

Survey Based Study on Awareness Regarding Self-Breast Examination for Detection of Breast Cancer

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Abstract:

Background: Cancer is a large group of diseases that occur when abnormal cells divide rapidly and can spread to other tissue and organs. Breast cancer stands as a primary factor contributing to female mortality across the globe. It is imperative to identify cancer at an early stage through a range of screening approaches. The primary objective of the study is to collect information regarding breast self-examination (BSE) from females belonging to various age groups.

Methods: A survey consisting of a comprehensive questionnaire was formulated to collect data. This survey was subsequently distributed among females from diverse age groups. The study encompassed a total of 100 participants, and over a span of 20 days, their knowledge about breast cancer and their engagement in breast self-examination (BSE) were evaluated.

Results: The study encompassed a group of 100 women spanning the age range of 18 to 50 years. Surprisingly, only 44.6% of these women demonstrated an understanding of the risk factors and symptoms associated with breast cancer. A significant majority, approximately 75.2%, disclosed that they had never engaged in self-breast examinations. This prevailing unawareness was primarily attributed to a dearth of knowledge, including the absence of information on the proper method and frequency for conducting these examinations.

Conclusion: The data gathered from the study underscores a significant lack of awareness and understanding among a substantial portion of the population regarding the fundamentals of breast cancer and breast self-examination. This deficiency in knowledge is anticipated to see improvement through the implementation of educational initiatives focused on breast cancer and BSE. Notably, this lack of information is consistent among females residing in both rural and urban settings.

Keywords: Breast Cancer, BSE, Women, Awareness

Introduction:

Cancer:

Cancer is a large group of diseases that occur when abnormal cells divide rapidly and can spread to other tissue and organs. These rapidly growing cells may cause tumors. They may also disrupt the body's regular function. Cancer is one of the leading causes of death in the world. According to the World Health Organization (WHO) Trusted Source, cancer accounted for almost 1 in 6 deaths in 2020. Experts are working hard to test out new cancer treatments every day. (1)

Types of Cancer:

Cancers are named for the area in which they begin and the type of cell they are made of, even if they spread to other parts of the body. For example, a cancer that begins in the lungs and spreads to the liver is still called lung cancer.

There are also several clinical terms used for certain general types of cancer:

Carcinoma is a cancer that starts in the skin or the tissues that line other organs.

Sarcoma is a cancer of connective tissues such as bones, muscles, cartilage, and blood vessels.

Leukemia is a cancer of the bone marrow, which creates blood cells.

Lymphoma and myeloma are cancers of the immune system. (1)

Prevalence rate:

Breast cancer, a global health concern, leads to the loss of hundreds of thousands of women's lives annually, impacting nations across different levels of development (2). In 2018, there were 2.1 million newly identified cases of breast cancer in women, making it account for nearly one in four cancer diagnoses in the female population (3). The World Health Organization (WHO) reported that in 2018, approximately 627,000 women lost their lives due to breast cancer, constituting roughly 15% of all female cancer-related fatalities (4). Breast cancer stands as the second most prevalent cancer worldwide and ranks as the most common among women, with an estimated 1.67 million new cases diagnosed in 2012 (5,6). Globally, breast cancer constitutes around 12% of all newly reported cancer cases and contributes to 25% of all cancer incidences among women (7).(8)

Detection and it's types:

Breast cancer screening involves examining a woman's breasts for cancer in the absence of any noticeable signs or symptoms. It's crucial for every woman to receive guidance from her healthcare provider regarding the most suitable screening choices for her. Through a comprehensive discussion about the advantages and potential drawbacks of screening, you collaboratively make an informed decision with your healthcare provider about whether undergoing screening is appropriate for your situation, and if it is, determining the optimal timing for it. This process is referred to as informed and shared decision-making. There are two types of screening : Self-breast examination and mammography.(9)

Breast Self-Examination (BSE) is a method of self-inspection that involves women observing and using their fingers to feel for any unusual changes or lumps in their breasts. This examination is typically done monthly, towards the end of the menstrual cycle. It serves as a valuable tool for early detection of breast cancer due to its affordability, widespread accessibility, and lack of need for complex training. BSE effectively increases sensitivity to and awareness of any abnormal changes, allowing women to promptly identify breast alterations. Moreover, regular BSE empowers women by encouraging them to actively manage their health. Therefore, promoting awareness about the significance of BSE is highly recommended.(10)

A mammogram is an X-ray procedure specifically designed for examining breast tissue. It stands as a crucial method for detecting breast cancer at its early stages, when treatment is most effective and before it progresses to a size that can be palpable or exhibit noticeable symptoms. Consistent and scheduled mammograms significantly contribute to reducing the likelihood of fatal outcomes linked to breast cancer. Presently, mammography remains the most optimal screening approach for the majority of women within the appropriate age range, providing unparalleled effectiveness in the detection of breast cancer. (9)

Review of Literature:

Sr. No.	Year/Name of journal	Author's Name	Article's name	Methodology	Result
1.	2022/BMC Cancer	Sarkar et al.	Effectiveness of educational intervention on breast cancer knowledge and breast self-examination among female university students in Bangladesh: a pre-post quasi-experimental study	A quasi-experimental (pre-post) research study was carried out at Jahangirnagar University in Bangladesh. The study focused on enhancing awareness about breast cancer and promoting breast self-examination (BSE) among female students. Prior to the intervention, 400 participants provided written informed consent. They received educational materials about breast cancer, BSE information, practical demonstrations of the BSE process, and informative leaflets. The BSE procedure was illustrated using stepwise instructions accompanied by images. To evaluate the impact of the intervention, assessments were conducted before the	The study encompassed a cohort of 400 female university students aged 18 to 26 years. Following the educational intervention, notable and meaningful shifts emerged in knowledge and consciousness regarding breast cancer, along with enhancements in the practice of breast self-examination (BSE). The discernible disparities manifested in the average scores during the pre-test and post-test phases: breast cancer symptoms (2.99±1.05 vs. 6.35±1.15; p<0.001), risk factors (3.35±1.19 vs. 7.56±1.04; p<0.001), treatment (1.79±0.90 vs. 4.63±0.84; p<0.001), prevention (3.82±1.32 vs. 7.14±1.03; p<0.001), screening for breast cancer (1.82±0.55 vs. 3.98±0.71; p<0.001), and the methodology of BSE (1.57±1.86 vs. 3.94±0.93; p<0.001). Correspondingly, a substantial percentage transformation in BSE practices was observed between the pre-test

				<p>intervention and again 15 days after. The goal was to measure changes in knowledge about breast cancer and the adoption of BSE practices. Statistical analyses, including Mc-Nemar's tests and paired sampled t-tests, were employed to assess differences between the pre- and post-intervention stages.</p>	<p>and post-test periods (21.3% vs. 33.8%; $p < 0.001$). (10)</p>
2.	2019/	Rahman et al.	<p>Awareness about breast cancer and breast self-examination among female students at the University of Sharjah: A Cross-sectional Study</p>	<p>In this research, a cross-sectional survey design was employed to examine the subject. The study involved 241 female undergraduate students with ages of 18 years or older, drawn from three different University of Sharjah campuses. Data collection took place between March and April 2017, facilitated by a self-administered questionnaire. This comprehensive questionnaire encompassed aspects such as sociodemographic traits, familiarity with breast cancer encompassing risk factors and indicative signs, as well as knowledge and engagement in Breast Self-Examination (BSE) practices. To analyze the collected data, descriptive statistical methods and Pearson's chi-square tests were employed.</p>	<p>Roughly 38.6% of the participants originated from the Medical campus, with 37.3% hailing from the Women's campus, and the remaining 24% from the Fine Arts and Design campus. An overwhelming majority, amounting to 99%, demonstrated awareness of breast cancer. Among them, approximately 50% exhibited familiarity with risk factors associated with the condition, while a slightly lesser 38% were knowledgeable about its warning signs and symptoms. Notably, the prevalent risk factors recognized were personal and familial histories of breast cancer, while the frequently identified warning sign/symptom was the presence of a breast lump. An interesting observation was the noteworthy link between awareness of risk factors and the type of campus attended. Particularly, participants from the Medical campus displayed more profound knowledge regarding risk factors compared to their counterparts from the other two campuses. On the whole, 68.5% of respondents were familiar with the concept of Breast Self-Examination (BSE), but its actual practice was less common. Reasons cited for not undertaking BSE included instances of "forgetting"</p>

					and lacking knowledge of the procedure. (8)
3.	2014	Ghodsi et al.	Breast self examination and mammography in cancer screening: women health protective barrier	This study adopted a descriptive and analytical cross-sectional approach to examine 385 women aged 35 and above, all of whom had no prior history of breast cancer. The participants were chosen through a simple randomized selection method. Data collection involved the use of a two-part self-administered questionnaire and a self-examination checklist. Both the questionnaire and checklist underwent rigorous evaluation for content validity and test-retest reliability.	Out of the total participants, 14.8% engaged in breast self-examination (BSE). Among these, 5.7% adhered to the recommended timing for BSE, and 9.4% consistently conducted the examination. The average age at which participants began BSE was 20.1 ± 7.6 years, and the average BSE score was 6.25 ± 2.26 (ranging from 2 to 11). Notably, 2.3% of participants demonstrated poor BSE performance, 7.5% performed it fairly, and 1.6% executed it well. Around 25.84% of the sample population had a history of undergoing mammography, out of which 13% had the procedure prescribed by a medical professional. The average age for the first mammogram was 36 ± 7.2 (ranging from 20 to 50) years, with an average frequency of 1.8 ± 1.4 (ranging from 1 to 8) screenings. Given the relatively low adoption of breast cancer preventive behaviors, this study also assessed participants' knowledge of breast cancer, recognizing its significance as a contributing factor to behavior. (9)
4.	2021/ BMC Women's health	Sadoh et al.	Improving knowledge about breast cancer and breast self examination in female Nigerian adolescents using peer education: a pre-post interventional study	Conducted between October and December 2016, this pre-post interventional study targeted female students from four secondary schools in Benin City. Prior to peer training, approximately 30% of students from each school participated in a pre-tested self-administered questionnaire to evaluate their knowledge of breast cancer (BC) and breast self-examination (BSE). Subsequently, 124 students were chosen (one per class)	A total of 1337 students participated in the pre-training questionnaire, whereas 1201 students responded to the post-training questionnaire. Initially, the mean knowledge score regarding breast cancer (BC) was relatively low at 20.61 ± 13.4 . However, this score showed a statistically significant enhancement to 55.93 ± 10.86 following the training ($p < 0.0001$). Notably, after the peer training, substantial and statistically significant improvements (ranging from $p = 0.037$ to $p < 0.001$) were observed across various knowledge domains, with the exception of symptomatology.

				<p>from these schools to serve as peer trainers. These peer trainers then delivered a session on BC and BSE to their fellow classmates, constituting the intervention.</p> <p>Within a span of two weeks following the peer training, the knowledge about BC and BSE was reevaluated among 30% of students from each school. The selection of students for both pre- and post-intervention assessments was accomplished using systematic sampling. The assessment involved scoring and presenting correct knowledge as percentages. Statistical analyses encompassed the utilization of the chi-square test, student t-test, and analysis of variance (ANOVA) to explore associations and differences, with a significance level set at $p < 0.05$.</p>	<p>Before the peer training, 906 students (67.8%) were acquainted with breast self-examination (BSE), while merely 67 students (4.8%) were aware of its practice. Remarkably, post peer training, the awareness about BSE saw a significant increase, with 1134 students (94.7%) now being knowledgeable about it. (11)</p>
5.	2020/Systematic reviews	Udoh et al.	<p>Mapping evidence on women's knowledge and practice of breast self-examination in sub-Saharan Africa: a scoping review protocol</p>	<p>We will conduct our scoping review following the established frameworks proposed by Arksey and O'Malley, Levac et al., as well as the guidelines provided by the Joanna Briggs Institute. To systematically gather relevant information, we will initiate literature searches across various electronic databases, specifically PubMed/MEDLINE, Scopus, Web of Science, CINAHL, PsycINFO, and Health Sources. Our search scope will encompass</p>	<p>The outcomes derived from the scoping review will play a pivotal role in enhancing our comprehension of women's awareness and implementation of breast self-examination within the sub-Saharan African context. This endeavor is expected to unveil a comprehensive assessment of the existing evidence landscape, shedding light on areas that necessitate further investigation. Our intention is to disseminate the results through publication in a peer-reviewed journal, thereby contributing to the body of scientific knowledge. Furthermore, the implications of these findings on clinical practices and health</p>

				<p>records published from 2008 onwards. Additionally, we will cast a wide net for grey literature by exploring sources such as dissertation databases, Google Scholar, and governmental databases. Our review process will involve a dual screening approach, with two reviewers meticulously assessing both citations and full-text articles. The collected data will be abstracted and structured into thematic and sub-thematic categories. Subsequently, we will synthesize and summarize the information using a narrative approach to report our findings. To evaluate the methodological quality and potential bias of the included studies, we will employ a mixed-method appraisal tool. This comprehensive approach will help ensure the rigor and reliability of our scoping review.</p>	<p>policies will be thoroughly deliberated and discussed. (12)</p>
6.	2022/BMC Women's Health	Tewelde et al.	<p>Breast self-examination practice and predictors among female secondary school teachers in Addis Ababa, Ethiopia: using the health belief model</p>	<p>A cross-sectional study was carried out among 589 female secondary school teachers in Addis Ababa, Ethiopia, aiming to investigate the practice of breast self-examination (BSE). To gather data, a self-administered questionnaire encompassing socio-demographic factors, sources of information, knowledge, perception of breast self-examination, and BSE practices was developed, drawing inspiration from Champion's revised Health</p>	<p>A cross-sectional study was carried out among 589 female secondary school teachers in Addis Ababa, Ethiopia, aiming to investigate the practice of breast self-examination (BSE). To gather data, a self-administered questionnaire encompassing socio-demographic factors, sources of information, knowledge, perception of breast self-examination, and BSE practices was developed, drawing inspiration from Champion's revised Health Belief Model. This questionnaire served as the primary data collection tool. To determine the predictors of breast self-examination practice, a multivariable binary logistic</p>

			<p>Belief Model. This questionnaire served as the primary data collection tool. To determine the predictors of breast self-examination practice, a multivariable binary logistic regression analysis was utilized. The analysis aimed to identify significant associations between various factors and the likelihood of practicing BSE. The statistical significance threshold was set at $p < 0.05$. Additionally, the analysis controlled for potential confounding variables that could influence the relationship between predictors and BSE practice.</p>	<p>regression analysis was utilized. The analysis aimed to identify significant associations between various factors and the likelihood of practicing BSE. The statistical significance threshold was set at $p < 0.05$. Additionally, the analysis controlled for potential confounding variables that could influence the relationship between predictors and BSE practice. (13)</p>
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Research Gap:

Breast cancer stands as the leading cause of mortality among women. Unfortunately, a significant number of women lack awareness regarding breast cancer and its early detection methods. Among these methods, self-breast examination emerges as a straightforward technique for identifying potential breast cancer symptoms. However, this technique remains largely unfamiliar to a substantial portion of rural women. Extensive exploration through various research papers has consistently highlighted the widespread lack of knowledge about self-breast examination among females. It's important to note that in previous research endeavors, the ability to verify data for assessing accuracy was limited.

Research Motive:

Our research and survey are driven by the aspiration to enhance awareness among females who are uninformed about breast cancer and the practice of self-breast examination. The primary objective is to disseminate crucial information and knowledge, particularly focusing on females residing in rural areas who currently lack adequate awareness. This discrepancy exists due to the absence of medical camps or health awareness initiatives in these underserved regions. Our principal aim is to bridge this gap and bring forth a heightened sense of awareness through our study.

Methods and Methodology:

We did a survey to know the awareness of the people. For this we form a questionnaire and then add those questions in a google form. Then we circulate that form in various age group of women through online mode. We have collected data of 100 women.

Inclusion Criteria:

- This study encompasses females within the age range of 18 to 50 years.
- Also this survey comprises both married and unmarried women.
- Women from both rural and urban areas participated in the study.

Exclusion Criteria:

- This study does not include men.
- This study excluded women below 18 and above 50 years of age from participation.

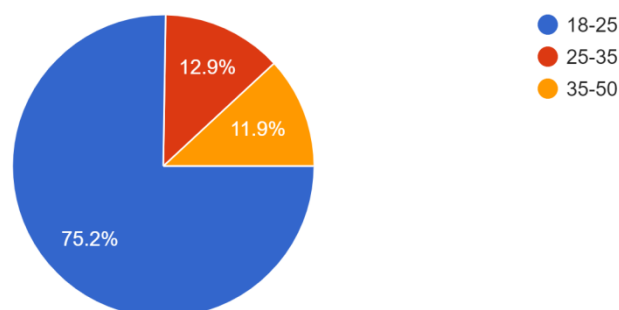
Results:

General characteristics of participants:

A total of 100 women, aged between 18 and 50, took part in the survey. We presented them with a variety of questions to gather information. An assortment of questions was present, and the following data was collected from this study :

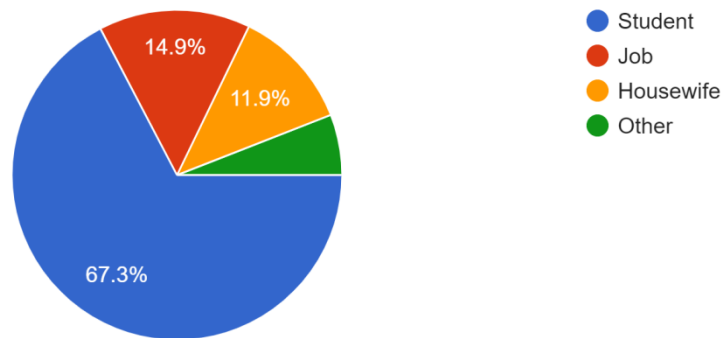
1. Age: Women spanning various age groups were included i.e. 18-25, 25-35, 35-50.

- The study or survey consisted of 75.2% females within the age group of 18 to 25 years.
- 12.9% females from 25-35 years age group.
- 11.9% females from 35-50 years age group.



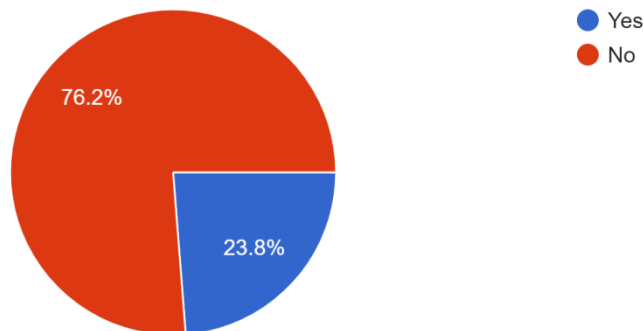
2. Field of Work: Women from different work field were there in study.

- 67.3% of females were college going students.
- A total of 14.9% of the females were employed.
- Housewives constituted 11.9% of the female participants.
- Females engaged in other fields accounted for 5.9% of the total.



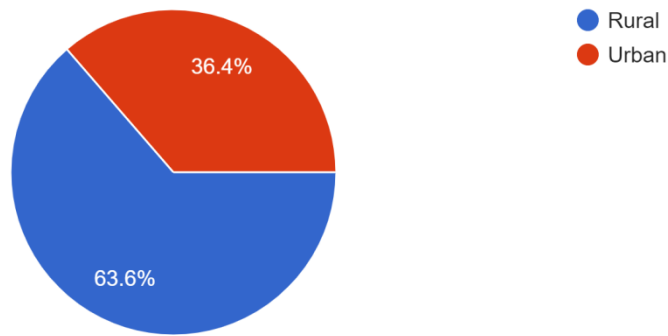
3. Marital status:

- A combined 76.2% of the women were not married.
- Approximately 23.8% of the participants in our study were married.



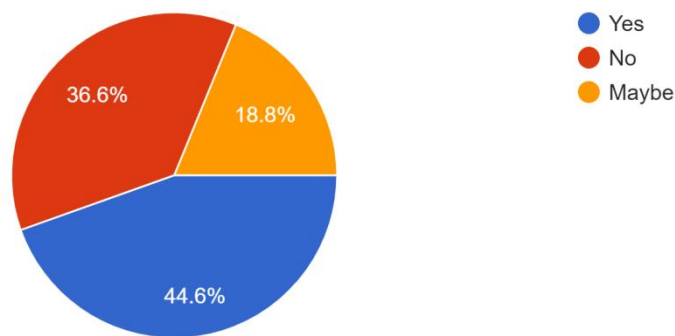
4. Residence or area to which belong:

- 36.4% of the females hailed from urban areas.
- Rural-area residents comprised 63.6% of the female participants.



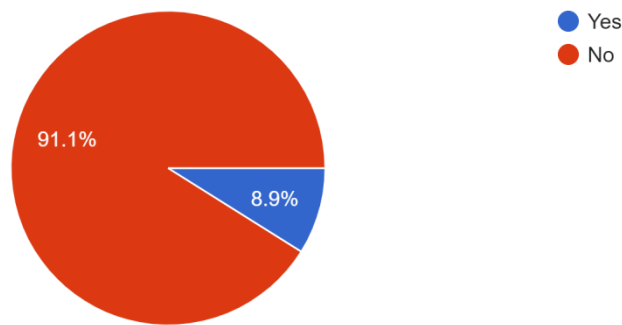
5. Knowledge about Signs and Symptoms:

- Out of the total, 44.6% of females possess an understanding of the signs and symptoms of breast cancer.
- A lack of awareness about signs and symptoms of breast cancer is evident in 36.6% of females.
- The option 'maybe' indicating unfamiliarity with the signs and symptoms is chosen by 18.8% of females.



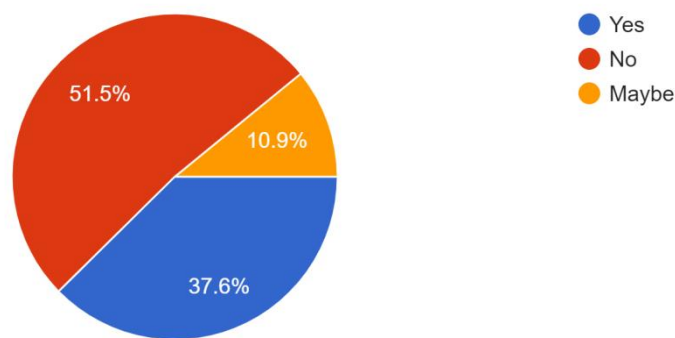
6. Family history of breast cancer:

- Family history of breast cancer is absent in 91.1% of females.
- Merely 8.9% of females possess a family history of breast cancer.



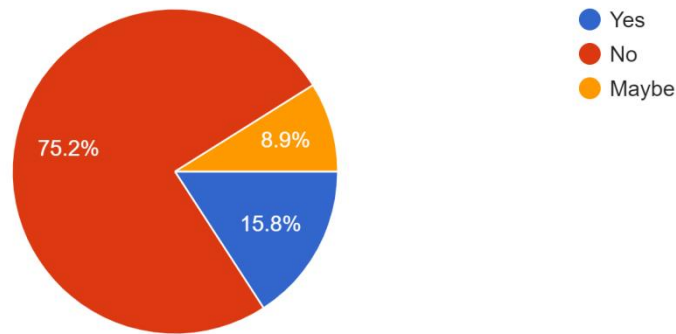
7. Knowledge about self-breast examination:

- The concept of SBE (Self-Breast Examination), or the procedure itself, is unfamiliar to 51.5% of females.
- A mere 37.6% of females are acquainted with the concept of SBE (Self-Breast Examination).
- The "maybe" option, indicating uncertainty about knowledge of self-breast examination, is selected by 10.9% of females.



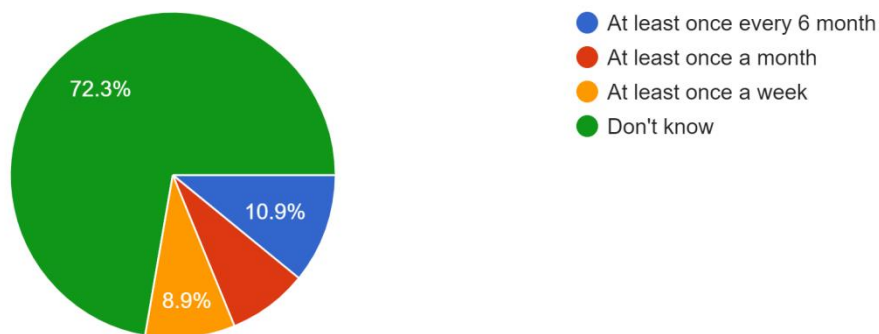
8. Practice of Self-Breast Examination:

- Self-breast examination is never carried out by 75.2% of females.
- Merely 15.8% of females engage in self-breast examination based on their awareness.
- Chosen by 8.9% of females, the "maybe" option signifies their lack of familiarity with the process of conducting breast examinations.



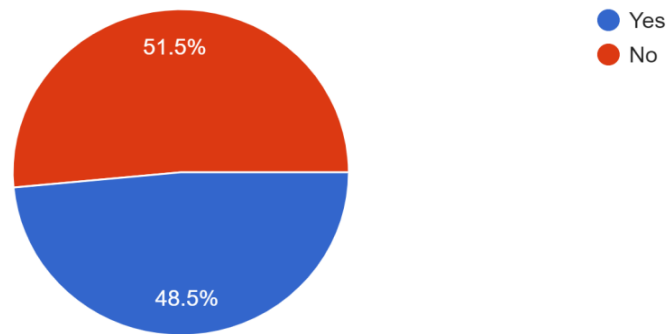
9. Frequency of Breast Self-Exam:

- A frequency of at least once every 6 months for breast checks is observed in 10.9% of females.
- Based on the data collected, 7.9% of females perform breast checks at least once per month.
- Self-breast examinations were conducted on a weekly basis by 8.9% of females.
- A lack of knowledge about how to perform breast checks or self-breast exams is evident in 72.3% of individuals.



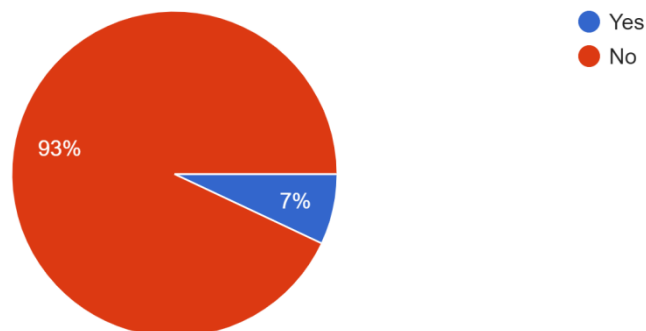
10. Knowledge about mammography:

- According to our study, 48.5% of females are knowledgeable about mammography.
- And mammography screening is unfamiliar to 51.5% of females.



11. Ever perform Mammography:

- Approximately 93% of females have never undergone mammography screening, representing the majority.
- Out of the total number of females included in our study, only 7% have undergone mammography screening at least once in their lifetime.



Discussion:

Cancer encompasses a diverse array of illnesses that emerge as a consequence of rapid division and spreading of abnormal cells to various tissues and organs. Breast cancer represents a swiftly progressing form of cancer, and performing a self-breast exam serves as a crucial early detection approach to ascertain the presence or absence of this condition. Early detection of breast cancer, especially among college-going girls. The study indicates that many participants had poor knowledge of breast self-exams (BSE), with a significant percentage being unaware of BSE. Similar findings were observed in studies in Turkey and Malaysia. A majority of participants had no family history of breast cancer, which might contribute to their limited knowledge of BSE. Despite family history being a risk factor, the American Cancer Society notes that most women with a first-degree relative having breast cancer won't develop the disease, while many women without such history will (14). The importance of Our study incorporated a significant proportion of women from rural areas, accounting for 63.6%, while 36.4% were urban residents. Given the higher representation of rural participants, our attention

is particularly drawn to addressing awareness gaps in these regions. The findings indicate that merely 44.6% of females possess knowledge concerning the risk factors, signs, and symptoms of breast cancer. The remaining individuals either lack awareness entirely or exhibit uncertainty in their information. Despite the majority having no family history of breast cancer, 8.9% do have such a history. Significantly, a substantial majority of women lack knowledge about self-breast examination and the associated process. A small fraction have practiced self-breast examination or have even heard of it. Surprisingly, approximately 70% of females have never conducted self-breast examination due to their limited understanding of the procedure. The study's sample of 100 women reveals that 48.5% are informed about mammography, but merely 7% have ever undergone this screening. In conclusion, our study highlights that while women in rural areas are knowledgeable about breast cancer, they lack awareness and understanding about self-detection methods. Their awareness about mammography exists, but there is an apparent disregard for undergoing this screening. Notably, the majority of participants belong to the 18-25 age group and are pursuing higher education or engaged in employment. This surprising revelation suggests a gap between education and health awareness. Despite being educated, these women tend to neglect self-breast examination, with only a few practicing it occasionally over varying time intervals. By fostering breast cancer awareness and encouraging the routine practice of Breast Self-Exams (BSE), the opportunity for early detection increases significantly. This, in turn, enhances the probability of improved survival rates and better overall health outcomes. Limited research has been conducted to explore the extent of knowledge about breast cancer, providing valuable insights that can aid in addressing this knowledge gap (15).

Limitation:

The research was completed within a span of 20 days, which represents a relatively short timeframe. With additional time, it would have been possible to include a larger number of female participants. Additionally, no educational campaigns were organized to disseminate information or raise awareness among women about breast cancer and breast self-examination (BSE). It's worth noting that all the data collected in the study relied on self-reported responses from the participants. However, there remains some uncertainty regarding whether the respondents actually carried out BSE, had the capability to do so, or refrained from it.

Conclusion:

The findings of the research study reveal that women's understanding of breast cancer, encompassing its symptoms, risk factors, and detection methods, fell short of initial expectations. This lack of awareness and knowledge is evident not only among women residing in rural areas but also extends to those living in urban settings. As a result, it is evident that interventions such as educational programs are essential to enhance women's awareness of breast self-examination (BSE). In the forthcoming studies, it is recommended to conduct surveys on a more extensive cohort of women to gauge potential improvements in their knowledge over time.

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