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Exploring Awareness and Understanding of Breast Cancer Risk Factors, Screening, and Treatment among Females in Pakistan

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Abstract

Purpose: Breast cancer is a pressing concern in Pakistan, ranking as the second leading cause of death among women. Despite its increasing incidence, it often lacks adequate attention from policymakers and healthcare professionals. This oversight could have severe consequences. To effectively tackle this health crisis, a thorough understanding of breast cancer's prevalence, risk factors, diagnosis, treatment, and outcomes in Pakistan is crucial.

Methodology: To assess the level of awareness and understanding of breast cancer among women, this study was conducted. A cross-sectional survey was conducted in the outpatient department of Fauji Foundation Hospital, Rawalpindi, involving 350 female patients. Data were collected using a pre-structured questionnaire and analyzed using SPSS Version 16.0.

Findings: Descriptive statistics were used, and the results were expressed as percentages and presented graphically. The study found that 70% of women were aware of breast cancer. Furthermore, 74% of the patients were married, and 87% had children. Knowledge about signs, symptoms, diagnosis, and treatment of breast cancer was relatively high among the women surveyed. However, only 23% of women had knowledge about performing breast self-examinations, and 18% had heard about mammography.

This study provides valuable insights into breast cancer awareness and prevention behaviors among women in Pakistan, with significant implications for theory, policy, and practice. The findings highlight gaps in knowledge and awareness, particularly regarding breast self-examinations and mammography screenings.

Unique Contribution to Theory, Policy and Practice: Policy implications stemming from the study results include the need for targeted awareness campaigns, educational programs, and screening initiatives to improve breast cancer awareness and preventive behaviors among women in Pakistan. Policymakers should allocate resources towards these efforts and integrate breast cancer education into existing healthcare services and community outreach programs to ensure widespread dissemination of information and access to screening services.

Keywords: *Breast Cancer, Knowledge about Risk Factors, Screening and Treatment*

Introduction

The body is made up of trillions of living cells. Normal body cells grow, divide into new cells, and die in an orderly way. During the early years of a person's life, normal cells divide faster to allow the person to grow. After the person becomes an adult, most cells divide only to replace worn-out or dying cells or to repair injuries. Cancer begins when cells in a part of the body start to grow out of control. There are many kinds of cancer, but they all start because of out-of-control growth of abnormal cells. Cancer cell growth is different from normal cell growth. Instead of dying, cancer cells continue to grow and form new, abnormal cells. Cancer cells can also invade (grow into) other tissues, something that normal cells cannot do. Growing out of control and invading other tissues are what makes a cell a cancer cell. Cells become cancer cells because of damage to DNA. DNA is in every cell and directs all its actions. In a normal cell, when DNA gets damaged the cell either repairs the damage or the cell dies. In cancer cells, the damaged DNA is not repaired, but the cell doesn't die like it should. Instead, this cell goes on making new cells that the body does not need. These new cells will all have the same damaged DNA as the first cell does. People can inherit damaged DNA, but most DNA damage is caused by mistakes that happen while the normal cell is reproducing or by something in our environment [5,24,25].

Breast cancer is the most frequent malignancy of women. It is the leading cause of female cancer-related mortality. Breast cancer rates are increasing in developed as well as developing countries. Prognosis and survival rates of breast cancer are better in developed countries due to early diagnosis and treatment. In countries with limited resources, the majority of females present with advanced or metastatic breast cancer leading to poor outcomes. Screening programs based on routine mammography are not readily available in developing countries. Breast Health Global Initiative (BHGI) proposes breast cancer awareness and breast self-examination (BSE) as a means of early breast cancer detection in developing countries [2,17,20]. Breast cancer is responsible for 10.4% of the global burden of cancers in women and half of this occurs in developing countries. In the sphere of cancer control, much would be achieved if breast cancer were to be detected early [1,16].

Pakistan spends 2.4-3.7% of GDP on health. Breast screening facilities are limited. Clinical screening for breast cancer is availed by 9.5% of urban and 4.8% of rural females. Radiological facilities in this regard are present for 2.5% of urban and 0.7% of rural females. The majority of Pakistani breast cancer patients present late. Lack of awareness and low socioeconomic status are major reasons for late presentation. In our socioeconomic setup, the only feasible solution to promote early detection of breast cancer is to create 'breast cancer awareness' among the female population. Apart from lack of knowledge, it is equally important to consider other social and cultural barriers which delay help-seeking. This is only possible if we know the present level of knowledge, attitudes, and practices of our female population towards breast cancer [3,18,23].

While all women are at risk for breast cancer, particularly as they get older, there are basic strategies for reducing the chances that you will get the disease – or increasing the likelihood that if you do develop breast cancer, it will be detected at an early stage when treatment is likely to be successful.

Because each woman has her own set of risk factors, specific strategies may differ: For example, a woman with an inherited mutation in one of the BRCA genes has significantly greater risk than a woman with a direct family history of breast cancer but no inherited mutation, or a woman found to have atypical or LCIS on a biopsy. But for all women, including those with no known risk factors, these minimum steps can help to reduce the risk:

Perform breast self-examination regularly beginning at age 20, at the same time each month. The best time for self-examination is 7-10 days after the onset of menstrual period. Obtain a physical breast exam by a physician or other health care provider every year starting at age 40 [4,22,26]. Breast Cancer is one of the leading causes of death worldwide. According to WHO estimates it represents 10% of all cancers diagnosed worldwide and constituted 22% of all new cancers in 2000 in women making it the most common cancer in females.

Pakistan alone has the highest rate of Breast Cancer than any other Asian country as approximately 90000 new cases are diagnosed every year out of which 40000 die. According to a research conducted approximately 1 out of every 9 women are likely to suffer from this disease at any point in their lives and about 77% of invasive breast cancer occurred in women above 50 years, but if diagnosed early the survival rates approach 90%.

Mortality in Breast cancer can be prevented in 1/3rd of women if routine mammography is done in women over 50 years, hence the longer a woman lives the lower is her risk of breast cancer therefore a 50-year-old woman who has not had breast cancer has 11% chance of having it, whereas a 70-year-old woman who has not had breast cancer has 7% chance of having it. BRCA1 and BRCA2 are the two most major breast cancer-susceptibility genes.

Literature review

Breast cancer is increasingly prevalent worldwide, necessitating greater awareness and understanding of risk factors, symptoms, and screening methods. Studies conducted in various regions have highlighted the importance of education and awareness campaigns to combat the disease. For example, a study in Mumbai, India, found that a significant proportion of women had a relatively high level of awareness about breast cancer [6]. However, there are still gaps in knowledge, as evidenced by studies in Pakistan and Korea, where a majority of women lacked knowledge about breast cancer [7].

The sources of information about breast cancer vary among populations, with electronic media being the primary source in many cases. In Nigeria and Iran, elders, neighbors, friends, and electronic media were cited as common sources of information [8]. However, despite widespread access to information, misconceptions about breast cancer symptoms persist. While a study in Egypt found that most patients recognized painless breast masses as a symptom [9], a study in Pakistan revealed that only a minority of patients identified size and shape changes as symptoms [10].

Regarding risk factors, studies have shown variations in awareness among different populations. In Angola, family history was commonly cited as a risk factor [11], while in Pakistan, genetic factors were more commonly recognized [12]. Access to screening techniques such as Clinical Breast Exam (CBE) and mammography remains limited in some regions due to a lack of awareness about their existence [13]. In addition, barriers to seeking medical help, such as fear, embarrassment, and difficulty making appointments, contribute to delays in diagnosis and treatment [14]. Despite the perceived importance of breast cancer screening, studies have indicated low awareness and utilization of screening services in some areas. In Esanland, Nigeria, over half of the patients were unaware of breast cancer screening, and female health workers had low rates of screening [15]. In summary, while there have been efforts to raise awareness about breast cancer worldwide, there are still significant knowledge gaps and barriers to screening and treatment. Continued education and outreach efforts are needed to improve early detection and outcomes for breast cancer patients globally.

Research Methodology

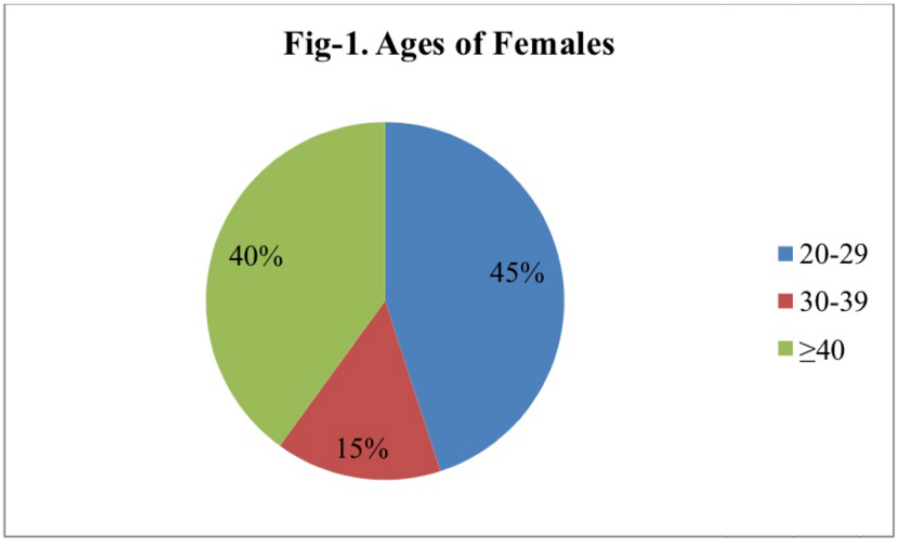
The methodology employed in this study aimed to comprehensively assess breast cancer knowledge among female patients visiting the outpatient department (OPD) of Fauji Foundation Hospital in Rawalpindi, Pakistan. A descriptive cross-sectional survey design was utilized to gather data from participants, enabling the identification of trends and patterns in breast cancer knowledge. The target population comprised females aged 20 and above visiting the OPD of Fauji Foundation Hospital, a tertiary care facility in Rawalpindi, Punjab province. A sample size of 350 female participants was determined using OpenEpi sample size calculator to ensure representation and accuracy of findings. Purposive sampling was employed due to the absence of a proper sampling frame. Data were collected using a structured questionnaire adapted from previous studies, covering demographic variables, breast cancer risk factors, knowledge about screening and treatment, and sources of information. Interview-administered questionnaires were conducted in a side room of the OPD to ensure clarity and prevent missing data. Descriptive analysis using frequencies and percentages was performed for data summarization, utilizing SPSS version 16.0 for analysis. Inclusion criteria included females aged 20 and above visiting the hospital's OPD, while exclusion criteria encompassed healthcare workers and females unable to understand Urdu, Punjabi, or English. Ethical approval was obtained from the Institutional Review Board of Vertex College of Science and Technology, Islamabad. Participants provided informed consent, and confidentiality and anonymity were maintained throughout the study.

Results

After collecting all the data, it was inputted into SPSS version 16.0 and filtered based on criteria such as age range, location of residence, education level, knowledge about breast cancer, marital status, breastfeeding history, risk factors, and protective factors. Subsequently, graphical representations were generated to visually depict the analyzed data concerning the targeted subject.

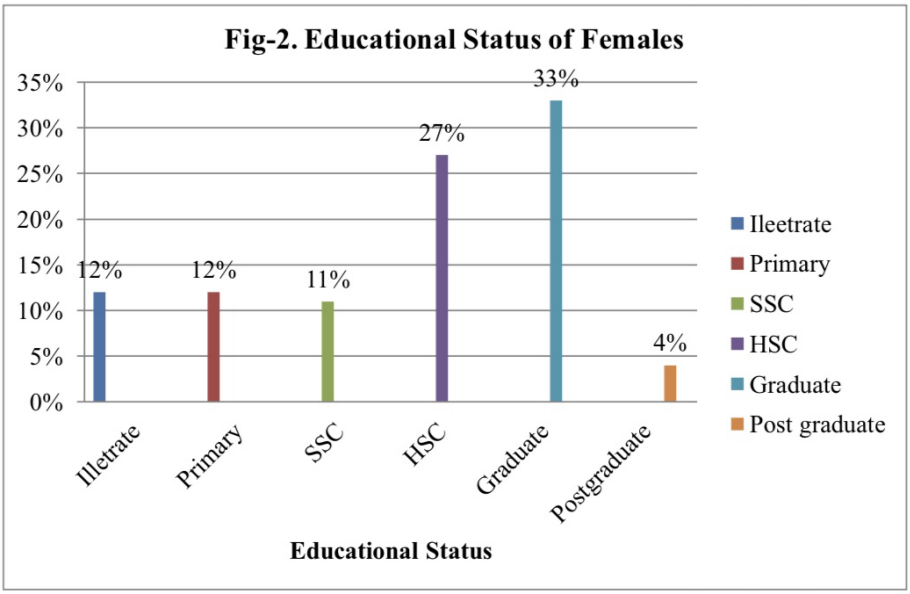
Age

Most of the females were aged between 20 to 29 years (45%). There were also subjects from 30 to 39 years (40%). On the other hand only 15% subjects were aged 40 years and above (Fig-1)



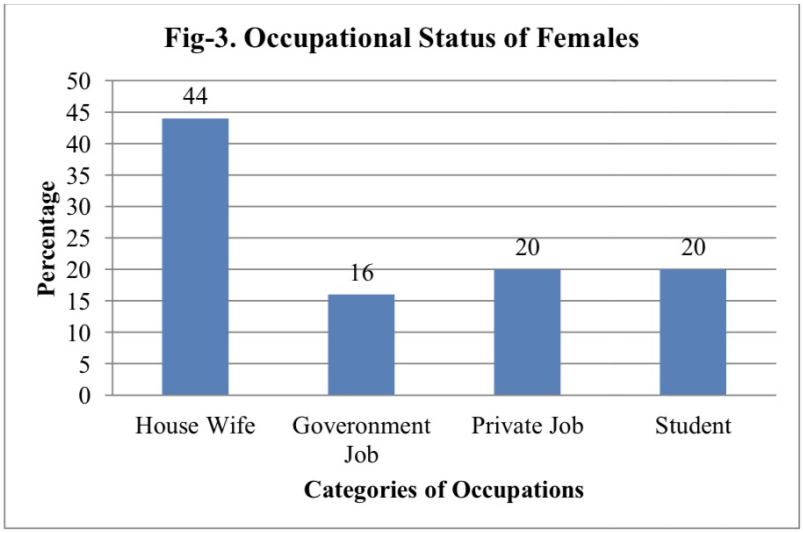
Educational Status

Majority of the participants (33%) had educational qualification up to graduate. About 12% completed primary education, 11% had passed SSC, 27% had passed HSC, 12% had completely



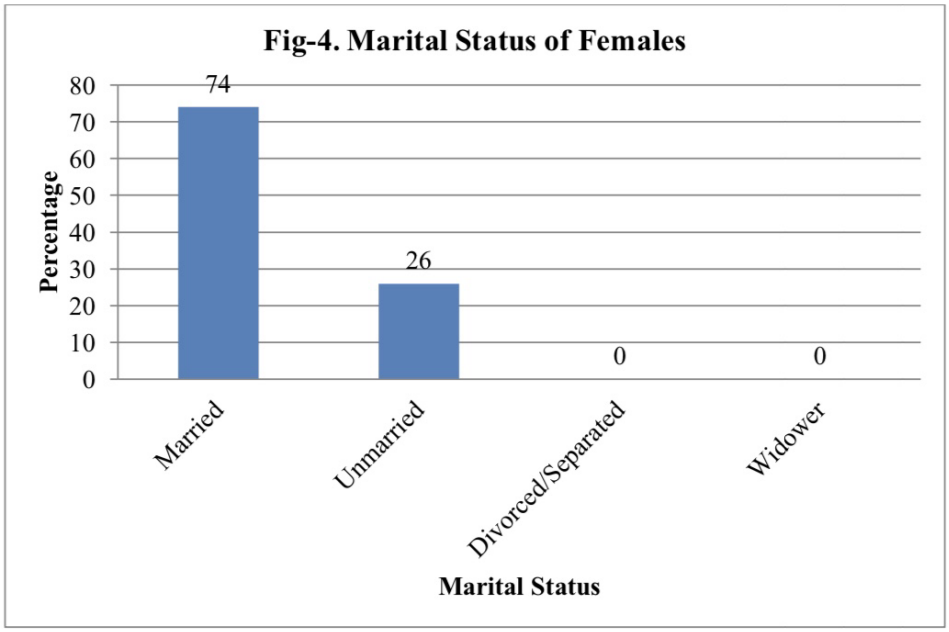
Occupational Status

Among all females majority of them were housewife (44%). Some were in government (16%) and students (20%) (Fig-3).



Marital Status

Majority of the participants (74%) were married. Only few of them (26%) were unmarried (Fig-4).



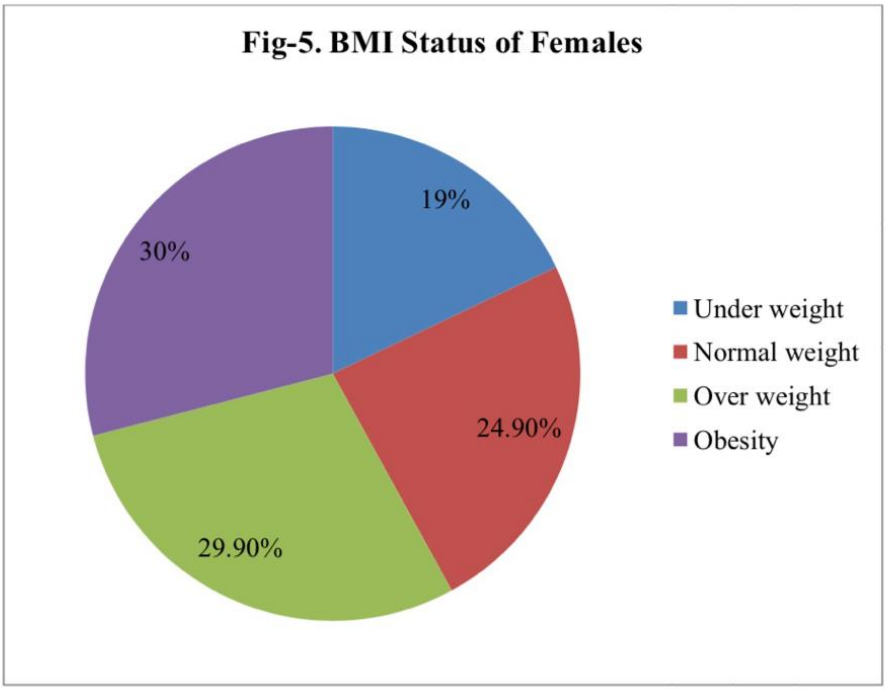
BMI Status of Breast Cancer

The body mass index (BMI) is a measure of relative weight based on an individual's mass and height. It is defined as the individual's body mass divided by the square of their height with the value universally being given in units of kg/m2.

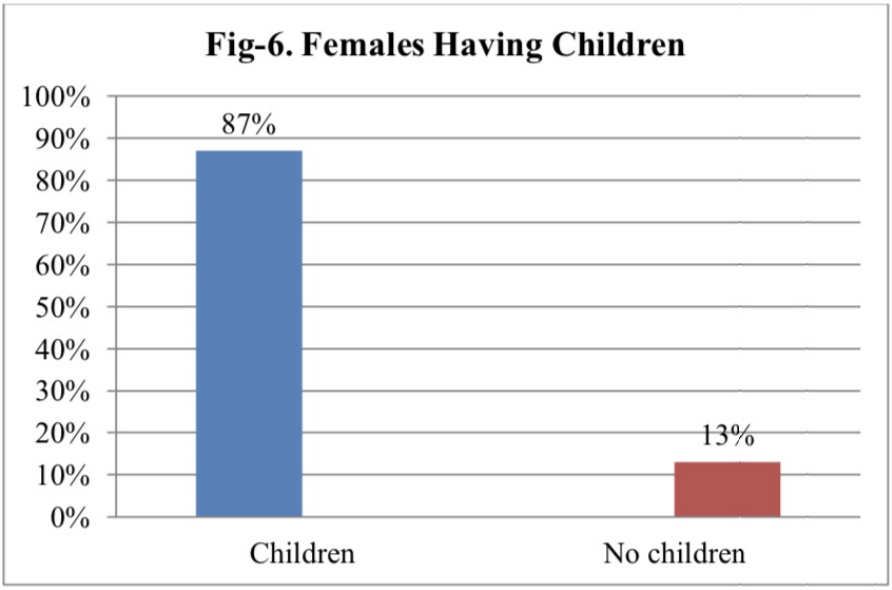
Table-1: Category according to BMI index (Assess body weight, 016).

Category	BMI index
Underweight	<19
Normal (healthy weight)	19-24
Overweight	24-30
Obese	30-40

There is a BMI graph from which it can be determined whether the respondent was underweight, normal weight, overweight or obese. Among all the females, only 6% of the females were obese and 26% had over weight (Fig-5).

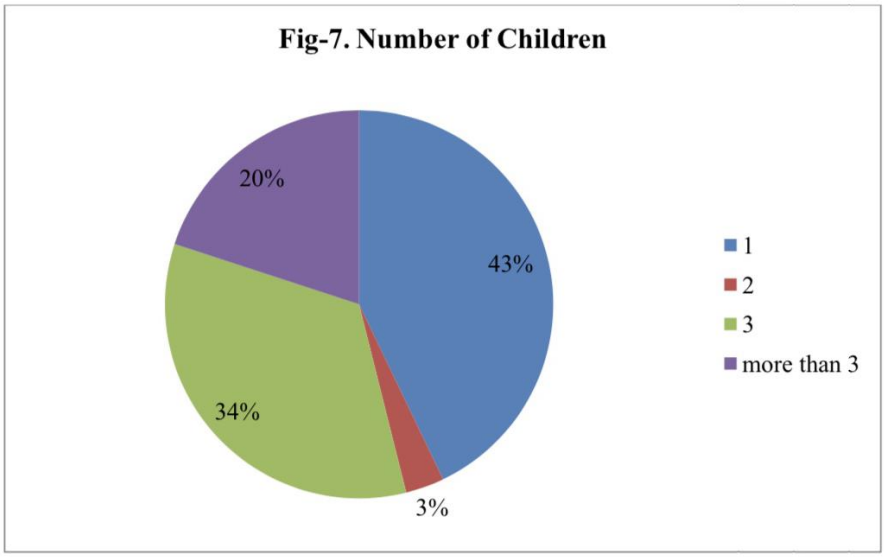


Having Children



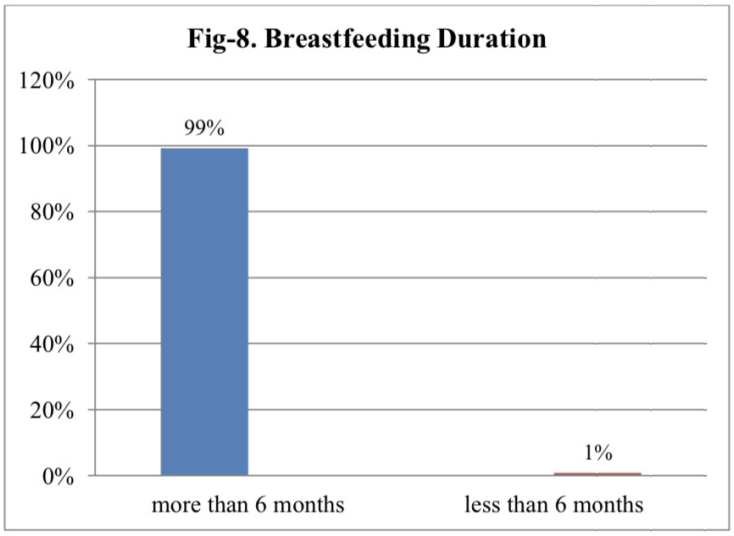
Number of Children

Among all the married females, many of them had children of which most of the females had 1 child (24%), 1.8% had 2 children and more than 3 child (11.18%).



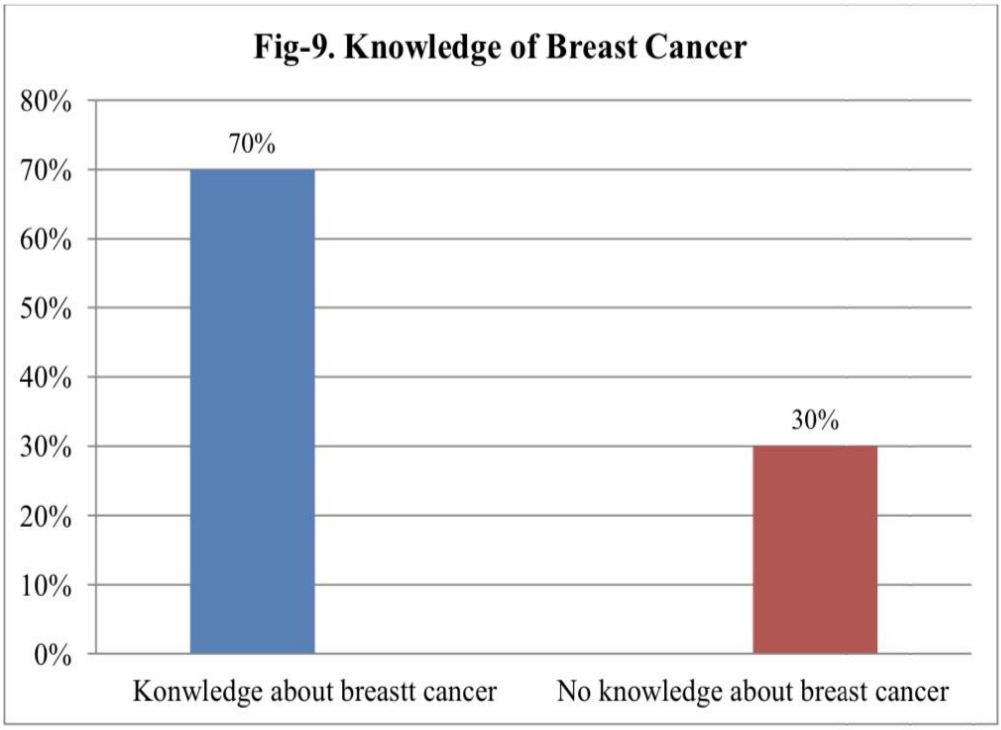
Breast Feeding Time

All the females (99%) stated that breast feeding should be done for more than 6 months (Fig-8).



Knowledge About Breast Cancer

Majority of the females (70%) had knowledge about breast cancer but 30% of all the participants said they had no knowledge (Fig-9).



Knowledge of Signs & Symptoms

About 59% of them identified size& shape, as the major symptom of breast cancer the other symptoms recognized by the patients were pain or discomfort (13%), a new lump or thickening in one breast (45%), mentioned rashes on or around the nipple (4%), Nipple changes (34%), discharge or fluid from both or one nipple (36%), skin changes (23%) (Table-2).

Table-2. Knowledge About Signs and Symptoms of Breast Cancer

S #	Signs and Symptoms	Yes (%)	No (%)
01	Abnormal size and shaped nipple	59	41
02	Pain in breast	13	87
03	New lump in breast	45	55
04	Rashes on breast	4	96
05	Nipple changes	34	66
06	Abnormal discharge from nipple	36	64
07	Skin Changes	23	77

Knowledge of Risk Factors

Regarding the knowledge of risk factors for breast cancer, 54% mentioned that genetics is the reason behind breast cancer. About half of them mentioned (41%) lack of breast feeding (24%) obesity, higher level of certain hormones (19%), lack of exercise (3%), exposure to radiation (14%), irregular menstrual cycle (12%) as causes of breast cancer (Table-3).

Table-3.Knowledge About Risk Factors of Breast Cancer

S #	Risk Factors	Yes (%)	No (%)
1	Genetics	54	46
2	Lack of Breast Feeding	41	59
3	Obesity	24	76
4	Hormone abnormality	19	81
5	Lack of Exercise	3	97
6	Exposure to Radiation	14	86
7	Irregular Menstrual Cycle	12	88

Among all the females, 66% had started menstruation above 12 years. Only 34% had started menstruation below 12 year.

Knowledge of Protective Factors

According to females' knowledge, majority of females (59%) thought that exercise can lower the risk of breast cancer. Rest of them thinks that healthy diet (57%), breast feeding (14%), control of HR (2%) and 29% said early marriage is the protective factors of breast cancer. Details of these factors are presented in table-4.

Table-4. Knowledge about Protective Factors of Breast Cancer

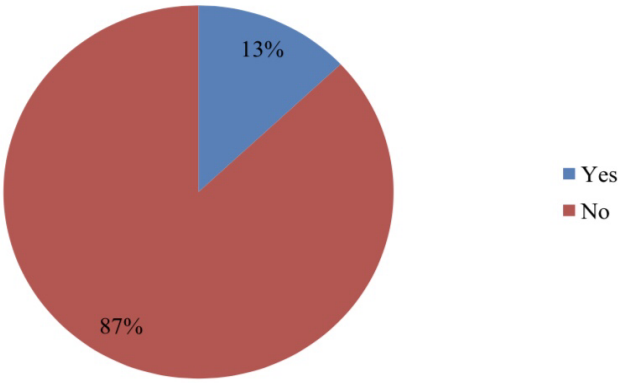
S #	Protective Factors	Yes (%)	No (%)
1	Exercise	59	41
2	Healthy diet	37	63
3	Exclusive breast feeding	14	86
4	Control of HR	2	98
5	Early marriage	29	71

Knowledge of Breast Cancer Screening

Regularly Observe Breast Changes

Among all females only 13% participants observe their breast change regularly but maximum participant (87%) did not observe their breast regularly .They knew about breast cancer but they were not aware about this matter (Fig-10).

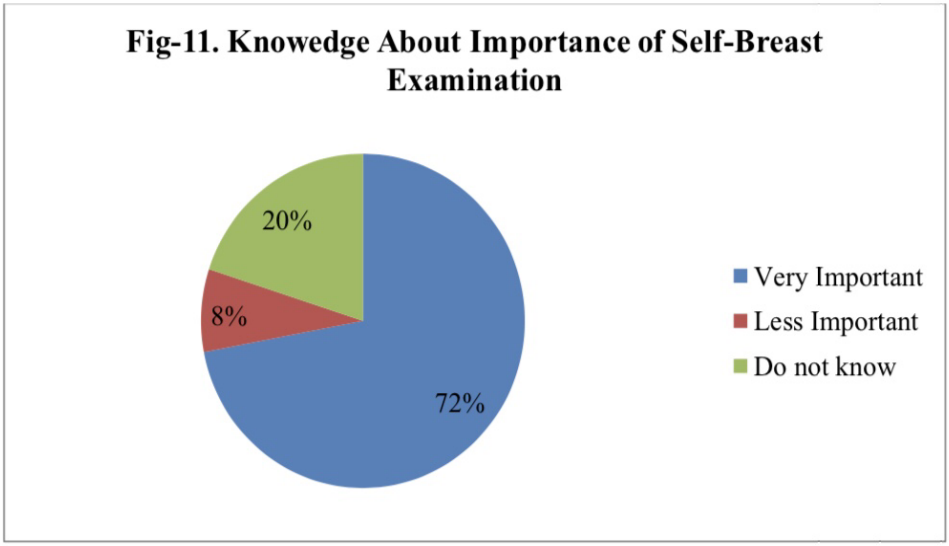
Fig-10. Opinion About Self-Breast Examination



Importance of Breast Cancer Screening

Among all participants 72% patients said breast cancer screening is very important, 20% patients don't know about this matter, 3% female said not necessary, 5% said less important.

Fig-11. Knowedge About Importance of Self-Breast Examination



Screening Tests

Among all females 23% knew about breast self-exam, 15% knew clinical breast exam, 18% knew memography.1.1% knew other kind of diagnosis such as ultra sound, MRI, Biopsy (table-5).

Table-5. Knowledge About Screening Measures

S #	Screening	Yes (%)	No (%)
1	Self-breast examination	23	77
2	Clinical breast examination	15	85
3	Mammography	18	82
4	Radiation	3	97

Knowledge of Measures After Finding Lump

Among all females 67% participants see a doctor after finding lump, 67.2% participants tell a family member, 2% see a nurse, 3.4% tell a friend, and 5.1% do nothing.

Table-6. Contact Person if the Lump Found

S #	Contact person incase of having lump	Yes (%)	No (%)
1	See doctor	67	33
2	See nurse	2	98
3	Tell the family member	67	33
4	Tell the Friends	5	95
5	Do nothing	10	90

Knowledge Breast Cancer Treatment

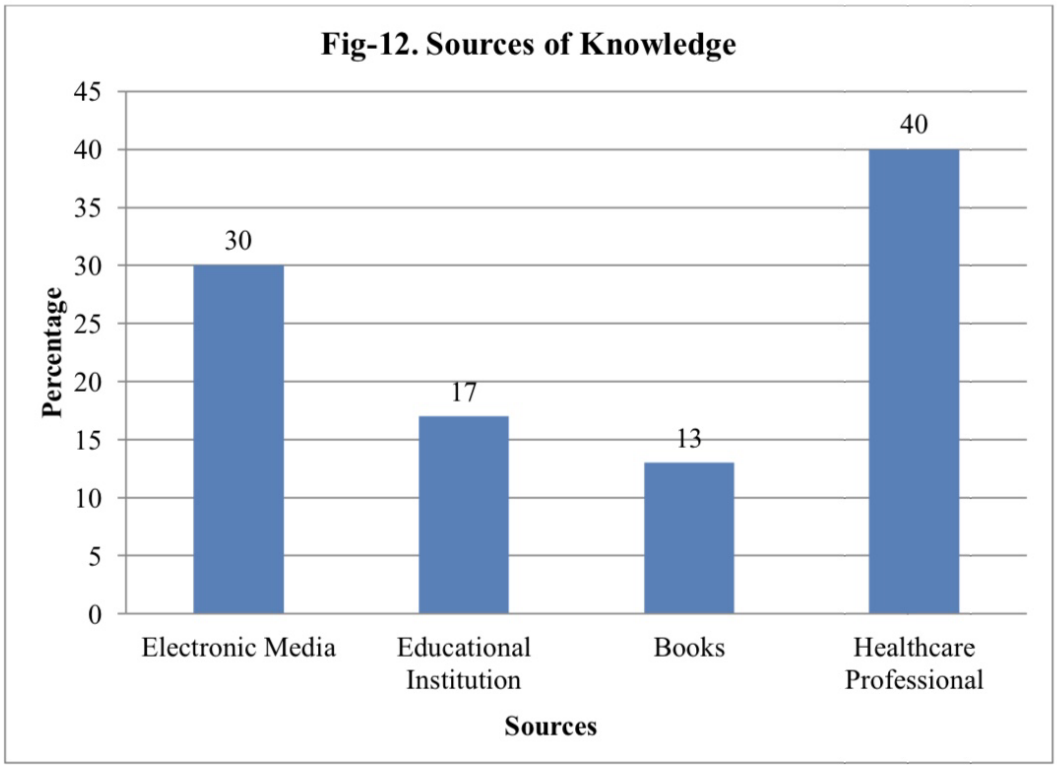
Among the participants 64% females had knowledge about breast cancer treatment. About 57% knew about chemotherapy, 38% knew about surgery, 2% hormonal radiation, 2.6% knew (Table-7).

Table-7. Knowledge About Types of Breast Cancer Treatment

S #	Treatment Modalities	Yes (%)	No (%)
1	Chemotherapy	62	38
2	Hormone Therapy	43	57
3	Surgery	2	98

Source of Information

Among the females (30%) had gained the information from the electronic media, 17% Educational institute and 13% book. Majority of them gained knowledge from the healthcare professionals (Fig-12).



Discussion

The findings of this study highlight the pressing need for increased awareness and education regarding breast cancer among women in the study population. While breast cancer is a significant health concern globally, our study reveals that there are still substantial knowledge gaps regarding risk factors, symptoms, and screening methods among women in this community.

Previous research conducted in Mumbai, India, has shown that a notable proportion of women possess a relatively high level of awareness about breast cancer [6,19]. However, our study indicates that many women in our population lack sufficient knowledge about this disease. This disparity underscores the importance of tailored educational interventions to enhance awareness and understanding of breast cancer within this community.

Sources of information about breast cancer varied among participants, with electronic media being the predominant source, consistent with findings from other regions [8,21]. Despite the availability of information, misconceptions persist, particularly regarding the recognition of symptoms. While some studies have identified family history as a common risk factor for breast cancer [19], our findings suggest that genetic factors are more commonly recognized in our population.

Barriers to seeking medical help, such as fear, embarrassment, and logistical difficulties, were also identified in our study, echoing findings from previous research. Addressing these barriers requires multifaceted interventions aimed at reducing stigma, improving healthcare access, and promoting regular screening practices. Despite the perceived importance of breast cancer screening, our study revealed low awareness and utilization of screening services among participants, consistent with findings from other studies [6]. This underscores the need for ongoing education and outreach efforts to promote the benefits of early detection and encourage regular screening among women in the community.

Conclusion

This study highlights the importance of increasing awareness and knowledge about breast cancer among women in the study population. Despite advancements in medical research and healthcare, there are still significant gaps in understanding risk factors, symptoms, and screening methods for breast cancer. Addressing these gaps through targeted education and outreach efforts is crucial for improving early detection rates and reducing mortality associated with breast cancer.

The findings of this study underscore the need for comprehensive public health initiatives aimed at promoting healthy lifestyle choices, encouraging regular screening practices, and providing accessible healthcare services. By empowering women with accurate information and resources, we can empower them to take proactive steps towards reducing their risk of breast cancer and seeking timely medical intervention when needed.

Moving forward, collaboration between healthcare providers, policymakers, advocacy groups, and community organizations will be essential in implementing effective strategies for breast cancer prevention and control. By working together, we can make significant strides towards reducing the burden of breast cancer and improving outcomes for women worldwide.

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