SELF-PERCEIVED RISK OF BREAST CANCER AND ACCEPTABILITY OF SCREENING AMONG WOMEN ATTENDING PERIPHERAL HEALTH CENTRES IN KOLAR

– A CROSS-SECTIONAL STUDY

By

Dr. PRUTHVI.P

DISSERTATION SUBMITTED TO

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH, KOLAR KARNATAKA

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In

COMMUNITY MEDICINE

UNDER THE GUIDANCE OF

DR. PRASANNA KAMATH B.T
PROFESSOR
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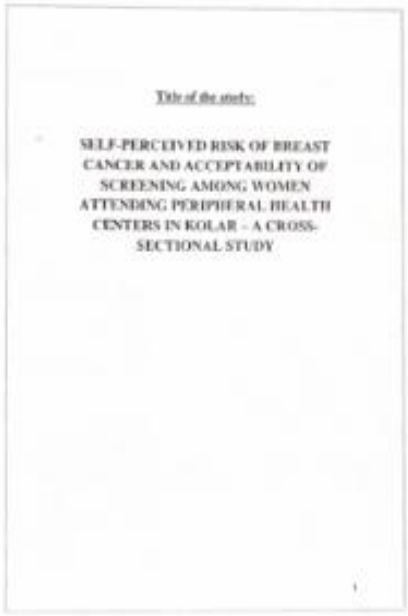

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ABSTRACT

Introduction: Among all cancers affecting women, breast cancer continues to be a leading cause of mortality on a global scale. Despite advancements in early detection and treatment, breast cancer continues to pose a significant public health challenge. Beyond the physical and emotional toll on patients, breast cancer contributes to substantial economic loss at both the household and national levels. Families often face financial strain, reduced productivity, and long-term psychological distress. The lack of awareness of disease per se, its risk factors and warning signs, stigma and embarrassment around it contribute to incorrect estimation of the risk of getting the disease and cause a delay in timely presentation to healthcare centres. Self-breast examination (SBE) is the most cost-effective screening tool for early detection and diagnosis of breast cancer, especially in low-resource settings. Awareness of breast health is essential for recognising significant changes in one's breasts and seeking timely medical attention for the same.

Objectives: Among women attending peripheral health centres in Kolar,

i. To assess the self-perceived risk of breast cancer and its association with sociodemographic factors.

ii. To assess the knowledge and perception of risk factors and warning signs of breast cancer and its association with sociodemographic factors.

iii. To assess the knowledge and practice of self-breast examination (SBE) as a screening test for the early detection and diagnosis of breast cancer and its association with sociodemographic factors.

Materials and methods: A Cross-Sectional Survey was conducted from July 2023 to December 2024 in the Outpatient departments of the Rural Health Training Centre (RHTC), Devarayasamudra, Mulbagal, and the Urban Health Training Centre (UHTC), Gandhinagar, Kolar, of the field practice area of the Department of Community Medicine, Sri Devaraj Urs Medical College, Tamaka, Kolar.

All women aged 18 years and above who availed themselves of the OPD services at RHTC/UHTC in the field practice area of the Department of Community Medicine, SDUMC, Kolar, were invited to participate in the study. The study excluded women presenting to the outpatient department (OPD) under emergency conditions (road traffic accidents or altered consciousness), as well as those with a pre-existing diagnosis of breast cancer and women who were pregnant or lactating. A minimum sample size of 350 participants was determined based on calculations derived from a prior study conducted by Pooja et al.[1] Expecting 400 women in each health centre per month, a sample of 175 women above 18 years satisfying inclusive and exclusive criteria in each centre was selected using systematic random sampling with a sampling interval of 3 (800/350=2.28).

Results: 64% of the total participants have heard about breast cancer, and 50 % of the participants said social media was the source of information. Self-perceived risk of breast cancer is 54%, and is significantly associated with age, residence, education, occupation, and socio-economic status of the participants. Overall perception of risk factors and warning signs of breast cancer is 45% and 23% respectively, and is significantly associated with residence, education and socio-economic status of the participants. Out of the total participants, only 42% were aware of the national program for breast cancer (NP-NCD). Among 350 participants, 22.5%

performed SBE, out of which 16% accepted it as a screening method for the early detection and diagnosis of breast cancer, practised it regularly, and it was significantly associated with the participants' residence, education, occupation, and socio-economic status.

Conclusion: The study highlights the alarming prevalence of limited awareness regarding breast cancer, including its predisposing factors and warning signs, and the significantly low practice of breast self-examination (SBE) among women. Contributing factors include low literacy levels, poor economic conditions, lack of motivation, and the stigma surrounding the disease. Implementing routine breast health programs monitored by healthcare professionals in schools, colleges, workplaces, and health centres could greatly benefit women and improve timely detection efforts.

Keywords: self-perceived risk, self-breast examination, breast health, breast cancer.

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INTRODUCTION

1. INTRODUCTION

Cancer, in any form, impacts individual health, family stability, and a country's economy. It is responsible for 16.8% (almost I in 6 deaths) and 22.8% (1 in 4 deaths) of mortality from non-communicable diseases (NCDs) worldwide. [2] The world is witnessing around 20 million cancer cases and around 9 million cancer-related deaths. Among the top 5 cancer-related morbidity and mortality in both sexes, Breast cancer ranks 2nd with an incidence of 11.5% and 6.8% deaths globally. In females, breast cancer is leading the chart with 46.8% incidence and 12.7% mortality. Breast cancer has impacted low/medium Human Development Index (HDI) countries (17 per 100,000) compared to high/very high HDI countries (12.8 and 15 per 100,000, respectively) [3]

India has around 14 lakhs new cases with 9 lakhs cancer-related deaths, with around 32 lakhs cases projected to have cancer in the next 5 years. With an incidence rate of 13.6% and accounting for 10.7% of cancer-related deaths, breast cancer ranks as the leading cancer diagnosis among both sexes nationwide. In the Indian female population, breast cancer incidence is about 26.6%, underscoring its significant public health burden. After breast cancer, cancer-related mortality in females is cancers of the cervix, uterus, ovary, lip and oral cavity, and colorectal cancer annually. Karnataka has an incidence of 50 thousand cancer cases annually, of which Kolar has around 2 thousand cases. [4–6]

In India, awareness about breast cancer remains limited among women, particularly when it comes to understanding its risk factors, recognising early symptoms, and seeking timely diagnosis. Personal and societal discomfort often prevents open conversations about breast health. Many

women are unaware that breast cancer is a serious health concern and may not realise the importance of regular screening.[7,8]

Factors that influence the self-perceived risk of breast cancer in women include the presence of an established family history of breast cancer, witnessing the hardship of the affected patients and psychological stress about the condition. Women struggle with either overestimation or underestimation of the risk of getting the disease, and hence do not want to check themselves, which in turn causes a delay in presenting themselves to healthcare professionals. Incorrect knowledge about the condition and not being counselled by healthcare professionals may keep them in the dark. Many women may not recognise the symptoms of breast cancer or may dismiss them without proper examination. [9]

Sociodemographic details like higher age, lack of education, and rural residence positively correlate with the disease. Other factors like inadequate breastfeeding, nulliparity, elderly maternal age, obesity and lack of physical activity are identified as significant risk factors. [10,11]. Lack of awareness about the disease's causation, progression, complications and available treatments further exacerbates this issue.

Even with ongoing national efforts to increase awareness and support early diagnosis, breast cancer still leads in cancer-related deaths among Indian women.[2] The programme also helps combat the gap in recognition of symptoms by the patient and availability of screening/treatment facilities. The country witnesses a considerable loss in the form of women succumbing to cancer-related deaths. [12]

Societal factors also play a crucial role in hindering timely diagnosis and treatment. Embarrassment and discomfort associated with the screening procedures deter women from participating in timely detection efforts. The stigma associated with breast cancer can discourage women from seeking

help, as they may fear judgment or discrimination. This societal pressure can lead to a reluctance to discuss symptoms or pursue necessary medical interventions. [13]

Given the limited accessibility and high cost of mammography in many developing countries, self-breast examination (SBE) serves as a crucial method for the timely detection of breast cancer and the enhancement of survival rates.

Moreover, social and cultural constraints often discourage women from undergoing procedures that require bodily exposure, such as mammography. In contrast, SBE is a simple, affordable, and private method that encourages the timely detection and diagnosis of cancer. The routine practice of SBE empowers women to become familiar with the normal structure of their breasts, allowing them to identify abnormalities at an early stage and seek timely medical attention.

However, the practice of SBE faces several challenges in India. Many women lack awareness about the importance of SBE and how to perform them correctly. This lack of knowledge, combined with feelings of embarrassment, results in low detection rates of breast abnormalities. Breast cancer in Indian women is not often self-reported; they would approach a healthcare provider following the exacerbation of the condition, like pain in the breast, bleeding or foul-smelling discharge. For the evaluation of breast cancer, opportunistic screening happens in the clinics or with ASHA home visits. [14]. SBE is still a new topic for most of the population in the country, and women often face awkwardness, fear of finding some abnormality in the breast, self-declaration of no risk of breast cancer, hence no need for the examination and non-remembrance of the procedure [11,15,16]

The global burden of breast cancer continues to rise steadily, a trend compounded by limited public awareness of self-breast examination (SBE), associated risk factors, and early signs and symptoms. Additionally, the lack of comprehensive cancer prevention and screening programs further hinders efforts toward early detection. These gaps collectively present major challenges to the timely diagnosis and effective management of the disease.

This study was conducted to assess the self-perceived risk and stigma attached to breast cancer and the reasons for the same among women seeking health care in peripheral health centers. Women who approach the health centers for other ailments also present an opportunity for the health care provider to educate them on breast cancer. However, educating women of various socio-economic and educational backgrounds might pose challenges that must be addressed.

Professional help by medical doctors and repeated monitoring by ASHA will encourage the women to overcome the embarrassment and taboo around the performance of SBE. This would allow them to be self-confident about detecting any abnormal finding in their breast(s) and recommend the same to their friends and family.

OBJECTIVES OF THE STUDY

2. OBJECTIVES OF THE STUDY

Among women attending peripheral health centres in Kolar,

1. To assess the self-perceived risk of breast cancer and its association with sociodemographic factors.
2. To assess the knowledge and perception of risk factors and warning signs of breast cancer and its association with sociodemographic factors.
3. To assess the knowledge and practice of self-breast examination (SBE) as a screening test for early detection and diagnosis of breast cancer and its association with sociodemographic factors.

REVIEW OF LITERATURE

2.1 Breast cancer and World

Breast cancer is the most diagnosed form of cancer globally, accounting for nearly 12% of all cancer cases worldwide. Breast cancer is the most common cancer among women in 158 of 183 countries (86%). It is the leading or second leading cause of female cancer-related deaths in 173 of 183 countries (95%). Higher breast cancer fatality rates are seen in low- and middle-income countries (LMICs) and among disadvantaged populations, resulting in late-stage presentation and diagnosis, limited access to quality treatment, which in several LMICs is compounded by a lack of awareness regarding the benefits of timely detection and effective therapies. The estimated increase in breast cancer cases and deaths in 2040 is said to be 50.7% in the Southeast Asian Region. As a MIC, India has projected a 59.6% increase in cases by 2040. [3,17]

2.2 Breast cancer and India

As early as 1946, the Bhore Committee—established by the Government of India in 1943 to conduct a comprehensive health survey—identified cancer as a growing public health concern and recommended the development of accessible and affordable cancer care services. Despite these early efforts, nearly 75 years later, a significant portion of the Indian population still faces barriers in accessing timely cancer diagnosis and treatment. Delays in timely detection and prevention, particularly in cases of breast cancer, continue to be widespread and are often worsened by factors such as age and socioeconomic status.[18]

Breast cancer has emerged as the most prevalent malignancy among women in India and is the foremost contributor to mortality among the five most common cancers.[6] The systematic collection of the cancer data is being carried out by the Population-Based Cancer Registries (PBCR) which was established in 1981 under the National Cancer Registry Programme (NCRP) - National Centre for Disease Informatics and Research (NCDIR) of the Indian Council of Medical Research (ICMR), (ICMR-NCDIR-NCRP), Bengaluru.[19]According to the recent NCRP 2022 report, there was an increasing trend in Age Adjusted Incidence Rate (AAR) per lakh population in Delhi (51.6 to 71.0), followed by Chennai (39.3 to 71.3), and Bangalore (33.6 to 70.3) from the period of 1985 to 2014 reported.[19]

This trend may be attributed to a gap in disease awareness and the importance of timely detection by available screening modalities. Cancer of breast tissue can be prevented, treated, and completely cured when the patient presents in the initial stages.[20]

In a country like India, reporting from the patient side happens more slowly, and active screening of such a vast population is cumbersome due to a lack of workforce. Opportunistic screening serves a good purpose and helps people to get educated about the disease.[14] Yet there is a considerable gap to be covered in terms of empowering women to overcome taboos related to screening for breast cancer. Timely detection is the key to curing a precancerous condition. According to NFHS-5, only 0.9% of females in the country have ever undergone breast examination, 1.7% in urban areas and 0.7% in rural areas.[21]

This gives a broad picture of the poor acceptance of the screening modalities present in the country.

2.3 Self-perceived risk of breast cancer

Breast cancer in individuals causes mental and physical stress and hence decreases the productivity of that individual in a family. In many cases, seeing family members suffer from the disease, the hardship of the post-cancerous life, and the stigma attached to the condition make an individual think that surviving cancer is next to impossible. Hence, the individual overestimates the risk of getting the disease and lives with the trauma attached to it. Looking at national statistics of 2016, the burden of breast carcinoma among Indian women in Years of life lost (YLL) due to breast cancer is 501.2 per 100,000 population.[22]

Years lived with disability (YLDs) is 14.2 per 100,000 population, and Disability adjusted life years (DALYs) is 515.4 per 100,000 population. The highest burden is seen in Southern states, where Karnataka has less burden than Kerala, and the lowest in the Northeastern states.[22]

In Karnataka, the registries used for burden estimation are from Bengaluru. Years of life lost (YLL) due to breast cancer are 691.4 per 100,000 population, Years lived with disability (YLD) are 20.6 per 100,000 population, and disability-adjusted life years (DALY) are 712.1 per 100,000 population.[22]

On the other hand, individuals who are informed about the nature of breast cancer and the available treatment options are better equipped to cope with disease-related stress and are more

likely to experience an improved quality of life.

Breast cancer awareness is essential in India, the USA, and China, which contribute one-third of the global burden. Rural India has a high mortality incidence rate of 66.3, despite the low incidence. However, Delhi had a low mortality rate of 8 despite a higher incidence of breast cancer, which is attributed to more awareness and better facilities in metropolitan cities.[10]

The self-perception of the risk of breast cancer is high in those who have a established family history of. We cannot pinpoint the cause for self-perception of being at risk of getting the disease; many factors, like age, awareness of disease per se, risk factors and warning signs, play a significant role in this. Also, there is an overestimation of self-perception of risk because they would have seen a relative suffering and an underestimation of the risk because of a lack of awareness of the disease.[23] In the study done by Alum et al.[24] , Fehniger et al[25] and Hajian et al[26] 37.5%, 24%, 14.87 ± 20.79% of the women perceived risk of getting breast cancer. This finding shows a significant relation when a established family history of of breast cancer is present.

2.4 Awareness of the risk factors of breast cancer

Breast carcinoma is influenced by a variety of genetic, hormonal, lifestyle, and environmental risk factors. A strong family history, particularly having a first-degree relative such as a mother, sister, or daughter with breast cancer, significantly increases a woman's risk. Demographic factors, including age and race, also play a role. Lifestyle factors such as being overweight or obese, physical inactivity, alcohol consumption,

and smoking have all been linked to increased risk of getting breast cancer. In addition, women with high breast density are at greater risk and may face challenges in timely detection due to less accurate mammogram results. Reproductive and hormonal factors significantly influence breast cancer risk. These include early onset of menstruation (before age 12), late onset of menopause (after age 55), not having children (nulliparity), having a first child after the age of 30, not breastfeeding or inadequate breastfeeding, and prolonged use of oral contraceptives or combined estrogen-progestin hormone therapy during menopause. Together, these elements play a crucial role in shaping both individual risk profiles and public health strategies focused on prevention and early detection.[27] In many low- and middle-income countries (LMICs), shifts in reproductive behaviour, lifestyle changes, and increased life expectancy have contributed to a marked rise in breast cancer incidence..[28]

Understanding the aetiology of breast cancer necessitates the inclusion of both modifiable and non-modifiable risk factors. Modifiable factors like decreased / no physical activity, stress, sleep quality, breastfeeding, maternal age at 1st childbirth, body mass index (BMI), diet type, alcohol consumption and smoking are significant risk factors associated with acquiring the disease.[10]

Non-modifiable factors like age, established family history or previous diagnosis of breast cancer in the individual, early menarche (precocious puberty) and late menopause (after 55 years) have a higher chance of getting the disease.[29,30]

In the study of Newton et al [7] in 2024, in India, 44.1% of women

knew about family history as a predisposing factor for breast cancer, and only 19.5% were aware of hormone replacement therapy as a risk factor.

Awareness of breast carcinoma and its risk factors in Chinese rural women was found to be 79.0% as per the study by Zhu et al in 2024.[31]

A study by Seif-Aldin Abdul Rahman et al says the awareness of family history as a risk factor in Syrian women was found to be 17.2%[32].

In a study conducted by Ranjan Kumar Prusty et al. (2020) among women in Mumbai, the majority believed that excessive consumption of tobacco (45%) and alcohol (44%) were the primary causes of breast cancer. Other perceived risk factors included lack of breastfeeding (39%) and high-fat diets (34%). However, awareness of critical biological risk factors, such as early onset of menstruation (6%) and late menopause (10%), was notably low.[33]

In the study on Sudanese women in 2021 by Rafat Munir Lawis et al, most women believed having history of breast cancer is predisposing factor for the disease (44.9%) followed by other risk factors like consumption of alcohol (27.5%), being overweight or obese (26.5%), having early periods (12.2%) and having less physical activity (28.2%). 39% of women were aware of hormone replacement therapy as one of the predisposing factors of breast cancer.[34]

In the study conducted by Vishwakarma G et al in 2022, the risk of breast cancer was 56% less in maternal age at first childbirth was lesser than 30 years, age at marriage being 25 years or less may have a 45% of lower chance of developing

breast cancer, women who did not breastfeed their child had 2 times more risk of breast cancer than the women who breastfed, and women who were stressed, breast cancer risk increased 7-times more as compared to women who had no stress.[35]

2.5 Importance of timely detection and screening for breast cancer.

Timely detection is the overall process whereby breast cancer is detected at earlier stages (0, I or II) when treatment is, on average, more effective. Timely detection requires "early-diagnosis" approaches among the general population and may include "screening" a prespecified subgroup of individuals without breast symptoms. Both early diagnosis and screening programs achieve "stage shifting", in which a more significant fraction of breast cancers in the population is diagnosed at earlier stages of disease progression. The goal of an timely detection breast-cancer program is to promote stage shifting so that >60% of women diagnosed with invasive breast cancer have stages I or II disease.[20,36]

The complex interplay of numerous causes leads to delayed presentation, a critical health hazard for women with breast cancer. With each delay, the likelihood of being presented with advanced stages of disease and the corresponding increase in mortality rate rises.

India's breast cancer screening guidelines are aligned with those of the World Health Organization (WHO), promoting timely detection as a critical public health strategy. Breast cancer screening programs are designed to educate women on

abnormal breast presentations and empower them to identify abnormalities if present. The primary goal is the timely detection of cancer in its earliest stages, when treatment is more effective, and survival rates are better than when presented at later stages.

For screening to be effective and efficient, it must be repeated consistently in the same individuals at regular intervals (every 1–2 years). To minimize the incidence of false positives and associated psychological and economic burdens, screening should be targeted to those whose breast cancer risk exceeds a predefined threshold. Screening selection criteria are primarily based on age and gender, with additional considerations given to recognized risk factors such as family history, genetic predisposition, reproductive history, and breast density.[14,20,37].

South Asian women reported more emotional barriers than white women in the study done by Forbes et al.[38] Key barriers included fear of discovering an abnormality, embarrassment related to the procedure, and a lack of confidence in discussing symptoms, all of which were found to be highly statistically significant. Notably, embarrassment was reported by 59% of Indian women, 46% of Pakistani women, and 66% of Bangladeshi women

. Fear of finding an abnormality in the breast was reported by 46% of Indian women, 63% of Pakistani and 69% of Bangladeshi women, and lack of confidence in discussing about their symptoms was reported by 53% of Indian women, 49% of Pakistani and 59% of Bangladeshi women. In this study, black women also felt the same as compared to white women in reporting of the emotional barriers. The most

common barrier was fear of diagnosing a cancer (47%), embarrassment (38%), wasting the doctor's time (37%) and finding it challenging to make an appointment (35%).[38]

In the study Abdulkareem et al[39] conducted on Iroquoian women in 2023, younger women waited longer for consulting healthcare professionals than older women. Older women presented late due to a painless lump in the breast (67.7%). Generally, women with awareness of breast cancer signs and symptoms present early to seek timely care. Self-non-reporting, rural residents, lack of understanding of breast cancer signs and symptoms and misdiagnosis by the healthcare practitioner were common reasons for late presentation of women in Iran.

In the study done by Hutajulu et al[40] Indonesian women with better socioeconomic status and a family history of breast cancer had no delay in presentation.

2.6 Self-Breast Examination (SBE) as a screening method for the early detection of breast cancer.

Breast cancer treatment lies in the efficiency of its timely detection. Self-breast examination (SBE) and screening by mammography combined with clinical breast exam (CBE) are effective methods in the timely detection of breast cancer.[41]

"High-income and middle-income regions in BRICS plus had significantly lower age-standardised BC mortality, case-fatality, and DALYs rates than low-income regions when nationwide BC screening programs were implemented"[42]

Among the screening methods available in the country, SBE is the cheapest method for the timely detection of breast

cancer, provided the lady is well aware of the correct procedure to perform it. Self-breast examination (SBE) is a visual and tactile screening method used to identify breast abnormalities pertaining to anatomy. Practice allows individuals to become familiar with the normal appearance and feel of their breasts, making it easier to recognise unusual changes over time.

During SBE, the individual inspects the breasts in front of a mirror, checks for visible signs like asymmetry, puckering, dimpling, or localised skin changes. This is followed by palpation of the breast, feeling the entire breast and underarm area using the fingers, with the arm raised and the shoulder extended to flatten the breast against the chest wall. This positioning enhances the ability to detect lumps, thickening, or other irregularities that may warrant further medical evaluation. The lady can inspect the breasts in a lying-down position for the detection of anatomical abnormalities.[20] Typically, no palpable abnormalities are detected in the breast tissue unless the examination is performed in the premenstrual phase or during pregnancy, when hormonal changes may cause the breasts to become more nodular and tender.[43] The right mentors for educating about the procedure and regular monitoring by community health professionals like Community Health Workers (CHWs) and Accredited Social Health Assistants (ASHAs) will ensure the timely detection of any abnormality in the breast, and hence, can seek the timely required health care.

In a study by Alam et al. (2021), around 19% of Bangladeshi women knew about self-breast examination; among them,

14.7% performed it.[44] In a 2022 study, Fatima et al. found that 16.21% of women from Davangere, Karnataka, practiced breast self-examination.[45] In the study done in 2023, on women of Tripura, Bhattacharjee et al. identified a lack of knowledge about self-breast examination (40.3%) as an essential barrier to conducting it, while 17.8% practiced it.[46]

2.7 National program for screening breast cancer (NP-NCD) and challenges.

The National Program for Prevention and Control of Non-Communicable Diseases (NP-NCD) aims to prevent and control significant NCDs, i.e., Hypertension, Diabetes, Cancers of the oral cavity, cervix and breast. The program was scaled up in a phased manner and now covers all the districts across the country. The focus of NPCDCS was to enable opportunistic screening for common NCDs at the District Hospital and Community Health Centers level, by setting up NCD clinics. Population-Based Screening (PBS) for common NCDs was launched in 2016 to expand the services and bring them closer to the community.[47] PBS includes screening individuals aged 30 years and above for NCDs: cardiovascular diseases, Diabetes mellitus, stroke, Cancer (oral, breast, cervical), chronic obstructive pulmonary disorder (COPD), chronic kidney disease (CKD), non-alcoholic fatty liver disease (NAFLD. This initiative is built around several key components: identifying and recording the target population,

evaluating risk factors, engaging communities to participate in screening programs at Sub-Centers (SCs) and Primary Health Centers (PHCs) in both rural and urban areas, promoting health awareness, initiating treatment at the PHC level, and referring cases to higher-level facilities when advanced care is needed. The program also ensures continuity of care through a well-defined system of upward and downward referrals and regular follow-ups.[47]

The prevention and control of non-communicable diseases (NCDs) in the community require a coordinated and multi-tiered approach, in which both Accredited Social Health Activists (ASHAs) and medical doctors play pivotal roles. As community-based frontline health workers, ASHA workers serve as vital links between the healthcare system and the population, particularly in rural and underserved areas. Their roles include raising awareness about risk factors for NCDs, promoting healthy behaviour, conducting community-level screening for conditions such as hypertension, diabetes, and certain cancers, and facilitating referrals to higher levels of care when necessary. On the other hand, medical doctors provide clinical expertise for diagnosis, management, and follow-up care, and play a critical role in training and supporting ASHAs in community outreach and health education.

The synergy between ASHAs and doctors enhances the effectiveness of NCD prevention strategies by ensuring grassroots engagement and professional medical oversight. Together, they contribute to timely detection, improved adherence to treatment, and continuity of care—ultimately reducing the burden of NCDs and improving health outcomes

within the community. Strengthening this collaborative model through capacity building, clear referral pathways, and supportive supervision is essential for sustainable impact.

Only 4% of Chinese women, compared to 70% of Italian women, utilise the government-provided screening service.[48] In the study by Negi et al, About 9.7% of women in the reproductive age group had undergone a breast examination for screening, and this was higher among women in the higher socioeconomic class, irrespective of their residence (urban or rural), religion, caste or tribal affiliation, education level, age, employment status, or marital status.[49]

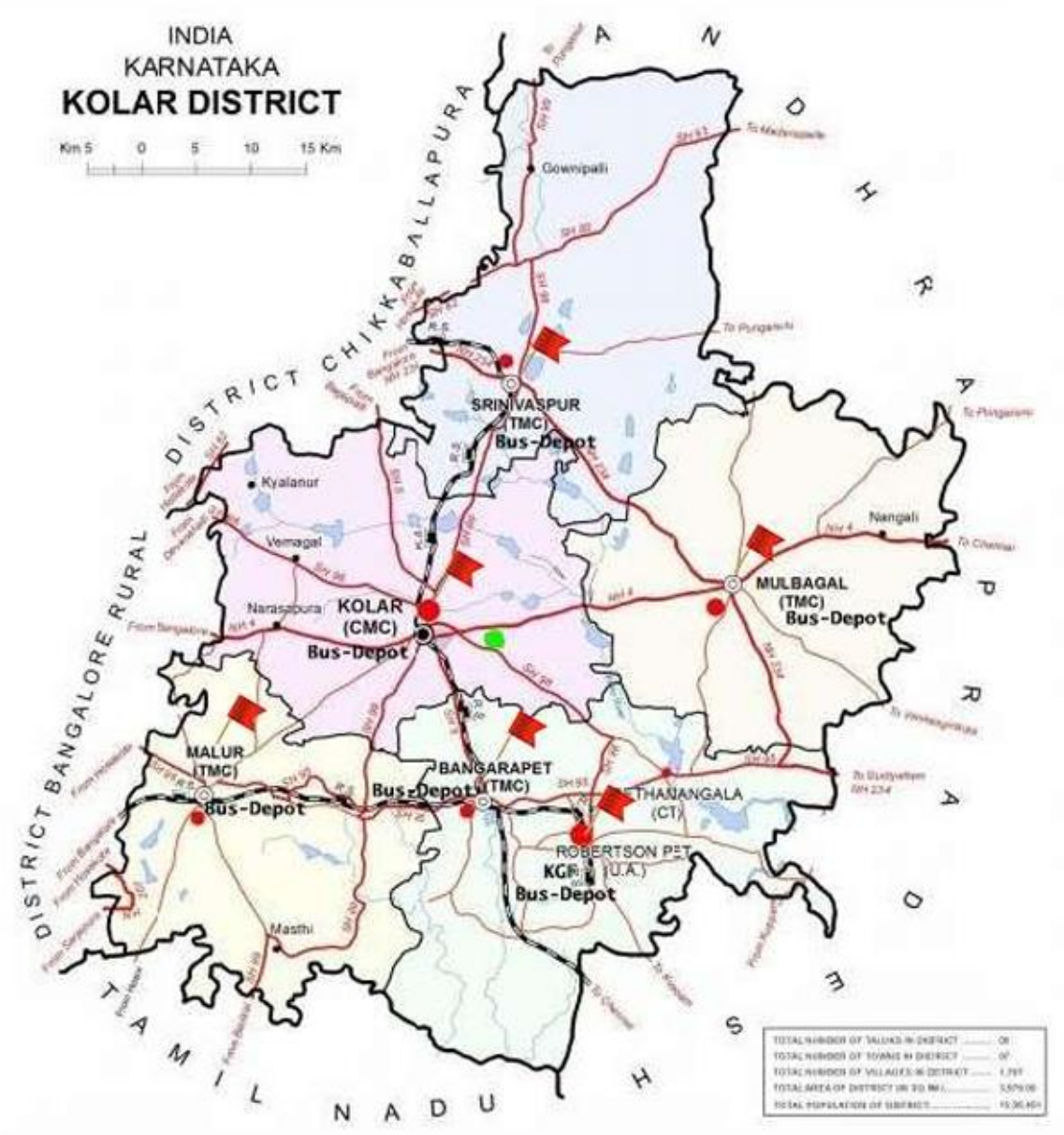
MATERIALS AND METHODS

4. MATERIALS AND METHODS

4.1 Topography of Kolar district

Figure 1:

Map of Kolar district.



4.2 Study design: Cross-Section Study

4.3 Study setting:

Outpatient departments of the Rural Health Training Center (RHTC) and Urban Health Training Center (UHTC) of the Department of Community Medicine, Sri Devaraj Urs Medical College, Tamaka, Kolar.

4.4 Study duration: July 2023 – Dec 2024

4.5 Study population:

All women aged above 18 years attending the OPD of RHTC (Devarayasamudra) / UHTC (Gandhinagar) in the field practice area of the Department of Community Medicine, SDUMC, Kolar.

4.6 Sample size calculation:

Prevalence of knowledge of self-breast examination in a previous study done by Pooja Ramakant et al in 2018 is 28% [1]

Z at 95% confidence interval is 1.96, Prevalence (p) being 28%, and absolute error being 5%,

$$n = \frac{Z^2 (p)(1-p)}{d^2}$$

$$n = \frac{(1.96)^2 (28) \times (72)}{(5)^2}$$

n = 310 + 10% (non-respondent rate) = 326 = (310+16), rounded to 350.

The sample size calculated for the study is 350.

4.7 Inclusion criteria:

Women over 18 years old who attended the Outpatient departments of the RHTC/UHTC, field practice area of the Department of Community Medicine, SDUMC, during the study period.

4.8 Exclusion criteria:

1. Women who are brought in a state of emergency to the OPD (RTA/state of unconsciousness)
2. Women already diagnosed with breast cancer.
3. Pregnant and lactating mothers.

4.9 Sampling procedure:

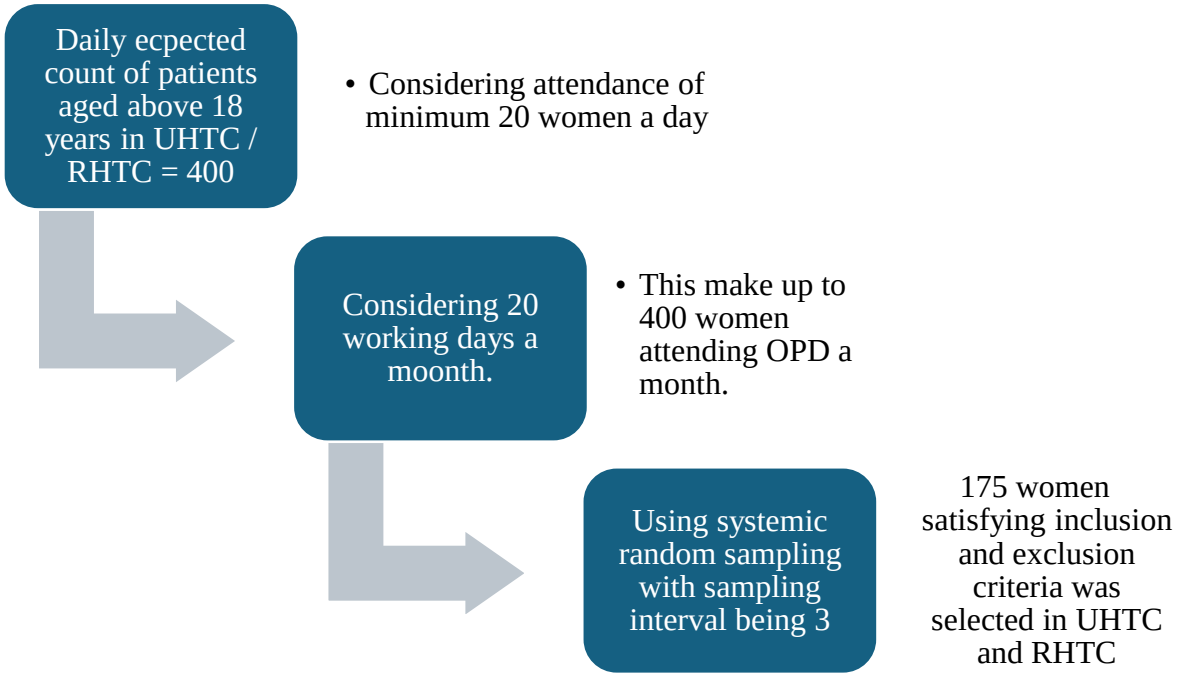
All women aged 18 years and above who availed themselves of the OPD services at RHTC/UHTC in the field practice area of the Department of Community Medicine, SDUMC, Kolar, were invited to participate in the study.

Daily expected attendance of women aged above 18 years in RHTC (Devarayasamudra, Mulbagal) and UHTC (Gandhinagar, Kolar), field practice area of Department of Community Medicine, SDUMC, was around 20/day in a month (considering around 20 working days a month).

Expecting a total of 400 women in each centre, a sample of 175 women aged 18 years or above, satisfying both inclusive and exclusive criteria, was selected using systematic random sampling with a sampling interval of 3 (800/350 = 2.28) until the required sample size was achieved.

Figure 2:

Sampling procedure



4.10 Study tool:

Breast Cancer Awareness Measurement (BCAM) questionnaire, which is developed by the Cancer Research UK, King's College London.49 This BCAM questionnaire is an internationally recognised breast cancer awareness tool. It has been translated and validated into Malay and used among the Malaysian population, which included Indian women, and it was found to be a valid, acceptable, and reliable tool.50

The questionnaire is available in English, validated, pilot-tested & later translated to the Kannada language, and back translated before data collection. Data were collected through face-to-face interviews, structured around the following domains. (Annexure I)

Domains	**Assessment**
Section A	**Socio-demographic details of the participants.**
Section B	**Self–perception of Breast cancer**. a. Risk of getting the disease. b. Measures taken if perceived risk.
Section C	**Awareness** a. Risk Factors of Breast Cancer. b. Warning signs of breast cancer. c. National screening program.
Section D	**Self-breast examination**. a. Source. b. Performance. c. Consultation with health care professionals d. Practicing as a screening for timely detection and diagnosis of breast cancer. e. Reference to friends and family.

4.11 Statistical analysis.

Independent variables	Dependent variables
1. Age 2. Religion 3. Marital status 4. Education 5. Occupation 6. SES 7. BMI	1. Self–perception of getting Breast cancer. 2. Awareness of a. Risk factors of breast cancer. b. Warning signs in breast cancer. c. National screening program. 3. Acceptability of the Self-breast examination (SBE) as screening modality for timely detection and diagnosis of breast cancer.

4.11.a. <u>Analysis of independent variables.</u>

Sl. no	Independent variables	Categories
1.	**Age**	1. 18-30 yrs 2. 31-40 yrs 3. 41-50 yrs 4. Above 50 yrs
2.	**Religion**	1. Hindu 2. Muslim 3. Christian 4. Others
3.	**Marital status**	1. Unmarried / separated/widowed 2. Married
4.	**Educational status**	1. Illiterate 2. Up to matriculation (1st class to 9th class) 3. Matriculation and above (above 10th class)
5.	**Occupational status**	1. Homemakers 2. Others

Sl. no	Independent variables	Categories
6.	**Socio-economic status (SES)** **Modified B G Prasad classification, 2024** 51	1. **Class I** – Rs. >/=9098/- 2. **Class II** – Rs. 4549-9097/- 3. **Class III** – Rs. 2729-4548/- 4. **Class IV** – Rs. 1364-2728/- 5. **Class V** – Rs. <1364/-
7	**Body Mass Index (BMI)**52 **WHO–Asian classification**	1. **Underweight** - <18.5 kg/m^2 2. **Normal** - 18.5-22.9 kg/m^2 3. **Overweight** - 23-24.9 kg/m^2 4. **Obese class – I** - 25-29.9 kg/m^2 5. **Obese class – II** ->/=30 kg/m^2

4.11.b. Analysis of dependent variables

Sl.no	Dependent variables	Analysis
1.	Heard about breast cancer	• Frequency and percentage
2.	Self-perceived risk of breast cancer	• Frequency and percentage of women perceiving the risk of the disease. • Association with Socio-demographic details. • Association with nutritional status (BMI).
2. a	Reason for self-perceived risk.	• Frequency and percentage of reasons
2.b	Measures taken if they perceive the risk.	• Frequency and percentage.
3. a	Perception of risk factors of breast cancer	• A 5-point Likert scale was used to score. • The 50^{th} percentile of attained scores will be used to categorize good and poor perception of risk factors. • Association with Socio-

		demographic details. • Association with nutritional status (BMI).
3.b	Perception of the warning signs in breast cancer.	• A 3-point Likert scale was used to score. • The 50th percentile of attained scores will be used to categorize good and poor perception. • Association with Socio-demographic details. • Association with nutritional status (BMI).
3.c	Knowledge of the screening program offered by the government.	• Frequency and percentage of: 1. Awareness of screening program. 2. Invite for screening in peripheral health centers. 3. Attendance to screening in peripheral health centers.
4.	Knowledge and practice of Self-breast examination (SBE) as the screening method for early detection and	• Frequency and percentage of SBE: 1. Awareness 2. Performance

	diagnosis of breast cancer	3. Practice 4. Recommendations to friends and family • Association with Socio-demographic details. • Association with nutritional status (BMI).

The data collected was coded and entered into Microsoft Excel. After editing and cleaning, the entered data has been transferred into IBM licensed SPSS Statistics version 23.0. The collected data were summarised and presented as frequencies and proportions. Bar diagrams were used to show the data graphically. The chi-square and Fisher's exact tests were used as significance tests. To estimate the association of socio-demographic factors and nutritional status (BMI) of the participants with self-perceived risk, perception of risk factors and warning signs and practice of SBE as a screening method for timely detection of breast cancer, Univariate binary logistic regression was performed. Crude Odds ratio and 95% Confidence Interval (CI) were used to quantify their relationship. Furthermore, a Multivariate logistic regression analysis was performed to estimate the strength of the association with Adjusted Odds ratio and its 95% Confidence Interval. All statistical tests were interpreted using a significance threshold of $p < 0.05$.

4.12 Pilot study

A total of 20 women availing the Outpatient department service in RHTC (Devarayasamudra) and UHTC (Gandhinagar), meeting the inclusion criteria and exclusion criteria, were interviewed with informed consent during a 1-month pilot study (August 2023) to test the questionnaire in the field, and to make any changes if necessary.

4.13 Ethical Committee Clearance:

This study is approved by the institutional ethical review committee of Sri Devaraj Urs Academy of Higher Education and Research, Kolar. (No.DMC/KLR/IEC/15/2023-24)

4.14 Autonomy:

Participants in the study were given a participant information sheet (PIS) that explained the research and encouraged them to participate voluntarily. Subjects were asked to provide a written informed consent form if they were ready to participate in the study.

4.15 Confidentiality:

A survey was done in peripheral healthcare centers to collect information from the participants. The data was collected from the participants through a face-to-face interview using the BCAM questionnaire, which was kept confidential. The collected data was accessible only to the study team. The data was entered and stored in a password-protected Excel sheet for analysis.

4.16 Benevolence:

The participants were educated about the risk factors, warning signs and importance of Self-Breast Examination at the end of the survey for timely detection and diagnosis of breast cancer. Individuals who were found at risk of getting the disease were informed regarding the same and advised to seek medical support.

4.17 Justice:

Research ensured that the selection of participants was fair and equitable, devoid of discrimination. The research benefits were distributed fairly among all participants while minimising burdens or risks.

RESULTS

The study was conducted among 350 women who attended peripheral centres of the field practice area of the Department of Community Medicine, Sri Devaraj Urs Medical College, Tamaka, Kolar.

Table 1

Distribution of the study participants according to age.

Sl. No	Age group	Participants (n = 350)
1.	18-30 yrs	118 (33.4%)
2.	31-40 yrs	98 (28.4%)
3.	41-50 yrs	89 (25.4%)
4.	Above 50 yrs	45 (12.8%)

Among the 350 study participants, the majority, 33.4% (118), were in the 18-30 age group, followed by 28.4% (98) in the 31-40 age group, 25.4% (89) in the 41-50 age group, and 12.8% (45) in the age group above 50.

The mean age of the participants of the study is 36.15±13.0 years.

Table 2

Distribution of the study participants according to residence.

Sl. No	Residence	Participants (n = 350)
1.	Urban	175 (50%)
2.	Rural	175 (50%)

Among the 350 study participants, 50% were from urban areas.

Table 3

Distribution of the study participants according to religion.

Sl. No	Religion	Participants (n = 350)
1.	Hinduism	220 (63%)
2.	Islam	126 (36%)
3.	Christianity	4 (1%)

Among the 350 study participants, the majority, 63% (220), practised Hinduism, followed by 36% (126) practiced Islam and 1% (4) practiced Christianity.

Table 4

Distribution of the study participants according to marital status.

Sl. No	Marital status	Participants (n = 350)
1.	Married	308 (88%)
2.	Unmarried	42 (12%)

Of the 350 study participants, 88% (308) were married.

Table 5

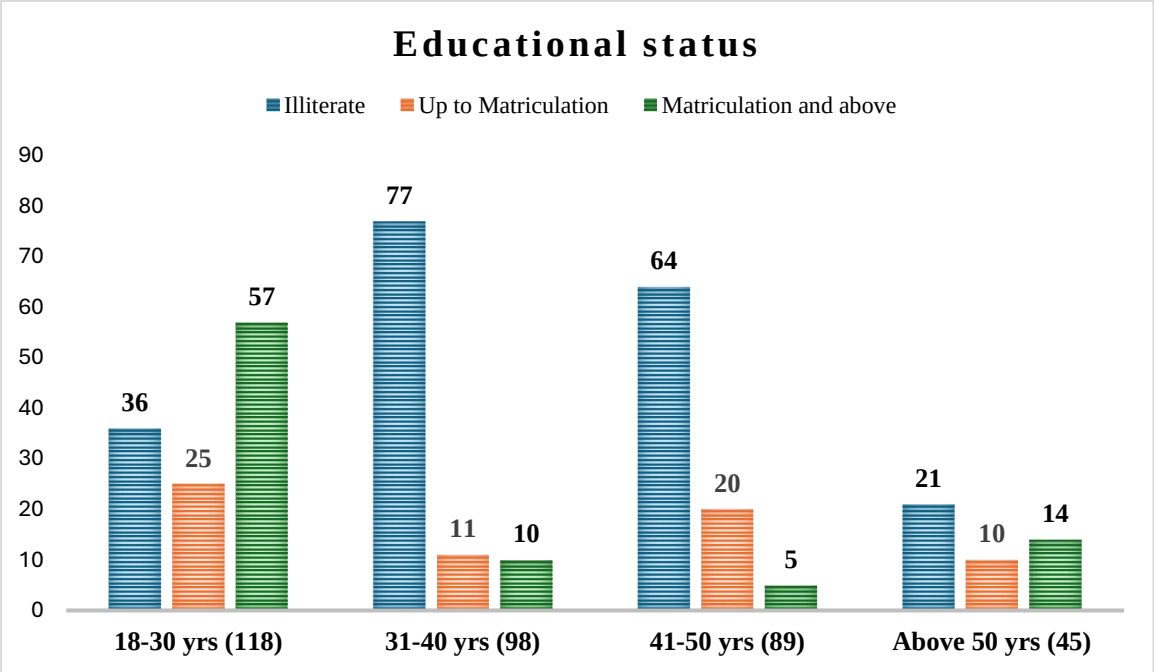
Distribution of the study participants according to educational status.

Sl. No	Education	Participants (n = 350)
1.	Illiterate	198 (56.6%)
2.	Up to matriculation	66 (18.8%)
3.	Matriculation and above	86 (24.6%)

Among the 350 study participants, the majority, 56.6% (198), were illiterate, followed by 24.6% (86) educated up to matriculation and 18.8% (66) educated up to matriculation.

Figure 3

Educational status of the participants in the study.



Among 350 participants, the majority of the illiterate participants, 79% (77), were in the 31-40 age group, followed by 72% (64) in the 41-50 age group.

Among 350 participants, the majority were educated up to matriculation. Of these, 21% (25) were in the 18-30 age group, followed by 22% (20) in the 41- 50 age group.

Among 350 participants, the majority are educated matriculation and above, and 48% (57) are in the 18-30 yrs age group.

Table 6

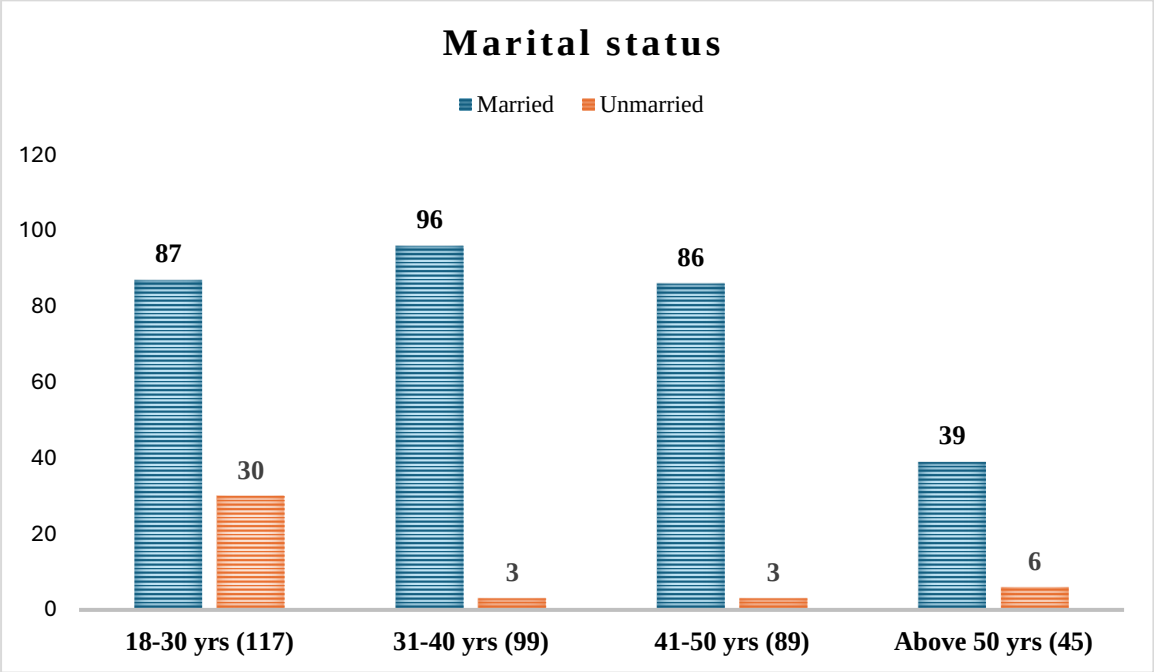
Distribution of the study participants according to occupational status.

Sl. No	Occupation	Participants (n = 350)
1.	Homemakers	308 (88%)
2.	Others	42 (12%)

Among the 350 study participants, the majority, 88% (308), were homemakers.

Figure 4

Marital status of the participants in the study.



Among 350 participants, it is observed that most are married in all age groups.

The majority of the participants, 97% (96) in the 31-40 age group, are married, followed by 74% (87) in the 18- 30 age group and 97% (86) in the 41- 50 age group.

26% (30) of the participants in the 18-30 years age group are unmarried.

Table 7

Distribution of the study participants according to socio-economic status.

Sl. No	Socio-economic status (Modified B.G Prasad classification, 2024)	Participants (n = 350)
1.	Class I (Above Rs 9098/-)	63 (18%)
2.	Class II (Rs 4549 – 9097/-)	143 (41%)
3.	Class III (Rs 2729 – 4548/-)	66 (19%)
4.	Class IV (Rs 1364 – 2728/-)	37 (10.5%)
5.	Class V (Below Rs 1364/-)	41 (11.5%)

Among the 350 study participants, majority of them, 41% (143) belong to Class II. 18% (63) of the participants belong to Class I, 19% (66) to Class III, 10.5% (37) to Class IV and remaining 11.5% (41) to Class V.

Table 8

Distribution of the study participants according to nutritional status.

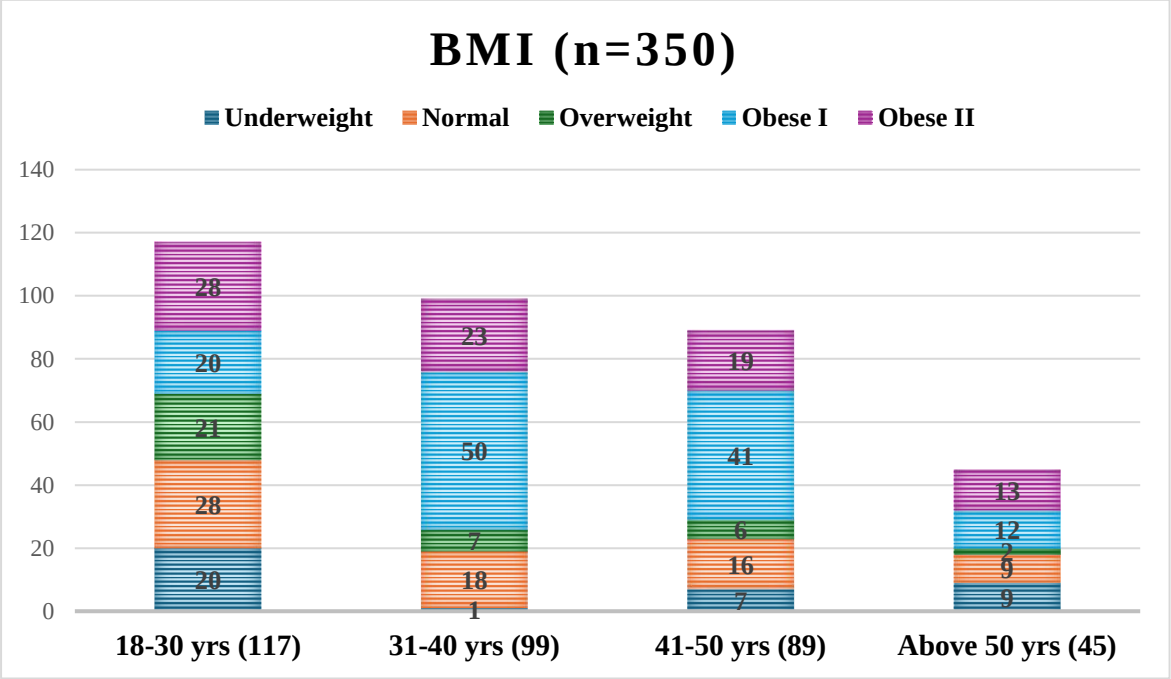
Sl. No	Body Mass Index (BMI) . (WHO-Asian BMI classification)	Participants (n = 350)
1.	Underweight (Below 18.5 kg/m^2)	37 (10.6%)
2.	Normal (18.5-22.9 kg/m^2)	71 (20.3%)
3.	Overweight (23-24.9 kg/m^2)	36 (10.3%)
4.	Obese class I (25-29.9 kg/m^2)	123 (35.1%)
5.	Obese class II (>/=30 kg/m^2)	83 (23.7%)

Among the 350 study participants, the majority of them, 35.1% (123), belong to Obese Class I, followed by 23.7% (83) to Obese Class II and 10.3% (36) to overweight.

Among the study participants, 20.3% (71) had normal BMI, while 10.6% (37) were underweight.

Figure 5

Assessment of Nutritional status of the participants in the study using Body Mass Index (BMI)



Participants in the 18-30 age group show almost equal distribution of all BMI classes. 17% (20) are underweight, 24% (28) have normal BMI, 18% (21) are overweight, 17% (20) belong to Obese Class I, and 24% (28) belong to Obese Class II.

50% (50) of the participants in the age group of 31-40 belong to Obese Class I, and 24% (23) belong to Obese Class II. 7% (7) are overweight, while 1% (1) are underweight. 18% (18) have a normal BMI.

46% (41) of the participants in the age group 41-50 belong to Obese Class I, and 21% (19) belong to Obese Class II. 7% (6) are overweight, while 8% (7) are underweight. 18% (16) have normal BMI.

29% (13) of the participants in the above 50 years age group belong to Obese Class II, and 27% (12) belong to Obese Class I. 4% (2) are overweight, while 20% (9) of the participants are underweight. 20% (9) have normal BMI.

Table 9

Prevalence of self-perceived risk of breast cancer among study participants

SL.NO	Variables	Participants (n = 350)
1.	**Heard about breast cancer.**	226 (64.6%)
2.	**Source of Breast cancer.**	
	a. Friends/family	135 (38.6%)
	b. Social media (WhatsApp, Facebook, etc.)	177 (50.6%)
	c. Electronic media (TV, Radio, etc.)	142 (40.6%)
	d. Healthcare professionals (Medical doctors, ANM, ASHA)	147 (42%)
3.	**Perceived risk of getting breast cancer**.	190 (54%)
4.	**Reason for self-perceived risk (n=190)**	
	a. Family history of breast cancer	43 (23%)
	b. No specific reason	147 (77%)
5.	**Measures taken if self-perceived risk is present. (n=190)**	
	a. Self-breast examination (SBE)	55 (29%)
	b. Clinical breast examination (CBE)	59 (31%)
	c. No measures taken	76 (40%)

In Table 9, out of 350 participants, 64.6% (226) have heard about breast cancer.

The most common source of information about breast cancer is through social media, 50.6% (177), followed by electronic media, 40.6% (142) and by healthcare professionals, 42% (147), while 38.6% (135) participants had heard about breast cancer from friends and family.

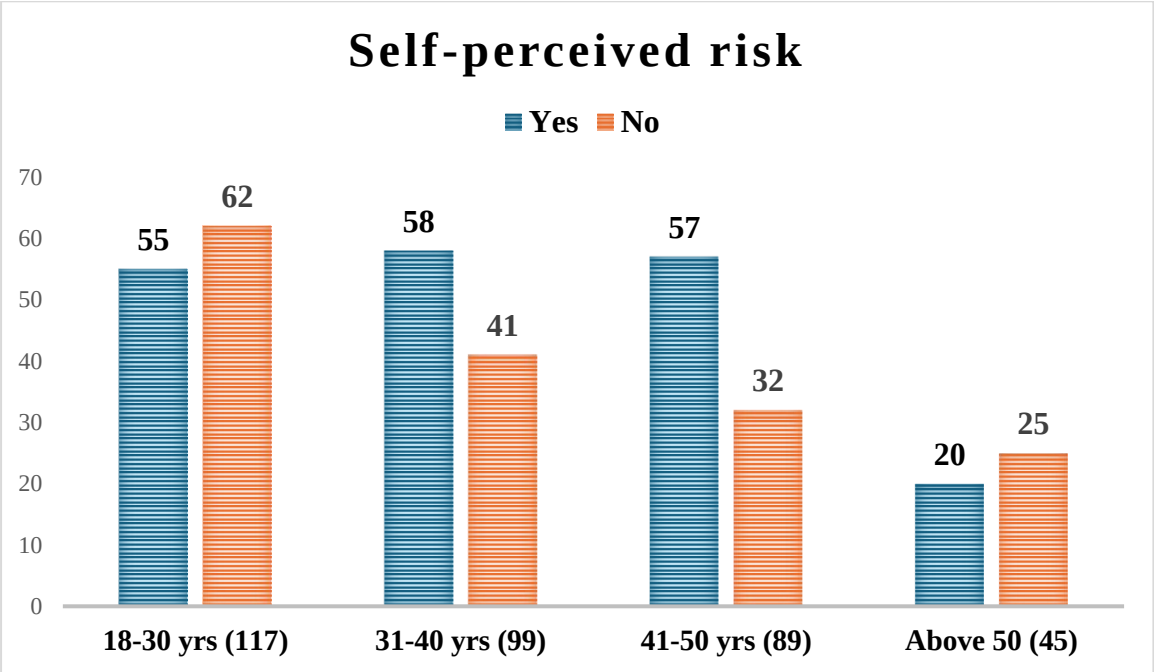
Out of 350 participants, 54% (90) have self-perceived risk of breast cancer.

Out of 190 participants, the majority of them, 77% (147), did not have a specific reason for perceived risk of breast cancer, while 23% (43) reported an established family history of breast cancer.

Out of 190 participants who perceived risk of breast cancer, majority of them 40% (76) did not take any measure, while 29% (55) were practicing SBE, 31% (59) were going for regular screening and follow up in hospital (CBE) for timely detection and diagnosis of breast cancer.

Figure 6

Prevalence of self-perceived risk of breast cancer among study participants



Out of 350 participants, the majority of them in the age group 31-40 years, 59% (58) and 41-50 years, 64% (57) had self-perceived risk of breast cancer.

Among 350 participants, the majority of them, in the age group of 18-30 years, 53% (62) and above 50 years, 55% (25) did not perceive the risk of breast cancer.

Table 10

Knowledge of the risk factors causing breast cancer.

Sl. No	Knowledge of the risk factors of breast cancer	Participants (n = 350)
1.	Family history of breast cancer	43 (12.3%)
2.	Previous history of breast cancer	35 (10%)
3.	Alcohol consumption	22 (6.3%)
4.	Obesity	55 (15.7%)
5.	It is an old age disease	71 (20.3%)
6.	Don't know	124 (35.4%)

Out of 350 participants, the majority of them, 35.4% (124) did not know any of the risk factors of breast cancer.

20.3% (71) of participants said it was an old age disease.

15.7% (55), 6.3% (22) participants said obesity and alcohol consumption as risk factors, respectively.

12.3% (43) and 10% (35) of participants said established history of breast cancer in the family and previous diagnosis of breast cancer, respectively, as risk factors for the disease.

Table 11

Perception of the risk factors of breast cancer.

SL.NO	Risk factors	Participants (n = 350)		
		Agree	**Don't know**	**Disagree**
1.	History of breast cancer	232 (66%)	118 (34%)	-
2.	Family history of breast cancer	232 (66%)	118 (34%)	-
3.	Using Hormonal replacement therapy (HRT)	55 (15.7%)	295 (84.3%)	-
4.	Drinking more than 1 unit of alcohol everyday	78 (22%)	272 (88%)	-
5.	Being overweight (BMI > 25kg/m^2)	157 (45%)	160 (45.7%)	33 (9.4%)
6.	Having children late in life (>30 yrs.) / Nulliparity	-	350 (100%)	-
7.	Starting one's menarche at an early age (< 10 years)	-	350 (100%)	-
8.	Having late menopause (>45 yrs.)	-	350 (100%)	-
9.	Physical activity (< 30 min. of moderate physical activity, 5 times a week.)	55 (15.7%)	295 (84.3%)	-

Table 11 shows the perception of participants about the risk factors of breast cancer.

Among 350 participants, the majority of them agreed that a previous diagnosis of breast cancer, 66% (232), an established history of breast cancer in the family, 66% (232) and being overweight, 45% (157), are risk factors for developing the disease.

While 15.7% (55) participants agreed that using hormonal therapy (HRT), consuming alcohol (>1 unit/day), 22% (78), no moderate physical activity, less than 30 min, 5 times a week, 16% (55) was a risk factor of breast cancer.

None of the participants knew about risk factors like late or no childbirth, early menarche, and late menopause.

Table 12

Distribution of the study participants according to perception of breast cancer risk factors.

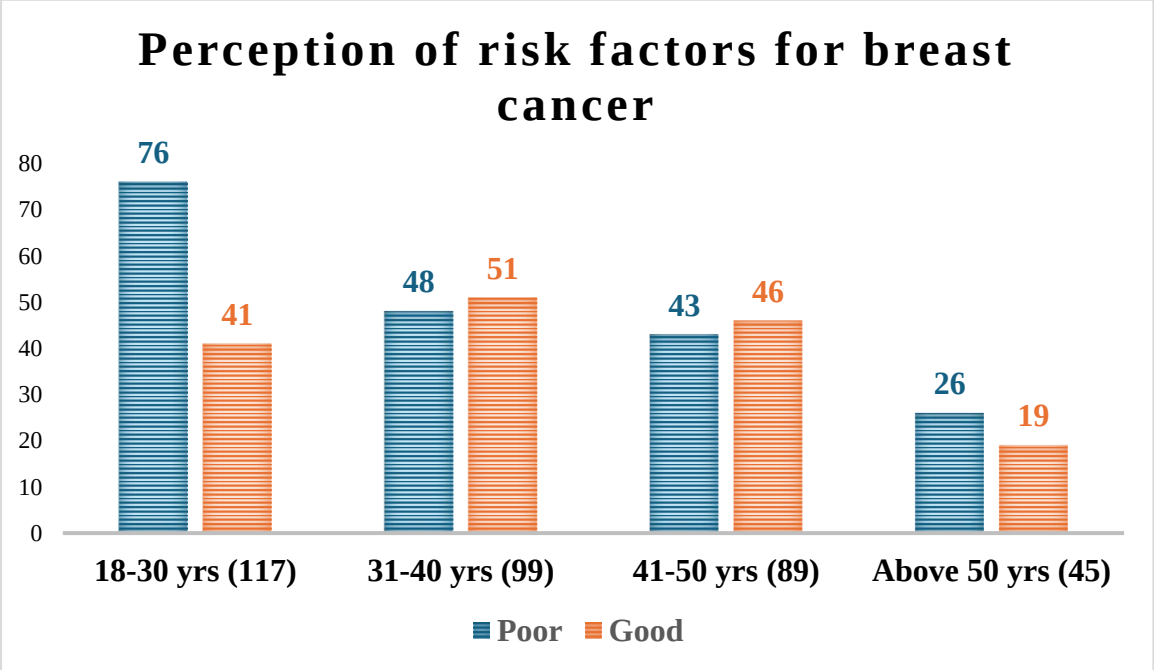
Participants (n = 350)	
Poor perception (score 30 and below)	**Good perception** (score more than 30)
193 (55%)	157 (45%)

Among the 350 participants, the majority, 55% (193), had a poor perception of the risk factors of breast cancer.

A good perception of breast cancer risk factors was observed in 45% (157) of the participants.

Figure 7

Distribution of the study participants' perception of risk factors of breast cancer according to age group.



Among 350 participants, participants in the age group 31-40 years, 52% (51) and 41-50 years, 52% (46) have a good perception of breast cancer risk factors.

In participants of the age group 18-30 years, the majority of them, 65% (76), have a poor perception about the risk factors of breast cancer.

In participants of the age group above 50 years, the majority of them 58% (26) have a poor perception about the risk factors of breast cancer.

Table 13

Knowledge of the warning signs of breast cancer.

Sl. No	Knowledge of the warning signs of breast cancer	Participants (n = 350)
1.	Pain in the breast(s)	119 (34%)
2.	Lump in the breast(s)	107 (31%)
3.	Don't know	124 (35%)

Out of 350 participants, the majority of them, 35% (124) did not know any of the warning signs of breast cancer for timely detection and diagnosis of breast cancer.

34% (119) of participants reported pain as a warning sign of breast cancer.

31% (107) of participants reported pain as a warning sign of breast cancer.

Table 14

Perception of warning signs of breast cancer.

SL.NO	Warning signs	Participants (n = 350)		
		Yes	**No**	**Don't know**
1.	Change in the position of the nipple	-	-	350 (100%)
2.	Pulling in of the nipple.	12 (3%)	42 (12%)	296 (85%)
3.	Pain in one of the breasts or armpits.	119 (34%)	32 (9%)	199 (57%)
4.	Puckering / Dimpling of the breast skin.	-	-	350 (100%)
5.	Discharge / bleeding from nipple	-	77 (22%)	273 (78%)
6.	lump / thickening in the breast.	107 (31%)	-	243 (69%)
7.	Rash on or around the nipple.	-	-	350 (100%)
8.	Redness of the breast skin.	-	-	350 (100%)
9.	lump / thickening under the armpit.	-	-	350 (100%)
10.	Change in size of the breast.	183 (52%)	-	167 (48%)
11.	Change in shape of the breast.	183 (52%)	-	167 (48%)

Table 14 shows participants' perception of warning signs of breast cancer.

Change in size, 52% (183) and shape of the breast, 52% (183), was perceived as a potential warning sign by the participants.

Pain in the breast was perceived as a potential warning sign of breast cancer by 34% (119) of the participants.

A lump in the breast was perceived as a potential warning sign of breast cancer by 31% (107) of the participants.

Pulling in of the nipple was perceived as a potential warning sign of breast cancer by 3% (12) of the participants.

Table 15

Distribution of the study participants according to perception of warning signs of breast cancer.

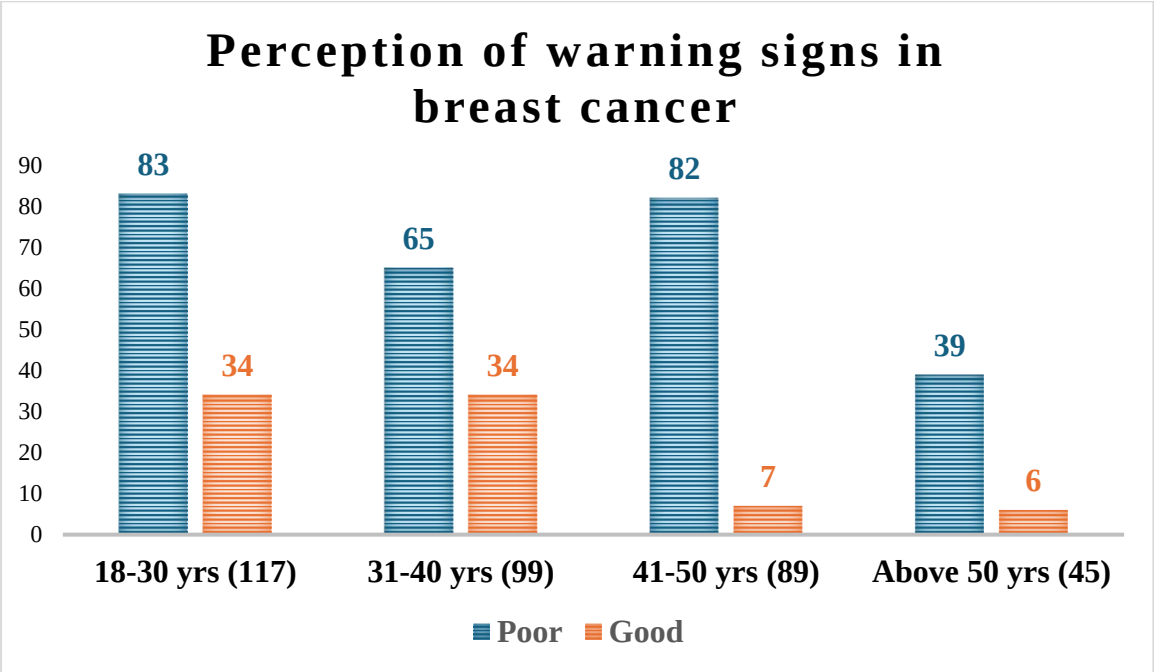
Participants (n = 350)	
Poor perception (score 17 and below)	**Good perception** (score more than 17)
269 (77%)	81 (23%)

Among 350 participants, majority of them, 77% (269) had poor perception of warning signs of breast cancer.

23% (81) of the total participants had a good perception of the warning signs of breast cancer.

Figure 8

Distribution of the study participants' perception of warning signs of breast cancer according to age group.



Out of 350 participants, the majority of them, in all age groups, had poor perception of warning signs of the breast cancer.

In participants of the age group 18-30 years, 29% (34) have a good perception about the warning signs of the breast cancer.

In participants of the age group 31-40 years, 34% (34) have a good perception about the warning signs of the breast cancer.

In participants of the age group 41-50 years, 8% (7) have a good perception about the warning signs of the breast cancer.

In participants of the age group above 50 years, 13% (6) have a good perception about the warning signs of the breast cancer.

Table 16

Knowledge of the National Breast Cancer Screening Program.

Sl. No	Particulars	Participants (n = 350)
1.	Awareness of breast cancer screening program in the country (NP-NCD)	153 (43.7%)
2.	Invitation for breast cancer screening under the program. (n=153)	
	a. 30 years and above	51 (33%)
	b. Below 30 years	21 (14%)
	c. Don't know	81 (53%)

The above table shows the awareness of the screening program in the country for timely detection and diagnosis of breast cancer.

Out of 350 participants,

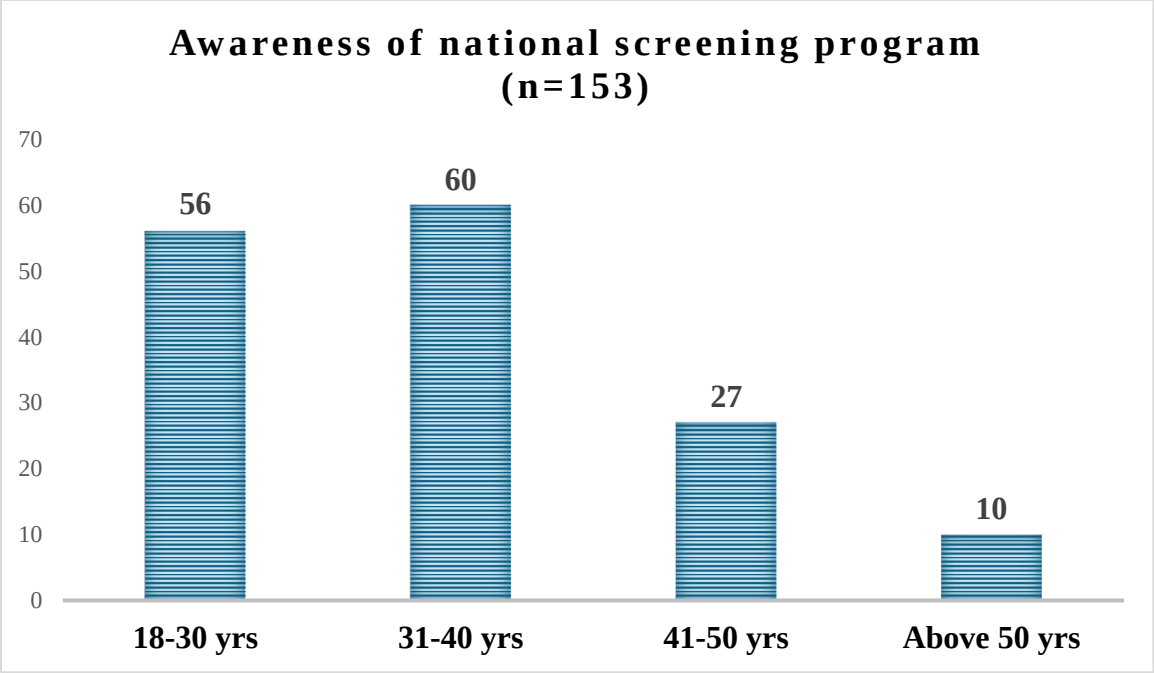
Of the participants, 43.7% (153) knew about the national breast cancer screening program (NP-NCD).

Out of 153 participants, the majority, 81 (53%), did not know about the age of commencement of breast cancer screening.

33% (51) of the participants are aware that the screening invitation for breast cancer will commence for individuals aged 30 years and above, while 6% (21) of the women said it would begin below 30 years.

Figure 9

Distribution showing the awareness of the breast cancer screening program in the country.



Out of 153 participants, Participants of age group 31-40 years, 39.8% (60) and 18-30 years, 36.6% (56) were more aware of national program for breast cancer screening than the other age groups.

While 17.6% (27) participants of age group 41-50 years, and , 6% (10) in age group above 50 years were less aware of the national program for breast cancer screening.

Table 17

Women availing the screening facility for breast cancer under the National Cancer Screening Program (NP-NCD).

Sl. No	Particulars	Participants (n = 350)
1.	**Invited for the breast cancer screening in peripheral health centres under the program.** a. Yes b. Don't know	 147 (42%) 203 (58%)
2.	**Had undergone breast cancer screening in the peripheral health centres. (n=147)**	147 (100%)
3.	**Abnormal reports after screening.**	NIL

Out of 350 participants, majority of them, 58% (203) did not know about the invitation for breast cancer screening while, 42% (147) participants knew about the invitation for screening and attended the same for timely detection and diagnosis of the same.

All the participants who knew about the national screening program for breast cancer, have attended the same in peripheral health centers and reported no abnormality after the screening.

Figure 10

Distribution showing the participants' attendance at the breast cancer screening program in peripheral centres.

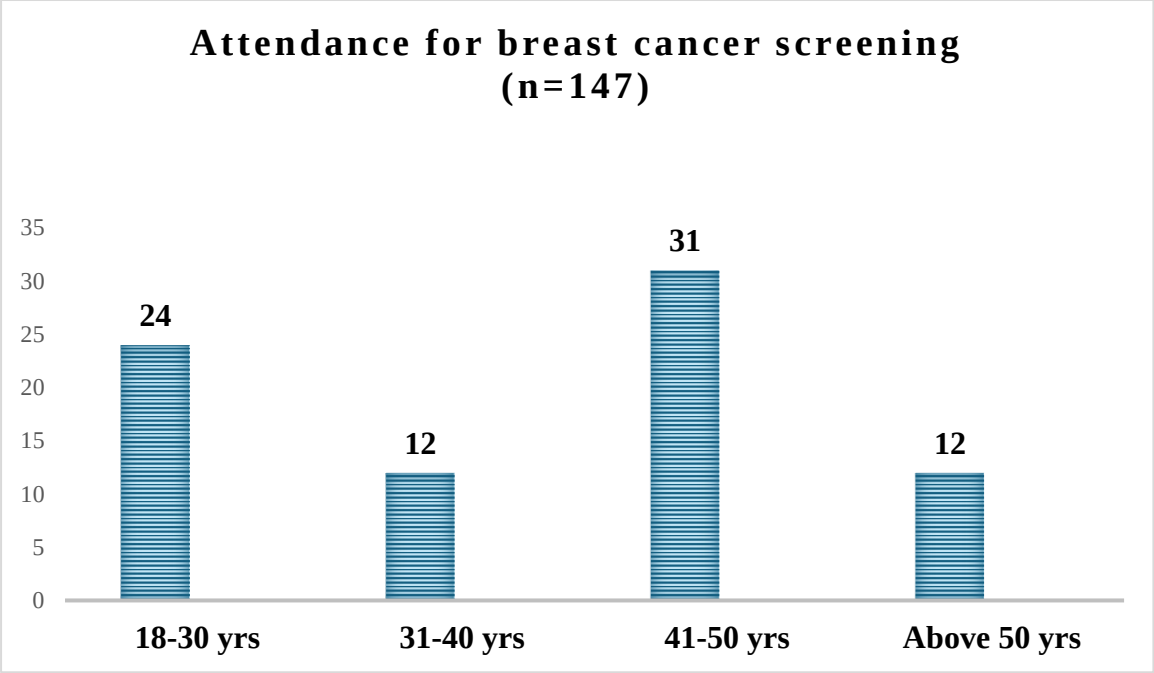


Figure 8 shows the age group-wise distribution of the women who attended the breast cancer screening program in peripheral centers for early detection and diagnosis of breast cancer.

Out of 147 participants, the majority of them who attended the screening program belong to the age group of 41- 50 years, 39% (31) and 18-30 years, 31% (24).

While 15% (12) of participants in the age groups of 31-40 years and above 50 years attended the breast cancer screening program.

Table 18

Assessment of participants' confidence, skills and behaviour in noticing any changes in the breast.

Sl. No	Particulars	Participants (n = 350)
1.	**Breast checking for any changes.**	
	a. Rarely /never	295 (84%)
	b. Once a month	55 (16%)
2.	**Confidence in noticing any breast changes.**	
	a. Not very confident	42 (12%)
	b. Fairly confident	190 (54%)
	c. Not at all confident	118 (34%)
3.	**Consulted a healthcare professional.**	
	a. Yes	22 (6%)
	b. Noticed no changes in the breast.	328 (94%)
4.	**Time taken to contact a health care professional (if any breast changes)**	
	a. Immediately	190 (54%)
	b. Within a week	42 (12%)
	c. Don't know	118 (34%)

Table 18 shows the confidence, skills, and behaviour participants have towards any changes in the breast.

Among 350 participants, the majority of them, 84% (295), check their breasts rarely, while only 16% (55) of the participants check their breasts once a month.

Out of 350 participants, the majority of them, 54% (194) are fairly confident of noticing any breast change, while 34% (118) are not confident in finding any breast changes.

Out of 350 participants, only 6% (22) have consulted a healthcare practitioner for any changes in their breasts. The majority of the participants, 94% (328), have not noticed any changes in their breasts.

Out of the total study participants, 54% (190) of them would contact the healthcare practitioners immediately and 12% (42) of them would report to them in a week. 34% (118) did not know when to report to the same.

Table 19

Knowledge of Self-breast examination (SBE)

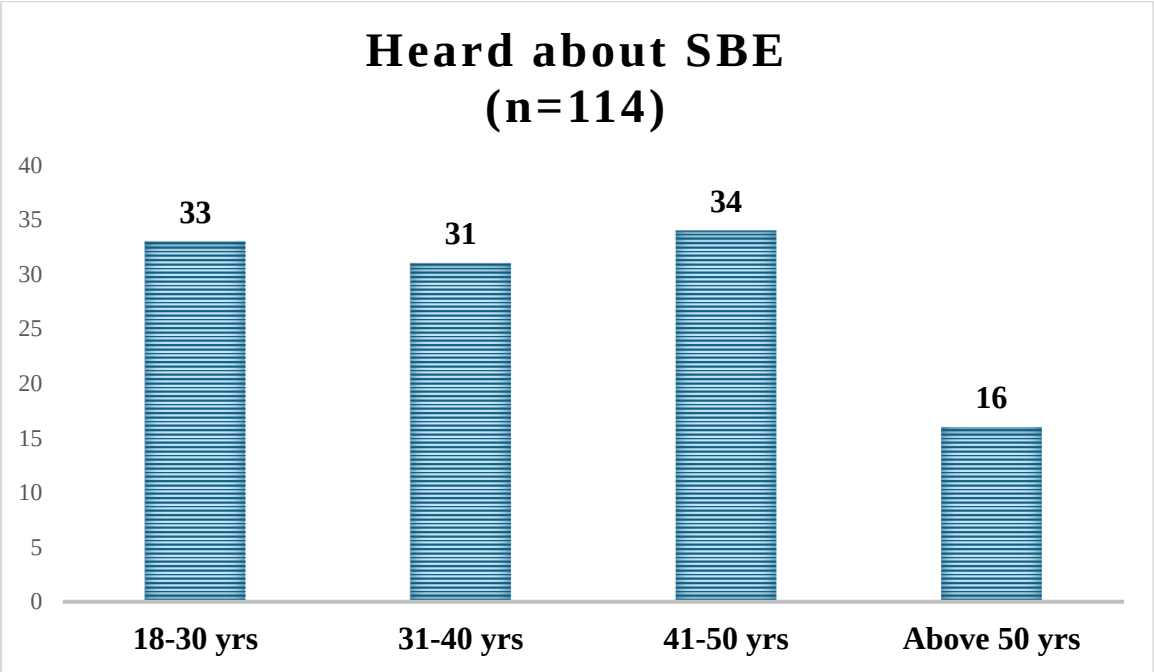
Sl. No	Particulars	Participants (n = 350)
1.	**Heard about SBE**	114 (33%)
2.	**Source of information (n=114)** a. ANM, ASHA b. Awareness programs.	 35 (31%) 114 (100%)

Among the total participants, 33% (114) of them have heard about self-breast examination.

Most common source of information is through awareness programs 100% (114) followed by ANM and ASHA workers, 31% (35).

Figure 11

Age group-wise distribution of participants heard about Self Breast Examination.



Almost equal distribution of the participants who have heard about the SBE is seen in all age groups below 50 years.

Out of 114 participants, 30% (34) in 41-50 yr age group, 29% (33) in 18-30 yrs age group, 27% (31) in 31-40 years age group and 14% (16) in age group above 50 years have heard about SBE.

Figure 12

Age group-wise distribution of participants according to the source of SBE.

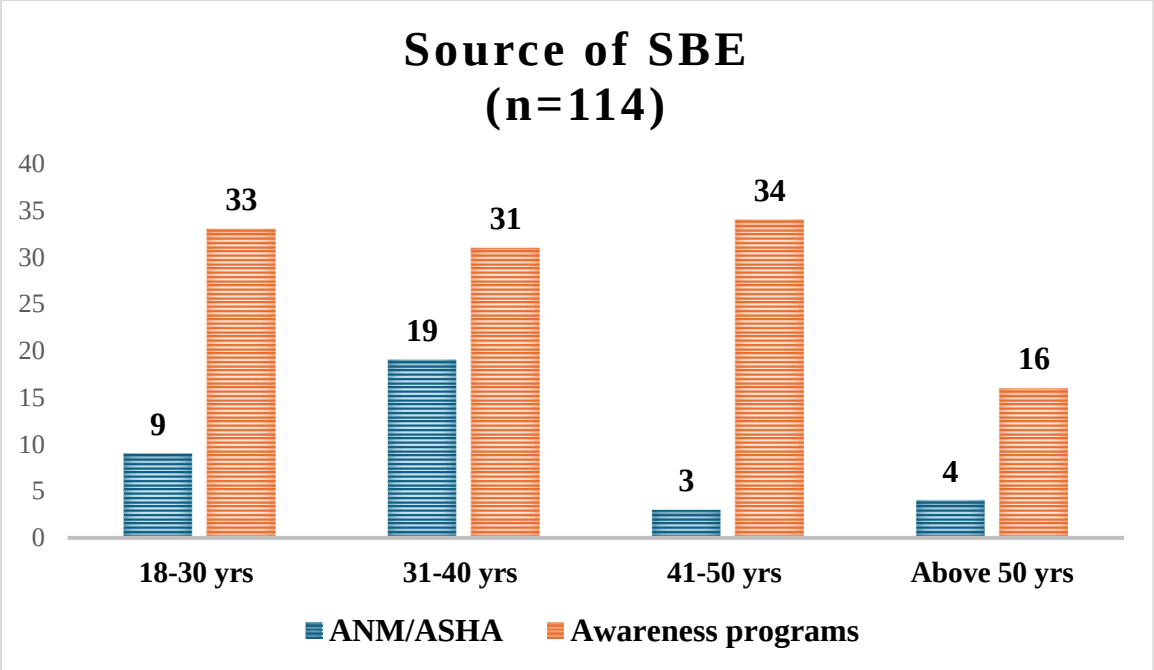


Figure 10 shows the age group-wise distribution of participants according to source of information about SBE (n=114).

Out of 114 participants who have heard about SBE, all the participants have heard about it through awareness programs.

While 27% (9) of participants in age group 18-30 years, 61% (19) in 31-40 years, 9% (3) in 41-50 years, and 20% (4) above 50 years have heard about SBE from ASHA / ANM.

Table 20

Practice of Self-breast examination (SBE)

Sl. No	Particulars	Participants (n = 350)
1.	**Ever done SBE**	79 (22.5%)
2.	**Practice SBE as screening method once a month.**	55 (16%)
3.	**Followed step 1 and step 2 while doing SBE. (n=79)**	79 100%)
4.	**Abnormal finding after SBE. (n=79)**	NIL
5.	**Practicing SBE since, (n=55)** a. Less than a year b. More than a year	 35 (64%) 20 (36%)

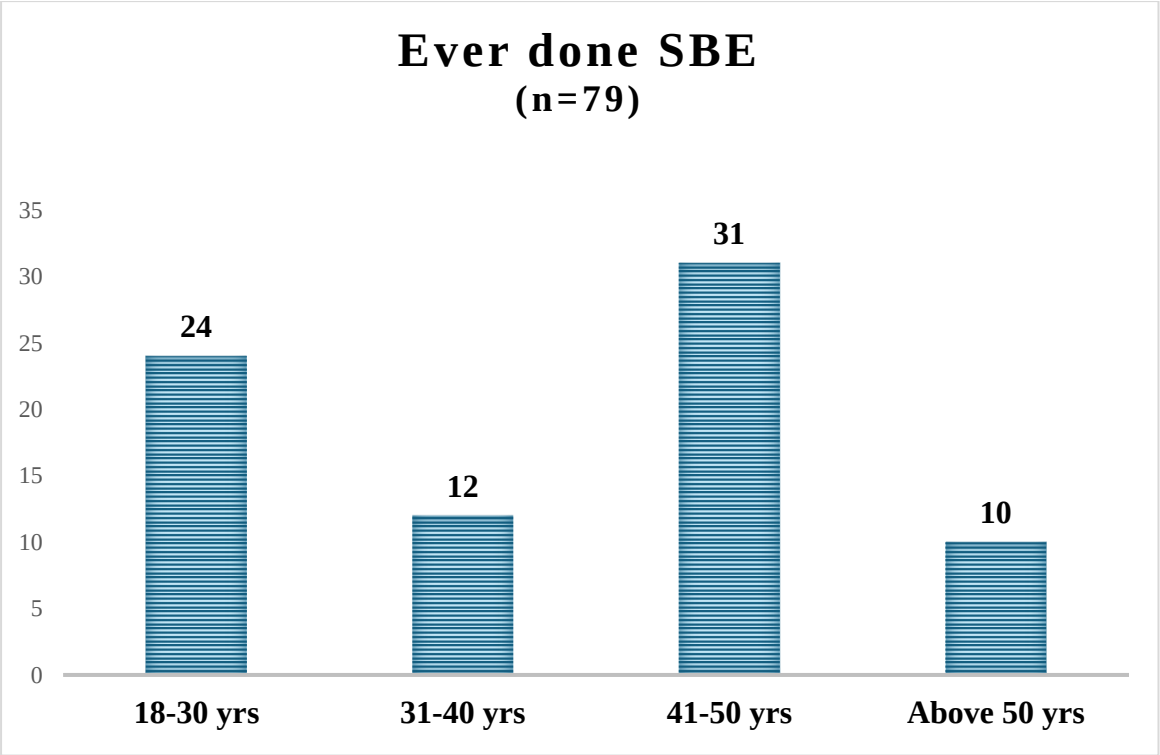
Among the total participants, 16% (55) practice SBE once a month as a screening method for the early detection and diagnosis of breast cancer.

Out of 350 participants, 22.5% (79) have ever done SBE for timely detection and diagnosis of breast cancer, all the participants have followed correct steps while performing it and no abnormal finding following the examination.

Among the participants who practice SBE every month, majority, 64% (35) of them have started it a year ago.

Figure 13

Age group-wise distribution of participants who has ever done SBE.

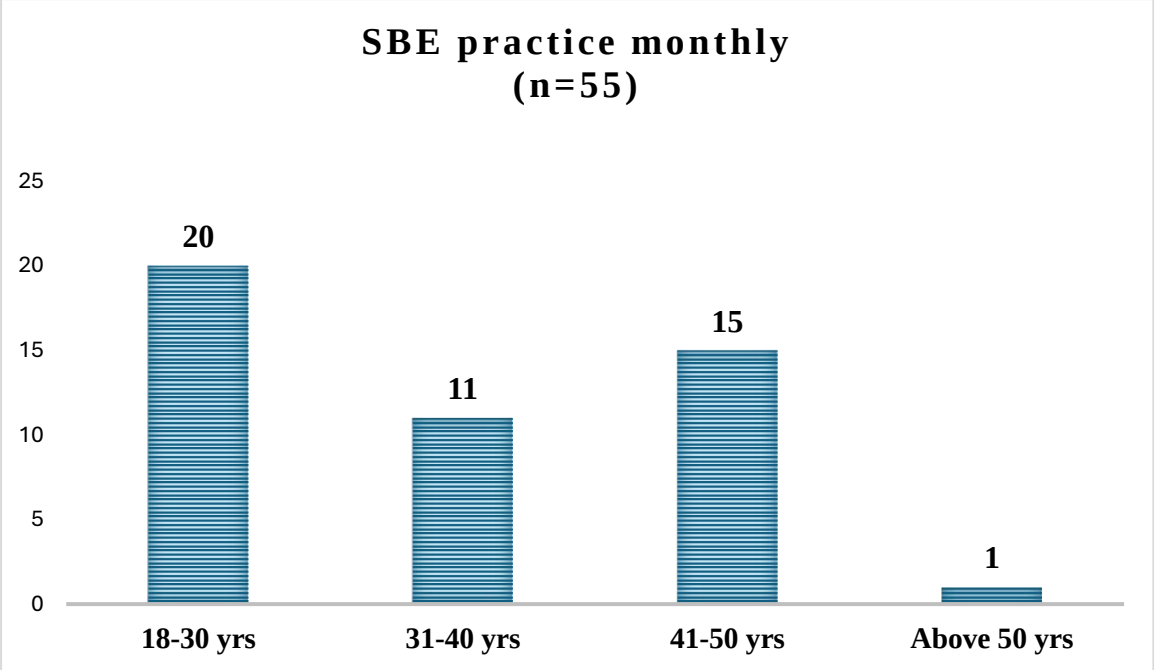


Out of 79 participants who have ever done SBE, majority of them belong to 41-50 years, 39% (31) and 18-30 years age group, 31% (24).

While 15% (12) participants of age group 31-40 years, and 15% (10) above 50 years, have ever done SBE.

Figure 14

Age group-wise distribution of participants who practice SBE monthly as a screening method for early detection and diagnosis of breast cancer.



Out of 55 participants who practice SBE monthly, the majority belong to the 18-30 years age group, comprising 36% (20), and the 41-50 years age group, comprising 27% (15).

While 20% (11) of the participants in the age group 31-40 years practice SBE monthly, and only 1 participant in the age group above 50 years practices SBE monthly.

Table 21

Willingness of the participants to learn Self-breast examination as a screening modality for early detection of breast cancer.

SL.NO	Particulars	Participants (n = 350)
1.	**Willing to learn the correct procedure of SBE.**	
	a. Already practicing SBE.	55 (16%)
	b. Yes	268 (77%)
2.	**Prefer to learn SBE from (n=268)**	
	a. Medical doctors	247 (92%)
	b. ASHA/ANM	21 (8%)
3.	**Recommend to friends and family.**	323 (92%)

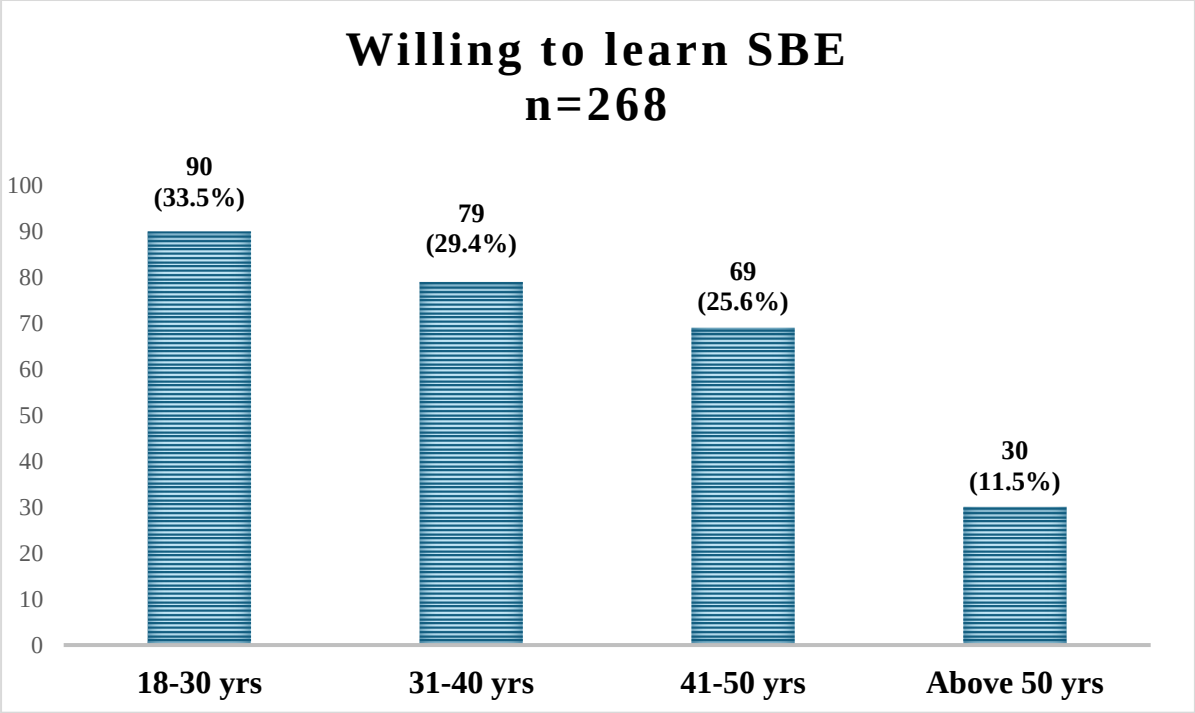
Out of 350 participants, the majority, 77% (268), were willing to learn the correct procedure of SBE.

Out of the total participants who were willing to learn SBE, the majority, 92% (247), preferred to learn from medical doctors, while only 8% (21) preferred to learn from ASHA / ANM.

Out of the total participants, 92% (323) wanted to recommend SBE to their family and friends as a screening test for early detection and diagnosis of breast cancer.

Figure 15

Age group-wise distribution showing participants willing to learn SBE



Out of 268 participants willing to learn correct way of SBE and practice it as screening test for timely detection and diagnosis of breast cancer, majority of them belong to age group 18-30 years, 33.5% (90) followed by age group 31-40 years, 29.4% (79) and age group 41-50 years, 25.6% (69).

While only 11.5% (30) of the participants in the age group above 50 years were willing to learn the correct procedure of SBE.

Table 22

Association of self-perceived risk of breast cancer with socio-demographic details.

Socio-demographic factors		Self-perceived risk of breast cancer (n = 350)		Chi-Square df p-value
		Yes	No	
Age group (years)	18-30	55 (47%)	62 (53%)	$\chi^2 = 7.98$ df = 3 p = 0.46
	31-40	58 (59%)	41 (41%)	
	41-50	57 (64%)	32 (36%)	
	Above 50	20 (44%)	25 (36%)	
Residence	Urban	148 (85%)	27 (15%)	$\chi^2 = 129.36$ df = 1 p = 0.01
	Rural	42 (24%)	133 (76%)	
Education	Illiterate	120 (61%)	78 (39%)	$\chi^2 = 16.86$ df = 2 p = 0.01
	Up to matriculation	21 (32%)	45 (68%)	
	Matriculation and above	49 (57%)	37 (43%)	
Occupation	Homemakers	164 (53%)	144 (47%)	$\chi^2 = 1.16$ df = 1 p = 0.29
	Others	26 (62%)	16 (38%)	
Socio-economic status	Class I	51 (81%)	12 (19%)	$\chi^2 = 45.17$ df = 4 p = 0.01
	Class II	84 (59%)	59 (41%)	
	Class III	34 (52%)	32 (48%)	
	Class IV	13 (37%)	24 (63%)	
	Class V	8 (19%)	33 (81%)	

Socio-demographic factors such as residence (χ^2 = 129.36, p=0.01), education (χ^2 = 16.86, p=0.01) and socio-economic status (χ^2 = 45.17, p=0.01) of the participants are significantly associated with self-perceived risk of breast cancer.

Table 23

Binary logistic regression to study the association of self-perceived risk of breast cancer with socio-demographic details.

Socio-demographic factors		p value (<0.05)	Crude Odds Ratio (95% CI)	p value (<0.2)	Adjusted Odds ratio (95% CI)
Age group (years)	**18-30**	0.769	0.902 (0.452-1.80)	0.171	1.948 (0.075-5.060)
	31-40	0.116	0.566 (0.278-1.15)	0.167	2.048 (0.741-5.659)
	41-50	0.032	**0.449 (0.216-0.93)**	0.88	0.926 (0.339-2.529)
	Above 50		Ref		Ref
Residence	**Urban**	0.001	**17.358 (10.1-29.7)**	0.001	**0.016 (0.006-0.042)**
	Rural		Ref		Ref
Education	**Illiterate**	0.567	0.861 (0.515-1.43)	0.197	0.197 (0.075-0.517)
	Up to matriculation	0.002	**2.838 (1.45-5.552)**	0.272	0.272 (0.086-0.857)
	Matriculation and above		Ref		Ref
Occupation	**Homemakers**	0.001	**1.427 (0.736-2.762)**	0.012	**3.163 (1.282-7.801)**
	Others		Ref		Ref
Socio-economic status	**Class I**	0.001	**0.057 (0.021-0.153)**	0.015	**0.236 (0.073-0.759)**
	Class II	0.001	**0.170 (0.073-0.396)**	0.194	**2.052 (0.694-6.069)**
	Class III	0.001	**0.228 (0.092-0.561)**	0.713	0.818 (0.280-2.390)
	Class IV	0.124	0.448 (0.16-1.248)	0.231	0.509 (0.168-1.537)
	Class V		Ref		Ref

In Table 23, socio-demographic factors like age, residence, education, occupation and socio-economic status of the participants are significantly associated with self-perceived risk of breast cancer using univariate analysis.

To further evaluate the strength association binary logistic regression was performed for the variables that were significant at the 0.2% level in the univariate analysis.

Participants of age group 31-40 years, AOR = 1.948 (0.075-5.060) and 18-30 years, AOR = 2.048 (0.741-5.659) have almost 2 times higher self-perceived risk of breast cancer than participants of above 50 years and is statistically significant.

Participants who were urban residents are less likely to perceive risk of breast cancer, AOR = 0.016 (0.006-0.042) and is statistically significant.

Participants who were illiterate, AOR = 0.197 (0.075-0.517) and educated up to matriculation, AOR = 0.272 (0.086-0.857) are less likely to perceive risk of breast cancer than participants who were educated matriculation and above and is statistically significant.

Participants who were homemakers perceive 3 times higher risk of breast cancer than others, AOR = 3.163 (1.282-7.801) and is statistically significant.

Participants in Class I, AOR = 0.236 (0.073-0.759) and Class II, AOR = 2.052

(0.694-6.069) of socio-economic status have higher self-perceived risk than the others and is statistically significant.

Table 24

Association of BMI of participants and self-perceived risk perception of breast cancer.

Body Mass Index	Self-perceived risk of breast cancer (n = 350)		Chi-Square df p-value	p value (<0.05)	Adjusted Odds* ratio (95% CI)
	Yes	No			
Underweight	26 (70%)	11 (30%)	$\chi^2 = 17.99$ df = 4 p = 0.01	0.010	0.328 (0.141-0.765)
Normal	31 (44%)	40 (56%)			Ref
Overweight	14 (39%)	22 (61%)		0.637	1.218 (0.538-2.759)
Obese I	80 (65%)	22 (61%)		0.004	0.417 (0.229-0.757)
Obese II	39 (47%)	44 (53%)		0.680	0.874 (0.462-1.653)

*Binary logistic regression for the AOR

There is a significant association between the BMI of participants and self-perceived risk of breast cancer.

Participants who were overweight, AOR = 1.218 (0.538-2.759 perceived risk of breast cancer as higher than participants who had a normal BMI and this difference is statistically significant.

Table 25

Association of perception scores of risk factors of breast cancer with socio-demographic details.

Socio-demographic factors		Perception of risk factors of breast cancer (n = 350)		Chi-Square df p-value
		Poor	Good	
Age group (years)	18-30	76 (65%)	41 (35%)	χ^2 = 7.40 df = 3 p = 0.60
	31-40	48 (49%)	51 (51%)	
	41-50	43 (43%)	46 (57%)	
	Above 50	26 (58%)	19 (42%)	
Residence	Urban	51 (29%)	124 (71%)	χ^2 = 95.65 df = 1 p = 0.01
	Rural	142 (81%)	33 (19%)	
Education	Illiterate	106 (54%)	92 (46%)	χ^2 = 11.79 df = 2 p = 0.03
	Up to matriculation	48 (73%)	18 (27%)	
	Matriculation and above	39 (45%)	47 (55%)	
Occupation	Homemakers	175 (57%)	133 (43%)	χ^2 = 2.91 df = 1 p = 0.08
	Others	18 (43%)	24 (57%)	
Socio-economic status	Class I	29 (46%)	34 (54%)	χ^2 = 29.52 df = 4 p = 0.01
	Class II	62 (43%)	81 (57%)	
	Class III	42 (64%)	24 (36%)	
	Class IV	25 (68%)	12 (32%)	
	Class V	35 (85%)	6 (15%)	

Socio-demographic factors such as residence (χ^2 = 95.65, p=0.01), education (χ^2 = 11.79, p=0.01) and socio-economic status (χ^2 = 45.17, p=0.01) of the participants are significantly associated with perception of risk factors of breast cancer.

Table 26

Binary logistic regression to study the association of perception of risk factors of breast cancer with socio-demographic details.

Socio-demographic factors		p value (<0.05)	Crude Odds Ratio (95% CI)	p value (<0.2)	Adjusted Odds ratio (95% CI)
Age group (years)	**18-30**	0.397	0.738 (0.366-1.491)	0.011	**0.304 (0.122-0.757)**
	31-40	0.302	1.454 (0.714-2.960)	0.443	0.698 (0.278-1.751)
	41-50	0.302	1.464 (0.710-3.017)	0.722	0.846 (0.338-2.118)
	Above 50		Ref		Ref
Residence	**Urban**	0.001	**0.096 (0.058-0.158)**	0.001	**16.289 (7.589-34.96)**
	Rural		Ref		Ref
Education	**Illiterate**	0.206	0.72 (0.433-1.197)	0.784	0.898 (0.418-1.929)
	Up to matriculation	0.001	**0.311 (0.156-0.619)**	0.520	1.382 (0.516-3.7)
	Matriculation and above		Ref		Ref
Occupation	**Homemakers**	0.091	1.754 (0.915-3.365)	0.017	0.354 (0.151-0.833)
	Others		Ref		Ref
Socio-economic status	**Class I**	0.001	6.839 (2.522-18.54)	0.72	1.243 (0.38-4.068)
	Class II	0.001	7.621 (3.016-19.25)	0.626	1.307 (0.445-3.839)
	Class III	0.018	3.333 (1.225-9.068)	0.878	0.914 (0.29-2.88)
	Class IV	0.068	2.8 (0.926-8.464)	0.15	**2.35 (0.734-7.57)**
	Class V		Ref		Ref

In Table 26, socio-demographic characters like residence, education and socio-economic status of the participants are significantly associated with perception risk factors of breast cancer using univariate analysis.

To further evaluate the strength of the association, binary logistic regression was performed for the variables that were significant at the 0.2% level in the univariate analysis.

Participants who were urban residents had a better perception of risk factors of breast cancer, AOR = 16.289 (7.589-34.96) and this is statistically significant.

Participants who were educated up to matriculation, AOR = 1.382 (0.516-3.7), had a better perception of the risk factors responsible for breast cancer than the participants who were educated at matriculation and above and illiterate, AOR = 0.898 (0.418-1.929), and this difference is statistically significant.

Participants in Class I, AOR = 1.243 (0.38-4.068), Class II, AOR = 1.307 (0.445-3.839), and Class IV, AOR = 2.35 (0.734-7.57) of socio-economic status have a better perception of risk factors for breast cancer than participants in Class V, and this is statistically significant.

Table 27

Association of BMI of participants and perception of perception of risk factors of breast cancer.

Body Mass Index	Perception of the risk factors of breast cancer (n = 350)		Chi-Square df p-value	p value (<0.05)	Adjusted Odds* ratio (95% CI)
	Poor	Good			
Underweight	60 (85%)	11 (15%)	$\chi^2 = 9.699$ df = 4 p = 0.046	0.004	3.395 (1.468-7.854)
Normal	25 (68%)	12 (32%)			Ref
Overweight	24 (67%)	12 (33%)		0.028	0.326 (0.120-0.885)
Obese I	101 (82%)	22 (18%)		0.009	2.225 (1.224-4.046)
Obese II	59 (71%)	24 (29%)		0.580	0.830 (0.428-1.606)

*Binary logistic regression for the AOR

There is significant association between BMI of participants and perception of warning signs of breast cancer.

Underweight participants, AOR = 3.395 (1.468-7.854), and Obese Class I, 2.225 (1.224-4.046), had a better perception of breast cancer risk factors than participants who had a normal BMI, and this difference is statistically significant.

Table 28

Association of perception scores of warning signs of breast cancer with socio-demographic details.

Socio-demographic factors		Perception of warning signs of breast cancer (n=350)		Chi-Square df p-value
		Poor	Good	
Age group (years)	18-30	49 (42%)	68 (58%)	χ^2 = 15.54 df = 3 p = 0.01
	31-40	48 (49%)	51 (51%)	
	41-50	59 (66%)	30 (34%)	
	Above 50	29 (64%)	16 (36%)	
Residence	Urban	50 (29%)	125 (71%)	χ^2 = 82.84 df = 1 p = 0.01
	Rural	135 (77%)	40 (33%)	
Education	Illiterate	111 (56%)	87 (44%)	χ^2 = 36.19 df = 2 p = 0.01
	Up to matriculation	50 (76%)	16 (24%)	
	Matriculation and above	24 (28%)	62 (72%)	
Occupation	Homemakers	165 (54%)	143 (46%)	χ^2 = 0.52 df = 1 p = 0.46
	Others	20 (48%)	22 (52%)	
Socio-economic status	Class I	51 (81%)	12 (19%)	χ^2 = 15.577 df = 4 p = 0.04
	Class II	95 (66%)	48 (34%)	
	Class III	55 (83%)	11 (17%)	
	Class IV	32 (87%)	5 (13%)	
	Class V	36 (88%)	5 (12%)	

Socio-demographic factors such as age group (χ^2 = 15.54, p=0.01), residence (χ^2 = 82.84, p=0.01), education (χ^2 = 11.79, p=0.01) and socio-economic status (χ^2 = 45.17, p=0.01) of the participants are significantly associated with perception of warning signs of breast cancer.

Table 29

Binary logistic regression to study the association of perception of warning signs of breast cancer with socio-demographic details.

Socio-demographic factors		p value (>0.05)	Univariable BLR (95% CI)	p value (>0.2)	Adjusted Odds ratio (95% CI)
Age group (years)	**18-30**	0.043	**2.663 (1.032-6.869)**	0.265	1.786 (0.645-4.945)
	31-40	0.012	**3.4 (1.309-8.830)**	0.019	**3.744 (1.248-11.23)**
	41-50	0.318	0.555 (0.175-1.761)	0.276	0.493 (0.138-1.758)
	Above 50		Ref		Ref
Residence	**Urban**	0.001	**0.261 (0.15-0.454)**	0.006	**3.273 (1.414-7.575)**
	Rural		Ref		Ref
Education	**Illiterate**	0.005	**0.449 (0.256-0.787)**	0.029	**0.386 (0.164-0.909)**
	Up to matriculation	0.005	**0.317 (0.142-0.708)**	0.53	0.719 (0.257-2.012)
	Matriculation and above		Ref		Ref
Occupation	**Homemakers**	0.016	**4.409 (1.325-14.66)**	0.002	**9.205 (2.335-36.28)**
	Others		Ref		Ref
Socio-economic status	**Class I**	0.359	1.694 (0.549-5.229)	0.69	0.761 (0.198-2.919)
	Class II	0.011	**3.638 (1.341-9.866)**	0.514	1.5 (0.444-5.062)
	Class III	0.530	1.440 (0.462-4.492)	0.399	0.571 (0.155-2.101)
	Class IV	0.862	1.125 (0.298-4.245)	0.862	1.130 (0.284-4.492)
	Class V		Ref		**Ref**

In Table 27, socio-demographic factors like age, residence, education, occupation and socio-economic status of the participants are significantly associated with perception of warning signs of breast cancer using univariate analysis.

To further evaluate the strength association binary logistic regression was performed for the variables that were significant at the 0.2% level in the univariate analysis.

Participants of age group 18-30 years, AOR = 1.786 (0.645-4.945) and 31-40 years, AOR = 3.744 (1.248-11.23) have better perception of warning signs of breast cancer and is statistically significant.

Participants who were urban residents had better perception of warning signs of breast cancer, AOR = 3.273 (1.414-7.575) and is statistically significant.

Participants who were illiterate, AOR = 0.386 (0.164-0.909) and educated up to matriculation, AOR = 0.719 (0.257-2.012) knew less about warning signs of breast cancer than the participants who were educated matriculation and above and is statistically significant.

Participants who were homemakers have better perception of warning signs of breast cancer, AOR = 9.205 (2.335-36.28) and is statistically significant.

Participants in Class II, AOR = 1.5 (0.444-5.062) and Class IV, AOR = 1.130

(0.284-4.492) of socio-economic status have better perception of warning signs of breast cancer than in participants of Class V and not statistically significant.

Table 30

Association of BMI of participants and perception of perception of warning signs of breast cancer.

Body Mass Index	Perception of warning signs of breast cancer (n = 350)		Chi-Square df p-value	p value (<0.05)	Adjusted Odds ratio* (95% CI)
	Poor	Good			
Underweight	12 (32%)	25 (68%)	χ^2 = 33.002 df = 4 p = 0.01	0.045	2.618 (1.021-6.715)
Normal	44 (62%)	27 (38%)			Ref
Overweight	30 (83%)	22 (17%)		0.037	2.727 (1.060-7.018)
Obese I	52 (42%)	71 (58%)		0.669	1.188 (0.539-2.621)
Obese II	55 (66%)	28 (36%)		0.051	2.219 (0.998-4.933)

*Binary logistic regression for the AOR

There is significant association between BMI of participants and perception of risk factors of breast cancer.

Participants who were Underweight, AOR = 2.618 (1.021-6.715), Overweight, AOR = 2.727 (1.060-7.018), Obese Class I, AOR = 1.188 (0.539-2.621), Obese Class II, AOR = 2.219 (0.998-4.933) have better perception of warning signs of breast cancer than participants who had normal BMI and is statistically significant.

Table 31

Association of practice of SBE with socio-demographic details.

Socio-demographic factors		Practice of SBE (n = 350)		Chi-Square df p-value
		Yes	No	
Age group (years)	18-30	20 (17%)	97 (83%)	χ^2 = 3.34 df = 3 p= 0.34
	31-40	11 (11%)	88 (89%)	
	41-50	15 (17%)	74 (83%)	
	Above 50	9 (20%)	36 (80%)	
Residence	Urban	47 (27%)	128 (73%)	χ^2 = 32.81 df = 1 p = 0.01
	Rural	8 (5%)	167 (95%)	
Education	Illiterate	21 (11%)	177 (89%)	χ^2 = 36.95 df = 2 p = 0.01
	Up to matriculation	3 (5%)	63 (95%)	
	Matriculation and above	31 (36%)	55 (64%)	
Occupation	Homemakers	36 (12%)	272 (88%)	χ^2 = 31.41 df = 1 p = 0.01
	Others	19 (45%)	23 (55%)	
Socio-economic status	Class I	19 (30%)	44 (70%)	χ^2 = 16.17 df = 4 p = 0.03
	Class II	22 (15%)	122 (85%)	
	Class III	8(12%)	58 (88%)	
	Class IV	5 (13.5%)	29 (83%)	
	Class V	1 (2%)	40 (98%)	

Socio-demographic factors such as residence (χ^2 = 32.81, p=0.01), education (χ^2 = 36.95, p=0.01), occupation (χ^2 = 31.41, p=0.01), socio-economic status (χ^2=16.17, p=0.03) of the participants are significantly associated with practice of SBE as a screening method for early detection and diagnosis of breast cancer.

Table 32

Multivariable Binary logistic regression to study the association of the practice of SBE with socio-demographic details.

Socio-demographic factors		p value (>0.05)	Univariable BLR (95% CI)	p value (>0.2)	Adjusted Odds ratio (95% CI)
Age group (years)	**18-30**	0.666	0.825 (0.344-1.978)	0.143	0.402 (0.119-1.36)
	31-40	0.158	0.5 (0.191-1.309)	0.219	0.423 (0.107-1.669)
	41-50	0.654	0.811 (0.324-2.029)	0.697	1.298 (0.349-4.835)
	Above 50		Ref		Ref
Residence	**Urban**	0.001	**7.665 (3.499-16.79)**	0.001	**8.946 (2.658-30.1)**
	Rural		Ref		Ref
Education	**Illiterate**	0.001	**0.210 (0.112-0.396)**	0.004	**0.232 (0.086-0.626)**
	Up to matriculation	0.001	**0.084 (0.024-0.292)**	0.012	**0.138 (0.029-0.626)**
	Matriculation and above		Ref		Ref
Occupation	**Homemakers**	0.001	**0.16 (0.08-0.323)**	0.001	**0.088 (0.029-0.268)**
	Others		Ref		Ref
Socio-economic status	**Class I**	0.007	**17.27 (2.21-134.9)**	0.296	0.236 (0.073-0.759)
	Class II	0.056	**7.273 (0.95-55.68)**	0.772	3.609 (0.326-39.97)
	Class III	0.114	**5.517 (0.66-45.85)**	0.691	1.414 (1.136-14.66)
	Class IV	0.102	**6.25 (0.69-56.22)**	0.164	**1.623 (0.149-17.71)**
	Class V		Ref		Ref

In Table 32, socio-demographic factors like residence, education, occupation and socio-economic status of the participants are significantly associated with the practice of self-breast examination as a screening method for timely detection and diagnosis of breast cancer using univariate analysis.

To further evaluate the strength of the association, binary logistic regression was performed for the variables that were significant at the 0.2% level in the univariate analysis.

Participants who were urban residents practised SBE more frequently than rural residents, AOR = 8.946 (2.658-30.1) and this is statistically significant.

Participants who were illiterate, AOR = 0.232 (0.086-0.626) and educated up to matriculation, AOR = 0.138 (0.029-0.626) practice SBE less frequently than the participants who were educated matriculation and above and is statistically significant.

Participants who were homemakers practised SBE less frequently than others, AOR = 0.088 (0.029-0.268) and this is statistically significant.

Participants in Class II, AOR = 3.609 (0.326-39.97), Class III, AOR = 1.414 (1.136-14.66) and Class IV, AOR = 1.623 (0.149-17.71) of socio-economic status practice SBE more frequently than participants in Class V and is statistically significant.

Table 33

Association of BMI of participants and perception of practice of SBE.

Body Mass Index	Practice of SBE (n = 350)		Fisher's exact test df p-value	p value (<0.05)	Adjusted Odds ratio* (95% CI)
	Yes	**No**			
Underweight	14 (20%)	25 (80%)	13.575 df = 4 p = 0.08	0.580	1.309 (0.505-3.390)
Normal	9 (24%)	27 (76%)			Ref
Overweight	0	36 (100%)		0.998	0
Obese I	16 (13%)	107 (87%)		0.216	0.609 (0.277-1.336)
Obese II	16 (19%)	67 (81%)		0.945	0.972 (0.437-2.163)

*Binary logistic regression for the AOR

There is a significant association between the BMI of participants and the practice of SBE as a screening method for the early detection and diagnosis of breast cancer.

Participants of different classes of BMI practiced SBE less frequently than participants who had normal BMI and is not statistically significant.

DISCUSSION

Self-perceived risk of breast cancer.

In the study, the prevalence of self-perceived risk of breast cancer in the participants is 54%, which is in line with the survey conducted by Alum et al.[24] (37.5%), Fehniger et al[25] (24%) and Hajian et al[26] (14.87 ± 20.79%) and in contrast with the study done by Siddharth et al[12] (99.72%) and Malik et al53 (93%) where the exposure to awareness of breast cancer was low, hence the self-perceived risk of getting the disease is higher.

23% of the participants in this study had an established family history of breast cancer as a reason for self-perceived risk of the disease, which is in line with the study conducted by Vernon et al54 and Fehniger et al[25] where 39% and 14.2% of the women perceived the risk of breast cancer due to having an established family history of, respectively.

In this study, sociodemographic factors like residence (χ^2 = 129.36, p = 0.01), education (χ^2 = 16.86, p = 0.01), and socio-economic status (χ^2 = 45.17, p = 0.01) are significantly associated with self-perceived risk of breast cancer.

Self-perceived risk of getting breast cancer in future is almost 2 times in 18-30 years (AOR = 1.9) and 31-40 years (AOR = 2.0) compared to those above 50 years. Urban residents perceive less risk of breast cancer (AOR = 0.016) compared to rural residents, which can be related to SBE (29%) and CBE (31%) consideration by the participants. A similar finding is seen in a study done by Hajian et al.[26] where young and highly educated women perceived more risk than older and less educated women. Participants who were homemakers perceived risk of breast cancer 3 times higher than others (AOR = 3.163), supported by Hajian et al[26], where the homemakers overestimated the risk of breast cancer. Women of higher socioeconomic status had a higher perceived risk of breast cancer (AOR = 2.052), which is similar to a study by Fehniger et al. [25]

Knowledge of the risk factors of breast cancer.

35.4% of the participants were unaware of any breast cancer risk factors. A similar finding was seen in the study conducted by Fatima et al.[45] (33.8%) and Nitin Gangane, et al[11] (33%).

Most women (20.3%) said it was a disease of old age (above 60 years), which aligns with the study by Neha Dahiya et al.55 (28%) and Paunikar AP et al 56, (40%)

15.7% of participants said obesity is a risk factor for breast cancer, a similar finding is seen in the study by Paunikar AP et al 56 (13.57%) whereas a contrasting finding is seen in the study conducted by Subhojith Dey et al57 (49.9%) where most women were aware of dietary and lifestyle risk factors.

12.3% of participants reported an established family history of breast cancer as a risk factor for the disease, which is in line with the study conducted by Shahista A et al in Maharashtra (10%)58 and Kalligudi et al59 (12.3%).

This finding contrasts with the study conducted by Neha Dahiya et al.55 (59.5%) and Subhojith Dey et al 57 (70.9%) where the participants had exposure to breast cancer cases in the family.

Knowledge of the warning signs of breast cancer.

The majority of the participants (35%) did not know the warning signs of breast cancer. This is similar to a study done by Shinde SD et al.60 (35.3%).

Pain (34%) and lump in the breasts (31%) were two warning signs reported by the participants.

This is in line with the study conducted by Paunikar AP et al.56 and Subhojith et al57 where 33.57% and 26.1% of participants reported pain as a warning sign of breast cancer, respectively. Also, in the study done by Siddharth et al[12] 18% and 20% of the participants reported lump and pain as the warning signs of breast cancer, respectively.

This is in contrast with the study conducted by Neha Dahiya et al55 where 66.2% of the participants reported pain and 58.6% reported a lump as warning signs, and Prusty et al[33] where 74.8% of the participants reported pain and 58.6% reported a lump as warning signs of breast cancer, which can be related to exposure to cancer cases in the family.

People who lived with a breast cancer patient (in the family) would be more likely to know about the risk factors and warning signs of the disease, maybe because of interaction and follow-up with doctors.

Perception of the risk factors of breast cancer.

45% of the participants in this study had a good perception of risk factors in the study, which is similar to the survey done by Subramaniam et al61 (29%).

Participants perceived that being overweight (45%), using HRT (15.7%), consuming alcohol (22%), and having an established family history of or previous diagnosis of breast cancer (66%) as a risk factors for breast cancer.

This is similar to the study conducted by Newton and Palanivelrajan et al.[7] where being overweight (25.7%), consuming alcohol (27.9%), using HRT (19.5%), and an established family history of breast cancer (69%) were perceived as the risk factors of breast cancer.

Socio-demographic factors such as residence (χ^2 = 95.65, p = 0.01), education (χ^2 = 11.79, p = 0.01), and socio-economic status (χ^2 = 45.17, p = 0.01) of the participants are significantly associated with perception of risk factors of breast cancer. Urban residents had a better perception of risk factors of breast cancer than rural residents (AOR = 16.289). Participants who were educated up to matriculation (AOR = 1.382) had a better perception of risk factors than Illiterates. Participants of other classes had a better perception of risk factors than those in Class V of socioeconomic status. (AOR = 2.35- Class II, 1.243-Class I, 1.307- Class III). Better perception of breast cancer risk factors can be related to urban dwelling, literacy and better socioeconomic status. A similar finding is seen in the study done by Siddharth et al[12] and Alam et al[44].

Perception of warning signs of breast cancer.

In this study, 23% of the participants had a good perception of warning signs of breast cancer, which is similar to the survey done by Malik et al53 (18%).

In the study, the majority of the participants (52%) perceived change in shape and size as a warning sign of breast cancer, as studied by Prusty et al[33] (47.9%). This finding aligns with the study conducted by Newton et al[7] where 62% of participants perceived a change in shape and 60.4% perceived a change in size of the breast as warning signs of breast cancer.

Socio-demographic factors such as age group (χ^2 = 15.54, p=0.01), residence (χ^2 = 82.84, p=0.01), education (χ^2 = 11.79, p=0.01) and socio-economic status (χ^2 = 45.17, p=0.01) of the participants are significantly associated with perception of warning signs of breast cancer.

In this study, women in the age group 31-40 years (AOR = 3.744), and 18-30 years (AOR = 1.786) had better perception of warning signs than women above 50 years. Urban participants have a better perception of warning signs of breast cancer than rural participants (AOR = 3.273). This is in line with the study done by Alam et al[44]

Participants in Class II (AOR = 1.5) and Class IV (AOR = 1.130) of socio-economic status have a better perception of warning signs of breast cancer than participants in of Class V, which is similar to a study done by Gangane et al.62 and Baburajan et al63

Women who are aware of the disease's curable nature, particularly through early detection, tend to have a good perception of risk factors and warning signs of the same.

Knowledge and practice of SBE.

Among the total participants, 33% have heard about SBE, which is in line with the study conducted by Shinde et al.60 Altun Kurek et al64 and Pooja et al[1] where 28%, 37.8% and 25% of the participants have heard about SBE and in contrast with the study done by Prusty et al[33] (6.5%). The most common source is awareness programs (100%), in contrast, 25% of the women had heard about it from friends and family in the study done by Ahmed et al65 and 42.85% from the media in the study done by Singh et al66.

Among the total participants, 16% (55) of them practice SBE once a month as a screening method for the early detection and diagnosis of breast cancer, this in line with the study conducted by Jadhav et al67, Fatima et al[45] and Altun Kurek et al64 where 10.2%, 16.21% and 16% of women practiced SBE, respectively and is in contrast with the study done by Prusty et al[33] reported 2.5%, and a study by Siddharth et al[12] reported that none of the participants were practicing SBE. This can be attributed to embarrassment and fear of finding out something in the breast.

In this study, Socio-demographic factors such as residence (χ^2 = 32.81, p=0.01), education (χ^2 = 36.95, p=0.01), occupation (χ^2 = 31.41, p=0.01), socio-economic status (χ^2=16.17, p=0.03) of the participants are significantly associated with practice of SBE as a screening method for early detection and diagnosis of breast cancer.

This is in line with a study done by Alam et al [24] and Baburajan et al63

Participants who were urban residents practised SBE more frequently than rural residents, AOR = 8.946 (2.658-30.1), and this difference is statistically significant. This finding aligns with the study conducted by

Farideh et al. 68. Participants who were illiterate, AOR = 0.232 (0.086-0.626) and educated up to matriculation, AOR = 0.138 (0.029-0.626), practice SBE less frequently than the participants who were educated at matriculation and above and this difference is statistically significant. Participants who were homemakers practised SBE less frequently than others, AOR = 0.088 (0.029-0.268), and this is statistically significant. This is similar to the study done by Singh et al69where less educated and homemakers practice SBE less frequently. Participants in Class II, AOR = 3.609 (0.326-39.97) Class III, AOR = 1.414 (1.136-14.66) and Class IV, AOR = 1.623 (0.149-17.71) of socio-economic status practice SBE more frequently than in participants of Class V and is statistically significant this finding is supported by study done by Baburajan et al63

Education, work environment, and social class play a significant role in understanding the depth of the prevailing problem and the need for taking action to curb its adverse consequences; nonetheless, the number of women practising SBE is negligible. A more effective approach is needed to address the underlying issue.

Willingness to learn and recommendation of SBE.

Out of 350 participants, the majority, 77% (268), were willing to learn the correct procedure for SBE. In the study conducted by Baburajan et al63, and Pooja et al[1] 99.2% and 72% of the participants were willing to learn SBE, respectively. The majority of the participants wanted to learn from medical doctors (92%), which is similar to the study done by Ahmed et al.65

Out of the total participants, 92% (323) wanted to recommend SBE to their family and friends as a screening test for the early detection and diagnosis of breast cancer; this is in contrast with the study done by Pooja et al.[1] (10%) and in a study done by Ahmed et al6537.9% of participants discuss SBE with friends.

Despite a considerable number willing to learn and recommend SBE for early detection and diagnosis of breast cancer, some participants took a back seat for the same, giving reasons like fear of finding something in the breast and being unsure of what others think if recommended.

SUMMARY AND CONCLUSION

SUMMARY:

Our study aimed to find the prevalence of the self-perceived risk of breast cancer, the knowledge and perception of risk factors and warning signs, acceptability and the practice of SBE as a screening method for early detection and diagnosis of breast cancer in women of Kolar, Karnataka, and its association with socio-demographic factors. A cross-sectional survey involving 350 women was conducted using a validated Breast Cancer Awareness Measurement (BCAM) questionnaire. Data was collected through face-to-face interviews. The majority of the participants were in the 18-30 years age group (33.7%), practiced Hinduism (63%), were illiterate (56.6%), were in Class II (41%), and belonged to Obese Class I (35%). Most women were married (88%) and homemakers (88%).

Results showed that among 350 participants, 64.4% had heard about breast cancer, and the most common source was social media (50.6%). Fifty-four percent of total participants perceived the risk of getting breast cancer in future, of which 23% had an established family history of breast cancer, participants had taken precautionary measures (screening) such as SBE (29%) and CBE (31%), respectively, for early detection and diagnosis of the cancer. Self-perceived risk is significantly associated with sociodemographic factors like the participants' age, residence, education, occupation and socioeconomic status.

Breast cancer is an old age disease (20.3%), which was identified as the most common risk factor by the participants. The participants identified pain (34%) and lump (31%) as warning signs in the majority. Forty-five per cent and 23% of the participants had a good perception of risk factors and warning signs of breast cancer, respectively. Perception of risk factors and warning signs is significantly associated with sociodemographic factors like the participants' residence, education, occupation, and

socioeconomic status.

43.7% of participants knew about the national screening program (NP-NCD), and 42% had undergone screening in peripheral health centers.

Among the total participants, 33% have heard about SBE, and the most common source is awareness programs (100%). 22.5% have performed SBE at least once in their lifetime, and 16% are practicing SBE and accept it as a screening method for the early detection and diagnosis of breast cancer. Practice of SBE is significantly associated with factors like residence, education, occupation and socioeconomic status of the participants.

This study highlights the importance of knowledge, perception and attitude towards timely detection of breast cancer and self-perception of risk of getting the disease.

CONCLUSION:

This study aimed to assess the level of awareness of breast cancer among the participants, focusing on their ability to identify risk factors, recognise warning signs, seek timely medical attention and utilise the available modes of screening for timely detection and diagnosis of breast cancer.

Here, the majority of the women lack awareness about the disease, which can be related to low literacy levels, poor economic condition and poor understanding and acceptance of the available and cost-effective screening method for timely detection of the disease. Despite of awareness programs, the practice of SBE is significantly less, this is because, most women in our study are homemakers, additional burdens such as numerous family commitments, time constraints, lack of motivation to initiate breast self-examination (BSE), and the fear of discovering abnormalities contribute to their reluctance to perform it. Social stigma and embarrassment about the topic per se will discourage women from openly discussing the difficulties they are facing; hence, self-practice and recommendation are negligible.

STRENGTH OF THE STUDY

1. Women of all ages have participated in the study, which gave us a broad understanding of breast cancer awareness across age groups.
2. The exclusive inclusion and exclusion criteria used in the present study, combined with a systematic random sampling method with a sample interval of 3, ensured equal chances for all the women attending the OPD.
3. The mean age of the participants is 36±13 years. According to NP-NCD, screening for cancer would start from 30 years and above. This is the correct time to instil awareness of breast cancer and the importance of timely detection of the same.
4. Followed a standardised questionnaire (BCAM), which ensures reliability and validity of the data collected. Using a standardised tool provides for comparability with other studies and increases the quality of the research.
5. Our study has distinguished between participants who had performed SBE a few times (22.5%) and who practised it and recommended it to their friends and family (16%). Although the number is small, we can help them spread awareness about SBE and eliminate hesitation, embarrassment, and stigma associated with it.

LIMITATION OF THE STUDY

1. This study was only conducted in the field practice area of the Department of Community Medicine, SDUMC. A multicentric survey would have helped to generalise the results.
2. Males were not included in the study; it could have been useful to know their awareness, perception, and attitude towards the disease. (as in a male family member)
3. The self-perceived risk of breast cancer assessment may be inaccurate as it has not been compared with standardized breast cancer risk estimation models. Therefore, participants' perceived risk could be either underestimated or overestimated. Also, we have not categorised women based on the risk of getting the disease. hence, the assessment of perceived and actual risk would differ in them.
4. A face-to-face interview could have caused recall bias and social desirability.

RECOMMENDATIONS

1. **Opportunistic screening of the women and incorporation of breast health in routine practice in PHCs**.

Screening for breast cancer and making women aware of risk factors and warning signs would prove beneficial in all patients visiting the clinic or hospitals, regardless of the reason for visit. This will decrease the stigma around the disease and aid in early case detection.

2. **Look-Feel-Report model to promote SBE.**

This serves as a practical patient-centred approach to promote timely detection of breast cancer. Women are to be trained by medical doctors to look for any breast changes, feel for any breast changes and report if any abnormality is detected using anatomical breast models that mimic breast changes. This can facilitate skill acquisition, reinforce tactile recognition, and enhance retention through the use of visual-tactile learning strategies.

3. **Self-help groups monitored by ASHA/ANM/RMP**

Many women feel embarrassed to check their breast status if the treating doctor is male, so a self-help group consisting of 8-10 ladies who were breast cancer survivors or who practice SBE could teach the other women, and ASHA/ANM/RMP could monitor the same.

4. **Tailored intervention for high-risk groups.**

Designing specific programs targeting individuals who have a high risk of developing the disease could make them feel more empowered.

5. Enhancing accessibility of screening services.

Mobile screening units would benefit women, as they can help overcome financial and logistical barriers, particularly in rural and hard-to-reach areas where access to medical care is limited.

6. Educating male family members.

Educating male family members about breast cancer and the importance of timely detection and diagnosis of the same can play a vital role in reducing stigma and encouraging supportive healthcare behaviours of the disease. Open discussions about women's health within the family can promote emotional support and facilitate prompt medical intervention. Male involvement may also contribute to a more empathetic household environment, particularly in communities where women are hesitant to discuss personal health concerns.

7. Incorporation of breast health in schools and colleges.

Integrating breast health education into the curriculum can foster early awareness among adolescents. Age-appropriate and evidence-based content should cover topics such as breast anatomy, risk factors, warning signs, the importance of self-breast examination (SBE), and the need for timely medical consultation. This can be achieved through health clubs, workshops, or awareness programs led by trained healthcare professionals. Exposure to such health behaviours not only empowers the younger generation but also normalises the conversations around breast health, ultimately reducing stigma and promoting lifelong preventive practices.

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ANNEXURES

ANNEXURE I

QUESTIONNAIRE – ENGLISH

SELF-PERCEIVED RISK OF BREAST CANCER AND ACCEPTABILITY OF SCREENING AMONG WOMEN ATTENDING PERIPHERAL HEALTH CENTRES IN KOLAR

– A CROSS-SECTIONAL STUDY

SECTION (A) – SOCIODEMOGRAPHIC DETAILS.

Sl. No	Questions	Options	Response	Skip
1	ID number of the participant.			
2	Age (completed years)			
3	Residence	a) Urban b) Rural		
4	Religion	a) Hindu b) Muslim c) Christian d) Others		
5	Marital status	a) Unmarried b) Married c) Widowed/Separated		
6	Education	a) Illiterate b) Primary education c) Secondary education d) PUC e) Undergraduate f) Postgraduate		
7	Occupation	a) Unemployed b) Homemaker c) Unskilled d) Semiskilled e) Skilled f) Semi-professional g) Professional		
8	Total no. of family members			

9	Total monthly family income (INR)			
10	Anthropometry	1. Height (m) 2. Weight (kg)		

SECTION (B) SELF-PERCEPTION OF GETTING BREAST CANCER

Sl. No	Questions	Options	Response	Skip
1	Have you heard about breast cancer?	1. Yes 2. No		
1a	If yes, what is the source?	Friends/family Social media (WhatsApp, Facebook, etc.) Electronic media (TV, Radio, etc.) Healthcare professionals (Medical doctors, ANM, ASHA) Others (specify)		
2	Do you think you are at risk of getting breast cancer?	a) Yes b) No		
2a	If yes, why?	1. Family h/o breast cancer 2. Breast changes (pain/lumps/skin changes/any discharge from nipples) 3. Delayed menarche 4. Delayed 1st		

		pregnancy 5. Nulliparity 6. Inadequate breastfeeding 7. High fat diet 8. Long term birth control pill usage 9. Others (specify)		
2b	What measure are you taking, if perceived risk is present	a) Self-breast examination b) Clinical evaluation by health care professionals c) No measures taken		

SECTION (C) AWARENESS OF RISK FACTORS AND WARNING SIGNS OF BREAST CANCER.

Sl. No	Questions	Options	Response	Skip
1.	What do you think are the risk factors of breast cancer?	1. Breast cancer in family. 2. Being overweight/obese 3. Delayed 1st pregnancy (>30 yrs) 4. No child 5. Starting of menstrual cycle at early age (<10yrs) 6. Late menopause (>45yrs) 7. Hormonal replacement therapy. 8. Alcohol consumption. 9. Smoking. 10. High fat diet.		

		11. Inadequate breastfeeding (<6m). 12. Long term birth control pill usage (>5yrs). 13. Stress. 14. Old age. 15. Others (specify)		
2.	How much can you agree that each of these can increase the chance of developing breast cancer?	1. Strongly disagree 2. Disagree 3. Don't know 4. Agree 5. Strongly agree		
2a	Having history of breast cancer.	1 2 3 4 5		
2b	Using Hormonal replacement therapy (HRT) / Oral contraceptive pills (OCP).	1 2 3 4 5		
2c	Drinking more than 1 unit of alcohol every day.	1 2 3 4 5		
2d	Having any family history of breast cancer.	1 2 3 4 5		
2e	Being overweight / obese (BMI > 25kg/m^2).	1 2 3 4 5		
2f	Having children late in life (>30 yrs.) / not having children at all.	1 2 3 4 5		

2g	Starting one's menstrual cycle at early age (<10yrs).	1 2 3 4 5		
2h	Having late menopause (>45 yrs).	1 2 3 4 5		
2i	Doing less than 30 min. of moderate physical activity 5 times a week.	1 2 3 4 5		
3.	What do you think are the warning signs of breast cancer?	1. Pain in breast. 2. Lump in breast. 3. Change in size of breast. 4. Change in shape of breast. 5. Discharge from nipple. 6. Rash/redness in nipple area. 7. Dimpling/puckering of nipple area. 8. Lump in armpit area. 9. Others (specify)		
4.	Can you tell me whether you think of any of these are warning signs of breast cancer?	a) Yes b) No c) Don't know		
4a	Do you think a lump / thickening in your breast could be a sign of breast cancer?	1 2 3		

4b	Do you think a lump / thickening under your armpit could be a sign of breast cancer?	1 2 3		
4c	Do you think pulling in of your nipple could be a sign of breast cancer?	1 2 3		
4d	Do you think change in the position of your nipple could be a sign of breast cancer?	1 2 3		
4e	Do you think rash on or around your nipple could be a sign of breast cancer?	1 2 3		
4f	Do you think redness of your breast skin could be a sign of breast cancer?	1 2 3		
4g	Do you think change in size of your breast could be a sign of breast cancer?	1 2 3		
4h	Do you think change in shape of your breast could be	1 2 3		

	a sign of breast cancer?			
4i	Do you think pain in one of your breasts or armpits could be a sign of breast cancer?	1 2 3		
4j	Do you think dimpling of your breast skin could be a sign of breast cancer?	1 2 3		
AWARENESS OF NATIONAL BREAST CANCER SCREENING PROGRAMME.				
5	As far as you are aware, is there any screening programme for breast cancer in your country?	a) Yes b) No c) Don't know		
5a	If yes, At what age are woman invited for breast cancer screening?	1. Below 30 yrs 2. 30 yrs and above 3. Don't know		
5b	If yes, Have you been invited for breast cancer screening to your nearby healthcare facility	a) Yes b) No c) Don't know		

	(SC/PHC/any others)			
5c	If yes, Have you ever had breast screening in health centre, under the screening programme?	a) Yes b) No c) Don't know		
5d	If yes, Did the screening report any abnormal finding?	1. Yes 2. No		

SECTION (D) AWARENESS OF SELF BREAST EXAMINATION AND IT'S PRACTICE)

Sl. No	Questions	Options	Response	Skip
1	Have you heard about SBE?	1. Yes 2. No		
1a	If yes, where/whom did you hear from?	a) Friends/family b) Social media (WhatsApp, Facebook, etc.) c) Electronic media (TV, Radio, etc.) d) Medical doctors.		

		e) ANM, ASHA f) Awareness programs. g) Others (specify)		
2.	How often do you check your breasts or Perform SBE?	a) Rarely/never b) Once in 6 months c) Once a month d) Once a week		
3	If yes, did you follow the following steps while doing SBE? STEP -1 Stand in front of the mirror that is large enough to see your breasts clearly (without clothing). Fold your hands behind your head and press your elbow forward. Perform this step 10-12 days after menstruation. CHECK FOR- a) Asymmetry of the breasts b) Skin changes (dimpling/puckering/redness/s ores/rashes) c) Any visible discharge from the nipple. d) Inverted nipples	1. Yes 2. No 3. Performed the procedure, but not accurate.		

	STEP-2 Palpation of the breasts (one after the other) can be done while lying down on a flat surface or while bathing. Choose a bed/flat surface to lie down. When lying down breast tissue spread out making it easier to feel any lump/mass in the breast(s) (Or) while bathing. Use the pads of the finger to feel any lump/hard mass in breasts. Try to follow a pattern to examine your breasts. Try to localize the lump/hard mass in the breast. (if present) Top to bottom (collar bones to cup of the breasts) Right to left (sternum to armpit area.) Gently squeeze the nipples to check for any discharge. CHECK FOR- a) Pain b) Lump/hard mass. c) If lump/hard mass are present, can it be localized.			

	d) Nipple discharge.			
4	Did you find any abnormal finding while performing BSE? (as mentioned in step 1 and 2 in Q3 above)	a) Yes b) No		
5	Are you confident you would notice a change in your breast?	c) Not at all confident d) Not very confident e) Fairly confident f) Very confident		
6	If you found any change in your breast (s), how soon would you contact a health care professional?	a) Immediately b) Within a week c) Within a month d) Within a year e) After the breast changes have progressed.		
7	What age did you start doing SBE?			
8	Which time of the menstruation did you do SBE? (only for menstruating women)	1. During menstruation 2. 10-12 days after menstruation.		

9	Do you want to learn the correct way of performing SBE?	a) Yes b) No		
9a	Whom do you prefer learning from?	a) Medical doctor b) ASHA/ANM c) Others (specify)		
10	Would you recommend BSE to your friends/family?	1. Yes 2. No		

ANNEXURE-II

QUESTIONNAIRE – KANNADA

ಕೋಲಾರಿನ ಬಾಹ್ಯ ಆರೋಗ್ಯ ಕೇಂದ್ರ ಗ್ಳಿಗೆ ಭೇಟಿನೋಡುವ ಮಹಿಳೆಯರಲ್ಲಿ

ಸ್ತನ ಕ್ಯಾನ್ಸರಿನ ಸ್ವ ಯಂ-ಗ್ರ ಹಿಕೆ ಮತ್ತು ತಪಾಸ್ಣೆಯ ಸ್ವೀಕಾರ ಕುರಿತ್ತ – ಒಂದು

ಕ್ರಾ ಸ್ ಸೆಕ್ಷನಲ್ ಸ್ವ ಡಿ.

ಪ್ರ ಶ್ನಾ ವಳಿ

ವಿಭಾಗ (A): ಸಾಮಾಜಿಕ-ಆರ್ಥಿಕ ವಿವರಗಳು

ಪ್ರ.ಸಂಖ್ಯೆ	ಪ್ರಶ್ನೆಗಳು	ಆಯ್ಕೆಗಳು	ಉತ್ತರ	ಬಿಡಿ
1	ಭಾಗಿಯ ಐಡಿ ಸಂಖ್ಯೆ	• UHTC / RHTC		
2	ವಯಸ್ಸು			
3	ವಾಸಸ್ಥಳ	• ನಗರ • ಗ್ರಾಮೀಣ		
4	ಧರ್ಮ	• ಹಿಂದೂ • ಮುಸ್ಲಿಂ • ಕ್ರಿಶ್ಚಿಯನ್ • ಇತರೆ		
5	ವೈವಾಹಿಕ ಸ್ಥಿತಿ	• ಅವಿವಾಹಿತ • ವಿವಾಹಿತ • ವಿಧವೆ ಅಥವಾ ವಿಚ್ಛೇದಿತ		
6	ಶಿಕ್ಷಣ	• ಅನಕ್ಷರಸ್ತರು • ಪ್ರಾಥಮಿಕ • ಪ್ರೌಢಶಿಕ್ಷಣ ಪಿಯುಸಿ • ಪದವಿ • ಸ್ನಾತಕೋತ್ತರ		
7	ಉದ್ಯೋಗ	• ನಿರುದ್ಯೋಗಿ • ಗೃಹಿಣಿ • ಅಕ್ಸಮಾತ್ ಕೆಲಸ • ಅರ್ಧಪ್ರವಹಿತ • ಪರಿಣತಿ ಪಡೆದ • ಅರ್ಧವೃತ್ತಿಪರ • ವೃತ್ತಿಪರ		

8	ಕುಟುಂಬದ ಒಟ್ಟು ಸದಸ್ಯರ ಸಂಖ್ಯೆ			
9	ಕುಟುಂಬದ ಮಾಸಿಕ ಆದಾಯ			
10	ಆಂತರೋಪೊಮೆಟ್ರಿ	• ಎತ್ತರ (ಸೆ. ಮೀ) • ತೂಕ (ಕೆ.ಜಿ)		

ವಿಭಾಗ (B): ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ಬಗ್ಗೆ ಸ್ವಯಂ ಗ್ರಹಿಕೆ

ಪ್ರ.ಸಂಖ್ಯೆ	ಪ್ರಶ್ನೆಗಳು	ಆಯ್ಕೆಗಳು	ಉತ್ತರ	ಬಿಡಿ
1	ನೀವು ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ಬಗ್ಗೆ ಕೇಳಿದ್ದೀರಾ?	• ಹೌದು • ಇಲ್ಲ		
1a	ಹೌದು ಅಂದರೆ, ಮಾಹಿತಿ ಮೂಲವೇನು?	• ಸ್ನೇಹಿತರು • ಸೋಷಿಯಲ್ ಮೀಡಿಯಾ • ಎಲೆಕ್ಟ್ರಾನಿಕ್ ಮೀಡಿಯಾ • ಆರೋಗ್ಯ ಸಿಬ್ಬಂದಿ • ಇತರೆ (ನಿರ್ದಿಷ್ಟಪಡಿಸಿ)		
2	ನೀವು ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ಅಪಾಯದಲ್ಲಿ ಇದ್ದೀರಾ ಎಂದು ಭಾವಿಸುತ್ತೀರಾ?	• ಹೌದು • ಇಲ್ಲ		
2a	ಹೌದು ಅಂದರೆ, ಏಕೆ?	• ಕುಟುಂಬದಲ್ಲಿ ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ಇದ್ದರೆ		

		• ಸ್ತನ ಬದಲಾವಣೆಗಳು (ನೋವು/ಗಡ್ಡೆಗಳು/ಚರ್ಮದ ಬದಲಾವಣೆಗಳು/ಮೊಲೆತೊಟ್ಟುಗಳಿಂದ ಸ್ರಾವ) • ತಡವಾಗಿ ಮುಟ್ಟಾಗುವುದು • ತಡವಾಗಿ ಮೊದಲ ಗರ್ಭಧಾರಣೆ • ಬಂಜೆಯಾಗಿರುವ ಮಹಿಳೆ • ಅಸಮರ್ಪಕ ಹಾಲುಣಿಸುವಿಕೆ • ಹೆಚ್ಚಿನ ಕೊಬ್ಬಿನ ಆಹಾರ ಸೇವಿಸುವುದು • ದೀರ್ಘಕಾಲೀನ ಜನನ ನಿಯಂತ್ರಣ ಮಾತ್ರೆ ಬಳಕೆ • ಇತರೆ (ನಿರ್ದಿಷ್ಟಪಡಿಸಿ)		
2b	ಹೌದು ಅಂದರೆ, ಯಾವ ಕ್ರಮಗಳನ್ನು ತೆಗೆದುಕೊಳ್ಳುತ್ತಿದ್ದೀರಿ?	• ಸ್ವಯಂ-ಸ್ತನ ಪರೀಕ್ಷೆ • ಆರೋಗ್ಯ ವೃತ್ತಿಪರರಿಂದ ಕ್ಲಿನಿಕಲ್ ಸ್ತನ ಪರೀಕ್ಷೆ • ಯಾವುದೇ ಕ್ರಮಗಳನ್ನು ತೆಗೆದುಕೊಳ್ಳಲಾಗಿಲ್ಲ		

ವಿಭಾಗ (C): ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ಅಪಾಯಗಳ ಅರಿವು ಮತ್ತು ಸರ್ಕಾರದ ಪರೀಕ್ಷಣಾ ಸೌಲಭ್ಯ

ಪ್ರ.ಸಂಖ್ಯೆ	ಪ್ರಶ್ನೆಗಳು	ಆಯ್ಕೆಗಳು	ಉತ್ತರ	ಬಿಡಿ
1.	ಸ್ತನ ಕ್ಯಾನ್ಸರ್‌ನ ಅಪಾಯಕಾರಿ ಅಂಶಗಳೇನು ಎಂದು ನೀವು ಯೋಚಿಸುತ್ತೀರಿ?	• ಕುಟುಂಬದಲ್ಲಿ ಸ್ತನ ಕ್ಯಾನ್ಸರ್ • ಅಧಿಕ ತೂಕ/ಬೊಜ್ಜು • ಮೊದಲ ಗರ್ಭಧಾರಣೆಯ ವಿಳಂಬ (>30 ವರ್ಷಗಳು) • ಮಕ್ಕಳಿಲ್ಲ • ಚಿಕ್ಕ ವಯಸ್ಸಿನಲ್ಲಿಯೇ ಋತುಚಕ್ರದ ಪ್ರಾರಂಭ (<10 ವರ್ಷಗಳು) • ತಡವಾಗಿ ಋತುಬಂಧ (>45 ವರ್ಷಗಳು) • ಹಾರ್ಮೋನ್ ಬದಲಿ ಚಿಕಿತ್ಸೆ. • ಮದ್ಯಪಾನ. • ಧೂಮಪಾನ. • ಹೆಚ್ಚಿನ ಕೊಬ್ಬಿನ ಆಹಾರ ಸೇವನೆ. • ಅಸಮರ್ಪಕ ಹಾಲುಣಿಸುವಿಕೆ (<6 ವರ್ಷಗಳು). • ದೀರ್ಘಾವಧಿಯ ಜನನ ನಿಯಂತ್ರಣ ಮಾತ್ರೆ ಬಳಕೆ (>5 ವರ್ಷಗಳು). • ಒತ್ತಡ.		

		• ವೃದ್ಧಾಪ್ಯ. • ಇತರೆ (ನಿರ್ದಿಷ್ಟಪಡಿಸಿ)		
2.	ಈ ಕೆಳಗಿನ ವಿವರಗಳಲ್ಲಿ, ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ಬರುವ ಸಾಧ್ಯತೆಯನ್ನು ನೀವು ಎಷ್ಟರ ಮಟ್ಟಿಗೆ ಒಪ್ಪಬಹುದು?	1. ಬಲವಾಗಿ ಒಪ್ಪುವುದಿಲ್ಲ 2. ಒಪ್ಪುವುದಿಲ್ಲ 3. ಗೊತ್ತಿಲ್ಲ 4. ಒಪ್ಪುತ್ತೇನೆ 5. ಬಲವಾಗಿ ಒಪ್ಪುತ್ತೇನೆ		
2a	ಕ್ಯಾನ್ಸರ್ ಇತಿಹಾಸ ಹೊಂದಿರುವುದು.	1 2 3 4 5		
2b	ಹಾರ್ಮೋನ್ ಬದಲಿ ಚಿಕಿತ್ಸೆ (HRT) / ಗರ್ಭನಿರೋಧಕ ಮಾತ್ರೆಗಳು (OCP) ಬಳಸುವುದು.	1 2 3 4 5		
2c	ಪ್ರತಿದಿನ 1 ಯೂನಿಟ್‌ಗಿಂತ ಹೆಚ್ಚು	1 2 3 4 5		

	ಮಧ್ಯಪಾನ ಮಾಡುವುದು.			
2d	ಕುಟುಂಬದಲ್ಲಿ ಸ್ತನ ಕ್ಯಾನ್ಸರ್‌ನ ಇತಿಹಾಸವಿರುವುದು.	1 2 3 4 5		
2e	ಹೆಚ್ಚು ತೂಕ / ಬೊಜ್ಜು (BMI > 25kg/m^2).	1 2 3 4 5		
2f	ತಡವಾದ ಗರ್ಭಧಾರಣೆ (>30 ವರ್ಷಗಳು) ಅಥವಾ ಬಂಜೆತನ	1 2 3 4 5		
2g	ಚಿಕ್ಕ ವಯಸ್ಸಿನಲ್ಲಿಯೇ (<10 ವರ್ಷಗಳು) ಮುಟ್ಟು ಪ್ರಾರಂಭವಾಗುವುದು.	1 2 3 4 5		
2h	ತಡವಾಗಿ ಋತುಬಂಧ	1 2 3 4 5		

	ಆಗುವುದು (>45 ವರ್ಷಗಳು).			
2i	ವಾರಕ್ಕೆ 5 ಬಾರಿ 30 ನಿಮಿಷಗಳಿಗಿಂತ ಕಡಿಮೆ ಮಧ್ಯಮ ದೈಹಿಕ ಚಟುವಟಿಕೆಯನ್ನು ಮಾಡುವುದು.	1 2 3 4 5		
3.	ಸ್ತನ ಕ್ಯಾನ್ಸರ್‌ನ ಎಚ್ಚರಿಕೆ ಚಿಹ್ನೆಗಳು ಯಾವುವು ಎಂದು ನೀವು ಯೋಚಿಸುತ್ತೀರಿ?	1. ಸ್ತನದಲ್ಲಿ ನೋವು. 2. ಸ್ತನದಲ್ಲಿ ಗಡ್ಡೆ. 3. ಸ್ತನದ ಗಾತ್ರದಲ್ಲಿ ಬದಲಾವಣೆ. 4. ಸ್ತನದ ಆಕಾರದಲ್ಲಿ ಬದಲಾವಣೆ. 5. ಮೊಲೆತೊಟ್ಟುಗಳಿಂದ ಸ್ರಾವ. 6. ಮೊಲೆತೊಟ್ಟುಗಳ ಪ್ರದೇಶದಲ್ಲಿ ದದ್ದು/ಕೆಂಪು. 7. ಮೊಲೆತೊಟ್ಟುಗಳ ಪ್ರದೇಶದಲ್ಲಿ ಚರ್ಮದ ಏಳಿಯುವಿಕೆ ಅಥವಾ ಗುಳಿಬೀಳುವುದು ಕಂಕುಳಿನಲ್ಲಿ ಉಂಡೆ. 8. ಇತರೆ (ನಿರ್ದಿಷ್ಟಪಡಿಸಿ)		

4.	ಈ ಕೆಳಗಿನ ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ಎಚ್ಚರಿಕೆ ಚಿಹ್ನೆಗಳು ನಿಮಗೆ ತಿಳಿದಿದೆಯೇ ?	1. ಹೌದು 2. ಇಲ್ಲ 3. ಗೊತ್ತಿಲ್ಲ		
4a	ಸ್ತನದಲ್ಲಿ ಗಡ್ಡೆ ಅಗುವುದು.	1 2 3		
4b	ಕಂಕುಳಿನಲ್ಲಿ ಗಡ್ಡೆ ಅಗುವುದು.	1 2 3		
4c	ಸ್ತನದ ತೊಟ್ಟುಗಳು ಎಳೆದಂತಾಗಿರುವುದು.	1 2 3		
4d	ಸ್ತನ ತೊಟ್ಟುಗಳ ಸ್ಥಾನ ಬದಲಾವಣೆ.	1 2 3		
4e	ಸ್ತನ ಚರ್ಮದ ತುರುಕೆ.	1 2 3		
4f	ಸ್ತನ ಚರ್ಮ ಕೆಂಪು ಅಗುವುದು.	1 2 3		

4g	ಸ್ತನ ಗಾತ್ರದ ಬದಲಾವಣೆ.	1 2 3		
4h	ಸ್ತನ ಆಕಾರದ ಬದಲಾವಣೆ.	1 2 3		
4i	ಸ್ತನ ಅಥವಾ ಕಂಕುಳಿನಲ್ಲಿ ನೋವು.	1 2 3		
4j	ಸ್ತನ ಚರ್ಮದಲ್ಲಿ ಗುಳಿಬೀಳುವುದು.	1 2 3		
<u>ಸರ್ಕಾರದ ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ತಪಾಸಣೆ ಕಾರ್ಯಕ್ರಮದ ಕುರಿತು ಅರಿವು</u>				
5	ನಿಮಗೆ ತಿಳಿದಿರುವಂತೆ, ಭಾರತದಲ್ಲಿ ಸ್ತನ ಕ್ಯಾನ್ಸರ್‌ಗೆ ಯಾವುದಾದರು ತಪಾಸಣೆ ಕಾರ್ಯಕ್ರಮವಿದೆಯೇ?	1. ಹೌದು 2. ಇಲ್ಲ 3. ಗೊತ್ತಿಲ್ಲ		
5a	ಹೌದು ಎಂದಾದರೆ, ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ	1. 30 ವರ್ಷಕ್ಕಿಂತ ಕಡಿಮೆ ವಯಸ್ಸಿನವರು 2. 30 ವರ್ಷ ಮತ್ತು ಮೇಲ್ಪಟ್ಟವರು 3. ಗೊತ್ತಿಲ್ಲ		

	ಮಹಿಳೆಯರನ್ನು ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ತಪಾಸಣೆಗೆ ಆಹ್ವಾನಿಸಲಾಗುತ್ತದೆ?			
5b	ಹೌದು ಎಂದಾದರೆ, ನಿಮ್ಮ ಹತ್ತಿರದ ಆರೋಗ್ಯ ಕೇಂದ್ರಕ್ಕೆ (SC/PHC/ಇತರ ಯಾವುದೇ) ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ತಪಾಸಣೆಗೆ ನಿಮ್ಮನ್ನು ಆಹ್ವಾನಿಸಲಾಗಿದೆಯೇ?	1. ಹೌದು 2. ಇಲ್ಲ 3. ಗೊತ್ತಿಲ್ಲ		
5c	ಹೌದು ಎಂದಾದರೆ, ಸ್ಕ್ರೀನಿಂಗ್ ಕಾರ್ಯಕ್ರಮದ ಅಡಿಯಲ್ಲಿ ನೀವು ಎಂದಾದರೂ ಆರೋಗ್ಯ	1. ಹೌದು 2. ಇಲ್ಲ 3. ಗೊತ್ತಿಲ್ಲ		

	ಕೇಂದ್ರದಲ್ಲಿ ಸ್ತನ ತಪಾಸಣೆ ಮಾಡಿಸಿಕೊಂಡಿದ್ದೀರಾ?			
5d	ಹೌದು ಎಂದಾದರೆ, ಸ್ತಾನದಲ್ಲಯೇನಾದರೂ ಕಂಡುಬಂದಿತ್ತಾ	1. ಹೌದು 2. ಇಲ್ಲ		

<u>ವಿಭಾಗ (D) ಸ್ವಯಂ ಸ್ತನ ಪರೀಕ್ಷೆ ಮತ್ತು ಅದರ ಅಭ್ಯಾಸದ ಅರಿವು</u>

ಪ್ರ.ಸಂಖ್ಯೆ	ಪ್ರಶ್ನೆಗಳು	ಆಯ್ಕೆಗಳು	ಉತ್ತರ	ಬಿಡಿ
1.	ನೀವು ಸ್ವಯಂ ಸ್ತನ ಪರೀಕ್ಷೆ (SBE) ಬಗ್ಗೆ ಕೇಳಿದ್ದೀರಾ?	1. ಹೌದು 2. ಇಲ್ಲ		
1a	ಹೌದು ಎಂದಾದರೆ, ನೀವು ಎಲ್ಲಿಂದ/ಯಾರಿಂದ ಕೇಳಿದ್ದೀರಿ?	1. ಸ್ನೇಹಿತರು/ಕುಟುಂಬ 2. ಸಾಮಾಜಿಕ ಮಾಧ್ಯಮ (ವಾಟ್ಸಾಪ್, ಫೇಸ್‌ಬುಕ್, ಇತ್ಯಾದಿ) 3. ಎಲೆಕ್ಟ್ರಾನಿಕ್		

		ಮಾಧ್ಯಮ (ಟಿವಿ, ರೇಡಿಯೋ, ಇತ್ಯಾದಿ) 4. ವೈದ್ಯರು. 5. ಎಎನ್‌ಎಂ, ಆಶಾ 6. ಜಾಗೃತಿ ಕಾರ್ಯಕ್ರಮ 7. ಇತರರು (ನಿರ್ದಿಷ್ಟಪಡಿಸಿ)		
) 2.	ನೀವು ಎಷ್ಟು ಬಾರಿ ನಿಮ್ಮ ಸ್ತನಗಳನ್ನು ಪರಿಶೀಲಿಸುತ್ತೀರಿ ಅಥವಾ SBE ಮಾಡುತ್ತೀರಿ?	1. ಅಪರೂಪಕ್ಕೆ/ ಎಂದಿಗೂ ಇಲ್ಲ 2. 6ತಿಂಗಳಿಗೊಮ್ಮೆ 3. ತಿಂಗಳಿಗೊಮ್ಮೆ 4. ವಾರಕ್ಕೊಮ್ಮೆ		
) 3	ಹೌದು ಎಂದಾದರೆ, SBE ಮಾಡುವಾಗ ನೀವು ಈ ಕೆಳಗಿನ ಹಂತಗಳನ್ನು ಅನುಸರಿಸಿದ್ದೀರಾ? ಹಂತ -1 ನಿಮ್ಮ ಸ್ತನಗಳನ್ನು ಸ್ಪಷ್ಟವಾಗಿ ನೋಡುವಷ್ಟು ದೊಡ್ಡದಾದ ಕನ್ನಡಿಯ ಮುಂದೆ ನಿಂತುಕೊಳ್ಳಿ (ಬಟ್ಟೆ ಇಲ್ಲದೆ). ನಿಮ್ಮ ಕೈಗಳನ್ನು	1. ಹೌದು 2. ಇಲ್ಲ		

	ನಿಮ್ಮ ತಲೆಯ ಹಿಂದೆ ಮಡಚಿ ಮತ್ತು ನಿಮ್ಮ ಮೊಣಕೈಯನ್ನು ಮುಂದಕ್ಕೆ ಒತ್ತಿರಿ. ಮುಟ್ಟಿನ ನಂತರ 10-12 ದಿನಗಳ ನಂತರ ಈ ಹಂತವನ್ನು ಮಾಡಿ. ಪರಿಶೀಲಿಸಿ- ಎ) ಸ್ತನಗಳ ಅಸಮತೆ ಬಿ) ಚರ್ಮದ ಬದಲಾವಣೆಗಳು (ಕುಗ್ಗುವಿಕೆ/ಕೆಂಪು/ಕೆಂಪು/ಅದಿರು/ದದ್ದುಗಳು) ಸಿ) ಮೊಲೆತೊಟ್ಟುಗಳಿಂದ ಯಾವುದೇ ಗೋಚರ ಸ್ರಾವ. ಡಿ) ತಲೆಕೆಳಗಾದ ಮೊಲೆತೊಟ್ಟುಗಳು ಹಂತ-2 ಸ್ತನಗಳ ಸ್ಪರ್ಶವನ್ನು (ಒಂದರ ನಂತರ ಇನ್ನೊಂದನ್ನು) ಸಮತಟ್ಟಾದ ಮೇಲ್ಮೈಯಲ್ಲಿ ಮಲಗಿರುವಾಗ ಅಥವಾ ಸ್ನಾನ ಮಾಡುವಾಗ ಮಾಡಬಹುದು. ಮಲಗಲು ಹಾಸಿಗೆ/ಸಮತಟ್ಟಾದ ಮೇಲ್ಮೈಯನ್ನು ಆರಿಸಿ. ಮಲಗಿರುವಾಗ ಸ್ತನ			

	ಅಂಗಾಂಶವನ್ನು ಹರಡಿ ಸ್ತನ(ಗಳಲ್ಲಿ) ಯಾವುದೇ ಗಡ್ಡೆ/ದ್ರವ್ಯರಾಶಿಯನ್ನು ಅನುಭವಿಸಲು ಸುಲಭವಾಗುತ್ತದೆ (ಅಥವಾ) ಸ್ನಾನ ಮಾಡುವಾಗ. ಸ್ತನಗಳಲ್ಲಿ ಯಾವುದೇ ಗಡ್ಡೆ ಅನುಸರಿಸಲು ಬೆರಳಿನ ತುದಿಗಳನ್ನು ಬಳಸಿ. ನಿಮ್ಮ ಸ್ತನಗಳನ್ನು ಪರೀಕ್ಷಿಸಲು ಒಂದು ಮಾದರಿಯನ್ನು ಅನುಸರಿಸಲು ಪ್ರಯತ್ನಿಸಿ. ಸ್ತನದಲ್ಲಿ ಗಡ್ಡೆ/ಗಟ್ಟಿಯಾದ ಗಡ್ಡೆಯನ್ನು ಸ್ಥಳೀಕರಿಸಲು ಪ್ರಯತ್ನಿಸಿ. (ಇದ್ದರೆ) ಮೇಲಿನಿಂದ ಕೆಳಕ್ಕೆ (ಕಾಲರ್ ಮೂಳೆಗಳಿಂದ ಸ್ತನಗಳ ಕಪ್ ವರೆಗೆ) ಬಲದಿಂದ ಎಡಕ್ಕೆ (ಸ್ಟರ್ನಮ್ ನಿಂದ ಆರ್ಮ್‌ಪಿಟ್ ಪ್ರದೇಶ.) ಸ್ರಾವವನ್ನು ಪರಿಶೀಲಿಸಲು ಮೊಲೆತೊಟ್ಟುಗಳನ್ನು ನಿಧಾನವಾಗಿ ಹಿಸುಕು. ಪರಿಶೀಲಿಸಿ-			

	ಎ) ನೋವು ಬಿ) ಗಡ್ಡೆ. ಸಿ) ಗಡ್ಡೆ ಇದ್ದರೆ, ಅದನ್ನು ಸ್ಥಳೀಕರಿಸಬಹುದೇ. ಡಿ) ಮೊಲೆತೊಟ್ಟುಗಳ ವಿಸರ್ಜನೆ.			
4	SBE ಮಾಡುವಾಗ ನೀವು ಯಾವುದೇ ಅಸಹಜತೆಯನ್ನು ಕಂಡುಕೊಂಡಿದ್ದೀರಾ? (ಮೇಲಿನ Q3 ರಲ್ಲಿ ಹಂತ 1 ಮತ್ತು 2 ರಲ್ಲಿ ಉಲ್ಲೇಖಿಸಿದಂತೆ)	1. ಹೌದು 2. ಇಲ್ಲ		
5	ನಿಮ್ಮ ಸ್ತನದಲ್ಲಿ ಬದಲಾವಣೆಯನ್ನು ನೀವು ಗಮನಿಸುತ್ತೀರಿ ಎಂದು ನಿಮಗೆ ವಿಶ್ವಾಸವಿದೆಯೇ?	1. ಯಾವುದೇ ಆತ್ಮವಿಶ್ವಾಸವಿಲ್ಲ 2. ಹೆಚ್ಚು ಆತ್ಮವಿಶ್ವಾಸವಿಲ್ಲ 3. ತಕ್ಕಮಟ್ಟಿಗೆ ಆತ್ಮವಿಶ್ವಾಸ 4. ಬಹಳ ಆತ್ಮವಿಶ್ವಾಸ		
6	ನಿಮ್ಮ ಸ್ತನದಲ್ಲಿ (ಗಳಲ್ಲಿ) ಯಾವುದೇ ಬದಲಾವಣೆ ಕಂಡುಬಂದರೆ, ನೀವು ಎಷ್ಟು ಬೇಗನೆ ಆರೋಗ್ಯ ವೃತ್ತಿಪರರನ್ನು	1. ತಕ್ಷಣ 2. ಒಂದು ವಾರದೊಳಗೆ 3. ಒಂದು		

	ಸಂಪರ್ಕಿಸುತ್ತೀರಿ?	ತಿಂಗಳೊಳಗೆ 4. ಒಂದು ವರ್ಷದೊಳಗೆ 5. ಸ್ತನ ಬದಲಾವಣೆಗಳು ಮುಂದುವರೆದ ನಂತರ.		
7	ನೀವು ಯಾವ ವಯಸ್ಸಿನಲ್ಲಿ SBE ಮಾಡಲು ಪ್ರಾರಂಭಿಸಿದ್ದೀರಿ?			
8	ಋತುಚಕ್ರದ ಯಾವ ಸಮಯದಲ್ಲಿ ನೀವು SBE ಮಾಡಿದ್ದೀರಿ? (ಋತುಚಕ್ರದ ಮಹಿಳೆಯರಿಗೆ ಮಾತ್ರ)	1. ಮುಟ್ಟಿನ ಸಮಯದಲ್ಲಿ 2. ಮುಟ್ಟಿನ 10-12 ದಿನಗಳ ನಂತರ		
9	SBE ಮಾಡುವ ಸರಿಯಾದ ವಿಧಾನವನ್ನು ನೀವು ಕಲಿಯಲು ಬಯಸುವಿರಾ?	1. ಹೌದು 2. ಇಲ್ಲ		
9a	ನೀವು ಯಾರಿಂದ ಕಲಿಯಲು ಬಯಸುತ್ತೀರಿ?	1. ವೈದ್ಯರು 2. ASHA/ANM 3. ಇತರರು (ನಿರ್ದಿಷ್ಟಪಡಿಸಿ)		
10	ನಿಮ್ಮ ಸ್ನೇಹಿತರು /ಕುಟುಂಬದವರಿಗೆ SBE ಶಿಫಾರಸು ಮಾಡುತ್ತೀರಾ?	1. ಹೌದು 2. ಇಲ್ಲ		

ANNEXURE III

PARTICIPANT INFORMATION SHEET

SELF-PERCEIVED RISK OF BREAST CANCER AND ACCEPTABILITY OF SCREENING AMONG WOMEN ATTENDING PERIPHERAL HEALTH CENTRES IN KOLAR – A CROSS-SECTIONAL STUDY

My name is Dr.Pruthvi P, a Postgraduate in the department of Community Medicine, Sri Devaraj Urs Medical College, Kolar. I am carrying out a study on self-perceived risk of breast cancer and acceptability of screening among women attending peripheral health centres in Kolar. The study has been reviewed by the local ethics review board and commenced only after receiving their formal approval.

Breast cancer cases have been increasing in recent years. Through this study, I will be able to identify the gaps in knowledge of risk factors, screening barriers, and self-perceived risk among women attending peripheral health centres in Kolar using a simple questionnaire. You do not need to answer any questions that you do not want to answer. However, your honest answer to these questions will help us to understand your knowledge of breast cancer. We would greatly appreciate your assistance in completing the questionnaire. Participation in this study doesn't involve any cost for you. This study is not only beneficial to you but also to the community at large. The results gathered from this study will be beneficial in estimating the prevalence.

All the information collected from you will be strictly confidential and

will not be disclosed to any outsider unless compelled by law. The information collected will be used solely for research purposes.

There is no compulsion to participate in this study. You will be affected in no way if you don't wish to participate in this study. You are required to sign up only if you voluntarily agree to participate in this study. Further, you are at liberty to withdraw from the study at any time, if you wish to do so. It is up to you to decide whether to participate. This document will be stored in the safe locker in the department of Community Medicine in the college and a copy is given to you for information.

For any further clarification, you are welcome to contact the principal investigator, Dr. Pruthvi P.

Mob No: **9739073381**

ANNEXURE IV

PARTICIPANT INFORMATION SHEET (KANNADA)

ಮಾಹಿತಿ ಹಾಳೆ:

ಕೋಲಾರಿನ ಬಾಹ್ಯ ಆರೋಗ್ಯ ಕೇಂದ್ರ ಗ್ಳಿಗೆ ಭೇಟಿನೋಡುವ ಮಹಿಳೆಯರಲ್ಲಿ ಸ್ತನ ಕ್ಯಾನ್ಸರಿನ ಸ್ವ ಯಂ-ಗ್ರ ಹಿಕೆ ಮತ್ತು ತಪಾಸ್ಣೆಯ ಸ್ವೀಕಾರ ಕುರಿತ್ತ – ಒಂದು ಕ್ರಾ ಸ್ ಸೆಕ್ಷನಲ್ ಸ್ವ ಡಿ.

ನನ್ನ ಹೆಸರು ಡಾ. ಪೃಥ್ವಿ ಪಿ, ಕೋಲಾರದ ಶ್ರೀ ದೇವರಾಜ್ ಅರಸ್ ವೈದ್ಯಕೀಯ ಕಾಲೇಜಿನ ಸಮುದಾಯ ವೈದ್ಯಕೀಯ ವಿಭಾಗದಲ್ಲಿ ಸ್ನಾತಕೋತ್ತರ ಪದವೀಧರೆ. ಕೋಲಾರದ ಬಾಹ್ಯ ಆರೋಗ್ಯ ಕೇಂದ್ರಗಳಿಗೆ ಹಾಜರಾಗುವ ಮಹಿಳೆಯರಲ್ಲಿ ಸ್ತನ ಕ್ಯಾನ್ಸರ್‌ನ ಸ್ವಯಂ-ಗ್ರಹಿಕೆ ಮತ್ತು ತಪಾಸಣೆಯ ಸ್ವೀಕಾರ ಕುರಿತು ನಾನು ಅಧ್ಯಯನವನ್ನು ನಡೆಸುತ್ತಿದ್ದೇನೆ. ಸ್ಥಳೀಯ ನೈತಿಕ ಪರಿಶೀಲನಾ ಮಂಡಳಿಯಿಂದ ಅಧ್ಯಯನವನ್ನು ಪರಿಶೀಲಿಸಲಾಗಿದೆ ಮತ್ತು ಅವರ ಔಪಚಾರಿಕ ಅನುಮೋದನೆಯನ್ನು ಪಡೆದ ನಂತರವೇ ಈ ಅಧ್ಯಯನವನ್ನು ಪ್ರಾರಂಭಿಸಲಾಗಿದೆ.

ಇತ್ತೀಚಿನ ವರ್ಷಗಳಲ್ಲಿ ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ಪ್ರಕರಣಗಳು ಹೆಚ್ಚುತ್ತಿವೆ. ಈ ಅಧ್ಯಯನದ ಮೂಲಕ, ಕೋಲಾರದ ಬಾಹ್ಯ ಆರೋಗ್ಯ ಕೇಂದ್ರಗಳಿಗೆ ಹಾಜರಾಗುವ ಮಹಿಳೆಯರಲ್ಲಿ ಅಪಾಯಕಾರಿ ಅಂಶಗಳು, ತಪಾಸಣೆಯ ಅಡೆತಡೆಗಳು ಮತ್ತು ಸ್ವಯಂ-ಗ್ರಹಿಕೆಯ ಜ್ಞಾನದಲ್ಲಿನ ಅಂತರವನ್ನು ಸರಳ ಪ್ರಶ್ನಾವಳಿಯನ್ನು ಬಳಸಿಕೊಂಡು ಗುರುತಿಸಲು ನನಗೆ ಸಾಧ್ಯವಾಗುತ್ತದೆ. ನೀವು ಉತ್ತರಿಸಲು ಬಯಸದ ಯಾವುದೇ ಪ್ರಶ್ನೆಗಳಿಗೆ ನೀವು ಉತ್ತರಿಸುವ ಅಗತ್ಯವಿಲ್ಲ. ಆದಾಗ್ಯೂ, ಈ ಪ್ರಶ್ನೆಗಳಿಗೆ ನಿಮ್ಮ ಪ್ರಾಮಾಣಿಕ ಉತ್ತರವು ಸ್ತನ

ಕ್ಯಾನ್ಸರ್ ಬಗ್ಗೆ ನಿಮ್ಮ ಜ್ಞಾನವನ್ನು ಅರ್ಥಮಾಡಿಕೊಳ್ಳಲು ನಮಗೆ ಸಹಾಯ ಮಾಡುತ್ತದೆ. ಪ್ರಶ್ನಾವಳಿಯನ್ನು ಪೂರ್ಣಗೊಳಿಸುವಲ್ಲಿ ನಿಮ್ಮ ಸಹಾಯವನ್ನು ನಾವು ತುಂಬಾ ಕೃತಜ್ಞರಾಗಿರುತ್ತೇವೆ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವಿಕೆಯು ನಿಮಗೆ ಯಾವುದೇ ವೆಚ್ಚವನ್ನು ಒಳಗೊಂಡಿರುವುದಿಲ್ಲ. ಈ ಅಧ್ಯಯನವು ನಿಮಗೆ ಮಾತ್ರವಲ್ಲದೆ ಒಟ್ಟಾರೆಯಾಗಿ ಸಮುದಾಯಕ್ಕೂ ಪ್ರಯೋಜನಕಾರಿಯಾಗಿದೆ. ಈ ಅಧ್ಯಯನದ ಫಲಿತಾಂಶಗಳು ಕೋಲಾರ್‌ನಲ್ಲಿ ಸ್ತನ ಕ್ಯಾನ್ಸರ್ ಇರುವಿಕೆಯನ್ನು ಲೆಕ್ಕಹಾಕಲು ಪ್ರಯೋಜನಕಾರಿಯಾಗುತ್ತದೆ.

ನಿಮ್ಮಿಂದ ಸಂಗ್ರಹಿಸಲಾದ ಎಲ್ಲಾ ಮಾಹಿತಿಯು ಕಟ್ಟುನಿಟ್ಟಾಗಿ ಗೌಪ್ಯವಾಗಿರುತ್ತದೆ ಮತ್ತು ಕಾನೂನಿನಿಂದ ಒತ್ತಾಯಿಸಲ್ಪಡದ ಹೊರತು ಯಾವುದೇ ಹೊರಗಿನವರಿಗೆ ಬಹಿರಂಗಪಡಿಸಲಾಗುವುದಿಲ್ಲ. ಸಂಗ್ರಹಿಸಿದ ಮಾಹಿತಿಯನ್ನು ಸಂಶೋಧನಾ ಉದ್ದೇಶಗಳಿಗಾಗಿ ಮಾತ್ರ ಬಳಸಲಾಗುತ್ತದೆ.

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಯಾವುದೇ ಬಲವಂತವಿಲ್ಲ. ನೀವು ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಬಯಸದಿದ್ದರೆ ನಿಮ್ಮ ಮೇಲೆ ಯಾವುದೇ ರೀತಿಯಲ್ಲಿ ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ. ನೀವು ಸ್ವಯಂಪ್ರೇರಣೆಯಿಂದ ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಒಪ್ಪಿದರೆ ಮಾತ್ರ ನೀವು ಸೈನ್ ಅಪ್ ಮಾಡಬೇಕಾಗುತ್ತದೆ. ಇದಲ್ಲದೆ, ನೀವು ಬಯಸಿದರೆ ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯುವ ಸ್ವಾತಂತ್ರ್ಯ ನಿಮಗಿದೆ. ಭಾಗವಹಿಸಬೇಕೆ ಬೇಡವೇ ಎಂಬುದನ್ನು ನಿರ್ಧರಿಸುವುದು ನಿಮಗೆ ಬಿಟ್ಟದ್ದು.

ಹೆಚ್ಚಿನ ಸ್ಪಷ್ಟೀಕರಣಕ್ಕಾಗಿ, ಪ್ರಧಾನ ತನಿಖಾಧಿಕಾರಿ ಡಾ. ಪ್ರಥ್ವಿ. ಪಿ ಅವರನ್ನು ಸಂಪರ್ಕಿಸಿ.

ಮೊಬೈಲ್ ಸಂಖ್ಯೆ: 9739073381.

ANNEXURE V

INFORMED CONSENT OF THE PARTICIPANT

SL No: **Date:**

SELF-PERCEIVED RISK OF BREAST CANCER AND ACCEPTABILITY OF SCREENING AMONG WOMEN ATTENDING PERIPHERAL HEALTH CENTRES IN KOLAR – A CROSS-SECTIONAL STUDY.

I, the undersigned, agree to participate in this study and to undergo counselling and disclosure of my personal information, as outlined in this consent form.

I have been read out/ explained in my local language, i.e. in Kannada, and understand the purpose of this study and the confidential nature of the information that will be collected and disclosed during the study.

I have had the opportunity to ask questions regarding the various aspects of this study, and my questions have been answered to my satisfaction. The information collected will be used solely for research purposes.

I understand that I remain free to withdraw from this study at any time. Participation in this study is at my sole discretion and does not incur any costs to me.

Participant's name and signature /thumb impression.

Name and signature of witness:

1.

2.

Name and signature of Principal Investigator: Dr. PRUTHVI.P

ANNEXURE VI

INFORMED CONSENT OF THE PARTICIPANT (KANNADA)

ಭಾಗವಹಿಸುವವರ ಒಪ್ಪಿಗೆ

ಕ್ರಮ ಸಂಖ್ಯೆ: **ದಿನಾಂಕ:**

ಕೋಲಾರಿನ ಬಾಹ್ಯ ಆರೋಗ್ಯ ಕೇಂದ್ರ ಗ್ಳಿಗೆ ಭೇಟಿನೋಡುವ ಮಹಿಳೆಯರಲ್ಲಿ ಸ್ತನ ಕ್ಯಾನ್ಸರಿನ ಸ್ವ ಯಂ-ಗ್ರ ಹಿಕೆ ಮತ್ತು ತಪಾಸ್ಣೆಯ ಸ್ವೀಕಾರ ಕುರಿತ್ತ – ಒಂದು ಕ್ರಾ ಸ್-ಸೆಕ್ಷನಲ್ ಸ್ವ ಡಿ.

ನಾನು, ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ಮತ್ತು ಈ ಒಪ್ಪಿಗೆ ನಮೂನೆಯಲ್ಲಿ ವಿವರಿಸಿದಂತೆ ನನ್ನ ವೈಯಕ್ತಿಕ ಮಾಹಿತಿಯನ್ನು ಬಹಿರಂಗಪಡಿಸಲು ಒಪ್ಪುತ್ತೇನೆ.

ನನ್ನ ಸ್ಥಳೀಯ ಭಾಷೆಯಲ್ಲಿ, ಅಂದರೆ ಕನ್ನಡದಲ್ಲಿ ನನಗೆ ಈ ನಮೂನೆಯನ್ನು ಓದಲಾಗಿದೆ/ವಿವರಿಸಲಾಗಿದೆ, ಮತ್ತು ಈ ಅಧ್ಯಯನದ ಉದ್ದೇಶ ಮತ್ತು ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ ಸಂಗ್ರಹಿಸಿ ಬಹಿರಂಗಪಡಿಸಲಾಗುವ ಮಾಹಿತಿಯ ಗೌಪ್ಯ ಸ್ವರೂಪವನ್ನು ಅರ್ಥಮಾಡಿಕೊಂಡಿದ್ದೇನೆ.

ಈ ಅಧ್ಯಯನದ ವಿವಿಧ ಅಂಶಗಳ ಕುರಿತು ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳಲು ನನಗೆ ಅವಕಾಶ ಸಿಕ್ಕಿದೆ ಮತ್ತು ನನ್ನ ಪ್ರಶ್ನೆಗಳಿಗೆ ನನ್ನ ತೃಪ್ತಿಗೆ ತಕ್ಕಂತೆ ಉತ್ತರಿಸಲಾಗಿದೆ. ಸಂಗ್ರಹಿಸಿದ ಮಾಹಿತಿಯನ್ನು ಸಂಶೋಧನಾ ಉದ್ದೇಶಗಳಿಗಾಗಿ ಮಾತ್ರ ಬಳಸಲಾಗುತ್ತದೆ.

ನಾನು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಈ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಲು ಸ್ವತಂತ್ರನಾಗಿರುತ್ತೇನೆ ಎಂದು ನಾನು ಅರ್ಥಮಾಡಿಕೊಂಡಿದ್ದೇನೆ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ

ಭಾಗವಹಿಸುವುದು ನನ್ನ ಸ್ವಂತ ವಿವೇಚನೆಗೆ ಬಿಟ್ಟದ್ದು ಮತ್ತು ನನಗೆ ಯಾವುದೇ ವೆಚ್ಚವನ್ನು ಉಂಟುಮಾಡುವುದಿಲ್ಲ.

ಭಾಗವಹಿಸುವವರ ಹೆಸರು ಮತ್ತು ಸಹಿ /ಹೆಬ್ಬೆರಳಿನ ಗುರುತು.

ಸಾಕ್ಷಿಯ ಹೆಸರು ಮತ್ತು ಸಹಿ:

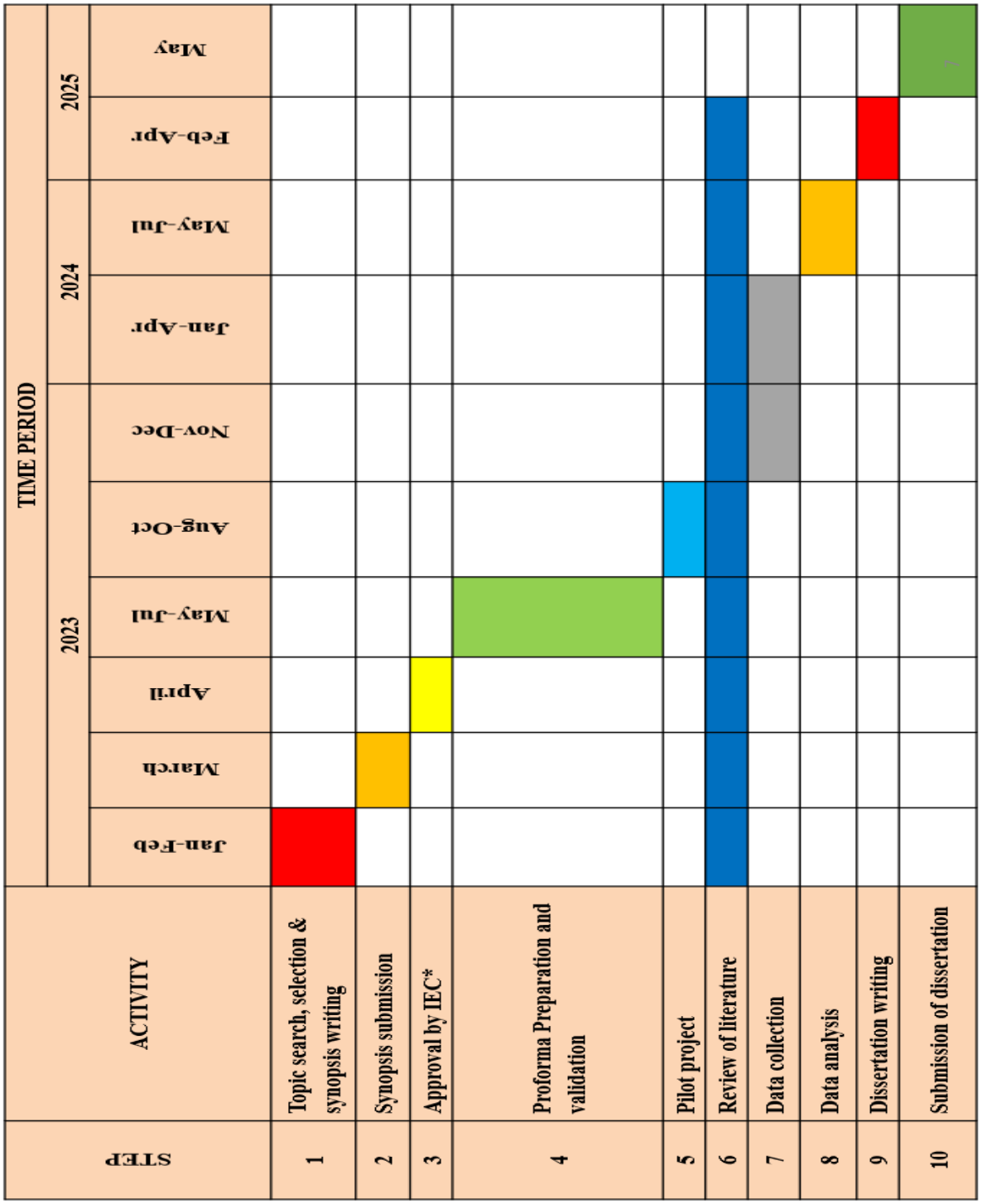
1.

2.

ಪ್ರಧಾನ ತನಿಖಾಧಿಕಾರಿಯ ಹೆಸರು ಮತ್ತು ಸಹಿ: ಡಾ. ಪೃಥ್ವಿ.ಪಿ.

ANNEXURE VII

GANTT CHART



ANNEXURE VIII

PERMISSION FROM INSTITUTIONAL ETHICS COMMITTEE.

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

SRI DEVARAJ URS MEDICAL COLLEGE

Tamaka, Kolar

INSTITUTIONAL ETHICS COMMITTEE

Members

1. **Dr. D.E.Gangadhar Rao, (Chairman)** Prof. & HOD of Zoology, Govt. Women's College, Kolar
2. **Dr. Sujatha.M.P, (Member Secretary),** Prof. Department of Anesthesia, SDUMC
3. Mr. Gopinath Paper Reporter, Samyukth Karnataka
4. Mr. G. K. Varada Reddy Advocate, Kolar
5. Dr. Hariprasad S, Prof. Dept, of Orthopedics, SDUMC
6. Dr. Abhinandana R Asst. Prof. Dept. of Forensic Medicine, SDUMC
7. Dr. Ruth Sneha Chandrakumar Assoc. Prof. Dept. of Psychiatry, SDUMC
8. Dr. Usha G Shenoy, Asst. Prof., Dept. of Allied Health & Basic Sciences SDUAHER
9. Dr. Munilakshmi U Asst. Prof. Dept. of Biochemistry, SDUMC
10. Dr.D.Srinivasan, Assoc. Prof. Dept. of Surgery, SDUMC
11. Dr.Shilpa M D Assoc. Prof. Dept. of Pathology, SDUMC

No. DMC/KLR/IEC/15/ 2023-24 **Date: 10/04/2023**

PRIOR PERMISSION TO START OF STUDY

The Institutional Ethics Committee of Sri Devaraj Urs Medical College, Tamaka, Kolar has examined and unanimously approved the synopsis entitled **" Self-Perceived Risk Of Breast Cancer And Acceptability Of Screening Among Women Attending Peripheral Health Centers In Kolar-A Cross Sectional Study"** being investigated by **Dr.Pruthvi.P & Dr.Prasanna Kamath** in the Department of Community Medicine at Sri Devaraj Urs Medical College, Tamaka, Kolar. **Permission is granted by the Ethics Committee to start the study.**

Member Secretary
Member Secretary
Institutional Ethics Committee
Sri Devaraj Urs Medical College
Tamaka, Kolar.

Chairman
CHAIRMAN
Institutional Ethics Committee
Sri Devaraj Urs Medical College
Tamaka, Kolar

ANNEXURE IX

DEFINITION OF VARIABLES

Operational definitions

1. **Age**: The age was recorded as stated by the participant in completed years.

2. **Marital Status**: The legally recognised state of being in a domestic relationship.
    a. **Unmarried**: Participants who have never been married.
    b. **Married**: Participants who are currently legally married.
    c. **Widow**: Participants whose spouse has passed away and has not remarried.
    d. **Divorced**: Participants who have legally dissolved their marriage.
    e. **Separated**: Participants who are living apart from their spouse but are not legally divorced.

3. **Education:** The highest level of formal education completed by the participant.
    a. Illiterate: Participants who cannot read or write.
    b. Primary: Participants who have completed up to 5th grade.
    c. Secondary: Participants who have completed up to 10th grade.
    d. PUC (Pre-University Course): Participants who have completed up to 12th grade.
    e. Diploma: Participants who have completed a technical or vocational course after secondary education, usually lasting 1-3 years.

f. **Graduate:** Participants who have completed a bachelor's degree.

g. **Professional Degree:** Participants who have completed professional courses such as engineering, medicine, law, etc.

Later was categorised into the following.

a. **Illiterate**: Participants who cannot read or write.

b. **Up to matriculation**: 1st standard to 9th standard.

c. **Matriculation and above**: 10th standard and above.

4. **Occupation**: current working status of the participant.

a. Professional: This category includes high-level positions with significant decision-making power, such as doctors, senior officials, college principals, and managing directors.

b. Semi-professional: Occupations requiring college education or lower-grade professional training, but involving routine tasks, are included here, such as engineers, high school teachers, and junior doctors.

c. Clerical/Shop/Farm Owner: This category encompasses jobs that require basic arithmetic and reading/writing skills, such as clerks, typists, and shopkeepers.

d. Skilled worker: This includes jobs requiring specialized training and skills, such as those in skilled trades or agriculture.

e. Unskilled worker: This category includes individuals with basic labour skills, lacking significant formal training.

f. Unemployed: This category represents those who are not currently employed.

Later was categorised into the following.

a. Homemakers: Participants who were homemakers.

b. Others.

5. **<u>Anthropometry</u>:**

a. Height Measurement:

- Equipment: Calibrated stadiometer.
- Preparation: Ensure the stadiometer is clean and zeroed.
- Subject Positioning:
    - Instruct the subject to stand erect, with feet flat on the floor and weight evenly distributed.
    - Shoulders should be level, hands at the sides, and knees/thighs together.
    - Ensure the subject's head is in the Frankfort horizontal plane (an imaginary line from the bottom of the eye socket to the top of the ear is horizontal).
    - If using a wall-mounted stadiometer, the subject should stand with their head, shoulders, buttocks, and heels touching the wall.
- Measurement:
    - Ensure the headpiece of the stadiometer rests on the crown of the head.
    - Read and record the measurement to the nearest half centimetre.
- Repeat: Measure twice to ensure accuracy.

2. Weight Measurement:

- Equipment: Use a calibrated scale (e.g., digital scale or balance beam).
- Preparation: Ensure the scale is zeroed and calibrated.
- Subject Positioning:
    - Instruct the subject to stand on the scale platform, distributing their weight evenly.

- They should stand still, not leaning on anything.
- Remove shoes and any bulky outer clothing.

- Measurement:
  - Read and record the weight to the nearest 0.1 kg.
- Repeat: Measure twice to ensure accuracy.

Later, BMI was calculated and categorised according to the WHO-ASIAN classification[52]

6. **Socio-economic class:** Modified B G Prasad classification (2024)[51]

Definition: The BG Prasad Classification is a socioeconomic classification system used in India, which is updated periodically to account for inflation and changes in the cost of living. It categorizes individuals into socioeconomic classes based on their monthly per capita income.

Categories (Updated to 2024):

Social class	**Socioeconomic class**	**Monthly income in Rupees**
Class 1	Upper class	>9098
Class 2	Upper middle class	4549-9097
Class 3	Middle class	2729-4550
Class 4	Lower middle class	1365-2728
Class 5	Lower class	<1365

Criteria for Classification:

- **Monthly Per Capita Income**: The total monthly income of the household divided by the number of members in the household.

- **Income Calculation**: Includes all sources of income for all household members.
- The CPI directly impacts the BG Prasad Classification as it affects the cost of living. Inflation, as measured by the Consumer Price Index (CPI), can alter the real value of income. Periodic updates to the BG Prasad Classification account ensure these changes are reflected to maintain accurate classification.