then, in a circular motion, you go around your breast outside your nipple, and then you end up in the nipple to check if there's any nodules.

Researcher: Okay and how often do you think breast self-exam must be done?
Participant: It must be done at least once a month after your menses.

Researcher: Okay. And how would you feel if you found a lump in your breast? How would it make you feel?
Participant: I would be anxious and I would want to check it.

Researcher: Okay. And what would you do if the lump is painful and what would you do if the lump is not painful?
Participant: Either way I will try and avoid poking it and try to squeeze it. And then I will seek the medical assistance.

Researcher: Okay. So, you think either way, whether it's painful or not you will see a doctor?
Participant: Yes, I would.

Researcher: Okay. And if you have a health problem, or you get sick, what do you normally do for any normal sickness?
Participant: I normally go to the clinic or I go to the doctor to check it out.

Researcher: Okay. And do you think it's easy or difficult to talk to your family, friends and community about a breast problem?
Participant: It is not a very comfortable subject for many and it's difficult to try and talk to the community especially in a group because it's not only females around it's also males and it's difficult to get them to respond on their feelings when there's an opposite gender around.

Researcher: Okay? And if a woman has breast cancer, how do you think people the family, friends and community in your culture will treat her?
Participant: Usually in our culture, the minute you mention cancer, they think that you are dying. And if you even, if you have cancer, there's this other stigma of HIV. They immediately when you start losing weight and you look sickly, they go around talking about you, that you've contracted AIDS.

Researcher: Okay. And do you think your family, friends and community will they understand and will they practice breast self-examination?
Participant: I think yes, they would, because cancer is a very scary disease for everyone in our communities. So, I think they will practice.

Researcher: Okay. Describe your traditional belief and understanding of breast cancer. So, from a traditional point of view, what did they say breast cancer is?
Participant: Well, from my tradition, cancer is not very understood, like I said, that they think if you've got cancer, then you will die immediately. They immediately when you got cancer, they want to try lots of things, especially traditional things, because they feel once you go for radiotherapy and for chemotherapy, then you definitely are on the death bed. And they want to try every traditional trick to stop that before you even go for treatment.

Researcher: Okay. And in your community, are woman encouraged to do breast self-exam?
Participant: In my community, yes, they are encouraged. Like I said, it's difficult to talk to them because they tend to think, they tend to shy away when there's a group of men around but they are encouraged.

Researcher: Okay. And if you have a health problem, who will you consult first a traditional healer or a healthcare provider? Who do you prefer?
Participant: I prefer healthcare provider because I've seen people mixing treatment, dying with mixing treatment with traditional medicine, dying in numbers and I've seen people start treatment surviving cancer.

Researcher: Okay. And what are the problems you face when you need medical care? Are there any problems you face from a medical point of view to come to a clinic? Is there any problem you or maybe the people in the community will face when they come to clinics?
Participant: Me no. But the people at large the thing they raise their concern about clinic long queues and sometimes the attitude of the staff in the clinic.

Researcher: Okay. Will you experience any problems if you had to do breast self-exam?
Participant: No, no.

Researcher: Because you know how too?
Researcher: Okay. In your opinion, how do you think we can encourage women in your community to practice this breast self-exam? What can I do to get more African women to practice breast self-exam? How do you think we can get them?

Participant: In my opinion especially where there is more women, I think that when they are gatherings in the community or maybe large family gatherings, we can ask for the slots to market the breast examination and speak more about cancer.
Researcher: Okay. And if there is a programme in the community to teach women about breast cancer and breast self-examination, will you go?

Participant: Well, can you please repeat the question?
Researcher: So, if we do a programme or some training about breast cancer and breast self-exam, will you come? Will you attend our programme?

Participant: Yes, definitely.
Researcher: Okay. And does the clinic you go to give you any information on breast cancer and breast self-examination?

Participant: Yes.
Researcher: Okay. Thank you so much for participating.

The end.

Appendix 8: Letter from the professional editor

Sarah Frost

B.A. (Hons in English Literature) (UCT), Masters in English Literature (UKZN)

Editing Services

Cell: 074 384 2772

Email: sfrost@juta.co.za

---

1 April 2023

Re: Editing services rendered

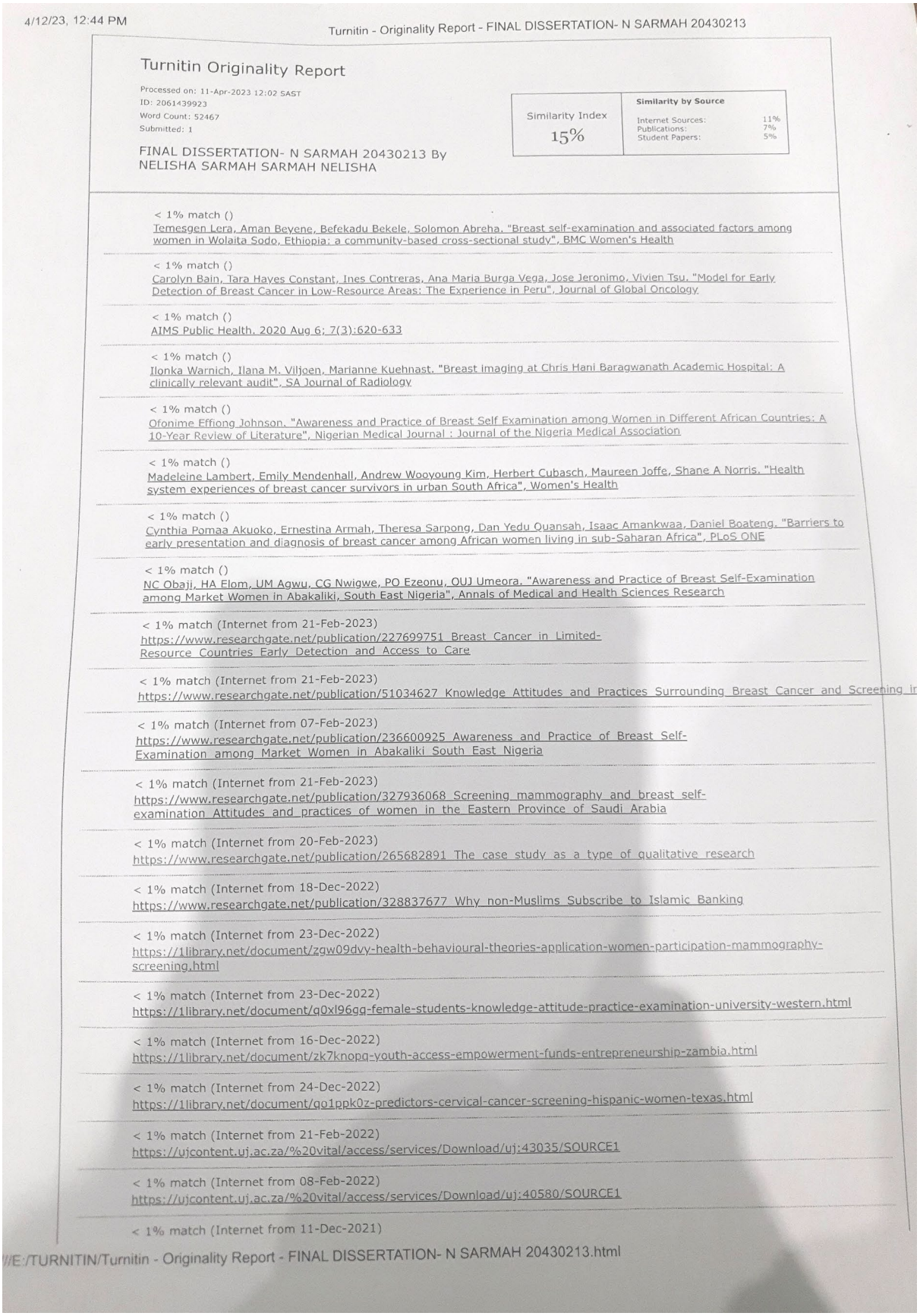
Please be advised that I edited a thesis written by Nelisha Sarmah (Student number 20430213), written as part of her PhD degree: Health Sciences at the Durban University of Technology.

Regards

Sarah Frost

Editor

Appendix 9: Turnitin report



4/12/23, 12:44 PM Turnitin - Originality Report - FINAL DISSERTATION- N SARMAH 20430213

Turnitin Originality Report

Processed on: 11-Apr-2023 12:02 SAST
ID: 2061439923
Word Count: 52467
Submitted: 1

FINAL DISSERTATION- N SARMAH 20430213 By NELISHA SARMAH SARMAH NELISHA

Similarity Index	Similarity by Source	
15%	Internet Sources:	11%
	Publications:	7%
	Student Papers:	5%

< 1% match ()
Temesgen Lera, Aman Beyene, Befekadu Bekele, Solomon Abreha, "Breast self-examination and associated factors among women in Wolaita Sodo, Ethiopia: a community-based cross-sectional study", BMC Women's Health

< 1% match ()
Carolyn Bain, Tara Hayes Constant, Ines Contreras, Ana Maria Burga Vega, Jose Jeronimo, Vivien Tsu, "Model for Early Detection of Breast Cancer in Low-Resource Areas: The Experience in Peru", Journal of Global Oncology

< 1% match ()
AIMS Public Health, 2020 Aug 6; 7(3):620-633

< 1% match ()
Ilonka Warnich, Ilana M. Viljoen, Marianne Kuehnast, "Breast imaging at Chris Hani Baragwanath Academic Hospital: A clinically relevant audit", SA Journal of Radiology

< 1% match ()
Ofonime Effiong Johnson, "Awareness and Practice of Breast Self Examination among Women in Different African Countries: A 10-Year Review of Literature", Nigerian Medical Journal : Journal of the Nigeria Medical Association

< 1% match ()
Madeleine Lambert, Emily Mendenhall, Andrew Wooyoung Kim, Herbert Cubasch, Maureen Joffe, Shane A Norris, "Health system experiences of breast cancer survivors in urban South Africa", Women's Health

< 1% match ()
Cynthia Pomaa Akuoko, Ernestina Armah, Theresa Sarpong, Dan Yedu Quansah, Isaac Amankwaa, Daniel Boateng, "Barriers to early presentation and diagnosis of breast cancer among African women living in sub-Saharan Africa", PLoS ONE

< 1% match ()
NC Obaji, HA Elom, UM Agwu, CG Nwigwe, PO Ezeonu, OUJ Umeora, "Awareness and Practice of Breast Self-Examination among Market Women in Abakaliki, South East Nigeria", Annals of Medical and Health Sciences Research

< 1% match (Internet from 21-Feb-2023)
https://www.researchgate.net/publication/227699751_Breast_Cancer_in_Limited-Resource_Countries_Early_Detection_and_Access_to_Care

< 1% match (Internet from 21-Feb-2023)
https://www.researchgate.net/publication/51034627_Knowledge_Attitudes_and_Practices_Surrounding_Breast_Cancer_and_Screening_in

< 1% match (Internet from 07-Feb-2023)
https://www.researchgate.net/publication/236600925_Awareness_and_Practice_of_Breast_Self-Examination_among_Market_Women_in_Abakaliki_South_East_Nigeria

< 1% match (Internet from 21-Feb-2023)
https://www.researchgate.net/publication/327936068_Screening_mammography_and_breast_self-examination_Attitudes_and_practices_of_women_in_the_Eastern_Province_of_Saudi_Arabia

< 1% match (Internet from 20-Feb-2023)
https://www.researchgate.net/publication/265682891_The_case_study_as_a_type_of_qualitative_research

< 1% match (Internet from 18-Dec-2022)
https://www.researchgate.net/publication/328837677_Why_non-Muslims_Subscribe_to_Islamic_Banking

< 1% match (Internet from 23-Dec-2022)
https://1library.net/document/zgw09dvy-health-behavioural-theories-application-women-participation-mammography-screening.html

< 1% match (Internet from 23-Dec-2022)
https://1library.net/document/q0xl96gq-female-students-knowledge-attitude-practice-examination-university-western.html

< 1% match (Internet from 16-Dec-2022)
https://1library.net/document/zk7knopq-youth-access-empowerment-funds-entrepreneurship-zambia.html

< 1% match (Internet from 24-Dec-2022)
https://1library.net/document/qo1ppk0z-predictors-cervical-cancer-screening-hispanic-women-texas.html

< 1% match (Internet from 21-Feb-2022)
https://ujcontent.uj.ac.za/%20vital/access/services/Download/uj:43035/SOURCE1

< 1% match (Internet from 08-Feb-2022)
https://ujcontent.uj.ac.za/%20vital/access/services/Download/uj:40580/SOURCE1

< 1% match (Internet from 11-Dec-2021)

file:///E:/TURNITIN/Turnitin - Originality Report - FINAL DISSERTATION- N SARMAH 20430213.html