Knowledge and Screening Practices of Breast Cancer among Female Teachers in Pokhara

Dipti Koirala Banjara

A Dissertation for the Degree of Master of Philosophy in Health Education

Submitted to

Graduate School of Education

Faculty of Education

Tribhuvan University

Kathmandu, Nepal

May 2025

II

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M. Phil. 19th Batch

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Abstract

As women are at risk of breast cancer (BC), female teachers should be aware of its risk factors and screening practices to safeguard their health and increase preventive awareness among other women. Considering this context, the present study aimed to assess BC knowledge and screening practices among female teachers in Pokhara. In addition, this study examined the role of health belief model (HBM) constructs in predicting breast self-examination (BSE) practice among teachers.

A cross-sectional study was done among 198 female teachers working at 13 secondary-level community schools of Pokhara metropolitan using a single-stage cluster sampling technique. Data was collected from 12 March to 9 April 2024 using a semi-structured questionnaire and self-administration technique and analyzed using IBM SPSS version 22.

The teachers ranged from 21 to 58 years; their average age was 40.99 $\pm$ 8.10 years. Nearly half of the respondents (44.9%) had a Master's degree in Education, and 62.1% were teaching at the primary level. This study found that 64.1% and 19.2% of the teachers knew BC symptoms and risk factors, respectively. There was a statistically significant difference in BC knowledge score according to job duration and having a social history of BC. BSE was ever done by 76.3% of the teachers. However, only 16.7% reported examining their breasts at least monthly. One-third of respondents (27.8%) had ever done a clinical breast examination (CBE), and 15.7% had done mammography. The practice of BSE was significantly associated with having a history of breast problems, marital status, having CBE, and having done mammography. This study also assessed health beliefs related to BC and BSE using the Champions HBM (CHBM) scale. The mean scores of the HBM constructs in the present study are: perceived susceptibility (7.07 $\pm$ 2.15), perceived severity (20.52 $\pm$

5.05), self-efficacy (24.85 $\pm$ 5.52), perceived benefits (22.21 $\pm$ 4.25), perceived barriers (13.35 $\pm$ 4.04) and general health motivation (27.47 $\pm$ 4.20). The present study also examined the relationship between BSE practice and HBM variables. The score of perceived benefits of BSE and BSE self-efficacy score were significantly higher among BSE performers than among women who never performed BSE (*t's*<-2.876, *p's*<0.011), and the groups did not differ with respect to other HBM variables. The present study observed that the women with perceived benefits of BSE were more likely to perform BSE. It was also observed that women with greater general health motivation were less likely to engage in BSE. This study concludes that only a few female school teachers living in urban areas have an understanding of BC and are less likely to go for BC screening periodically. BC knowledge and screening might be increased through the targeted intervention of BC education, emphasizing the risk factors of BC, the benefits of BSE, and focusing on increasing women's self-efficacy to perform BSE.

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Declaration

I hereby declare that this dissertation is my original work and has not been submitted for any other degree or diploma apart from article publication.

I understand that my MPhil dissertation will become a part of the permanent collection of Tribhuvan University Central Library. My signature below authorizes the release of my dissertation to any readers upon reasonable request.

Dipti Koirala Banjara

MPhil Scholar

10th May, 2025

Recommendation Letter

This is to certify that Ms. Dipti Koirala Banjara, a M.Phil. student, has prepared the dissertation entitled "*Knowledge and screening practices of breast cancer among female teachers in Pokhara"* under my guidance and supervision. She has made all necessary corrections and revisions in accordance with the comments and suggestions of experts and reviewers. I, therefore, recommend the dissertation for acceptance, evaluation and award for the Degree of Master of Philosophy in Health Education.

Prof. Dr. Chitra Bahadur Budhathoki

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Date: 15th May, 2025

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Approval Letter

We certify that the dissertation entitled **"Knowledge and Screening Practices of Breast Cancer among Female Teachers in Pokhara"**, presented by Dipti Koirala Banjara to the Faculty of Education, Tribhuvan University, for the degree of Master of Philosophy in Health Education, has been approved on 23 May 2025.

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CHAPTER I

Introduction

Breast cancer is a key public health concern and a top cause of cancer-related deaths among women globally. Early detection through regular screening significantly increases the chances of successful treatment. Yet, many women in low- and middle-income countries, including Nepal, lack adequate awareness and do not engage in routine screening practices. Female teachers, as educated and influential figures in society, play an important role in health education and awareness, but their own knowledge and screening behaviors remain underexplored. In the context of Pokhara, a rapidly developing urban area, there is a noticeable gap in research studies focusing on this key population. This study seeks to evaluate the knowledge and screening practices concerning breast cancer among female teachers in Pokhara.

Background of the Study

Cancer, also called malignant tumors or neoplasms, is a broad category of disorders that can affect any region of the body. Abnormal cells proliferate quickly, develop outside of their natural bounds, and can infiltrate nearby bodily sections before spreading or metastasizing to other areas. The main reason for death of people from cancer is because of widespread metastases (WHO, 2022a). Cancer is a topmost cause of death worldwide and accounts for around 10 million deaths in 2020 in both sexes and all ages. Breast cancer [BC] is the commonest type of cancer among all cancers, with the number of new cases among 2.26 million (11.7% of all cancer cases) in 2020. It caused deaths of 6,84,996 people (6.9% of all cancer deaths) in 2020 being the fifth common cause of all cancer deaths (Globocan, 2020a).

BC is also the most prevalent cancer globally. There were 7.8 million women alive who were diagnosed with BC in the past 5 years as of the end of 2020. There are

more lost disability-adjusted life years (DALYs) by women to BC globally than to any other type of cancer. Every country in the globe has women with BC at any age after puberty, though the incidence rises with age. From the 1930s to the 1970s, BC mortality rates barely changed. However, in nations that used early detection strategies and various forms of therapy to end invasive disease, survival rates started to rise in the 1980s (WHO, 2021).

In the United States, cancer is the biggest cause of death after heart disease. It accounts for one out of every five fatalities. Except skin cancer, BC is the most prevalent cancer among women in the US. In 2020, there were 602, 347 cancer-related deaths and 1,603, 844 new cancer cases. BC was observed in 119.2 out of 100,000 individuals (U.S. Cancer Statistics Working Group, 2023). BC is common among middle-aged and older women. When BC is diagnosed, the median age is 62. Women under 45 make up a relatively small percentage of those with a BC diagnosis. Since 1989, BC's death rates have been gradually declining, resulting in a 43% overall drop through 2020. Better therapies, greater awareness, and early detection of BC through screening are thought to be the causes of the decline in death rates (American Cancer Society, 2023).

In the context of Asian countries, the incidence of BC and deaths is rising, including Nepal (Dhakal et al., 2022). In Nepal, BC is the second most frequent cancer among women after cervical cancer, with 1973 new cases in 2020. Cancer mortality in Nepal is higher in females as compared to males–7,385 and 6,244, respectively, and BC contributes to 7.7% of female deaths (Globocan, 2020b). A retrospective analysis of hospital records of BP Koirala Memorial Cancer Hospital (BPKMCH) from January 2014 to December 2018 showed 2115 cases of BC during the five-year period. There were 2052 females and 63 male patients, and their mean

age of appearance was 48 years (±11.74). A higher burden of this cancer was seen among people of the Terai region (Sapkota et al., 2022). Similarly, a retrospective analysis of 205 BC cases was done at the Department of Pathology in BPKMCH from 15 April 2018 to 14 April 2019. In the study, 96.5% were females, and 88.6% cases were invasive ductal carcinoma of no special type. It was most common in the age group 41-50 years (32.2%), with the cases seen between the ages of 21 to 70 and above. By ethnicity, Terai/ Madhes were commonest with 82 (40.1%) cases, 55 (26.9%) cases were from Brahman/ Chhetri, 54 (26.4%) cases were from Janajati/Newar, and 14 (6.8%) cases were from the Dalit community (Pun et al., 2020). There is an unavailability of population-based BC registries [PBCR] in Nepal (Giri et al., 2019), and there exists an immediate need for the implementation of PBCR in Nepal (Dhakal et al., 2022).

The goal of the WHO Global Breast Cancer Initiative [GBCI] is to prevent 2.5 million BC deaths worldwide between 2020 and 2040 by lowering BC mortality by 2.5% annually. Reducing global BC mortality by 2.5% per year would avert 25% of BC deaths by 2030 and 40% by 2040 among women under 70 years of age (WHO, 2021). The three pillars of action for reaching these goals are set. The Pillar 1 promotes health promotion for early detection through public health education in order to increase women's knowledge the signs and symptoms of BC and of the significance of early identification and treatment. A diagnosis of at least 60% of invasive BC at stage I or II is the goal. Pillar 2 focuses on timely diagnosis by educating the public and healthcare professionals on the signs and symptoms of early BC so that women are directed to diagnostic services when necessary. The goal is to finish pathology, imaging, tissue sampling and evaluation in 60 days. The Pillar 3 advocates for complete BC management by expanding centralized services and

specialized BC treatment and care. The target is to have 80% of patients to complete multimodality therapy programs and return home safely (WHO, 2022b).

There is a dearth of BC survivor data, no national screening program, and no explicit guidelines for managing BC in Nepal. Common diagnostic procedures utilized for early identification and detection in Nepal include breast self-examination (BSE), clinical breast examination (CBE), breast ultrasonography, and mammography. Treatments frequently employed include radiation, chemotherapy, and modified mastectomy. In Nepal, cancer patient health care and delivery systems are still in their infancy and cancer screening and treatment services are provided by both public and private healthcare facilities (Dhakal et al., 2022).

BC screening is the process of examining a woman's breasts for cancer before any symptoms or indicators of the condition show up. Health care providers should inform all women about the best screening options for them. Although screening cannot avert BC, it can aid in its early detection, when treatment is simpler. The various BC screening tests are mammography, breast magnetic resonance imaging (MRI), CBE and BSE. The United States Preventive Services Task Force commends for women between 50 and 74 years and are at average risk for BC to get a mammogram every two years. Women of 40 to 49 years should talk to their doctor or health care provider about when to start and how often to get a mammogram. Women should weigh the benefits and risks of screening tests when deciding whether to begin getting mammograms before age 50. Breast MRI is used along with mammograms to screen women who are at increased risk for getting BC. They are not done for women at average risk since breast MRIs might appear irregular even when there is no cancer. A CBE is an examination performed by a physician or nurse who feels for lumps or other changes with his or her hands. BSE means being familiar with own breast by

looking and feeling for symptoms such as lumps, pain, or changes in size (Centers for Disease Control and Prevention, 2023). According to American Cancer Society (2022), women with average BC risk should get a mammogram every year, start screening with one between 40 and 44, get one every year between the ages of 45 and 54, or switch to one every other year or continue to get one annually. Screening should be done as long as a woman is healthy and has at least 10 more years to live. CBE is not advised for BC screening among average-risk women of any age.

A study reviewed current guidelines for breast cancer screening in various countries. According to the study, industrialized nations issued the majority of the international standards, which included recommendations on BC screening age, procedures, and intervals that were essentially the same but not exactly the same. Most of the guidelines recommended annual or biennial mammographic screening between 40 and 74 years for average-risk populations and annual MAM or annual MRI starting from a younger age for high-risk populations (Ren et al., 2022). BSE is a simple, cost-effective and noninvasive technique for early BC diagnosis and a crucial screening procedure for all women over 20. It involves the woman herself looking at and feeling for any change in their breast as early as possible, which yields a better survival rate (National Breast Cancer Foundation, 2020).

Lack of knowledge about early BC screening causes many women to miss out an opportunity for early identification and treatment. Various studies have been conducted in Nepal related to BC across various populations. Rademaker et al. (2022) conducted a scoping review to find knowledge, attitude, and screening practices for breast and cervical cancers among Nepali women which concluded that knowledge and screening practices for breast and cervical cancer are poor and highlighted the need for awareness and education programs. Other studies also have revealed that the

overall knowledge and practice of BSE is inadequate among women of reproductive age in Nepal (Poudel & Dhakal, 2021; Marahatta & Sharma, 2018; Sathian et al., 2019).

A study done among women of Kathmandu Valley also found that the prevalence of poor screening behavior with 3.4% undergoing MMG biennially, 7.2% CBE annually, and 14.4% BSE monthly (Bhandari et al., 2021). Mulmi et al. (2021) also concluded a low rate of regular screening practices among the first-degree relatives of breast cancer patients in Nepal.

A study was conducted among 200 female academicians in Turkey in 2018, which determined their BC screening behaviors and also uncovered the relationship between their screening behaviors and health beliefs. The female performing BSE had higher perceived sensitivity (OR = 2.88) benefits to BSE (OR = 0.90), self-efficacy (OR = 0.87), health motivation (OR = 1.74), benefit to mammography (OR = 0.97), lower barrier to mammography (OR = 1.05) than women who did not (Kirag & Kızılkaya, 2019). However, awareness and screening practice among female educationalists in the context of Nepal is not known and needs investigation.

Statement of the Problem

Breast cancer is an international health issue, with the increase in incidence and prevalence of the disease. It causes significant morbidity and mortality among women. Its burden is increasing in Nepal as well. For better results and survival, early detection is essential. Two methods for early BC detection are screening and early diagnosis. Limited resource settings with weak health systems where many women are diagnosed in late stages should prioritize early diagnosis programs based on awareness of early signs and symptoms and prompt referral to diagnosis and treatment (WHO, 2022b). Nepal is not an exception to this, where there is a significant delay in

detection leading to diagnosis at advanced stages, giving a poor prognosis (Giri et al., 2019).

Various studies have been done across various female populations of Nepal to assess awareness regarding the disease and screening tests. Evidence has shown that Nepalese women have limited awareness regarding the disease and poor screening practices (Rademaker et al., 2022; Bhandari et al., 2021; Mulmi et al., 2021; Poudel & Dhakal, 2021; Sathian et al., 2019; Marahatta & Sharma, 2018). In the context of school teachers of Nepal, a study showed inadequate awareness of BC among half of the teachers of Gokarneswor municipality (Pokharel et al., 2024). Female teachers who are well aware of BC and screening tests can not only reach women in a community but also benefit students in the long run. Assessment of knowledge and practice regarding breast cancer among school teachers is important (Mekuria et al., 2020).

Therefore, the researcher intended to conduct a study among this group of population. In addition, the Health Belief Model [HBM] has been proven to predict such screening behaviors among women in low and middle-income countries (Ngan et al., 2022; Birhane et al., 2015). Champion (1984) first applied the HBM framework to investigate women's beliefs regarding BC and breast screening behavior, including BSE and mammography, and also developed Champion's Health Belief Model Scale (CHBMS) (Champion, 1993; Champion, 1999). This scale has been widely used to predict BC screening rates and has been adapted to many languages and cultural settings and used in countries such as Indonesia (Dewi, 2018; Dewi, et al., 2019), Ethiopia (Birhane et al., 2015), Malaysia (Htay, et al., 2021), Vietnam (Nguyen et al., 2023), Turkey (Kirag & Kizilkaya, 2019), Iran (Pirzadeh, 2018), and Thailand (Suriyong, et al., 2023; Taneepanichskul et al., 2023) and have shown various results

related to the significance and magnitude of HBM factors in predicting BC screening practice. However, the relationship between HBM and BC screening practice among Nepalese women needs exploration. Therefore, the present study aimed to investigate the understanding of BC and screening practices among female teachers in the Pokhara Metropolitan of Kaski district, Nepal.

Objectives of the Study

The general objective of the study is to examine the understanding of breast cancer and screening practices of female teachers in the Pokhara Metropolitan of Kaski district.

The specific objectives are to:

1. identify the level of knowledge on breast cancer
2. measure the difference in knowledge score according to socio-demographic and health-related variables
3. find out the breast cancer screening practices (BSE, CBE, Mammography) among female teachers
4. measure the association between breast cancer screening practices and BC knowledge
5. measure the association between breast cancer screening practices and socio-demographic and health-related variables
6. examine the relationship between BSE practice and health belief model constructs (perceived susceptibility, perceived severity, perceived benefits, perceived barriers, health motivation, and confidence)

Research Questions

1. What is the level of knowledge regarding breast cancer among female teachers of Kaski?

2. Is there a difference in BC knowledge score according to selected variables of the teachers?
3. What are the breast cancer screening practices among the female teachers of Kaski?
4. What are the factors associated with breast cancer screening practices?
5. What are the teachers' beliefs related to BC and BSE according to HBM constructs?
6. Is there a difference of means between the two independent groups (screened/not screened) in relation to HBM constructs?

Significance of the Study

The result of this study has added valuable information about BC knowledge and screening practices among female schoolteachers residing in Pokhara metropolitan of Kaski district. In addition, this study has examined the factors associated with BSE practice, including the role of HBM variables. This information may be beneficial for concerned authorities to develop health education intervention plans. The results may be useful for developing IEC materials in the future and stimulate regular BSE among educated women of Nepal.

Delimitations of the Study

On the basis of available time, logistic support, and information available, I have delimited this study under the following boundaries:

1. This is a cross-sectional study and not a longitudinal one. So, it provides information regarding the status of BC knowledge and screening practices on the specific point of time.

2. This study is delimited to female teachers working in community schools of the Pokhara metropolitan only, as the researcher could obtain the list of teachers working in this setting only.
3. The study is limited to BC knowledge only. Researcher has not measured the teacher's present degree of knowledge on BSE in general. Their practice and perceived efficacy, benefit, and barriers to BSE is only assessed.

Operational Definitions

Knowledge of breast cancer	In this study, it refers to the respondents' ability to identify BC symptoms, age-related and other risk factors, based on their correct responses. Women were considered to be aware of BC symptoms if they could identify five or more of the eleven non-lump symptoms on the list; could identify five or more risk factors out of 10, including age-related risk factor and also stated that they checked their breasts at least once a week or once a month. This definition has been adopted from the study of Linsell et al. (2010) as well as Ngan et al. (2022).
BC Screening practice	In this study, it refers to the self-reported performance of BC screening practices (BSE, CBE, and mammogram) of the participants, which is measured using three questions: (how often do you check your breasts, have you ever done CBE and have you ever done mammography). A definition of BSE, CBE, and mammography was provided alongside the respective questions to ensure that respondents have a common understanding of the terms. The frequency of performing BSE was determined. Mammography and CBE screening practice of the participants is

	characterized by reason and time since the last examination.
Beliefs/attitudes towards BC	It is an individual's subjective feelings or perceptions or beliefs of the risk of getting breast cancer. Beliefs were measured by adapting a validated and reliable Champion's Health Belief Model Scale which consists of 37 items grouped into six subscales, Perceived susceptibility (3 items), perceived seriousness (7 items), perceived benefits (6 items) and perceived barriers (6 items), general health motivation (7 items) and self-efficacy (8 items)**.** These six HBM constructs were measured using a 5-point Likert scale from strongly agree to strongly disagree. The subscales were scored so that a high score means greater susceptibility, seriousness, benefits, barriers, general health motivation, and confidence (Champion, 1993).
Female teachers	The female teachers teaching in the community schools of Pokhara Metropolitan are either at the primary or secondary level.

Chapter Summary

Breast cancer is global health problem. Having BC knowledge and its screening practices can help detect BC in early stage and thus reduce significant mortality and morbidity. However, it is unanswered that what proportion of school teachers of Pokhara have BC knowledge and do screening practices. Their beliefs about BC and about BSE needed exploration. So, this study aimed to examine the understanding of BC and screening practices of female teachers in Pokhara Metropolitan of Kaski district.

CHAPTER II

Literature Review

This chapter presents a review of the literature related to BC knowledge and screening practices in Nepal. Electronic searches were used to locate the relevant literature. The keywords used in the online search were “breast self-examination”, “breast cancer”, “breast cancer screening”, “knowledge”, “practice”, “behavior”, and “Health belief model”. The search includes both research as well as non-research literature published within ten years from Nepal. In addition, only those studies using HBM for predicting BC screening practices outside Nepal are also considered. The online websites used for literature reviews were Google Scholar, Research4Life, and PubMed. The reviewed literatures are paraphrased or summarized, and organized below:

Review of Theoretical Literature

Introduction to breast cancer. Breast cancer is a condition when there is proliferation of cells in the breast uncontrollably. Although it can start anywhere in the breast, the ducts or lobules are where it usually starts. It can spread outside the breast (metastasize) through blood vessels and lymph vessels (WHO, 2021).

Signs and symptoms of breast cancer. Breast cancer symptoms differ from person to person. Some people have absolutely no symptoms or indicators. However, a new lump in the breast or underarm (armpit), thickening or swelling of a portion of the breast, irritation or dimpling of the breast skin, redness or flaky skin in the breast or nipple area, pulling in of the nipple or pain in the nipple area, nipple discharge other than breast milk, including blood, any change in the size or shape of the breast, and pain in any part of the breast are some warning signs of breast cancer. While many conditions can cause breast lumps, including cancer, most (90%) are caused by

other medical conditions like fibroadenomas and cysts (Centers for Disease Control and Prevention [CDC], 2023).

Risk factors of breast cancer. Breast cancer is associated with a number of risk factors. Certain risk factors, such as being a woman, which is the highest risk factor for breast cancer, cannot be altered. Men are affected by breast cancer in about 0.5–1% of cases. Additional variables that raise breast and ovarian cancer risk are increasing age, with most diagnosed after age 50, and genetic mutations, such as women having inherited changes/mutations to certain genes like BRCA1 and BRCA2.

Women who begin menopause after the age of 55 and had menstrual cycles before the age of 12 are more exposed to hormones, which increases their risk of developing breast cancer. Women are more likely to develop breast cancer if they have a personal history of the disease or if they have certain non-cancerous breast conditions such lobular carcinoma in situ or atypical ductal hyperplasia.

A woman's risk increases if she has a positive family history of ovarian or breast cancer. If a woman has a mother, sister, or daughter (a first-degree relative) or several family members on her father's or mother's side of the family who have had breast or ovarian cancer, her risk of developing breast cancer is increased. A woman's risk further increases if she has a first-degree male relative who has breast cancer. Women receiving radiation therapy to the breasts or chest before the age of 30, for example, to treat Hodgkin's lymphoma have increased risk for breast cancer later.

There are some other risk factors that can be changed such as women who are not physically active, are overweight or have obesity after menopause, drinking more alcohol, smoking, having their first pregnancy after age 30, not breast feeding and never having a full-term pregnancy, and taking hormone replacement therapy containing both estrogen and progesterone during menopause for more than five

years, and taking certain oral contraceptives have a higher risk of getting breast cancer (Centers for Disease Control and Prevention [CDC], 2023).

Review of Health Behavior Change Theories

Health belief model (HBM). HBM is one of the maximum used conceptual frameworks in health behavior research studies. It provides direction to describe health-related behaviors. It was developed in the 1950s by social psychologists such as Hockbaum, Kegeles, Leventhal, and Rosenstock in the U.S. Public Health Service to explain health-related behavior at the level of individual decision-making (Rosenstock, 1966).

According to this model, a person's subjective experience- their thoughts and perceptions- determines whether or not they will engage in a behavior connected to their health. It contains a number of several elements or constructs that forecast if and why people take action to prevent, identify, or manage medical issues.

Four ideas/concepts made up HBM at first: a) perceived subjective risk or personal vulnerability to a health condition (susceptibility), b) perceived personal harm from the condition (seriousness), c) perceived positive aspects of an action (benefits) and d) perceived negative aspects related of an action (barriers). The original HBM was eventually expanded to include the idea of general health motivation. Health motivation is defined as 'an individual's degree of interest in and concern about health matters' (Mikhail, 1981, p.68). More recently, the concept of confidence is added to HBM which is defined as the belief that one can effectively carry out a behavior that will subsequently result in a desirable outcome. Confidence is synonymous with Bandura's concept of self-efficacy (Conner & Norman, 2015; Champion, 1993).

The researcher has used HBM for this study since it has been proven to predict such screening behaviors among women in low and middle-income countries (Ngan et al., 2022; Birhane et al., 2015). Several studies have been done using HBM variables to examine BSE or other breast cancer detection behaviors in women. Champion (1984) first applied the HBM framework to investigate women's beliefs regarding breast cancer and breast screening behavior, including BSE and mammography (Champion, 1993; Champion, 1999). In this study, HBM constructs includes perceived vulnerability (3 questions), perceived seriousness (7 items), perceived benefits (6 items), perceived barriers (6 items), health motivation (7 items), and confidence (8 items) on 5-point Likert -type scales (I completely agree = 5; I agree = 4; I have no opinion = 3; I disagree = 2; and I completely disagree = 1) previously developed by Victoria L. Champion. The subscales are scored so that a high score means greater susceptibility, seriousness, benefits, barriers, general health motivation and confidence (Champion, 1993).

Review of Empirical Literature

Awareness and knowledge of breast cancer in Nepal. A research assessed BC awareness among 220 female school teachers of Gokarneswor municipality, Kathmandu selected from nine different government and private schools of ward 4, 8, 9. In the study, 72.8% were below age 40 years and 19.9% were working in government schools. Nearly half were aware of obesity (46.8%), use of contraceptives (43.6%), and not breastfeeding (60%) as risk factors of BC. The three most known symptoms were: breast lump (92.7%), bleeding or discharge from nipple (78.6%), pain in breast or armpit (74.5%). The study found that nearly half had an inadequate ($\leq$ 50% of the mean value) level of awareness. Education status (p=0.007) and type of school (p=0.014) had a significant association with awareness level, whereas age,

religion and teaching experience had no association in that study (Pokharel et al., 2024).

A scoping review was done among Nepalese women to assess knowledge, attitudes, and screening practices for breast and cervical cancers. Five electronic databases (CINAHL, Embase, Global Health, PsycINFO, and PubMed), grey literature, and reference and citation lists were searched for articles published in English up to June 2021 yielding 615 articles out of which 27 cervical cancer and 10 breast cancer and 1 both cancers were included in the study. The study concluded that knowledge and screening practices for breast and cervical cancer among Nepali women were poor and highlighted the need for awareness and education program (Rademaker et al., 2022).

A cross-sectional study assessed BC knowledge and its associated factors among female adolescents studying in secondary-level in a rural municipality of Kaski, Nepal. The study was done among 227 samples who were selected from six secondary schools out of 10 of Machhapuchhre rural municipality using a total enumerative sampling technique from class 9 to 12 using a self-administered questionnaire. 81.5% had heard about BC. Teachers were the major sources of information. Almost half (48.9%) of the respondents had inadequate BC knowledge. The study showed no association of sociodemographic factors with the knowledge level. The study recommended that awareness programs regarding BC and its preventive measures be implemented in secondary schools targeting female adolescents (Banstola & Koirala, 2021).

Breast cancer screening practices/behaviors in Nepal. A study evaluated the impact of an educational intervention on women's intention to undergo a mammography and BSE screening. A total of 360 females between the ages of 40 and

75 were enrolled in the study after one ward was allocated to the intervention (IG; ward number 30) and control group (CG; ward number 33). Following the baseline evaluation, IG participants had an hour-long lecture, discussion, and demonstration on BC screening, which included BSE and mammography with the help of a silicone dummy. The female-trained nurses conducted the session. At baseline and four, eight, and twelve months after the intervention, outcome data were collected. With the exception of subjective norms (SNs), attitudes, perceived behavioral controls (PBCs), and behavioral intentions (BIs) of both mammography and BSE at baseline were comparable in IG and CG. While mammography was only effective at 4 and 12 months, BSE's intentions persisted for 4 months. Additionally, views toward the two exams did not change over the course of 4, 8, and 12 months ($p = <.05$). Women who had good control over PBCs only stayed in both screening tests for four months. In addition, there were notable mean changes in SN at 4 and 12 months for BSE and only at 4 months for mammography screening. At least four months' worth of BSE and mammography intentions were successfully maintained by the session. The study called for additional educational tactics that focused on subjective norms and perceived behavioral controls of both tests to retain the effects longer (up to 12 months) (Dhakal et al., 2023).

A study was done to find BC screening behavior and factors linked to BC screening intention among 500 women residing in five municipalities in Kathmandu, Nepal. Using an interview technique and a structured questionnaire, data was gathered between July and September of 2018. The notion of planned behavior, fatalism, perceived susceptibility, and perceived severity were used to conceptualize the study. The outcome variables were: the intention to have mammograms (MMG) every two years, the intention to have CBE annually, and the intention to do BSE monthly. Each

outcome variable was analyzed independently using a partial proportional odds model. It was discovered that 14.4% had undergone BSE monthly, 7.2% had undergone CBE annually, and 3.4% had received MMG biennially. Women were more likely to intend to use all three screening techniques if they had a good outlook, high subjective norms, and high perceived behavioral control. Similarly, when women believed they were at risk for breast cancer, they were more likely to intend to have CBE and MMG. On the other hand, women who held strong fatalistic views about BC were less likely to intend to have CBE. The study women exhibited poor screening behavior, according to the study's findings. Compared to CBE and mammography, BSE was used more frequently (Bhandari et al., 2021).

A survey was done to find out BC screening behavior and its contributing factors among Pokhereli women, Nepal. Data were collected from 269 females ranging from 30 to 69 years residing in ward number 33 of Pokhara who were selected using systematic sampling. The study found that only 12.3% of women have ever undergone BC screening. They performed either BSE (15.2%), CBE (54.5%), Mammography (27.3%), and, breast ultrasound (3.0%). The study concluded that very low number of women are practicing breast screening measures in the area. Factors like educational status, heard about BC, having breast problems, and health care professional recommendations were associated with screening behaviors. The collaboration among different local health sector is needed to increase community awareness and practice of different breast screening measures by women (Poudel & Dhakal, 2021).

BC screening practices were assessed among 150 purposefully chosen first-degree female relatives of BC patients receiving treatment at BPKMCH. Data was gathered by interviews and a semi-structured questionnaire with research participants

ranging in age from 20 to 60. Participants were 37.6 years old on average (SD 10.9). Around two third (77.3%) women had ever done BSE (regular=34.7%; irregular= 42.7%) and 28.0% had ever practiced CBE (regular=14.7%; irregular=13.3%). Merely 10% of the women have had routine mammograms. Of them, only two-fifths were well aware of the risk factors and symptoms of BC. In conclusion, the study stated a low rate of regular screening practices among the first-degree relatives of BC patients. There is a need to provide comprehensive, and inclusive information and support and interventions aimed at increasing awareness of the importance of healthy behaviors in cancer prevention among these high-risk groups (Mulmi et al., 2021).

Thapa et al. (2021) conducted a cross-sectional study at Patan Academy of Health Sciences using a structured questionnaire to assess the awareness of BC, attitude, and practice of its screening among 172 female support staff. The study found that 64.57% of participants had a poor BC awareness level and screening. More than half (52.76%) had a favorable attitude towards BC screening practice and 37% had done BC screening methods. Awareness and practice were significantly correlated ($r = 0.313$, $p = 0.032$), whereas attitude and practice showed no significant correlation ($r = -0.045$, $p = 0.726$). The study concluded that most of the female support workers knew very little about breast cancer and screening.

Gyawali and Gautam (2021) conducted a descriptive cross-sectional study to assess the practice of BSE and its associated factors among the women of reproductive age of Rapti Sonari Rural Municipality of Banke district. The study showed that 12.2% had practiced BSE. Adequate BSE knowledge was seen among 44.3% of respondents. Only 19.6% had done BSE. The most common cause for non-performance of BSE were: a deficiency of knowledge (50.8%) and a lack of self-confidence (36.7%). Few (8.3%) reported that they performed it occasionally and the

remaining did monthly (0.4%) and weekly (3.5%). The study showed no association between practice and the various factors, like age, education, occupation, ethnicity, and other socio-demographic factors. The study recommended to conduct various educational intervention/ awareness programs at a community level to increase knowledge and practice of BSE.

To evaluate Nepali women's awareness of BSE, Sathian et al. (2019) performed a meta-analysis. They used computerized databases such as Pubmed, MEDLINE, the Cochrane Library, and Google Scholar to search the literature. There were 36 articles found in the search. There were five original articles fulfilling the inclusion criteria for the analysis. The total pooled sample size was 1910 and the overall pooled knowledge was determined to be 27% with a 95% CI. According to the study's findings, women in Nepal lacked a general understanding of BSE, and swift action to increase public awareness of BSE is necessary.

Marahatta and Sharma (2018) conducted a quantitative descriptive cross-sectional study with 219 women of reproductive age residing in Butwal Sub-Metropolitan city in 2016. The study found that 31.1% had ever heard and 19.2% of had ever performed BSE. Marital status, monthly household income and education level were the influencing factors for BSE knowledge while performance of BSE was influenced by monthly household income, education level, and history of breast disease in the study. The study concluded that poor knowledge and inadequate practice of BSE prevail among reproductive age women in the Butwal. In order to bridge the knowledge and practice gap, the study suggested implementing community-based awareness and skill development programs on BSE targeting the women in the reproductive age range.

A study was done in Kathmandu Medical College and Teaching Hospital among 320 female health staff members to assess their knowledge, attitude, and practice regarding BSE. The study found that 72.5%, 21.9% and 5.6% of the respondents had an average, poor and good level of knowledge respectively. Most of them (95%) had a good attitude and only 5.0% had a poor attitude regarding BSE. Knowledge had statistically significant association with age, ethnicity, and marital status (p=<0.05). The study also found a significant association of attitude with age, religion, profession, and level of education (p=<0.05). Knowledge and attitude had a very weak correlation (r=0.094) in the study. The study highlighted the need for educational programs to create awareness regarding BSE (Shrestha[1] et al., 2017).

Sideeq et al. (2017) conducted a descriptive study among 250 female patients of 20-60 years admitted to a hospital in Kashmir in 2014 which found that only 26% of participants had heard of BC. Knowledge regarding BSE was very limited and only 19 (7.6%) study participants had ever heard of BSE, among them only 14 knew the correct method of BSE and all of them also had self-examined their breasts. Out of these 14 participants, 11 had started BSE between the ages of 20 to 30 years. Only 3.2 % of the study participants used to do a regular monthly BSE. Only 10 out of 250 participants were ever exposed to CBE by a medical professional and among them, 3 used to go for yearly CBE, and 6 had gone for clinical examination only once in their life. A significant relationship was observed between knowledge of BC and BSE with educational status and occupation, but not with socioeconomic status.

Application of the health belief model and breast cancer screening behaviors. Several studies have examined BSE or other BC detection behaviors in women using HBM variables. A study was done among 498 Vietnamese women ranging 20 to 84 years to examine BC screening status and associated factors with

their BC screening behavior. In the study, BSE was ever heard by 68.5% of the women. Out of them, 69.2% had ever performed, and 18.8% performed as recommended. For CBE, 38.6% had ever heard out of which 61.5% had ever performed, and 22.4% had done so annually as recommended. Regarding mammograms, 29.7% had ever heard, out of them, 39.2% had ever performed, and 5.4% did as recommended (biannually). Multivariate logistic regression showed the effect of demographic factors on the recommended CBE. A statistically significant relation between education level and annual CBE was seen. The study concluded that educational levels and attitudes towards general health checks are important issues determining compliance and adherence with recommended BC screening practices (Pham et al., 2025).

A study conducted among 372 Iranian women over 40 years of age revealed that 68.3% performed BSE (9.9% regularly, monthly), 60.2% had CBE (8.9% regularly, biannually), 51.3% had mammography (12.3% regularly, annually) and 36.2% had sonography (3.8% regularly, biannually). The study also found that CBE (OR=8.49; 95% CI 2.55 to 28.21; $p<0.001$), mammography (OR=8.84; 95% CI 2.98 to 10; $p<0.001$), and sonography (OR=18.84; 95% CI 6.40 to 53.33; $p<0.001$) were performed more often by women having benign breast disease. Women between the ages of 50 and 59 tend to undergo mammography (OR = 2.33; 95% CI 1.29 to 4.77; $p = 0.008$) and CBE (OR = 2.40; 95% CI 1.347 to 4.20; $p = 0.003$) compared to women $\geq$ 60 years. The study recommended that health authorities to use reminder systems for reminding women over 40 years for breast screening. Health care providers must seek to improve BC knowledge, attitudes, and perceptions of women attending the health centers (Seyedkanani et al., 2024).

A hospital-based study was done by Jiraniramai et al. (2024) to determine the impact of demographics on beliefs about the practice of BSE, using mammogram and ultrasound in the context of BC screening among 130 Thai women aged 40 to 70 years. Education had no statistically significant association with confidence and motivation scores. Those having an education of secondary and below level had greater scores in the seriousness subscale in comparison to college groups (F=3.44, p=0.035). Those with a college education level had greater barrier-BSE subscale score compared to other education level groups (F = 5.32, p = 0.006). Participants having health insurance had more barrier-BSE subscales score compared to other groups (F = 8.50, p = 0.001). Multiple linear regression showed that no any factors had significant association with the seriousness subscale. Health insurance schemes showed statistically significant association with Benefit-MG (p=0.023) and Barrier-BSE (p=0.008). In order to improve BC screening in Thailand, the study suggested that future research and program plans concentrate on health insurance coverage.

Noman et al. (2024) investigated the effect of HBM-based educational intervention on BCS uptake, knowledge, and beliefs among Yemeni school teachers in Malaysia using a cluster-randomized controlled trial. As per the study, the intervention successfully raised awareness, lowered barriers to BCS and enhanced BCS uptake. They emphasized how focused educational initiatives could encourage cancer screening practices among marginalized groups.

Mousavi et al. (2021) conducted a study entitled HBM and determinants of BSE performance among 225 Iranian women using the Champions HBM scale and BC knowledge test. The mean of the BSE performance was 0.53 ± 0.52. There was a significant difference of BCKT score between women, who performed and did not perform BSE (p= 0.001). The mean of the BSE (the number of BSE in the year)

performance was 0.53 ± 0.52. Demographic factors (education, occupation, marital status, breastfeeding, family history of BC, doctor-performed breast examination, kind of issue, and age) and BSE were significantly correlated ($p \leq 0.00$). Participants who were self-employed, had more education, had a family history of breast cancer, or divorce, and were breastfeeding had a greater mean number of BSEs. Perceived severity, susceptibility, benefits, and barriers had mean values of 24.45 ± 7.28, 9.98 ± 4.70, 19.86 ± 5.58, and 26.56 ± 9.40 respectively. The BCKT score had a noteworthy disparity between BSE performing and non-performing women ($p = 0.001$). The study came to the conclusion that removing perceived barriers and raising educational attainment could boost self-care habits.

Taneepanichskul et al. (2023) assessed factors associated with the practice of BSE, confidence in BSE, and the continuity of doing BSE among 405 women aged 30-70 years in Thailand during the COVID-19 pandemic. Health data (BMI, age of menarche, regularity of period, menopausal status, history of pregnancy, presence of congenital disease, family history of any cancer or breast cancer), demographic data (age, occupation, income, education, marital status, insurance type), and factors linked to BC were gathered. These included using a hormone replacement or contraceptive medication for longer than three months, drinking alcohol, smoking, engaging in physical activity, and frequently eating a high-fat diet. BSE was collected using a modified CHBM questionnaire. The results were ever-practicing BSE, BSE practice for the previous six months, BSE continuity, and BSE confidence. The related factors were found using decision tree analysis and logistic regression. Two-thirds (75.55%) of participants reported having ever done BSE. Approximately 74.18% completed BSE in the previous six months. The factors linked to ever practicing BSE were: higher knowledge, attitude, practice/cues of action towards BSE, ever pregnant, not

drinking alcohol, not receiving hormone replacement, and diploma graduates. BSE discontinuance and not practicing BSE within six months were linked to frequent high-fat diets, high breast cancer awareness, low BSE knowledge, and low BSE attitude. Absolute confidence in BSE was only associated with high BSE knowledge (p<0.05). The study came to the conclusion that there is a need to improve BSE knowledge to enhance BSE practice, confidence, and continuity of BSE among Thai women. The BSE program should also focus on women who have sedentary lives and have been exposed to estrogen for a long time.

Ngan et al. (2022) examined breast cancer screening practices among 508 Vietnamese women aged 30-74 years and the factors associated with the uptake of CBE. The study was done in 2019 using a validated tools of BC awareness (Breast CAM) and health beliefs (CHBM scale) and a household face-to-face interview survey. Data were analyzed using descriptive statistics, $\chi 2$, and ANOVA tests across groups with various sociodemographic attributes. The relationships between knowledge, beliefs, and sociodemographic traits and CBE uptake were evaluated using a logistic regression. Although 63% of respondents had already undergone BC screening, the survey revealed that only 18% were knowledgeable of BC signs, risk factors, and screening modalities. With a 51% uptake rate, CBE was discovered to be the most popular screening method. Mammograms were performed on a substantially greater percentage of urban dwellers than on rural ones (32% vs. 18%, $\chi 2$, p = 0.04). In contrast to mammography, there was no association of CBE uptake with sociodemographic factors like residence, education level, occupation, household monthly income, health insurance possession. BC knowledge (OR = 2.44, 95% CI: 1.37–4.32), perceived susceptibility to BC (OR = 1.15, 95% CI: 1.05–1.25), and

perceived barriers to accessing CBE (OR = 0.88, 95% CI: 0.84–0.92) were all linked to CBE uptake.

Carmen et al. (2021) conducted an integrative review of the articles on educational interventions for BC carried out in health care between 2016 and 2021. For analysis, the study chose 19 full-text, quantitative papers written in English, Spanish, or Portuguese. Regarding educational interventions on BC conducted in healthcare, the study discovered that one article included both men and women, while the other 18 articles exclusively included women. The interventions were conducted in stages, workshops, sessions, and with dynamic techniques. The study came to the conclusion that there is an urgent need for educational interventions on BC for both men and women at all stages of life; however, in order to facilitate early prevention, focus should be given to the younger population. By raising awareness and encouraging self-care, these interventions benefit the health sector without adding to expenses.

Kirag and Kızılkaya (2019) conducted a study in 2018 in Turkey among 200 female academicians to examine the projected risk of BC in Turkish women academician, determine the levels of their BC screening behaviors, and uncover the relationship between their health beliefs and screening behaviors. Questionnaires and the CHBMS in Turkish were used to gather data. Using SPSS version 20, the t-test, ANOVA, Chi-square, and logistic regression were used to analyze the data. The average age of the respondents in the study was 36.1 ± 0.53 years. In comparison to women who did not performed BSE, the female performing BSE had higher perceived sensitivity (OR = 2.88, 95% Cl 1.32, 2.66), benefits to BSE (OR = 0.90, 95% Cl 0.82, 0.99), self-efficacy (OR = 0.87, 95% Cl 0.81, 0.93) health motivation

(OR = 1.74, 95% Cl 0.50, 0.90), benefit to mammography (OR = 0.97, 95% Cl 0.88, 1.08), lower barrier to mammography (OR = 1.05, 95% Cl 1.0, 1.09).

Pirzadeh (2018) conducted a study to apply the HBM in BSE among 384 female university students in Iran using the CHBMS. The practice of BSE had statistically significant associations with marital status (p = 0.002) and the education level (p = 0.031) only. Age had a significant association with perceived susceptibility (p= 0.024), perceived barriers (p= 0.014), and self-efficacy (p= 0.011), while the other demographic variables had no significant associations with the components of the HBM. The mostly known BC risk factors were aging (77.6%), family history of BC (77%), and radiation therapy to the chest (69.6%). The majority of the students had no idea that late maternal age for first pregnancy and no pregnancy status were the risk factors for BC. The HBM constructs average score were: perceived susceptibility (8.77 ± 4.16), perceived severity (24.63 ± 5.80), perceived benefits (22.96 ± 12.86), perceived barriers (27.21 ± 17.18) and self-efficacy (24.73 ± 8.78). The practice of BSE was associated with perceived severity (p= 0.011), perceived barriers (p= 0.005), and self-efficacy (p= 0.0001) using independent t-test. The study recommended that educational initiatives be put in place to give thorough information on perceived susceptibility, self-efficacy, and risk factors of BC.

A study was done to predict self-reported BSE practice among 1967 women aged 20-60 years in Indonesia using HBM. The chi-square test compared demographic factors between women doing BSE (either regularly or irregularly) and not doing BSE. Independent-sample t-tests compared HBM constructs between BSE performers and non-performers. Logistic regression analysis was done to compute the association between HBM factors and BSE practice. The average age was 36.17 (SD 11.39). 44.4% of respondents had performed BSE at least once. BSE performance was

associated with age, education, history of breast problems, and family history of cancer ($p<0.05$). Independent samples t-tests showed that perceived benefits, cues to action, and self-efficacy were significantly greater among BSE performers than among non-performers ($t > 6.48$, $p < .001$). The perceived barriers were also significantly lower among BSE performers ($p < .001$). There was no difference among the groups according to perceived susceptibility and perceived severity ($t < -1.22$, *ns*). At last, logistic regression was done to reveal the probability of BSE practice. The study concluded that BSE health instruction programs should focus on the perceived benefits of BSE, emphasizing to raise women's self-efficacy to address and overcome perceived barriers in performing BSE, and help them identify personally relevant cues to action (Dewi et al., 2019).

Descriptive-analytical research was conducted to forecast breast cancer screening practice among 226 Iranian women using the HBM. Data analysis was done using descriptive statistics, Pearson correlation, and regression in SPSS. The study found a poor level of awareness and practice among the women, and there was a noteworthy relationship of women's performance with variables of knowledge, perceived sensitivity, benefits, barriers, self-efficacy, and cues to action. The study concluded that poor knowledge and performance of women indicate a critical necessity for formal instructional programs to sensitize women regarding the vitality of breast cancer screening. These educational programs should consider factors affecting BC screening behaviors (Masoudiyekta et al., 2015).

Research Gap

Empirical evidence shows that HBM can be useful to predict BC screening behavior. However, in the context of Nepal, there is a lack of studies focusing on investigations of the role of HBM in predicting BC screening practices. Very few

studies have been done among the female school teachers of Gokarneswor municipality of Nepal that assessed BC knowledge only. Few studies were found that assessed the factors associated with cervical cancer screening behavior among Nepalese women, including the role of belief factors using HBM. Hence, a review of the literature revealed the need for more investigations regarding the understanding of BC and factors associated with screening practices among female school teachers in Nepal.

Implications of Review of Literature

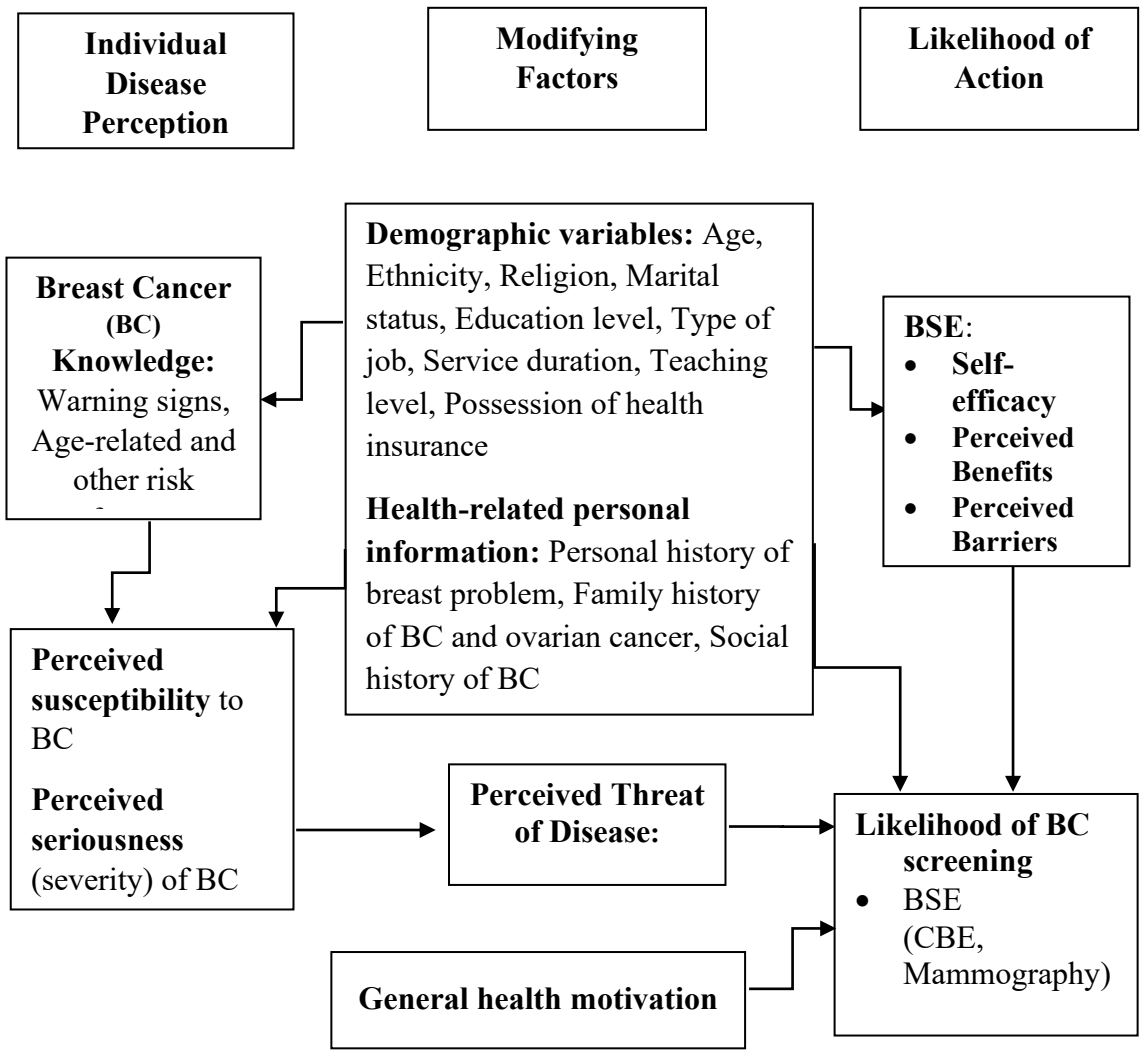
From the literature review, the researcher was able to find enormous research regarding BC awareness and screening practices among various age groups of women in developed as well as developing countries, including Nepal. BSE has been widely studied since it is an easy, safe, and economical health-related behavior. Evidence has shown that Nepalese women have limited awareness regarding the disease and poor screening practices. Researcher found only one study conducted among female teachers of Gokarneswor municipality of Nepal. In addition, several studies have been done among various countries using HBM to identify the role of belief factors in predicting BSE and/or CBE and/or Mammography. While these studies have varied greatly in population, sample size, and statistical techniques used, in general, they support the hypothesis that there is a relationship between the HBM variables and the frequency of BSE and/or CBE and/or mammography in women. However, in the context of Nepal, researcher has found very few studies that assessed the factors associated with cervical cancer screening behavior among Nepalese women, including the role of belief factors using HBM. However, role of belief factors in predicting BSE practice have not been studied in Nepal. Hence, a review of the literature

revealed the need for more investigations regarding the understanding of BC and factors associated with screening practices among female school teachers in Nepal.

Conceptual Framework

Figure 1 presents the conceptual framework developed for the purpose of the study. The HBM is selected as a conceptual foundation for this study to study the screening practices that may result in prevention or early detection of breast cancer. The socio-demographic and health related personal information, knowledge of BC and beliefs about BC and BSE (constructs of this model) serve as the independent variables to identify the correlates and predictors of screening behavior for BC.

Figure 1. *Conceptual Framework Developed for the Study*



First, a woman may have perception that she is in danger for having BC if BCS is not obtained (perceived susceptibility). Also, her likelihood of taking the action of obtaining the screening is associated with her perception of the seriousness of a BC diagnosis (perceived severity). Together, perceived susceptibility and perceived severity are expected to predict her perceived threat and the likelihood of taking action, i.e., completing BCS. This also is influenced by general health motivation and self-efficacy to perform the screening behavior. The HBM also identifies perceived benefits and barriers to taking positive action as factors associated with completing the health promotion behavior. So, the dependent/outcome variable in this study is the status of frequency of BSE practice.

Chapter Summary

In this chapter, various literatures have been reviewed, including theoretical, health behavior change theory (HBM) and empirical literatures in the context of Nepal and outside. The variables of the study are identified and the relationship between the variables are shown in the conceptual framework.

CHAPTER III

Methodology

This section deals with the philosophy of inquiry, research design, study setting, population, sample size, sampling procedure, data collection tools and techniques, data analysis area, and ethical considerations taken for conducting research.

Research Paradigm

A paradigm is a worldview, a general perspective on the complexities of the real world (Polit & Beck, 2012). It is a comprehensive belief system, worldview, or framework that guides research and practice in a field (Willis, 2007 as cited in Taylor & Medina, 2011). A paradigm is a basic belief system with assumptions about ontology, epistemology, methodology, and methods. It is our way of understanding the reality of the world and studying it (Rehman & Alharthi, 2016). Paradigms for human inquiry are often characterized in terms of how they respond to basic philosophical questions like: Ontology (what is the nature of reality?), Epistemology (what is the relationship between the inquirer and those being studied?), Axiology (what is the role of values in the inquiry?), Methodology (how is the evidence best obtained?) (Polit & Beck, 2012).

In this study, the researcher aimed to gain knowledge about the participants through a post-positivist lens. Post-positivism is a milder form of positivism which follows the same principles of positivism but allows for more interaction between the researcher and the research participants. It utilizes additional methods like survey and qualitative methods. This paradigm is the modified scientific method for the social sciences, aiming to produce objective and generalizable knowledge about social patterns (Taylor & Medina, 2011). The nature of this research is applied in terms of

application; descriptive according to objective, and quantitative in terms of inquiry mode.

The ontological assumptions of the positivist paradigm is that reality exists and there is a real world which driven by real natural causes and ensuing effects. Nature is basically ordered and regular, and an objective reality exists independent of human observation. Likewise, post positivists accept the view of positivism, but they agree with the objective knowledge with a chance of error. Therefore, the ontological assumption of my research work is based on the post-positivistic paradigm of objective reality. I have tried to maintain objectivity in my study by specifying clear operational definition of variables, use of validated and reliable measurement tools like CHBMS, BCMS, using a random sampling technique to select participants, reducing the risk of selection bias. I have followed a systematic approach for data collection. I have collected data myself to ensure consistency and minimize the influence of researcher biases.

My epistemological assumption is that knowledge can be gained by observation, measurement, and quantitative data analysis. My axiological assumptions are value-free, and the researcher is independent of those being researched; findings are not influenced by the researcher's values and assumptions. Therefore, attempts were made to avoid subjective biases and maintain objectivity. Likewise, the methodologic assumptions are to follow deductive processes, theory verification, emphasis on discrete, specific concepts, focusing on the objective and quantifiable, corroboration of researcher's predictions, fixed, prespecified design, tight control over context, large, representative samples calculated using formula, measured, quantitative information, statistical analysis, seek generalizations and focus on the

product (Polit & Beck, 2012). These methodological assumptions are also well maintained in this study.

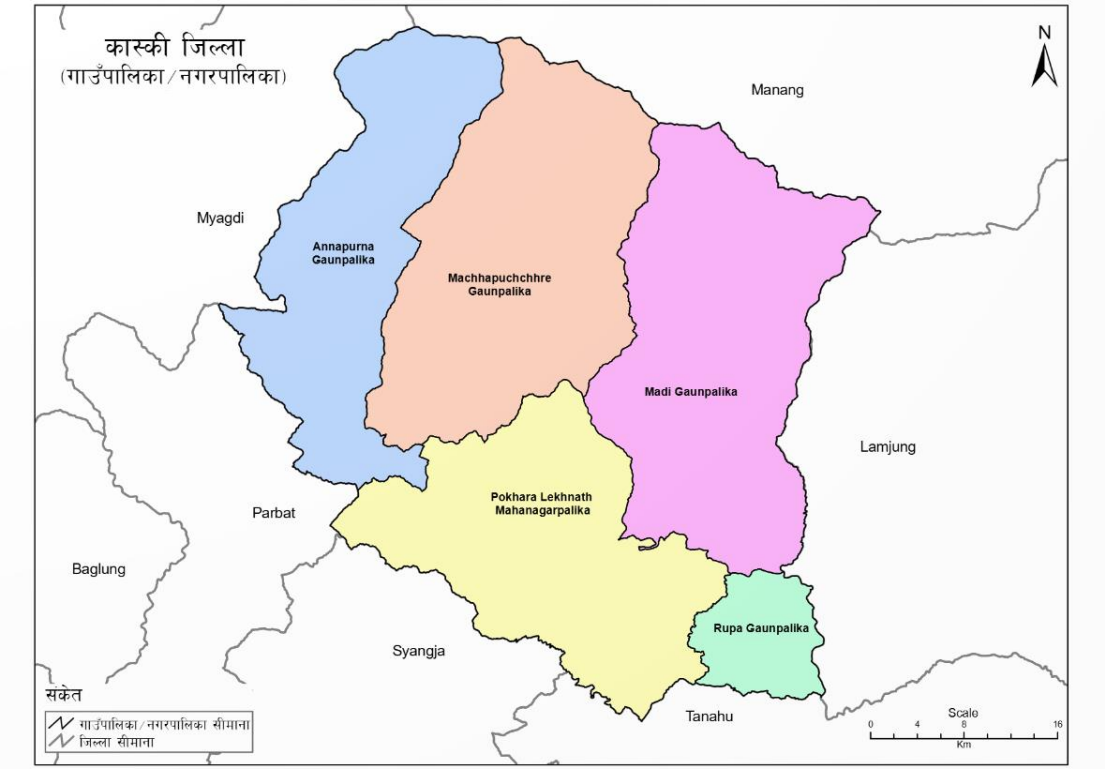
Research Design

A quantitative, cross-sectional survey design was used for this study. Quantitative research deals with numbers and objective stances. This approach is convergent in reasoning, and through rigorous measures uses quantifiable data and utilizes statistical analyses with the aim to generalize results from the sample to a larger population. A cross-sectional method is useful when the data from a selected group of individuals is collected at one point in time, as the researcher does not intend to follow up with the sample (Polit & Beck, 2012). In addition to simply describing the BC knowledge and screening practices, I have tried to investigate relationships between variables to understand the factors affecting BC screening practices. I have formulated hypotheses and then tested them using statistical analysis.

Research Setting and Population

This study was done in the Pokhara metropolitan of Kaski district of Nepal. Kaski district lies within Gandaki province (province four) is one of the seventy-seven districts of Nepal. The district has an area of 2,017 square km and had a total population of 492, 098 according to the 2022 census. This district is located at the centroid point of the country. It has one Metropolitan, four Rural Municipalities, and three Electoral Sectors. Pokhara is the capital of Gandaki Province and is located 200 Kilometres (120 miles) west of Kathmandu, the capital city of Nepal. It has 33 wards and 207 community schools out of which 75 are of secondary level. This setting was selected purposively for the study because researcher could obtain the list of female teachers working in this metropolitan only during the period of proposal development and it was feasible for the researcher to conduct in this setting.

Figure 2. *Map of Kaski District, Province 4 with Study Area Pokhara*



Source: Central Bureau of Statistics, 2068

The targeted population consisted of all female teachers working at the secondary-level community schools of Pokhara. The total number of female teachers working in these 75 secondary-level schools was 654, which was obtained from the record of the Education Division, Pokhara, on 2080/09/26.

Sampling Procedure

Sample size. The sample size was calculated using a formula for a single population proportion:

$n = Z^2pq/d^2$ where, n = minimum sample size for a statistically significant survey

Z= is the significance level (at 5% significance level, its value is 1.96)

p= is the proportion of women doing BSE monthly in Nepal= 19.2%

= 0.192 (Marahatta & Sharma, 2018)

q= 1-p=0.808

d= Allowable error= 5% = 0.05

Sample size (n_o) = $(Z/d)^2 \times p \times q$

$= (1.96/0.05)^2 \times 0.192 \times 0.808$

$= 238.3 \sim 239$

Further, the sample size is estimated on the basis of a finite population. The finite population was 654. Now, for finite population size (n)= n0/(1+n0/N)

=239/(1+239/654) =175.7 ~ 176

Adding a 10% non-response rate = 17.6 ~ 18 and

Therefore, the minimum sample size required for this study was 176+ 18=194.

Sampling technique. A single-stage cluster sampling technique was used to select the samples. In this study, each school was considered a cluster. So, the researcher randomly selected 13 schools using the lottery method from the list of 75 schools that exist in Pokhara Metropolitan, and then all female teachers working in the selected clusters (sample schools) who were available during data collection time were included in the study as samples. Thus researcher collected data from 198 teachers out of the total 214 female teachers of the 13 schools. So, the actual sample size for this study is 198. The list of the sample school and the number of participants is included in the appendix E.

Inclusion/exclusion criteria of respondents. All female teachers teaching in the selected secondary schools of Pokhara who were available and consented to participate in the study were included. Those who were seriously ill, were unable to provide answers, were unwilling to participate, and not available during the time of data collection were excluded from the study.

Data Collection Tool

A semi-structured questionnaire was developed on the basis of extensive review of the literature, along with consultation with the research supervisor and

subject matter experts. In the first phase, the tool was developed in English language. Then it was translated into Nepali language and back translated into English to check for its original meaning with the help of bilingual translators. The tool was organized into four parts as below:

Part I: consisted of items related to socio-demographic information of the respondents (age, ethnicity, religion, level of education, marital status, type of job, duration of service, current teaching level, possession of health insurance)

Part II: consisted of items related to health-related variables (personal history of breast problem, family history of breast and ovarian cancer, history of BC in social circle).

Part III: consisted of items to assess three categories of knowledge of BC [warning signs (11 items), risk factors (10 items), BSE (1 item)] and practices of BSE, CBE, and mammography using yes/no questions. Female teachers were considered to be aware of BC if they identified five or more non-lump symptoms from the list of nine provided; identified five or more risk factors out of 10 and reported checking their breasts at least once a week or once a month (Linsell et al., 2010; Ngan et al., 2022).

Part IV: consisted of 37 items grouped into six subscales to measure HBM constructs including perceived susceptibility (3 items), perceived seriousness (7 items), perceived benefits (6 items), perceived barriers (6 items), health motivation (7 items), and confidence (8 items) on 5-point Likert -type scales (I completely agree = 5; I agree = 4; I have no opinion = 3; I disagree = 2; and I completely disagree = 1) previously developed by Victoria L. Champion. The subscales are scored so that a high score means greater susceptibility, seriousness, benefits, barriers, general health motivation and confidence (Champion, 1993).

Validity and reliability of tool. The validity of the tool was ascertained by an extensive review of updated guidelines and related literature and consultation with the research supervisor and subject matter experts (an oncologist) before and during the construction of the tool. Moreover, validated tools such as CHBMS and Breast-CAM were adapted and modified for use in this study.

The breast-CAM tool was developed by Cancer Research UK, King's College London, and University College London in 2009. It was validated with the support of Breast Cancer Care and Breakthrough Breast Cancer (Linsell et al., 2010). It is an open-access tool available in English, is flexible, provides instruction for using this tool and has been extensively used in breast cancer research. It has been modified by various researchers and used widely. The tool asks researchers to include at least three questions that includes knowledge of BC symptoms, BC age-related risk and frequency of breast checking. It allows researchers to ask additional questions of their own (Ngan et al., 2022). So, I have added the items to assess the knowledge of other nine risk factors of BC. I have also added items to assess socio-demographic and health-related information of respondents as appropriate to our population of interest, i.e., female school teachers, like current level of teaching, job type, job duration, possession of health insurance, past breast problem, family history of BC, and ovarian cancer, social history of BC.

Champion's Health Belief Model Scale (CHBMS) is a valid and reliable tool to assess individuals' attitudes toward breast cancer and screening methods based on HBM. It was initially developed by Champion in 1984 to measure HBM constructs (susceptibility, seriousness, benefits, barriers, and health motivation) in the context of BSE and BC which consisted of 20 to 24 items for each concept, each statement reflecting an attribute of the concept. Champion (1993) refined the instrument to

measure HBM concepts using the context of BC and BSE. A new scale to measure confidence was added. The CHBMS was also revised in 1999 to take the increasing use of mammogram screening into account (Champion, 1999). This tool has been translated into several languages and has been tested among various women. It is a valid and reliable tool and used in many countries, both Western and Eastern cultures.

In Southeast Asia, the current CHBMS is translated and validated for use to assess BC screening behavior in many countries like Malaysia (Htay et al., 2021; Parsa et al., 2008; Noman et al., 2021) and Indonesia (Dewi, 2018). The CHBMS was translated into Thai and modified by adding content about ultrasound for screening BC. The study recommended that this scale could be easily used by healthcare providers to determine the beliefs before planning appropriate interventions to increase early detection (Suriyong et al., 2023).

The Vietnamese version of the HBM scale can be considered a valid tool to survey the beliefs of Vietnamese women in the implementation of BSE behavior (Nguyen et al., 2023). The CHBMS adapted for use in Brazil was also found to be a reliable, valid, and stable tool capable to assess the compliance of Brazilian women with mammographic examinations. Thus, the final configuration of the tool had seven items divided into three domains, with response options ranging from one to five (Moreira et al., 2020).

In the context of Nepal, the psychometric properties, validity, and reliability evidence of the Nepalese HBM scale (NHBMS) has been evaluated and established by Satyal (2013) (alpha coefficient value of 0.70) in the context of cervical cancer screening. So, I have adapted and modified the NHBMS for my study. The researcher obtained written permission from the author of this tool for use before data collection, and the letter is attached in the appendix section.

The reliability of the instrument was maintained by adapting a reliable tool. Pretesting was done among 12 female teachers of a school in Pokhara. After the first pre-testing, items to assess independent variables like income level, smoking, and alcohol consumption habits of respondents were omitted since all the respondents thought as not relevant. Also, the specific multiple-choice questions to assess knowledge regarding BSE were omitted because the researcher also used the CHBMS tool, which included the items related to BSE self-efficacy, barriers, and benefits to BSE. The tool was also felt to be very long and repeated to administer by the pretested respondents. After that, the researcher again pretested among eight female teachers of another school in Pokhara, and it was found to be sound and feasible in administration. Still, the tool was organized in sequential order, and the finalized tool is attached in appendix D herewith.

Data Collection Procedure

This study was done out after the approval of the research proposal from the Graduate School of Education [GSE], Tribhuvan University. Ethical approval was obtained from the institutional review committee of Gandaki Medical College (Reg. no 15/080/081). Before the collection of the data, a written request letter from GSE was submitted to the Education division of Pokhara Metropolitan for permission to conduct the research. They were briefed about the study objective, method, and purpose of the study. Then formal written permission was taken for data collection from the education division along with which the researcher met with head teachers of respective schools who were briefed again about the study and permission was also taken from the principal of each school. They were requested to gather all female teachers of their school in their library or meeting hall or teacher's room as feasible on their proposed date and time for data collection. Then the researcher went to the

respective school on their given date and time. The researcher took help from the head teacher or the assigned teacher by the principal in each school.

Data collection was done by the researcher herself from 13 schools by school-to-school survey in the daytime. It started from a randomly selected school of Ward 17, then continued to Wards 13, 8, 10, 1, 9, 29, 27, 19, 32, 16, 22 and finally from Ward 3. Data was collected by using a self-administration technique. To ensure quality of the data, clear instruction was provided about answering the questionnaire. The average time taken for the administration of the questionnaire was about 20-30 minutes. Data was collected from about 10-20 respondents in a day and data was collected from 12 March to 9 April 2024. After data collection from each school, every query of the respondents was addressed and a formal health teaching regarding breast cancer and its screening focusing on BSE was provided using a multimedia projector and demonstration technique. Those who had breast problems were referred to a gynaecologist.

Data Analysis Procedure

After the collection of data, it was immediately checked for completeness and accuracy. Data were inspected and edited to omit the errors before entry. The collected data was organized, coded and entered into IBM Statistical Package for Social Science (SPSS) version 22 daily. I prepared a codebook for data entry in SPSS. After entry of data, individual variable frequency was checked for ensuring the quality of data. Data was handled by authorized person i.e. by the researcher herself only. Data was analyzed by using both descriptive and inferential statistical methods.

Descriptive statistics such as measures of central tendency (frequency, percentage, mean, median and standard deviation) was used to analyze demographic

data, knowledge on breast cancer, HBM variables and breast cancer screening practice.

Inferential statistics like independent sample *t* test was used to examine the difference in knowledge score according to socio-demographic and health-related variables. The Chi square test was used to measure association between BC screening practices and selected variables. The purpose of the chi-square test statistical test is to examine the group differences when the dependent variable is nominal, such as 'the status of screening' (Polit & Beck, 2012). An independent sample *t* test was also used to find differences in HBM constructs scores according to socio-demographic and health-related factors. Similarly, *t* test was also used to examine the relationship between BSE practice and HBM variables. Pearson correlation test (two-tailed) was also computed to assess the relationship between CHBM domains.

Parametric tests such as the t-test and Pearson correlation were applied after checking the normality of the distribution. The assumption that sample must be randomly selected from the population was also met. Lastly, multivariate logistic regression was performed to explain the effects of HBM variables on the likelihood of BSE practice after checking multicollinearity among predictor variables. The variation inflation factor was 1.153 and tolerance value is >0.1 for all predictors which indicated not a matter of concern for doing regression analysis. The level of significance was considered at 5% with p value <0.05 and 95% confidence interval. The tables have been prepared as per the consultation with the supervisor and statisticians as well as through extensive literature review.

Ethical Considerations

The study was conducted after receiving ethical clearance from the institutional review committee of Gandaki Medical College (Reference no:

15/080/081) on 29 September 2023. Informed verbal and written consent were taken from each participant prior to data collection after giving information about the nature of the study and their role in research. They were also informed about the objective of the study, their voluntariness in participation, and no any foreseeable risk and harm in the study. They were also assured that information would be reported in group and individual identity would not be disclosed in the report, and information would be used for the study purpose only. Every precaution was taken to safeguard the rights of the respondents. Confidentiality of their identities was reassured by using code numbers for all forms, and collected information was used only for the study purpose.

Chapter Summary

This study was a quantitative, cross-sectional analytical survey design done among 198 female teachers of Pokhara metropolitan who were selected using multistage random sampling. Data was collected using a structured questionnaire and self-administration technique following ethical guidelines. IBM SPSS Statistics 22 version was used for data analysis. Data are analyzed using descriptive and inferential statistical methods according to the objectives of the study.

CHAPTER IV

Analysis and Interpretation of Results

This chapter presents the analysis of data using descriptive and inferential statistical measures according to the objectives of the study.

Background Characteristics of the Respondents

This study was conducted among 198 female teachers teaching at the secondary level community schools in the Pokhara Metropolitan area of Kaski district. Their average age was 40.99 years (SD 8.10 years), and they ranged from 21 years to 58 years (see Table 1).

Table 1 *Socio-Demographic Information of the Respondents*

Characteristics	Number	Percentage
Age (in years)		
20-40	102	51.5
41-60	96	48.5
Mean age ± SD = 40.99±8.10; Min 21; Max 58		
Ethnicity		
Brahmin and Chhetri	159	80.3
Others (Dalit, Janajatis)	39	19.7
Religion		
Hindu	187	94.4
Others (Bouddha, Bon)	11	5.5
Marital status		
Married	187	94.4
Others (Unmarried, Widow)	11	5.5
Highest level of education		
Below bachelor's degree (Undergraduate)	43	21.7
Bachelor level (Graduate)	66	33.3
Masters and above (Postgraduate)	89	44.9
Nature of Job		
Permanent	113	57.1

Temporary	85	42.9
Duration of current work (in years)		
1-5	68	34.3
6-10	45	22.7
>10	85	42.9
Mean duration of current work (in years) 11.26 ± 8.76; Max 37 years; Min 1 year		
Current teaching level		
Primary	123	62.1
Lower Secondary	40	20.2
Secondary	35	17.7
Possession of health insurance		
Yes	109	55.1
No	61	30.8
Had in the past but not renewed	28	14.1

Table 1 shows the socio-demographic characteristics of the respondents. Four-fifths (80.3%) of the respondents were from upper caste groups, and 94.4% were Hindus by religion. Most of the women (94.4%) were married, and 89.9% had given birth. Nearly half of the teachers (44.9%) had a master's or above level of education. More than half (57.1%, 62.1%, and 55.1%) were permanent in their job, were teaching at the primary level, and had health insurance, respectively. One-third of the teachers (34.3%) had work experience of five years or below. The health-related information of the respondents is shown in Table 2.

Table 2 *Health-related Information of the Respondents*

Characteristics	Number	Percentage
Personal history of breast problem		
Yes	24	12.1
No	174	87.9
If yes, the type of the problem (n=24)		
Pain in the breast	10	41.7

Breast engorgement	6	25.0
Infection in breast/nipple	5	20.8
Breast lump	3	12.5
Family history of breast cancer		
Yes	13	6.6
No	185	93.4
If yes, nature of the relation been affected (n=13)		
First-degree relatives	3	23.1
Second-degree relatives	8	61.5
Other	2	15.4
Family history of ovarian cancer		
Yes	9	4.5
No	189	95.5
If yes, relation been affected (n=9)		
First-degree relatives	5	55.5
Second-degree relatives	4	44.5
Have a friend or neighbor with breast cancer		
Yes	48	24.2
No	150	75.8
If yes, (n=48)		
Neighbor	32	66.7
Friend	10	20.8
Both	6	12.5

Table 2 shows the health-related information of the respondents. Few respondents (12.1% and 6.6%) had a history of breast problems and a family history of breast cancer, respectively. Around one-fifth of the respondents (24.3%) had a social history of breast cancer, i.e., they had friends or neighbors with breast cancer.

Knowledge Regarding Breast Cancer Among the Respondents

The current study identified the respondent's knowledge on breast cancer based on self-report. Table 3 reveals the knowledge of the teachers regarding breast cancer warning signs.

Table 3 *Knowledge of Breast Cancer Warning Signs among Female Teachers*

Items	Yes	No	Don't know
A change in the position of your nipple	37 (18.7)	49 (24.7)	112 (56.6)
Pulling in of your nipple	46 (23.2)	43 (21.7)	109 (55.1)
Pain in one of your breasts or armpits	112 (56.6)	20 (10.1)	66 (33.3)
Puckering or dimpling of your breast skin	52 (26.3)	32 (16.2)	114 (57.6)
Discharge or bleeding from your nipple	142 (71.7)	18 (9.1)	38 (19.2)
A lump or thickening in your breast	170 (85.9)	13 (6.6)	15 (7.6)
Nipple rash	118 (59.6)	16 (8.1)	64 (32.3)
Redness of your breast skin	113 (57.1)	16 (8.1)	69 (34.8)
A lump or thickening under your armpit	126 (63.6)	21 (10.6)	51 (25.8)
Changes in the size of your breast or nipple	93 (47.0)	19 (9.6)	86 (43.4)
Changes in the shape of your breast or nipple	81 (40.9)	19 (9.6)	98 (49.5)

Table 3 shows that the three most known symptoms were a lump or thickening in the breast in 85.9% of women, discharge or bleeding from the nipple in 71.7%, and a lump under the armpit in 63.6% of women. The three least known symptoms were a change in the position of the nipple (18.7%), pulling in of the nipple (23.2%), and dimpling of breast skin (26.3%). Table 4 shows the knowledge of the risk factors of BC among the respondents.

Table 4 *Knowledge of Risk factors of Breast Cancer*

Items	Number	Percentage
In the next year, who is most likely to get breast cancer? (Age-related risk)		
A 30-year-old woman	15	7.6
A 50-year-old woman	49	24.7
A 70-year-old woman	1	0.5
A woman of any age	86	43.4
Don't know	47	23.7

Other Risk Factors	Strongly Disagree	Disagree (2)	Not sure (3)	Agree (4)	Strongly Agree (5)

	(1) No (%)	No (%)	No (%)	No (%)	No (%)
Having a history of breast cancer	27 (13.6)	10 (5.1)	63 (31.8)	70 (35.4)	28 (14.1)
Using Hormone Replacement Therapy)	17 (8.6)	47 (23.7)	84 (42.4)	40 (20.2)	10 (5.1)
Drinking alcohol every day (more than 1 unit a day)	19 (9.6)	46 (23.2)	49 (24.7)	66 (33.3)	18 (9.1)
Being overweight	14 (7.1)	66 (33.3)	73 (36.9)	36 (18.2)	9 (4.5)
Having a close relative with breast cancer (e.g. sister, mother, daughter)	24 (12.1)	31 (15.7)	27 (13.6)	81 (40.9)	35 (17.7)
Having children later on in life (after age 30) or not at all	17 (8.6)	53 (26.8)	83 (41.9)	34 (17.2)	11 (5.6)
Starting your periods at an early age (before age 12)	24 (12.1)	63 (31.8)	93 (47.0)	14 (7.1)	4 (2.0)
Having a late menopause (after age 55)	21 (10.6)	52 (26.3)	99 (50.0)	21 (10.6)	5 (2.5)
Doing less than 30 minutes of moderate physical activity 5 times a week	21 (10.6)	40 (20.2)	64 (32.3)	60 (30.3)	13 (6.6)

Table 4 shows that the three most commonly known risk factors were having a close relative with BC (58.6%), having a past history of BC (49.5%), and drinking alcohol every day (42.4%). The three least known symptoms were age-related risk (0.5%), early menarche (9.1%), and late menopause (13.1%). Table 5 shows the overall level of knowledge of breast cancer in three domains.

Table 5 *Level of Knowledge of Breast Cancer*

Knowledge Domains	Number	Percentage
Level of Knowledge on Breast cancer symptoms		
No knowledge (0-4)	71	35.9
Having knowledge (≥ 5)	127	64.1
Level of Knowledge on Breast cancer risk factors		
No knowledge (0-4)	160	80.8
Having knowledge (≥ 5)	38	19.2
Breast cancer screening		
Reports checking breast once a month or more frequently	33	16.7
Have never examined breast or does not do monthly	165	83.3
Overall level of knowledge of breast cancer in three domains		
No knowledge	193	97.5
Having knowledge	5	2.5
Mean Score ± SD: 8.47; ± 4.1		

Table 5 highlights that 64.1% and 19.2% of the teachers had knowledge of BC symptoms and risk factors, respectively, i.e., they could identify five or more non-lump symptoms out of 11 and five risk factors out of 10 risk factors of breast cancer. Less than one-fifth (16.7%) of the teachers had knowledge of BC screening. Data shows that only five teachers had knowledge of BC in three domains.

Relationship Between BC Knowledge and Socio-demographic and Health-related Variables

This study measured the difference in knowledge scores of breast cancer according to socio-demographic and health-related variables using independent samples T test and is shown in table 6.

Table 6 *Differences in Knowledge Score of Breast Cancer According to Socio-Demographic and Health-related Characteristics*

Variables	No	Mean Score	*t*	*Df*	*p*-value
Age (years)					
20-40	102	8.44	.457	196	0.648
41-60	96	8.17			
Education level					
Bachelor's level and below	109	8.17	-1.159	196	0.248
Master and above	89	8.85			
Current job type					
Permanent	113	8.64	.656	196	0.513
Temporary	85	8.25			
Duration of current work					
<10 years	113	9.00	2.072	196	0.040
≥ 10 years	85	7.78			
Current level of teaching					
Primary	123	8.52	.213	196	0.832
Lower secondary and secondary	75	8.40			
Have health insurance					
Yes	109	8.95	1.809	196	0.072
No	89	7.89			
Had breast problems in the past					
Yes	24	7.75	-.928	196	0.354
No	174	8.58			
Have a family member with BC					
Yes	13	9.53	.961	196	0.338
No	185	8.40			
Have a social history of BC					
Yes	48	9.62	2.242	196	0.026
No	150	8.11			
Marital status					
Ever married	189	8.52	0.690	196	0.491

Unmarried	9	7.55			
Ever done BSE					
Yes	151	8.75	-1.698	196	0.091
No	47	7.59			
Ever done CBE					
Yes	55	8.83	.757	196	0.450
No	143	8.34			
Ever done Mammography					
Yes	31	9.16	1.006	196	0.316
No	167	8.35			
Overall mean score: 8.47 (SD 4.10); Min 0 Max 20; Total possible score 22					

p value significant <0.05

Table 6 shows that there is a statistically significant difference in the mean knowledge score of breast cancer according to variables such as job duration (p=0.040) and having a social history of breast cancer (p=0.026). Based on the mean score, the knowledge score was significantly higher among those women who had a work duration of 10 years or more and had a social history of breast cancer. However, no significant difference in the score was depicted concerning age, education level, job type, teaching level, having health insurance, having breast problems in the past, having a family member with BC, marital status. Likewise, there is no significant difference of knowledge score with BC screening practices: BSE, CBE, and mammography.

Breast Cancer Screening Practices

Data show that breast self-examination was ever performed by 76.3% of the respondents. However, examination according to the guideline, i.e., at least monthly, was practiced by 16.7% of the respondents (Table 7).

Table 7 *Breast Cancer Screening Practices among the Teachers*

Items	Number	Percentage
Ever done a breast self-examination		
Yes	151	76.3
No	47	23.7
Frequency of practice of breast self-examination		
Rarely	73	36.9
Never	41	20.7
Sometime	8	4.0
At least once a year	28	14.1
At least once every 6 months	9	4.5
At least once a month	22	11.1
At least once a week	11	5.6
Don't know	6	3.0
Ever visited a doctor for a change you have noticed in one of your breasts		
Yes	27	13.6
No	124	62.6
Never noticed a change in one of my breasts	38	19.2
Don't know	9	4.5
Ever had a clinical breast examination		
Yes	55	27.8
No	143	72.2
Ever done mammography		
Yes	31	15.7
No	167	84.3

Table 7 shows that BSE was never performed by 20.7% of the teachers. Few respondents (13.6%) reported that they had been to see a doctor for a change noticed in one of their breasts. One-third of respondents (27.8%) had CBE, and 15.7% had done mammography.

Factors Associated with BC Screening Practices

Bivariate analysis of BC screening and selected variables were performed. Result found that there was a significant association of practice of BSE with variables like having a history of breast problems (p=<0.016), marital status (p=<0.005), having CBE (p=0.003), and having done mammography (p=0.003). Those who had past breast problem, were married, had ever had clinical breast examination and had done mammography tend to perform BSE in comparison to their counterparts (Table 8).

Table 8 *Association of BSE Practice with Socio-Demographic and Health-related Information*

Characteristics	Ever done BSE		X^2	p Value
	Yes	No		
	Number (%)	Number (%)		
Age (in years)				
20-40	76 (74.5)	26 (25.5)	0.357	0.550
41-60	75 (78.1)	21 (21.9)		
Education level				
Bachelor and below	82 (75.2)	27 (24.8)	0.143	0.705
Master and above	69 (77.5)	20 (22.5)		
Current job type				
Permanent	86 (76.1)	27 (23.9)	0.004	0.952
Temporary	65 (76.5)	20 (23.5)		
Duration of current work				
≤10	81 (71.7)	32 (28.3)	3.052	0.081
> 10	70 (82.4)	15 (17.6)		
Current level of teaching				
Primary	97 (78.9)	26 (21.1)	1.212	0.271
Lower secondary and secondary	54 (72.0)	21 (28.0)		
Have health insurance				
Yes	85 (78.0)	24 (22.0)	0.396	0.529

No	66 (74.2)	23 (25.8)		
Had breast problem in past				
Yes	23 (95.8)	1 (4.2)	5.778	**0.016**
No	128 (73.6)	46 (26.4)		
Have family member with BC				
Yes	10 (76.9)	3 (23.1)	0.003 [l]	0.954
No	141 (76.2)	44 (23.8)		
Have friend/neighbour with BC				
Yes	41 (85.4)	7 (14.6)	2.933	0.087
No	110 (73.3)	40 (26.7)		
Marital status				
Ever married	148 (78.3)	41 (21.7)	7.871 [l]	**0.005**
Never married	3 (33.3)	6 (66.7)		
Ever done CBE				
Yes	50 (90.9)	5 (9.1)	9.024	**0.003**
No	101 (70.6)	42 (29.4)		
Ever done Mammography				
Yes	30 (96.8)	1 (3.2)	8.542	**0.003**
No	121 (72.5)	46 (27.5)		

** p value significant (<.05) [l] Likelihood ratio value*

Table 8 shows that there was no statistically significant association of practice of BSE with variables like age, education level, job type, job duration, teaching level, having health insurance, having family member and friends/neighbour with BC.

Association of clinical breast examination and mammography with selected variables is shown in Tables 9 and 10, respectively.

Table 9 *Association of CBE Practice with Socio-demographic and Health-related Information*

Characteristics	Ever done CBE		X^2	*p* Value
	Yes	No		
	Number (%)	Number (%)		

Age (in years)				
20-40	23 (22.5)	79 (77.5)	2.867	0.090
41-60	32 (33.3)	64 (66.7)		
Education level				
Bachelor and below	74 (67.9)	35 (32.1)	2.269	0.132
Master and above	69 (77.5)	20 (22.5)		
Duration of current work				
<10 years	88 (77.9)	25 (22.1)	4.194	0.041
≥ 10 years	55 (64.7)	30 (35.3)		
Current level of teaching				
Primary	83 (67.5)	40 (32.5)	3.641	0.056
Lower secondary and secondary	60 (80.0)	15 (20.0)		
Have health insurance				
Yes	39 (35.8)	70 (64.2)	7.740	0.005
No	16 (18.0)	73 (82.0)		
Had breast problem in past				
Yes	18 (75.0)	6 (25.0)	30.356	<0.001
No	37 (21.3)	137 (78.7)		
Have family member with BC				
Yes	4 (30.8)	9 (69.2)	0.061[l]	0.805
No	51 (27.6)	134 (72.4)		
Have friend/neighbour with BC				
Yes	16 (33.3)	32 (66.7)	0.975	0.323
No	39 (26.0)	111 (74.0)		
Marital status				
Ever married	55 (29.1)	134 (70.9)	6.021[l]	0.014
Never married	0 (0.0)	9 (100.0)		
Ever done Mammography				
Yes	28 (90.3)	3 (9.7)	71.668	0.001
No	27 (16.2)	140 (83.8)		

** p value significant (<.05) [l] likelihood ratio*

Table 9 demonstrates the association of CBE practice with the socio-demographic characteristics of the respondents. It is evident that current job duration (p=0.041), teaching level (0.056), having health insurance (p=0.005), having past breast problems (p=<0.001), being married (p=0.014), and having undergone mammography (p=0.001) had a significant association with CBE practice. Those who had less than 10 years of work duration, were teaching at above primary level, had health insurance, had past breast problem, were married and had done mammography tended to perform CBE in comparison to their counterparts.

Table 10. *Association of Mammography Practice with Socio-demographic and Health-related Information*

Characteristics	Ever done Mammography		X^2	p Value
	Yes	No		
	Number (%)	Number (%)		
Age (in years)				
20-40	10 (9.8)	92 (90.2)	5.457	0.019*
41-60	21 (21.9)	75 (78.1)		
Education level				
Bachelor or below	22 (20.2)	87 (79.8)	3.763	0.052*
Master or above	9 (10.1)	80 (89.9)		
Duration of current work				
<10 years	12 (10.6)	101 (89.4)	5.058	0.025*
≥ 10 years	19 (22.4)	66 (77.6)		
Current level of teaching				
Primary	22 (17.9)	101 (82.1)	1.222	0.269
Lower secondary and secondary	9 (12.0)	66 (88.0)		
Have health insurance				
Yes	23 (21.1)	86 (78.9)	5.443	0.020*
No	8 (9.0)	81 (91.0)		
Had breast problem in past				
Yes	12 (50.0)	12 (50.0)	18.56	<0.001*

			5^{l}	
No	19 (10.9)	155 (89.1)		
Have family member with BC				
Yes	2 (15.4)	11 (84.6)	0.001^{l}	0.978
No	29 (15.7)	156 (84.3)		
Have friend/neighbour with BC				
Yes	10 (20.8)	38 (79.2)	1.286	0.257
No	21 (14.0)	129 (86.0)		
Marital status				
Ever married	30 (29.1)	159 (84.1)	0.161^{l}	0.689
Never married	1 (0.0)	8 (88.9)		

p value significant (<.05) [l] likelihood ratio

Table 10 shows the association of mammography practice with socio-demographic characteristics. There is a statistically significant association of having mammography with variables like age (p=0.019), education level (p=0.052), duration of current work (p=0.025), having health insurance (p=0.020), having a history of breast problems (p=<0.001). Based on the score, middle adults, having a bachelor's or below level of education, having work duration of more than 10 years, having health insurance, having past breast problem tended to have mammography compared to their counterparts.

Attitude/belief towards BC/BSE

This study also assessed health beliefs related to breast cancer and BSE using the Champions Health Belief Model scale. Table 11 shows the overall mean scores in HBM variables.

Table 11. *Descriptive Statistics of CHBM Subscale Variables*

CHBM Subscales	Possible score range	Obtained Minimum, Maximum score	Overall Mean Score
Perceived susceptibility (Items 3)	3-15	3, 14	7.06 ± 2.15

Perceived severity (Items 7)	7-35	7, 34	20.52 ± 5.05
Self-efficacy (Items 8)	8-40	8, 39	24.85 ± 5.52
Perceived benefits (Items 6)	6-30	6, 30	22.21 ± 4.25
Perceived barrier (Items 6)	6-30	6, 30	13.35 ± 4.04
General health motivation (Items 7)	7-35	7, 35	27.47 ± 4.20

**HBM score ranged from 1-5 scale*

The mean scores of the HBM constructs in the present study are: perceived susceptibility (7.07 ± 2.15), perceived severity (20.52 ± 5.05), self-efficacy (24.85 ± 5.52), perceived benefits (22.21 ± 4.25), perceived barriers (13.35 ± 4.04) and general health motivation (27.47 ± 4.20). Tables 12 shows the difference in HBM constructs according to socio-demographic and health information of respondents.

Table 12 *Difference in HBM Constructs Score According to Socio-demographic and Health Information of Respondents*

Variables	No	Perceived Mean Score					
		Susceptibility	Seriousness	Self-Efficacy	Benefit	Barrier	Motivation
Age (in years)							
<40	102	7.24	20.59	24.5	21.8	13.4	27.5
≥ 40	96	6.87	20.44	25.2	22.6	13.2	27.4
t value		1.208	-0.208	-0.942	-1.278	0.331	0.238
p-value		0.228	0.835	0.348	0.203	0.741	0.812
Marital status							
Ever married	189	7.10	20.56	24.8	22.2	13.4	27.3
Unmarried	9	6.22	19.77	24.0	22.1	12.3	30.3
t value		1.202	-0.820	0.477	0.076	0.777	-2.100
p-value		0.231	0.429	0.634	0.939	0.438	**0.037**
Education level							
≤Bachelor	109	7.00	20.88	24.5	22.0	13.6	27.5
≥ Master	89	7.14	20.07	25.2	22.4	13.0	27.4
t value		-0.473	1.095	-0.894	-0.559	1.057	0.227
p- value		0.637	0.275	0.372	0.577	0.292	0.821

Had breast problem in past							
Yes	24	7.95	20.00	25.3	22.4	12.7	28.4
No	174	6.94	20.59	24.7	22.1	13.4	27.3
t value		-2.184	-0.542	0.488	0.296	-0.839	1.217
p-value		**0.030**	0.589	0.626	0.768	0.402	0.225
Have family member with BC							
Yes	13	7.76	22.00	25.0	24.1	13.1	27.7
No	185	7.01	20.42	24.8	22.0	13.3	27.4
t value		1.218	1.088	0.147	1.708	-0.188	0.256
p-value		0.225	0.278	0.883	0.089	0.851	0.798
Have social history of BC							
Yes	48	7.41	21.52	24.0	22.2	12.7	27.2
No	150	6.95	20.20	25.1	22.2	13.5	27.5
t value		-1.298	1.572	-1.118	-0.017	-1.116	-0.513
p-value		0.196	0.117	0.265	0.987	0.266	0.609

p value significant (<.05)

Table 12 shows that there is statistically significant difference among the groups in perceived susceptibility score according to variables like having breast problem in past only (p= 0.03). The mean of perceived susceptibility is greater among those having past breast problem in comparison to their counterparts. There is no statistically significant difference of perceived severity, self-efficacy, perceived benefit and barrier score with sociodemographic and health related variables. There is statistically significant difference in the general health motivation score according to marital status only (p= 0.027).

Table 13. *Correlations among six Domains of CHBM Scale*

Domain	Perceived susceptibility	Perceived severity	Perceived efficacy	Perceived benefit	Perceived barrier	GHM
Perceived susceptibility	1.000	0.267**	0.119	-0.109	0.113	0.004
	.	.000	0.095	0.126	0.113	0.958
Perceived severity		1.000	-0.112	-0.044	0.185**	0.074
		.	0.116	0.542	0.009	0.302

Perceived efficacy	1.000	0.420**	-0.183	0.422**
	.	.000	0.010	0.000
Perceived benefit		1.000	-0.316**	0.391**
		.	0.000	0.000
Perceived barrier			1.000	-0.273**
			.	0.000
GHM				1.000

** Correlation is significant at 0.05 level (2-tailed).*
*** Correlation is significant at 0.01 level (2-tailed).*

Table 13 shows that there is a statistically significant low degree positive relationship between perceived susceptibility and perceived severity scale score (r=0.267, *p*=<0.001). Likewise, perceived severity and perceived barrier also have a low degree of positive relationship (r=0.185, *p*=0.009). Similarly, perceived efficacy have a moderate degree of positive relationship with benefit as well as GHM score (r=0.420, *p*=<0.001; r=0.422, *p*=<0.001 respectively). There is a modest degree of negative linear relationship between variables such as perceived benefit and barrier score (r=-0.316, *p*=0.001), perceived barrier and GHM score (r=-0.273; *p*=<0.001). However, there is low degree of negative relationship between barrier and GHM score (r=-0.273, *p*=<0.001) using Pearson Correlation test.

Association of BSE Practice with HBM Constructs

The researcher examined the mean difference in the HBM scale score (perceived susceptibility, severity, benefits, barriers, health motivation, and confidence) among BSE performers and non-performers (Table 14).

Table 14 *Comparison of CHBM Factors among BSE Performers and Non-performers*

Variables	Performing BSE		*t*	Df	*P* value
	Yes	No			
	Mean (SD)	Mean (SD)			
Susceptibility	7.18 (2.11)	6.68 (2.26)	-1.404	196	0.162
Severity	20.45 (5.36)	20.74 (3.98)	0.396	102.551#	0.693
Self-efficacy	25.47 (5.18)	22.87 (6.14)	-2.876	196	0.004*
Benefits	22.64 (4.09)	20.85 (4.49)	-2.558	196	0.011*
Barriers	13.13 (4.12)	14.06 (3.73)	1.372	196	0.172
General health motivation	27.22 (4.42)	28.29 (3.33)	1.532	196	0.127

#Levene's test indicated unequal variances (F's 5.618, p's 0.019, so degrees of freedom were adjusted

Table 14 shows that the perceived benefits of BSE and BSE self-efficacy scores were significantly higher among BSE performers than among women who never performed BSE (t <- 2.558, p <0.011). The groups did not differ concerning perceived susceptibility, perceived severity, perceived barriers, and general health motivation.

Logistic regression was computed to explain the effects of HBM variables on the likelihood of BSE practice after checking for multicollinearity among predictor variables. The multicollinearity issue was not a concern, as indicated by the tolerance statistics of >0.1 for all predictors and also by the variation inflation factor of <2 in this study. First, researcher looked at the predictive value of the HBM components (Model 1). The results showed that the HBM variables like perceived benefit and general health motivation were significantly associated with BSE practice ($\chi 2$ (6)=23.026, p=<.001) and accounted for 16.5% (Nagelkerke R square) of the variance of BSE practice and correctly classified 79.3% of cases.

Next, the researcher examined whether controlling for sociodemographic characteristics (age, work duration, history of breast problem, social history of BC, marital status, BC knowledge) would change the predictive value of the HBM components in explaining BSE practice, by including the socio-demographic variables in Model 2 in the first step, and the HBM variables in the second step.

The results show that this model significantly predicted BSE practice ($\chi 2$ (12) = 42.801, p = <.0001) and explained 29.8% of the variance in whether participants had ever utilized this screening method. There was 13.3% extra variance explained by sociodemographic variables in this model, compared to Model 1. Table 15 presents the full results.

Table 15 *Hierarchical Logistic Regression Analysis of HBM Factors for Predicting BSE Practice*

Variables	**Model 1[a]**			**Model 2[b]**		
	AOR	**95% CI**	***P***	**AOR**	**95% CI**	***P***
Sociodemographic						
Age				0.970	0.910-1.035	0.361
Work duration				1.057	0.994-1.125	0.077
Knowledge of BC				1.082	0.975-1.201	0.139
Having past breast problem (ref=No)				14.138	1.355-147.566	**0.027**
Have social history of BC (ref=No)				1.740	0.603-5.017	0.306
Married (ref=unmarried)				7.6017	1.234-46.806	**0.029**
***HBM constructs**						
Susceptibility	1.171	0.977-1.402	0.087	1.105	0.910-1.341	0.314
Severity	0.997	0.924-1.074	0.930	0.983	0.905-1.067	0.678

Self-efficacy	1.060	0.984-1.141	0.123	1.057	0.973-1.148	0.192
Benefits	1.128	1.019-1.248	**0.020**	1.142	1.016-1.283	**0.026**
Barriers	0.931	0.847-1.023	0.138	0.935	0.845-1.033	0.185
GHM	0.849	0.765-0.943	**0.002**	0.846	0.756-0.945	**0.003**

[a]*Logistic regression with HBM constructs, Model x2 (6) = 23.026, p<0.001, R2= 11%; 16.5% (Cox & Snell; Nagelkerke), Hosmer & Lemeshow p=0.734*

[b]*Logistic regression with sociodemographic characteristics + HBM constructs, Model x2 (12)= 42.801, p<0.001, R2=19.4%; 29.8% (Cox & Snell; Nagelkerke), Hosmer & Lemeshow p=0.398*

Table 15 shows that the unique correlates of BSE practice in Model 1 were perceived benefits and GHM (*p* 's < 0.020).

The women who perceived greater benefits of BSE (AOR = 1.128, CI = [1.019,1.248]), but had fewer general health motivations (AOR =0.849, CI = [0.765,0.943]) were more likely to perform BSE.

When socio-demographic variables were controlled in Model 2, the HBM components which associated with BSE practice were identical to those in the first model: perceived benefits, and GHM were among the HBM components that explained BSE behavior.

Moreover, having past breast problems (OR = 14.138, CI = [1.355, 147.566]), and being married (OR =7.6017, CI = [1.234, 46.806]) were each associated with BSE practice, suggesting that women who had a history of breast problem and married were more likely to have engaged in BSE practice.

CHAPTER V

Discussions of Results

This chapter deals with the discussion based on the findings of the study. The discussion presents all the findings of the study, comparing and contrasting them with the findings of other studies identified from the review of literature and also with HBM.

Breast cancer is the most common cancer among Nepalese women after cervical cancer. Early identification and management of this disease is linked with decrease in the mortality rate. Therefore, it is critical to understand early warning indicators, risk factors, and early detection techniques, among which BSE is one of the most effective. Particluarly in nations with low and middle incomes, where women are reluctant to talk about concerns pertaining to breast health, giving the women the confidence to assess their own breasts is a crucial first step. Therefore, the current study assessed the understanding and screening practices of breast cancer among female teachers in the Pokhara metropolitan of Kaski district of Nepal. In addition, it investigated which factors affect the likelihood of women's performance of BSE.

This study was done among 198 educated women who were teaching at community schools of Pokhara. Nearly half had a Master's degree in Education (44.9%), were permanent in their job (57.1%), were teaching for more than 10 years (42.9%), and 62.1% were teaching at the primary level. The teachers ranged from 21 to 58 years, with their average age being 40.99 $\pm$ 8.10 years. Few respondents had a history of breast problems (12.1%) and a family history of breast cancer (6.6%).

Breast Cancer Knowledge

This study found that around two third (64.1%) of the teachers had knowledge of BC symptoms, which is in line with the finding of a study conducted among Vietnamese women, where 61% were knowledgeable about BC symptoms. The three most known symptoms were a lump or thickening in the breast by 85.9% of women, discharge or bleeding from the nipple by 71.7% and a lump under armpit by 63.6% of women, and the three least known symptoms were a change in the position of the nipple (18.7%), pulling in of nipple (23.2%), dimpling of the breast skin (26.3%) in this study. The three least commonly known symptoms among Vietnamese women were also 'puckering/dimpling of breast skin' (42%), 'nipple rash' (42%), and 'redness of breast skin' (43%) (Ngan et al., 2022). This study's finding is similar to findings of Pokharel et al. (2024) done among school teachers of the Gokarneswor municipality of Kathmandu where the three most known symptoms were: breast lump (92.7%), bleeding or discharge from nipple (78.6%), pain in breast or armpit (74.5%).

BC risk factors were known to only 19.2% of the teachers. The three most commonly known risk factors were having a close relative with BC (58.6%), having past history of BC (49.5%), and drinking alcohol everyday (42.4%) and the three least known symptoms were age-related risk (0.5%), early menarche (9.1%) and late menopause (13.1%) in the current study. This proportion of knowing is also low in our study in comparison to a study that reported that 40% of respondents knew BC risk factors. However, there is similarity in the commonly known risk factors: 'history of BC' (83%) 'having a close relative with BC' (59%) and the least commonly known risk factors: 'having late menopause' (21%) and 'starting periods early' (17%) (Ngan et al., 2022).

Less than one-fifth (16.7%) reported examining their breast at least monthly or more frequently, which meant having knowledge of BC screening in our study. Overall, very few (2.5%) knew BC in all three domains (symptoms, risk factors, and screening modalities), which is lower in comparison to Vietnamese women (18%) (Ngan et al., 2022). This finding is supported by studies conducted in Nepal among adolescents, where 48.9% had inadequate knowledge (Banstola & Koirala, 2021). Rademaker et al. (2022) also concluded that knowledge about breast cancer among Nepali women is poor. Pokharel et al. (2024) also found that nearly half of school teachers had inadequate level of BC awareness. These findings highlight that female teachers in Pokhara have insufficient knowledge regarding BC reflecting the need of BC education.

Factors Associated with BC Knowledge

There was a statistically significant difference in the knowledge score of BC according to duration of teaching (p=0.040) and having a social history of breast cancer (p=0.026) in this study. Those who had work experience of less than 10 years or had friends or neighbors with BC had higher BC knowledge compared to their counterparts. There was no statistically significant difference in knowledge score according to age, education level, job type, teaching level, having health insurance, having breast problems in the past, having a family member with BC and marital status. In line with the current study findings, a study among schoolteachers in Saudi Arabia also revealed that educational level, family history, and personal breast problems had no association with knowledge. However, marital status and age were associated in that study (Alshareef et al., 2020). In contrast to our findings, Pokharel et al. (2024) revealed that education status had a significant association with

awareness level. Neighbours or friends can be the major source of BC knowledge which can be used while planning and providing BC education programs.

BC Screening Practices

This study revealed that BSE was ever done by 76.3% of the teachers. However, only 16.7% reported examining their breasts at least monthly or more often. Few respondents (13.6%) had ever been to see a doctor about a change they had noticed in their breasts. One-third of the respondents (27.8%) had ever done CBE, and 15.7% had done mammography. This proportion is lower than in the study conducted among female academicians in Turkey, which showed 41.5% performed BSE regularly, 48.5% had at least one CBE, and 33.5% had at least one mammography (Kirag & Kizilkaya, 2019). In line with present study findings, a study conducted among women residing in Kathmandu found that 3.4% had undergone MMG biennially, 7.2% CBE annually, and 14.4% BSE monthly (Bhandari et al., 2021). Poudel and Dhakal (2021) also showed low prevalence of screening behavior among women of Pokhara: BSE (15.2%), CBE (54.5%), Mammography (27.3%), and breast ultrasound (3.0%). The proportion of doing BSE is similar to the finding of Mulmi et al. (2021) done among first-degree female relatives of BC patients at BPKMCH, whereas it is greater in comparison to women of Butwal sub-metropolitan city (19.2%) (Bhandari et al., 2021). The greater proportion of women practicing BSE in this study in comparison to women of Butwal may be because this study's population group was academic women, which would have increased awareness in comparison to the general women. However, monthly performance was among only 16.7%, which is similar to other women in Nepal. This finding reflects the need to reinforce the female teachers to be aware of their breasts.

Factors Associated with BC Screening Practices

This study found that there is no significant difference of BC knowledge with BC screening practices: BSE, CBE and mammography. Having knowledge of BC does not tend to influence the practice. This finding is in contrast to the finding of Mousavi et al. (2021) which showed the score of BCKT had a significant difference between BSE performers and non-performers (p = 0.001). However, in line with this study's finding, Taneepanichskul et al. (2023) also found that high awareness of BC was not associated with practicing of BSE. Only high knowledge of BSE was associated with absolute confidence in BSE (p<0.05). Thus, it can be inferred that having knowledge of BC does not influence BSE practice.

The current study also assessed the association between BC screening practices and socio-demographic and health-related variables. There was no association of age, education level, job type, job duration, teaching level, having health insurance, having family member and friends/neighbor with BC with BSE practice. However, the practice of BSE had a statistically significant association with variables like having a past history of breast problems (p=<0.016), marital status (p=<0.001), having CBE (p=0.003), and having done mammography (p=0.003) in this sample. Women having past breast problem, married, ever had CBE and undergone mammography tend to perform BSE. Contrary to this study's finding, a study showed age had a significant association (p=<0.001) with BSE practice (Kirag & Kizilkaya, 2019). Likewise, Dewi et al. (2019) also showed that older age, higher education, and having a history of a family member with cancer were all positively correlated with performing BSE. In line with present study findings, a study also revealed that having a history of BC in the family had no association with BSE practice (Kirag & Kizilkaya, 2019). Banstola and Koirala (2021) also showed no association between

sociodemographic variables and knowledge level of the female adolescents of Kaski. Factors like educational status, having heard about breast cancer, and having breast problems were associated with screening behaviors in a study (Poudel & Dhakal, 2021). Supporting our study findings, Pirzadeh (2018) also found that marital status (p = 0.002) was associated with the practice of BSE.

This study found that variables like job duration (p=0.041), teaching level (p=0.056), having health insurance (p=0.005), having a past breast problem (p=<0.001), being married (p=0.007), and having mammography (p=<0.001) were associated with CBE practice. Those who had work duration of below 10 years, teaching above primary level, having health insurance, having past breast problem, being married and having done mammography tended to perform CBE compared to their counterparts. The present study also assessed the association of mammography practice with selected variables and found that age (p=0.019), education level (p=0.052), duration of current work (p=0.025), having health insurance (p=0.020), and having a history of breast problems (p=<0.001) had statistically significant associations. The researcher found no studies revealing factors associated with CBE and mammography in the context of Nepalese women. A study conducted in Vietnam showed no association of CBE uptake with education level or possession of health insurance, but there was an association with BC knowledge (Ngan et al., 2022).

Attitude/Belief Towards BC/BSE and Associated Factors

This study also assessed health beliefs related to breast cancer and BSE using the Champions Health Belief Model scale. The mean scores of the HBM constructs in the present study are: perceived susceptibility (7.07 $\pm$ 2.15), perceived severity (20.52 $\pm$ 5.05), self-efficacy (24.85 $\pm$ 5.52), perceived benefits (22.21 $\pm$ 4.25), perceived barriers (13.35 $\pm$ 4.04) and general health motivation (27.47 $\pm$ 4.20). The mean scores

of the HBM constructs in a study done by Pirzadh (2018) were: perceived susceptibility (8.77 ± 4.16), perceived severity (24.63 ± 5.80), perceived benefits (22.96± 12.86), and perceived barriers (27.21 ±17.18) among Iranian female university students.

In the present study, the mean score of perceived susceptibility was 7.07 ± 2.15, which does not seem to be high and could be due to the low level of awareness about age-related and other risks of breast cancer. They might believe that they are not at risk of developing breast cancer, as in a study (Johnson & Dickson-Swift, 2008). They might have a false perception that they are generally healthy and do not need to perform BSE, as in a study done on female students in Malaysia (Akhtari-Zavare et al., 2014).

The current study measured the difference in HBM construct scores by socio-demographic and health information of respondents. The fourth hypothesis was accepted for perceived severity, self-efficacy, perceived benefit, and barrier score. Data showed no statistically significant difference in perceived severity, self-efficacy, perceived benefit, and barrier score according to variables such as age, marital status, education level, having a history of breast problem, having a family member with BC and having social history of BC. However, there was statistically significant difference in perceived susceptibility score with the variable having breast problem in past (p= 0.03) only. Likewise, there was statistically significant difference in general health motivation score with marital status (p= 0.027) only. Those who had past breast problem had higher susceptibility score and those who were unmarried had higher general health motivation score in this study. A study also showed that age and marital status had no significant association with the susceptibility, seriousness, perceived benefit, perceived barrier, confidence and motivation score. Education level

tend to be associated with perceived seriousness and barrier score in that study. Those having education secondary or below level exhibited more scores in the seriousness subscale compared to those having college education. That study also highlighted those participants with a college educational level had higher scores in barrier subscale compared to other education group (Jiraniramai et al., 2024). In line with this study's result, Kirag and Kizilkaya (2019) revealed that age had no association with susceptibility score, but in the contrary, Ngan et al. (2022) found that younger respondents had a significantly higher perceived susceptibility score regarding BC (p<0.001). Supporting our finding, the study revealed no significant difference of age, with perceived severity, motivation, and BSE benefit score. However, there was a significant difference in self-efficacy and BSE barrier scale score according to age.

BSE Practice in Relation to HBM Constructs

The researcher examined the mean difference in the HBM scale score (perceived susceptibility, perceived severity, perceived benefits, perceived barriers, health motivation, and confidence) among BSE performers and non-performers. It is found that the perceived benefits of BSE and BSE self-efficacy score are significantly higher among BSE performers than among women who never performed BSE (t's<-2.558, p's<0.011), which is in line with the HBM (Champion, 1984). However, the groups did not differ for other HBM variables (perceived susceptibility, perceived severity, perceived barriers, and general health motivation), which contrasts with the expectation. In a study conducted among female academicians, sensitivity, benefits, self-efficacy, health motivation, and barriers were found to be related to performing BSE (Kirag & Kizilkaya, 2019). This result might be due to women having inadequate knowledge about vulnerability to breast cancer and the severity of the disease. It might also be due to the presence of some women in the study who may

have had unrealistically optimistic perceptions of their health and thus felt less urgency about performing BSE (Dewi et al., 2019). The contradiction in our findings as compared to other studies and HBM concepts calls for speculation of other possible underlying factors, unique to Nepalese women.

Multivariate analysis showed that the HBM variables like perceived benefit (p= <0.026) and general health motivation (p= <0.003) were significantly associated with BSE practice. The present study predicted that the women who perceived greater benefits of BSE were more likely to perform BSE (AOR = 1.128, CI = [1.019,1.248]). Women with higher general health motivation were found to have non-performance of BSE in this study, which might be due to Nepalese women having low health motivation in general. It is also revealed that women who have had past breast problems tend to perform BSE more often compared to those not having problems. The current study also shows that ever-married women were more likely to perform BSE compared to never-married women. Likewise, having a longer work duration and having social history of BC tends to increase women's performance of BSE, but they are statistically insignificant. Based on these findings, it can be inferred that the study participants, who were not screened or have not had the awareness regarding BC, would benefit from education and/or an intervention program that can raise their awareness about these barriers to BC screening.

Limitations of the Study

The data were collected by using a self-reporting questionnaire, and women were asked to report only whether they had ever performed BSE, not whether they were aware of the BSE guidelines. The difference between women's self-reported knowledge and their actual knowledge could be explored further in future studies.

The unexpected finding that the non-significant relationship between BSE practice and perceived susceptibility, severity, and barrier suggests that some of the women in this study may have had unrealistically optimistic perceptions of their own health and so feel less urgency about performing BSE. Therefore, future studies should investigate the impact of optimistic bias on perceptions of BC susceptibility and the need to engage in screening behaviors (Dewi et al., 2019).

Study samples were taken from the community schools of only one metropolitan of Kaski, providing limited power to be generalized to reflect the entire knowledge and practice of all teachers of the Kaski district.

CHAPTER VI

Conclusions and Implications

This chapter presents the conclusions and implications based on the findings of the study. Both are drawn from each of the findings in light of the limitations of the study. Implications show the usefulness of the study results, including specific areas for further research based on the results obtained in the study.

Conclusion

Based on the findings of the study, it can be concluded that only a few educated women teaching in schools have an understanding of breast cancer in all domains. However, two-thirds of the teachers knew breast cancer (BC) symptoms, one-fifth knew its risk factors, and nearly two in ten women reported examining their breasts at least monthly. Teachers who have longer work durations and possess a social history of BC tend to have greater breast cancer knowledge. Likewise, there is no significant difference in knowledge score with BC screening practices: BSE, CBE, and mammography.

Two-thirds of the teachers have ever examined their breasts by themselves. However, only a small proportion of teachers utilized screening services such as clinical breast examination and mammography in healthcare settings. This indicates that only a limited proportion of educated women residing in urban areas consistently engage in BSE and participate in regular breast cancer screening despite their critical role as educators and influencers in the community,

Having history of breast problems, being married, having clinical breast examination and having done mammography tend to influence the practice of breast self-examination. Married women, who have health insurance, have past breast problem, have ever had mammography and teaching above primary level tend to

perform CBE. Middle-aged teachers with a bachelor's or below level of education, longer work duration, having health insurance, and having breast problems in the past tend to have mammography.

Notably, women who perceive greater benefits of BSE and possess higher BSE self-efficacy are more likely to perform BSE. The HBM constructs like perceived susceptibility, perceived severity, perceived barrier tends to have no influence to BSE behavior. Specifically, perceived greater benefits of BSE emerged as strong predictor of BSE practice, while greater general health motivation did not necessarily translate into BSE behavior. An unexpected inverse relationship emerges between general health motivation and BSE practice, which contradicts existing literature and calls for further investigation.

Thus, this study concludes that there is significant gaps in BC knowledge and screening practices among female teachers in Pokhara, despite their educational attainment and urban residence. Therefore, targeted educational interventions that strengthen risk perception, emphasize the benefits of BSE, and enhance self-confidence in performing the procedure are essential for promoting regular breast cancer screening and early detection which can empower teachers to advocate for preventive health practices in their wider communities.

Implications of the Study

Based on the findings and empirical evidence, the following recommendations and implications can be made for policymakers, researchers, stakeholders, and other academicians.

Practice Implication. The study findings showed a significant association between the perceived benefits of BSE and actual BSE practice; health promotion activities could focus on the benefits of BSE practice as an early detection strategy for

the local context. The result of self-efficacy was positively associated with BSE practice, suggesting the need to institute methods that increase women's self-efficacy and confidence in BSE, such as health education with guided practice. Educational programs should focus on risk factors and symptoms of BC, benefits of BSE, and screening modalities, and/or information, education, and communication materials should be developed to increase knowledge and screening practices of BC among the school teachers.

Policy implication. The study shows that a large number of educated women are unaware of breast cancer symptoms and risk factors. Likewise, a huge number of women do not have regular screening practices for breast cancer. These findings highlight a need for a massive IEC programme among women. This can be the basis for the Pokhara Metropolitan and the Education Division to plan and conduct health education programs regarding BC and its screening tests for early detection and prevention of BC.

Implications for further study. A comparative study can be done among teachers of community and private schools. A study in larger-scale about Nepalese women's BC screening behavior, including more geographical area, and women in various socioeconomic status is also recommended. Since the findings of this study showed that perceived susceptibility, seriousness and barrier were not different for women who did screening and women who didn't, further examination by a qualitative method to understand other factors that may play a role in BC screening, including those not related to HBM, is recommended.

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Appendix A

Informed Consent Form (in English)

Dear Participant,

Namaskar, I am Dipti Koirala, a student of MPhil in Health Education from Graduate School of Education, Tribhuvan University. I am doing a study on **'Knowledge and Screening Practices of Breast Cancer among Female School Teachers of Kaski District**' as a requirement of the program. The findings of the study will be beneficial to identify the degree of need of health education regarding breast cancer and its screening practices among schoolteachers of Pokhara. You are a probable participant of this study. If you consent to participate in this study, you will have to respond to a questionnaire relating to breast cancer that I have prepared to gather data for the study. It will take about 25 minutes to complete and information received from you will be kept strictly confidential and used for study only without your personal identity. The study involves no foreseeable risks or harm to you.

Your participation in this study is voluntary. If you do not wish to participate, you may refuse to do so at any time before or while responding to the questionnaire.

With appreciation for your decision,

Dipti Koirala,

MPhil in health education, 3rd semester student, GSE, Tribhuvan University

Written Consent from Participant

I have been well informed about the study and I understand its content and purpose. I hereby voluntarily give consent to participate in the above-mentioned stud**y.**

Signature of participant ……..

Date ……

Appendix B

Informed Consent Form (in Nepali)

सुसुचित मञ्जुरीनामा फाराम

नमस्कार । म, दिप्ती कोइराला, गण्डकी मेडिकल कलेज, कलेज अफ नर्सिङमा, सहप्राध्यापक पदमा कार्यरत छु र त्रिभुवन विश्वविद्यालय ग्राजुएट स्कुल अफ एजुकेसन अन्तर्गत, M Phil degree in health Education, तेस्रो सेमेस्टरमा अध्यनरत छात्रा हुँ । मैले "कास्की जिल्लामा हुनुभएका महिला शिक्षकहरुमा स्तन क्यान्सर सम्वन्धी ज्ञान र स्तनको जाच सम्वन्धी अभ्यास (ब्रेस्ट स्क्रीनिङ) विषयमा अनुसन्धान गरीरहेको छु र सोसम्बन्धि तथ्याङ्क संकलन गर्न आएकी छु । यो अनुसन्धान :उजर्ष मभनचभभ को आंशिक आवश्यकता पुरा गर्नको लागि गरिएको हो । यो अनुसन्धान गर्नको लागि मैले, गण्डकी मेडिकल कलेजको इन्स्टिच्युसनल रिभ्यु बोर्डबाट र पोखरा शिक्षा महाशाखाबाट अनुमति प्राप्त गरिसकेकी छु ।

यस अनुसन्धानबाट तपाईहरुलाई कुनै पनि हानि नोक्सानी हुने छैन । यहाँहरुलाई अनुसन्धाकर्ताले केहि प्रश्नहरु सोध्नुहुनेछ र ती प्रश्नहरुको आफुलाई मिल्ने उत्तर दिनुहुन अनुरोध गर्दछु । प्रश्नावली भर्नका लागि २०-२५ मिनेटको समय लाग्न सक्छ । तपाईबाट आएका उत्तरहरुले पोखरा महानगरमा हुनुभएका शिक्षीकाहरुमा स्तन क्यान्सर सम्वन्धी कतिको ज्ञान छ भन्ने कुरा थाहा पाउन सहयोग मिल्नेछ ।

यस अध्ययनमा तपाईहरुबाट प्राप्त सुचना गोप्य राखिने छ र यसको प्रयोग अध्ययनको लागि मात्र हुनेछ । यहाँको व्यक्तिगत परिचय कतैपनि उल्लेख गरिने छैन । तथ्याङ्क संकलनको दौरान तपाईले पूर्ण सहयोग गरिदिनुहुन्छ भन्ने आशा राख्दछौँ । यदि तपाइले असजिलो महसुस गर्नुभयो भने कुनै पनि समयमा यो अध्ययनमा सहभागी हुनबाट रोक्न सक्नुहुनेछ ।

तपाईलाई यस अध्ययन सम्बन्धि सोध्नुपर्ने केहि प्रश्न छ ? के मैले तपाईबाट यस अध्ययनमा सहभागी भएको मन्जुरीनामा लिन सक्छु ?

हुन्छ ( )

हुँदैन ( )

यदि हुन्छ भने कृपया तल हस्ताक्षर गर्नुहोस ।

.....

सहभागीको हस्ताक्षर

मिति .....

Appendix C

Self-Administered Questionnaire (in English)

Topic: Breast Cancer Knowledge and Screening Practices among Educated Women of Kaski District

Instruction: The participants are requested to read the questions carefully and indicate the appropriate responses by tick (√) marking in the appropriate boxes or writing the response in the spaces provided.

Phone no of the respondent……

Code No……..

Date: _____/_____/____/

PART I: Socio-Demographic Characteristics of Respondents

1.1 How old are you? (in completed years): **…….**

1.2 What is your ethnicity:

a. Dalit □
b. Disadvantaged *Janajatis* □
c. Disadvantaged *non-dalit Terai* caste Group □
d. Religious Minorities □
e. Relatively advantaged *Janajatis* □
f. Upper Caste Group □

1.3 Which religion do you belong to?

a. Hinduism □
b. Islam □
c. Buddhism □
d. Christianity □

e. Kirat □

f. Bon □

g. If other, (specify)……

1.4 What is your marital status?

a. Married □

b. Unmarried □

c. Widowed □

d. Divorced/Separated □

1.5 What is the highest level of education that you have completed?

a. Secondary level (9-12 class) □

b. Bachelor level □

c. Masters and above □

1.6 What is your major subject in your highest level of education?

a. Nepali

b. English

c. Maths

d. Health

e. Education

f. If other, mention……

1.7 What is the type of job that you are currently working?

a. Permanent □

b. Temporary □

1.8 What is the duration of your current work in teaching (in completed year)?

……

1.9 What is your teaching experience till now (in years)?

.....

1.10 What is the level at which you are currently teaching?

a. Primary □

b. Lower secondary □

c. Secondary □

1.11 Do you have health insurance?

a. Yes

b. No

c. Had in past but not renewed

1.11.1 If yes, type of health insurance?

d. Nepal government

e. Private

f. Both

1.12 What is your household's monthly income?

a. More than expenses

b. Equal to expenses

c. Less than expenses

PART II: Health-related Characteristics of Respondents

2.1 Have you had any breast problem in the past?

a. Yes □

b. No □ (If No, go to question no 2.2)

2.1.1 If yes, what was the diagnosis?

a. Breast infection □

b. Nipple infection □

c. Pain in the breast □

d. Breast engorgement □

e. Breast cancer □

f. If others (specify).....

2.1.2 If yes, when?

a. Within a year

b. 1-5 years ago

c. More than 5 years ago

d. In postnatal period

2.2 Has any member of your family been diagnosed with breast cancer?

a. Yes □

b. No □ (If No, go to question no 2.3)

2.2.1 If yes, what is her relationship to you?

a. Grandmother □

b. Mother □

c. Sister □

d. Daughter □

e. Mother's sister/aunt □

f. Cousin □

g. If others (specify).....

2.3 Has any member of your family been diagnosed of ovarian cancer?

a. Yes □

b. No □ (If No, go to question no 2.4)

2.3.1 If yes, what is her relationship to you?

a. Grandmother □

b. Mother □

c. Sister □

d. Daughter □

d. Aunt □

e. Cousin □

f. If others (specify).....

2.4 Has any of your friend or neighbour been diagnosed of breast cancer?

a. Yes □

b. No □ (If No, go to question no 3.1)

2.4.1 If yes, what is his/her relationship to you?

a. Friend □

b. Neighbour □

c. If other (specify)…….

PART III

Self-Reported Knowledge and Practice on Breast Cancer

3.1 Knowledge of breast cancer warning signs

Can you tell me whether you think any of these are warning signs of breast cancer or not?

	Tick the appropriate boxes	Yes	No	Don't know
1.	Do you think a change in the position of your nipple could be a sign of breast cancer? [Explanation]: such as pointing up or down or in a different direction to normal			
2.	Do you think pulling in of your nipple could be a sign of breast cancer? [Explanation]: where the nipple no longer points outwards, but			

	into the breast			
3.	Do you think pain in one of your breasts or armpit could be a sign of breast cancer?			
4.	Do you think puckering or dimpling of your breast skin could be a sign of breast cancer? [Explanation]: like a dent or orange peel appearance			
5.	Do you think discharge or bleeding from your nipple could be a sign of breast cancer?			
6.	Do you think a lump or thickening in your breast could be a sign of breast cancer?			
7.	Do you think a nipple rash could be a sign of breast cancer?			
8.	Do you think redness of your breast skin could be a sign of breast cancer?			
9.	Do you think a lump or thickening under your armpit could be a sign of breast cancer?			
10.	Do you think changes in the size of your breast or nipple could be signs of breast cancer?			
11.	Do you think changes in the shape of your breast or nipple could be signs of breast cancer?			

3.2 Knowledge of Age-related and other risk factors of breast cancer

3.2.1 In the next year, who is most likely to get breast cancer? Please tick one box only.

a. A 30 year old woman □

b. A 50 year old woman □

c. A 70 year old woman □

d. A woman of any age □

e. Don't know □

3.2.2 How much do you agree that each of these can increase the chance of getting breast cancer?

		Strongly Disagree (1)	**Disagree (2)**	**Not sure (3)**	**Agree (4)**	**Strongly Agree (5)**
1.	Having a past history of breast cancer					
2.	Using HRT (Hormone Replacement Therapy)					
3.	Drinking alcohol everyday (more than 1 unit a day)					
4.	Being overweight (BMI over 25)					
5.	Having a close relative with breast cancer (e.g. sister, mother, daughter)					
6.	Having children later on in life (after age 30) or not at all					
7.	Starting your periods at an early age (before age 12)					
8.	Having a late menopause (after age 55)					
9.	Doing less than 30 mins of moderate physical activity 5 times a week					

3.3 How often do you check your breast or do breast self-examination?

Please tick one box only.

a. Rarely or never □

b. At least once every 6 months □

c. At least once a month □

d. At least once a week □

e. Don't know □

3.3.1 Have you ever been to see a doctor about a change you have noticed in one of your breasts? (Please tick one box only.)

a. Yes

b. No

c. Never noticed a change in one of my breasts

d. Don't know

3.3.2 If you found a change in your breast, how soon would you contact your doctor? Please write how soon you would contact your doctor here.

.....

3.4 Have you ever done CBE? (A *clinical breast exam* is an examination by a doctor or nurse, who uses his or her hands to feel for lumps or other changes that could be early signs of breast cancer.)

a. Yes □

b. No □ (if No, go to Q.No. 3.5)

3.4.1 If yes, when had you done?

…….

3.4.2 If yes, reason for CBE?

a. As per doctor's advice

b. Being self aware

c. If other, specify, ……..

3.5 Have you ever done a mammography? (Mammography is an x-ray imaging method used to examine the breast for the early detection of cancer and other breast diseases. Most of the international guidelines recommends annual or biennial mammographic screening between 40 and 74 years for average-risk populations and annual MAM or annual MRI starting from a younger age for high-risk populations.)

a. Yes □

b. No □ (if No, go to Q.N. 3.5.3)

3.5.1 If yes, when had you done mammography?

…….

3.5.2 If yes, reason for mammography?

……..

3.5.3 If you have not done mammography, why not?

a. Not old enough □

b. Financial constraint □

c. Mammography not available □

d. Did not know

e. Had no any problem in breast

f. If other reasons (please specify) _____

PART IV

Health Belief Model Instrument

The following questions are related to your experiences with breast cancer and breast self-examination. There are no right or wrong answers and you do not have to practice self-breast examination to complete the survey. Please circle the number that best describes your feelings about each statement.

1= Strongly Disagree (SD)

2= Disagree (D)

3= Neutral (N)

4= Agree (A)

5= Strongly Agree (SA)

	Items	***SD (1)***	***D (2)***	***N (3)***	***A (4)***	***SA(5)***
1.	It is likely that I will get breast cancer.					
2.	My chances of getting breast cancer in the next few years are great.					
3.	I feel I will get breast cancer sometime during my life.					
4.	The thought of breast cancer scares me.					
5.	When I think about breast cancer, my heart beats faster.					
6.	I am afraid to think about breast cancer.					
7.	Problems I would experience with breast cancer would last a long time.					

8.	Breast cancer would threaten a relationship with my boyfriend, husband or partner.					
9.	If I had breast cancer my whole life would change.					
10.	If I developed breast cancer, I would not live longer than 5 years.					
11.	I know how to perform a breast self-exam.					
12.	I am confident I can perform BSE correctly.					
13.	If I were to develop breast cancer I would be able to find a lump by performing BSE.					
14.	I am able to find a breast lump if I practice BSE alone.					
15.	I am sure of the steps to follow for doing BSE.					
16.	I am able to identify normal and abnormal breast tissue when I do BSE.					
17.	When looking in the mirror, I can recognize abnormal changes in my breast.					
18.	I can use correct part of my fingers when I examine my breasts.					
19.	When I do BSE I feel good about myself.					
20.	When I do BSE monthly, I don't worry much about breast cancer.					
21.	Completing BSE each month will allow me to find lumps early.					
22.	If I complete monthly BSE, I will					

	decrease my chance of dying from breast cancer.					
23.	If I complete BSE monthly, I will decrease my chances of requiring radical or disfiguring surgery if breast cancer occurs.					
24.	If I do monthly breast exams, it will help me to find a lump which might be cancer before it is detected by a doctor or nurse.					
25.	I feel funny doing BSE					
26.	Doing BSE will make me worry about BC.					
27.	BSE will be embarrassing to me.					
28.	Doing BSE will take too much time.					
29.	Doing BSE will be unpleasant.					
30.	I don't have enough privacy to do BSE.					
31.	I want to discover health problems early.					
32.	Maintaining good health is extremely important to me.					
33.	I search for new information to improve my health.					
34.	I feel it is important to carry out activities which will improve my health.					
35.	I eat a well-balanced diet.					
36.	I exercise regularly- at least three times a week.					
37.	I have regular health checkups even when I am not sick.					

Appendix D

Self-Administered Questionnaire (in Nepali)

प्रश्नावली

निर्देशनः हरेक सहभागीहरुले तल दिइएको प्रश्नहरु राम्ररी पढ्नु पर्नेछ र सही उत्तरमा सहीचिन्ह (√) लगाउनुपर्नेछ वा खाली ठाउँमा जबाफ लेख्नुपर्नेछ । कृपया तपाईको अवस्था प्रतिनिधित्व हुनेगरी जवाफ दिनुहोला । प्रश्नावलीवाट प्राप्त जानकारी गोप्य राखिनेछन साथै यसको प्रयोग अनुसन्धानको लागि मात्र हुनेछ र व्यक्तिको कुनै परिचय खोलिनेछैन ।

कोड नम्बर .....

मिति .....

भाग कः सामाजिक जनसाङ्खीक विवरणसम्बन्धी प्रश्नहरु

१.१) तपाईंको उमेर कति भयो ? (पूरा भएको वर्ष) .....

१.२) तपाईको जात के हो ?

क) दलित

ख) पहुँच नभएका जनजातिहरु

ग) पहुँच नभएका गैरदलित तराई जाति समुह

घ) धार्मीक रुपले अल्पसंख्यक

ङ) तुलनात्मक रुपले पहुँच भएका जनजातिहरु

च) उपल्लो जाती समुह

१.३) तपाईको धर्म के हो ?

क) हिन्द

ख) बौद्ध

ग) मुसल्मान

घ) क्रिस्चीयन

ङ) किरात

च) बोन

१.४) तपाईको बैवाहिक स्थिती के छ ?

क) विवाहित

ख) अविवाहित

ग) विधवा

घ) पारपाचुके वा छुटिएर वसेका

१.५) तपाईंले प्राप्त गर्नुभएको सबैभन्दा उच्च तहको शिक्षा के छ ?

क) आधारभूत शिक्षा (कक्षा ८ सम्म पास गरेको)

ख) माध्यमिक तह (९ देखी १२ कक्षासम्म पास गरेको)

ग) स्नात्तक तह पास गरेको

घ) स्नातकोत्तर तह वा सो भन्दा माथी पास गरेको

१.६) तपाईंले पढ्नु भएको मेजर विषय के हो ?

क) नेपाली

ख) अङ्ग्रेजि

ग) गडित

घ) स्वास्थ्य

ङ) शिक्षा

च) अन्य भए (खुलाउनुहोस्).....

१.७) तपाईंले अहिले गरिरहनु भएको काम कस्तो हो ?

क) स्थाही

ख) अस्थाही

१.८) हालको विध्यालयमा पढाउन थाल्नु भएको कती वर्ष पुरा भएको छ ?

..... वर्ष

१.९) अहिले सम्म तपाईंको शिक्षण पेशामा जम्मा कती वर्षको अनुभव छ ?

..... वर्ष

१.१०) हाल हजुरले कुन तहमा पढाउदै हुनुहुन्छ ?

क) प्राथमिक

ख) निम्न माध्यामिक

ग) माध्यामिक

१.११) के तपाईंले स्वास्थ बिमा गर्नु भएको छ ?

क) छ

ख) छैन

ग) थियो तर अहिले रिन्यू गरेको छैन

१.११.१) यदी छ भने, कुन खालको बिमा होला ?

क) नेपाल सरकार

ख) निजी बिमा

ग) माथिका दुबै

१.१२) तपाईंको आम्दानीको स्तर कस्तो छ ?

क) खर्च भन्दा बढी

ख) खर्च बराब

ग) खर्च भन्दा कम

भाग ख

स्वास्थ्य विवरण सम्बन्धी प्रश्नहरु

२.१) तपाईंलाई बिगतमा आफ्नो स्तनमा केहि समस्या वा रोग आइपरेको थियो ?

क) छ

ख) छैन (यदी छैन भने, प्र नं २.२ मा जानुहोस)

२.१.१ यदि छ भने, के भएको थियो ?

क) स्तनमा सन्क्रमण

ख) स्तनको मुन्टामा सन्क्रमण

ग) स्तनमा दुखाइ

घ) दुध गानेको

ङ) स्तनको क्यान्सर

च) अन्य भए (खुलाउनुहोस).....

२.१.२ यदि छ भने, कहिले भएको थियो ?

क) यही एक बर्ष भित्र

ख) एक - पाच बर्ष भित्र

ग) पाच बर्ष भन्दा पहिले

घ) सुत्केरी हुँदा

२.२) तपाईंको परिवारमा कसैलाई स्तन क्यान्सर भएको छ?

क) छ

ख) छैन (यदी छैन भने, प्र नं २.३ मा जानुहोस)

२.२.१ यदि छ भने, कसलाई भएको थियो ? नाता खुलाउनुहोस ।

क) हजुरआमा

ख) आमा

ग) दिदिबहिनी

घ) छोरी

ङ) ठुलिआमा वा सानिमा

च) ठुलिआमा वा सानिमाका छोराछोरि

छ) अन्य भए (खुलाउनुहोस) .....

२.३) तपाईंको परिवारमा कसैलाई पाठेघरको अण्डाशयको क्यान्सर भएको छ?

क) छ

ख) छैन (यदी छैन भने, प्र नं २. ४ मा जानुहोस)

२.३.१ यदि छ भने, कसलाई भएको थियो ? नाता खुलाउनुहोस ।

क) हजुर आमा

ख) आमा

ग) दिदिबहिनी

घ) छोरी

ङ) ठुलिआमा वा सानिमा

च) ठुलिआमा वा सानिमाका छोराछोरि

छ) अन्य भए (खुलाउनुहोस) .....

२.४) के तपाईंको साथी वा छिमेकमा कसैलाई स्तन क्यान्सर भएको छ ?

क) छ

ख) छैन (यदी छैन भने, प्र नं ३.१ मा जानुहोस)

२.४.१ यदी छ भने, कसलाई भएको छ ?

क) साथी

ख) छिमेकी

ग) अन्य भए (खुलाउनुहोस) .....

भाग ग

स्तन क्यान्सरको ज्ञान र अभ्याससम्बन्धी प्रश्नहरु

३.१ स्तन क्यान्सरमा देखिने खतराका संकेत वा चिन्हको बारेमा ज्ञान

	स्तन क्यान्सरमा देखिने खतराका संकेत वा चिन्हहरु के के होलान ? **उपर्युक्त कोठामा ठीक चिन्ह (√) लगाउनुहोस ।**	**हो**	**होइन**	**थाहा छैन**
१	के स्तनको मुन्टो फरक दिशातिर फर्किनु स्तन क्यान्सरको चिन्ह हो ?			
२	के स्तनको मुन्टो भित्र तिर पस्नु वा दबिनु स्तन क्यान्सरको चिन्ह हो ?			
३	के कुनै एक स्तन वा काखीमुनी दुख्नु स्तन क्यान्सरको चिन्ह हो ?			
४	के स्तनको छाला भित्र दबिएको हुनु स्तन क्यान्सरको चिन्ह हो ?			
५	के स्तनको मुन्टोवाट खुन अथवा अन्य असामान्य पदार्थ बग्नु स्तन क्यान्सरको चिन्ह हो ?			
६	के स्तनमा नयाँ गिर्खा अथवा गाठो आउने स्तन क्यान्सरको चिन्ह हो ?			
७	के स्तन वा स्तनको मुन्टाको वरिपरिको छालाको रङ रातो हुनु वा अस्वभाविक परिवर्तन हुनु स्तन क्यान्सरको चिन्ह हो ?			
८	के स्तनको केहि वा पुरै भाग सुन्निनु वा बाक्लो हुनु स्तन क्यान्सरको चिन्ह हो ?			
९	के काखीमुनी नयाँ गिर्खा भेटिनु स्तन क्यान्सरको चिन्ह हो ?			
१०	के स्तन वा मुन्टोको आकारमा (कजबउभ) परिवर्तन आउनु स्तन क्यान्सरको चिन्ह हो ?			
११	के स्तन वा मुन्टोको नाप (कष्शभ) मा परिवर्तन आउनु स्तन क्यान्सरको चिन्ह हो ?			

३. २ स्तन क्यान्सरको जोखिम कारकहरुको बारेमा ज्ञान

३.२.१ अब आउने बर्षमा तल दिएका मध्य कसलाई स्तन क्यान्सर हुने जोखिम बढी हुन्छ ?

क) एक ३० बर्षिय महिलालाई

ख) एक ५० बर्षिय महिलालाई

ग) एक ७० बर्षिय महिलालाई

घ) कुनै पनि उमेरका महिलालाई

ङ) थाहा छैन

३.२.२ तल दिइएका प्रत्येकले स्तन क्यान्सर हुने सम्भावना बढाउन सक्छ भन्ने कुरामा तपाईं कति सहमत हुनुहुन्छ ?

		पूर्ण असहमत (१)	**असहमत (२)**	**निस्चित वा एकिन छैन (३)**	**सहमत (४)**	**पूर्ण सहमत (५)**
१	बिगतमा स्तन क्यान्सर हुनु					
२	महिनावारी सुकेपछी प्रयोग गर्ने औसधि प्रयोग गर्नु (Hormone)					
३	मदिराजन्य पदार्थको सेवन गर्नु					
४	मोटोपन हुनु					
५	आफ्नो नजिकको नातेदार जस्तै आमा, हजुर आमा, दिदि, वहिनी, आदीमा स्तन क्यान्सर हुनु					
६	ढिलो (३० बर्षको उमेर पछी) बच्चा जन्माउनु वा बच्चा नै नजन्माउनु					
७	महिनावारी सानै उमेरबाट सुरु					

	हुनु (१२ बर्ष अगाडि)					
८	महिनावारी ढिलो सुक्नु (५५ बर्ष पछी सुक्ने)					
९	शारिरिक रुपमा सकृय नहुनु					

३.३ तपाईंले स्वयम आफ्नो स्तनको जाचँ कति गर्नुहुन्छ ? -कृपया एउटा सही उत्तर दिनु होला)

क) विरलै

ख) कहिल्यै पनि गर्दिन

ग) कमसेकम ६ महिनामा एक पटक

घ) वर्षको एक पटक

ङ) कमसेकम महिनामा एक पटक

च) कमसेकम हप्तामा एक पटक

छ) थाहा छैन

३. ३.१ तपाईंले आफ्नो स्तन आफै जाँच्दा कुनै फरक कुरा पत्ता लगाएर डाक्टरकोमा जानु भएको छ ? (कृपया एउटा सही उत्तर छान्नु होला ।)

क) छ

ख) छैन

ग) कुनै फरक कुरा पत्ता लगाएको छैन

घ) थाहा छैन

३.३.२ यदी स्वम स्तन जाँच्दा कुनै फरक कुरा पाउनु भयो भने, कत्तीको छिटो डाक्टरकोमा जानु हुनेछ ? लेख्नुहोला ।

.....

३. ४ के तपाईंले कहिल्यै दक्ष स्वास्थकर्मीबाट आफ्नो स्तनको जाच गराउनु भएको छ ?

क) छ

ख) छैन (यदी छैन भने, प्र नं ३. ५ मा जानुहोस्)

३. ४.१ यदी छ भने, कहिले गर्नु भएको थियो ? .....

३.४.२ यदी छ भने, किन गर्नु भएको थियो ? (तपाईले यो प्रश्नको एक वा एक भन्दा बढी उत्तर दिन सक्नु हुन्छ)

क) डाक्टरले भन्नु भएर

ख) आफै सचेत भएर

ग) यदी अन्य कारण छ भने, खुलाउनुहोस

.....

३.५ के तपाईंले कहिल्यै म्यामोग्राफी (स्तनको विशेष एक्स रे) गर्नु भएको छ ?

क) छ

ख) छैन (यदी छैन भने, प्र नं ३.५. ३ मा जानुहोस्)

३.५.१ यदी छ भने, कुन उमेरमा गर्नु भएको थियो ?

.....

३.५.२ यदी छ भने, किन गर्नु भएको थियो ? (तपाईले यो प्रश्नको एक वा एक भन्दा बढी उत्तर दिन सक्नु हुन्छ)

क) डाक्टरले भन्नु भएर

ख) आफै सचेत भएर

ग) यदी अन्य छ भने, खुलाउनुहोस

.....

३.५. ३ यदी म्यामोग्राम गर्नु भएको छैन भने, नगर्नुको कारण खुलाउनुहोस । (तपाईले यो प्रश्नको एक वा एक भन्दा बढी उत्तर दिन सक्नु हुन्छ)

क) उमेर नपुगेको भएर

ख) पैसा नभएको भएर

ग) म्यामोग्राम गर्ने सुबिधा नभएर

घ) थाहा नभएर

ङ) स्तनमा केहि समस्या नभएर

च) यदी अन्य छ भने, खुलाउनुहोस

.....

भाग घः

स्तन क्यान्सर प्रतीको बिश्वास

निम्न प्रश्नहरू स्तन क्यान्सर र स्तन स्वयमं-परीक्षणको साथ तपाईंको अनुभवहरूसँग सम्बन्धित छन्। त्यहाँ कुनै सही वा गलत उत्तरहरू छैनन् र सर्वेक्षण पूरा गर्न तपाईंले स्वयमं-स्तन परीक्षणको अभ्यास गर्नुपर्दैन । कृपया प्रत्येक कथनको बारेमा तपाईंका भावनाहरू राम्रोसँग वर्णन गर्ने सङ्ख्यालाई सर्कल गर्नुहोस्।

१ = कडा असहमति (SD)

२ = असहमत (D)

३ = तटस्थ (N)

४ = सहमत (A)

५ = दृढतापूर्वक सहमत (SA)

		SD	D	N	A	SA
१	मलाई भविष्यमा स्तनको क्यान्सर हुने सम्भावना धेरै छ ।	१	२	३	४	५
२	मलाई अबको केहि बर्षमा स्तनको क्यान्सर हुने सम्भावना धेरै छ ।	१	२	३	४	५
३	मलाई भविष्यमा स्तनको क्यान्सर हुन्छ जस्तो लाग्छ ।	१	२	३	४	५
४	स्तनको क्यान्सरको सोचले मलाई डर लाग्छ ।	१	२	३	४	५
५	जब म स्तन क्यान्सरको बारेमा सोच्छु, मेरो मुटु छिटो छिटो धड्किन्छ ।	१	२	३	४	५
६	म स्तनको क्यान्सरको बारे सोच्न डराउँछु ।	१	२	३	४	५
७	मलाई लाग्छ स्तनको क्यान्सरबाट आउने समस्या धेरै समयसम्म रहिरहन्छ ।	१	२	३	४	५
८	स्तनको क्यान्सर भएमा मेरो श्रीमान, केटा साथी, वा सहकर्मीसगंको सम्बन्ध बिग्रन सक्छ ।	१	२	३	४	५
९	यदि मलाई स्तनको क्यान्सर भएमा मेरो सम्पूर्ण जीवन नै परिवर्तन हुन्छ ।	१	२	३	४	५
१०	यदि मलाई स्तनको क्यान्सर भएमा म ५ बर्ष भन्दा बढी	१	२	३	४	५

बाच्ने छैन ।

११	म स्वयम स्तन परिक्षण कसरी गर्ने भन्ने कुरा जान्छु ।	१	२	३	४	५
१२	मैले स्वयम स्तन परिक्षण सही तरिकाले गर्न सक्छु भन्ने कुरामा म विश्वस्थ छु ।	१	२	३	४	५
१३	यदी मलाई स्तन क्यान्सर हुँदैछ भने मैले त्यो स्तनको गिर्खा स्वम स्तन परिक्षण गरेर पत्ता लगाउन सक्छु ।	१	२	३	४	५
१४	मैले आफ्नो स्तनमा हुन सक्ने गिर्खा छामेर पत्ता लगाउन सक्छु ।	१	२	३	४	५
१५	मलाई स्वम स्तन जाच गर्ने तरिका पक्का आउछ ।	१	२	३	४	५
१६	मैले स्वम स्तन जाच गर्दा सामान्य र असमान्य परिवर्तन पत्ता लगाउँन सक्छु ।	१	२	३	४	५
१७	मैले ऐना अगाडी उभिएर स्तनमा भएका असमान्य परिवर्तन पत्ता लगाउँन सक्छु ।	१	२	३	४	५
१८	मैले मेरो स्तन परिक्षण गर्दा औंलाको सही भागको प्रयोग गर्न सक्छु ।	१	२	३	४	५
१९	जब म आफ्नो स्तन आफैले जाच गर्छु, तब म राम्रो अनुभव गर्छु ।	१	२	३	४	५
२०	जब म हरेक महिना स्वयम स्तनको जाच पूरा गर्छु, म स्तनको क्यान्सरको बारे खासै चिन्ता गर्दिन ।	१	२	३	४	५
२१	हरेक महिना स्वयम स्तनको जाँचले मलाई स्तनको क्यान्सरको प्रारम्भिक लक्षण थाहा पाउन सहयोग पुग्छ ।	१	२	३	४	५
२२	यदि मैले हरेक महिना स्वयम स्तनको जाचँ गरे भने यस रोगबाट मेरो मृत्यु हुने सम्भावना कम हुन्छ ।	१	२	३	४	५
२३	यदि मैले हरेक महिना स्वयम स्तनको जाचँ गरे भने मैले यस रोगबाट हुन सक्ने दु:ख र चिरफारको सम्भावना कम गर्छु ।	१	२	३	४	५
२४	यदि मैले हरेक महिना स्वयम स्तनको जाचँ गरे भने, यसले मेरो स्तनमा भएको गिर्खा पत्ता लगाउन सक्छ जुन क्यान्सर	१	२	३	४	५

पनि हुन सक्छ ।

२५	मलाई स्वयम स्तन जाच गर्नु हासउठ्दो लाग्छ ।	१	२	३	४	५
२६	स्वयम स्तन जाच गरे पछि मलाई स्तनको क्यान्सरबारे चिन्ता मात्रै रहिरहन्छ ।	१	२	३	४	५
२७	स्वयम स्तन जाच गर्न मलाई धेरै लाज र असजिलो लाग्छ ।	१	२	३	४	५
२८	स्वयम स्तन जाच गर्न मलाइ धेरै समय लाग्छ ।	१	२	३	४	५
२९	स्वयम स्तन जाच गर्न मलाइ अप्रिय लाग्छ ।	१	२	३	४	५
३०	स्वयम स्तन जाच गर्न मलाइ पर्याप्त एकान्तता छैन ।	१	२	३	४	५
३१	म आफ्नो स्वास्थ्यसग सम्वन्धित समस्या चाढै नै पत्ता लगाउँन चाहन्छु ।	१	२	३	४	५
३२	आफ्नो राम्रो स्वास्थ्य कायम राख्नु मेरो लागि अत्यन्तै महत्वपूर्ण छ ।	१	२	३	४	५
३३	म मेरो स्वास्थ्य सुधार गर्नका लागि नयाँ खबर खोज्ने गर्छु ।	१	२	३	४	५
३४	मलाई मेरो स्वास्थ्यमा सुधार गर्ने हरेक कुराहरु गर्नुपर्छ जस्तो लाग्छ।	१	२	३	४	५
३५	म सन्तुलित आहार खान्छु ।	१	२	३	४	५
३६	म नियमित रुपमा ब्यायाम गर्छु -कम्तीमा पनि हप्ताको तीन पटक् ।	१	२	३	४	५
३७	म आफ्नो स्वास्थ्यको जाच नियमित रुपमा गर्ने गर्छु, बिरामीनै नहुँदा पनि	१	२	३	४	५

धन्यवाद !

Appendix E

List of Sample Schools

S.N.	Name of the School	Ward Number	Total No of Female Teachers	Sample Number
1.	Chhorepatan Ma. Vi.	17	22	20
2.	Bhadrakali Ma. Vi.	13	24	22
3.	Janapriya Ma. Vi.	8	18	15
4.	Kalika Ma. Vi.	10	24	21
5.	Rastriya Ma. Vi.	1	18	17
6.	Mahendra Ma. Vi.	9	9	8
7.	Janaprakash Ma. Vi.	29	20	19
8.	Laxmi Ma. Vi.	27	15	14
9.	Janaki Ma. Vi.	19	13	11
10.	Gogan Ma. Vi.	32	25	25
11.	Indrarajya laxmi Ma. Vi.	16	17	17
12.	Sukraraj Ma. Vi.	22	2	2
13.	Balmandir Ma. Vi.	3	7	7
			214	198

Appendix F

Administrative Letters

त्रिभुवन विश्वविद्यालय
शिक्षाशास्त्र सङ्काय
ग्राजुएट स्कूल अफ एजुकेसन
कीर्तिपुर, काठमाडौं

पत्र च.नं.: मितिः २०८०/११/१३

शिक्षा शास्त्र संकाय
डीनको कार्यालय
ग्राजुएट स्कूल अफ एजुकेसन
कीर्तिपुर

जो जससँग सम्बन्धित छ ।

उपरोक्त सम्वन्धमा शिक्षाशास्त्र संकाय डीनको कार्यालय अर्न्तगत संञ्चालित ग्राजुएट स्कूल अफ एजुकेशनमा एम.फिल. १९औ व्याच तेस्रो सेमेष्टरको शोधार्थी श्री दिप्ति कोइरालाले आफ्नो शैक्षिक कार्यक्रममा **"Knowledge and Screening Practices of Breast Cancer among Female Teachers in Kaski District"** शीर्षकमा अध्ययन गरिरहनु भएकोले आवश्यक तथ्याङ्क संकलनको लागि त्यस विद्यालय / कार्यालयवाट निजलाई आवश्यक सहयोग गरिदिनुहुन हार्दिक अनुरोध गर्दछु ।

प्रा.डा. वेदराज आचार्य
निर्देशक
ग्राजुएट स्कुल अफ ऐजुकेसन

Regd. No. 4700... PAN No.: 302845752

Gandaki Medical College-Nepal
कर्मण्येवाधिकारस्ते
My right is to my work

गण्डकी मेडिकल कलेज
(टिचिङ हस्पिटल एण्ड रिसर्च सेन्टर प्रा.लि.)
GANDAKI MEDICAL COLLEGE
(Teaching Hospital & Research Centre Pvt. Ltd)
Gandaki Medical College-Institutional Review Committee

Registration No: 15/080/081 Date: 29/09/2023

Referral No: 13/080/081 - F

Subject : Approval of research proposal

Dear Ms. Dipti koirala

Department of Adult Health Nursing

Thank you for submission of your research proposal entitled "**Breast Cancer Knowledge and Screening Practices among educated women of Kaski District"** to the Institutional review Committee of Gandaki Medical College . we are pleased to inform you that the above mentioned proposal has been approved from ethical point view by GMC IRC on 28/09/2023.

Approval is given for one year from date of ethical approval. Study which have not been commenced or completed within a year of original approval must be re submitted to IRC for extension of the renewal. Any changes in the approved proposal has to be implemented only after prior approval from IRC. You are requested to follow the ethical principles for health and biomedical research by Nepal Health Research Council .

After completion of your study , you must submit a hard copy of final draft of your research to the GMC IRC.

Thanking you ,

.....

Ms. Pramila Poudel

Member Secretary

.....

Dr. Neelu Hirachan

Chairperson

Hospital
GMC Teaching Hospital
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पोखरा महानगरपालिका
नगर कार्यपालिकाको कार्यालय
न्यूरोड, कास्की
(शिक्षा महाशाखा)

फोन नं.०६१-५८०८३
metroedupkr@gmail.com
वेभसाइट: pokharamun.gov.np
गण्डकी प्रदेश, नेपाल

पत्र संख्या: ०८०/०८१
चलानी नं ४२०

मिति : २०८०/११/१५

विषय : आवश्यक सहयोग गरिदिने सम्वन्धमा ।

श्री पोखरा म.न.पा. स्थित माध्यमिक विद्यालयहरु ।

प्रस्तुत विषयमा त्रिभुवन विश्वविद्यालय शिक्षा शास्त्र संकाय अर्न्तगत एम.फिल. अध्ययनरत शोधार्थी दिप्ती कोइरालाले आफ्नो अनुसन्धान कार्य सम्पन्न गर्न पोखरा म.न.पा. स्थित माध्यमिक विद्यालयहरुलाई आवश्यक समन्वयका लागि यस कार्यालयमा निवेदन पेश गरेकोले तहां विद्यालयको पठनपाठनमा असर नपर्ने गरी आवश्यक तथ्याङक उपलब्ध गराई सहयोग गरिदिनुहुन अनुरोध छ ।

२०८०।११।१५
शिक्षा अधिकृत

पोखरा महानगरपालिका
नगर कार्यपालिकाको कार्यालय
गण्डकी प्रदेश, कास्की ।
शिक्षा महाशाखा

website: pokharamun.gov.np
email: metroedupkr@gmail.com
फोन: ०६१-४५८०८२

पत्र संख्या:०८१/०८२
चलानी नं. ९९२

मितिः-२०८२/०२/०१

जो जससँग सम्बन्धित छ ।

विषयः- तथ्याङ्क संकलन बारे ।

उपरोक्त सम्वन्धमा त्रिभुवन विश्वविद्यालय शिक्षा शास्त्र संकाय अन्तर्गत एम.फिल. अध्ययनरत शोधार्थी दिप्ती कोइरालाले आफ्नो अनुसन्धान कार्यको लागि पोखरा म.न.पा. स्थित वडा नं. १, ३, ८, ९, १०, १३, १६, १७, १९, २२, २७, २९ र ३२ अन्तर्गतका माध्यमिक विद्यालयहरुमा मिति २०८०/११/२९ देखि २०८०/१२/२७ सम्म तथ्याङ्क संकलन कार्य गरेको व्यहोरा प्रमाणित गरिएको छ ।

अनुसन्धानको शीर्षकः- पोखरामा हुनुभएका महिला शिक्षकहरुमा स्तन क्यान्सर सम्बन्धि ज्ञान र अभ्यास ।

२०८२/०२/०१

जिल्ला शिक्षा अधिकृत

Appendix G

Permission to use CHBM

INDIANA UNIVERSITY
SCHOOL OF NURSING

October 30, 2023

Dipti koirala
Assoc. Prof. College of Nursing, Gandaki medical college, Pokhara, Nepal
Mphil Std, Graduate school of education, Tribhuvan univeristy, Kirtipur, Nepal

Dear Dipti koirala,

Thank you for your interest in my work. You have permission to view and modify the Health Belief Model for your use as long as you cite my work and send me an abstract of your completed projects.

Sincerely,

Victoria Champion, PhD, RN, FAAN
Mary Margaret Walther Distinguished Professor
Edward W. and Sarah Stam Cullipher Endowed Chair
Assistant Director of Cancer Control and Population Science
Indiana University Simon Cancer Center

Appendix H

Some Photographs of Data Collection



Tribhuvan University
Central Library
Kirtipur, Kathmandu, Nepal

Ref. No. ..... Date: 07/14/2025

Tribhuvan University Central Library, Kirtipur

Plagiarism Test Report

The **M. Phil. Thesis** titled **"Knowledge and Screening Practices of Breast Cancer among Female Teachers in Pokhara"** submitted by **Dipti Koirala Banjara** for a plagiarism test on **July 14, 2025**, has been checked by the iThenticate plagiarism checker software. The software found an overall similarity index of **14%** based on the following criteria.

Criteria:

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- Quotes - Excluded
- Bibliography - Excluded
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- Small Matches - Words Count (<10 words)
- Abstract - Included
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Note: Kindly be advised that the similarity index produced by software may not comprehensively reflect the caliber and criteria of the document. Consequently, it is highly advisable for the appropriate authority to manually assess the examined file to ascertain its adherence to the essential benchmarks of being articulate, well-investigated, and upholding academic integrity.

14th July, 2025

Roshan Kumar Pokhrel
(Section Officer)

iThenticate

Similarity Report ID: oid:3117:473677979

PAPER NAME

Knowledge and Screening Practices of B reast Cancer among Female Teachers in Pokhara

AUTHOR

Dipti Koirala Banjara

WORD COUNT

29290 Words

CHARACTER COUNT

153832 Characters

PAGE COUNT

134 Pages

FILE SIZE

2.8MB

SUBMISSION DATE

Jul 14, 2025 9:27 AM GMT+5:45

REPORT DATE

Jul 14, 2025 9:28 AM GMT+5:45

Tribhuvan University
Central Library, Kirtipur

2082/03/30

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