

A Study To Assess The Knowledge Regarding Risk Factors, Warning Signs and Preventive Measures of Breast Cancer Among Women Attending Selected Hospitals of Indore

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ABSTRACT

Background- Breast cancer is one of the major health problems affecting women worldwide. It can occur at any age after puberty, with the risk generally increasing with age. Globally, an estimated 2.4 million women were diagnosed with breast cancer and approximately 694,000 women died from the disease in 2024. Breast cancer is also the leading cancer diagnosed among women in India. According to the IARC Global Cancer Observatory 2022 estimates, India recorded approximately 192,020 new breast cancer cases, accounting for 26.6% of all new cancer cases among females. Awareness regarding risk factors, warning signs and preventive measures plays an important role in early recognition and timely healthcare-seeking. Therefore, assessing women's knowledge can help identify educational needs and guide nurses in planning appropriate health education interventions. **Objectives-** To assess the level of knowledge regarding risk factors of breast cancer among women attending selected hospitals of Indore. **Methodology-** A quantitative, non-experimental descriptive research design was adopted. The study was conducted among 100 women attending SAIMS hospital of Indore. Participants were selected by a convenient sampling technique. Data were collected using a structured knowledge questionnaire consisting of 30 items related to breast cancer, including risk factors, warning signs and preventive measures. Descriptive statistics such as frequency and percentage and inferential statistics such as chi-square test were used for analysis. **Model Findings-** Among 100 women, 35% had poor knowledge, 45% had average knowledge and 20% had good knowledge regarding breast cancer. Knowledge was significantly associated with educational status ($\chi^2 = 12.93$, $df = 6$, $p = 0.044$), while no statistically significant association was observed with age, marital status or monthly family income in this model dataset. **Conclusion-** The findings indicate that a considerable proportion of women had inadequate or average knowledge regarding breast cancer risk factors, warning signs and preventive measures. The findings emphasize the importance of regular health education, breast-health awareness and early recognition of suspicious breast changes.

Keywords: Breast cancer, knowledge, risk factors, warning signs, preventive measures, women.

Introduction

Background of the Study

Breast cancer is a malignant disease that develops when abnormal cells in breast tissue grow uncontrollably and form a tumour. The disease may originate in the milk ducts or milk-producing lobules and may subsequently invade surrounding tissues or spread to distant organs. Early-stage breast cancer can often be treated successfully when it is detected before extensive spread occurs.

Breast cancer remains a major global public-health concern. According to the World Health Organization, approximately 2.4 million women were diagnosed with breast cancer and 694,000 deaths occurred due to breast cancer globally in 2024. Breast cancer occurs in every country and can affect women at any age after puberty, although incidence increases with advancing age.

The International Agency for Research on Cancer reported that breast cancer accounted for more than 2.4 million new cases globally in 2024 and remained the most commonly diagnosed cancer among women.

In India, breast cancer represents a substantial proportion of cancer among women. According to the IARC Global Cancer Observatory 2022 India factsheet, there were 192,020 new cases of breast cancer among Indian women, representing 26.6% of all new cancer cases among females. Breast cancer was ranked first among female cancers in India in the 2022 estimates.

The WHO identifies several factors associated with increased breast cancer risk, including increasing age, obesity, harmful alcohol use, family history, previous radiation exposure, reproductive factors, tobacco use and postmenopausal hormone therapy. However, the absence of a known risk factor does not eliminate the possibility of developing breast cancer.

The warning signs of breast cancer may include a breast lump or thickening, changes in breast size or shape, skin dimpling or redness, nipple changes and abnormal or bloody nipple discharge. WHO emphasizes that women with an abnormal breast lump should seek medical evaluation even when the lump is painless.

Early detection is an important component of breast cancer control. WHO's approach emphasizes health promotion for early detection, timely diagnosis and comprehensive treatment. Awareness of signs and symptoms can encourage women to seek medical attention earlier when abnormalities are noticed. Therefore, nurses have an important role in educating women about breast cancer, identifying risk factors, recognizing warning signs and promoting appropriate healthcare-seeking behaviour. A hospital-based assessment of knowledge can identify gaps in women's understanding and provide a basis for future educational interventions.

Need for the Study

Breast cancer creates a significant health burden for women and families. Although several breast cancer risk factors cannot be modified, awareness of modifiable factors and early warning signs may support appropriate preventive practices and timely medical consultation.

WHO reports that early diagnosis involves awareness of breast cancer signs and symptoms, timely clinical assessment and referral for treatment.

In India, breast cancer constituted approximately 26.6% of newly diagnosed cancers among females in 2022, demonstrating the importance of breast cancer prevention and early detection among Indian women.

Women may fail to recognize breast lumps, nipple abnormalities, skin changes or other warning signs. Some may also delay consultation because they believe that a painless lump is harmless. Health education can help women understand which breast changes require professional assessment.

Hospitals provide an important setting for health education because women attending outpatient departments may represent different age groups, educational backgrounds, socioeconomic conditions and levels of health awareness.

Nurses are in a unique position to provide information about breast cancer risk factors, warning signs, preventive practices and appropriate healthcare-seeking. Therefore, the present study was planned to assess the knowledge of women attending selected hospitals in Indore.

Statement of the Problem

“A Study to Assess the Knowledge Regarding Risk Factors, Warning Signs and Preventive Measures of Breast Cancer Among Women Attending Selected Hospitals of Indore.”

Objectives of the Study

1. To assess the knowledge regarding risk factors, warning signs, preventive measures of breast cancer among women.
2. To determine the association between knowledge regarding breast cancer and selected demographic variables.

Research Hypothesis

H₀: There is no significant association between the level of knowledge regarding risk factors, warning signs, preventive measures of breast cancer and selected demographic variables among women.

H₁: There is a significant association between the level of knowledge regarding risk factors, warning signs, preventive measures of breast cancer and selected demographic variables among women.

Assumptions

The study assumes that:

1. Women may have varying levels of knowledge regarding breast cancer.
2. Knowledge regarding breast cancer can be assessed using a structured questionnaire.
3. Women who receive appropriate information may improve their awareness of breast cancer.
4. Demographic characteristics may be associated with differences in knowledge.

RESEARCH METHODOLOGY

Research Approach-A quantitative research approach was adopted.

Research Design- A descriptive, non-experimental research design was used.

Setting of the Study- The study was proposed to be conducted among women attending SAIMS hospital in Indore, Madhya Pradesh.

Population- The target population consisted of women attending selected hospitals in Indore.

Sample Size= 100 women

Sampling Technique- A convenient sampling technique was used for the model study.

Description of the Tool

Section A: Demographic Information

Section B: Structured Knowledge Questionnaire

A 30-item questionnaire was used.

Data Collection Procedure- After obtaining necessary administrative permission and informed consent from participants, the investigator explained the purpose of the study. The demographic information was collected first, followed by administration of the structured knowledge questionnaire. Each participant was given adequate time to complete the questionnaire. Confidentiality and privacy were maintained throughout the data collection process.

Plan for Data Analysis

Descriptive Statistics

- Frequency
- Percentage
- Mean
- Standard deviation

Inferential Statistics

- Chi-square test
- Level of significance: $p < 0.05$

DATA ANALYSIS AND INTERPRETATION

Section I: Demographic Characteristics

Table 1: Distribution of Women According to Age

Age group	Frequency	Percentage
20–29 years	30	30%
30–39 years	35	35%
40–49 years	25	25%
≥50 years	10	10%
Total	100	100%

Interpretation

The table shows that 35% of women were aged 30–39 years, followed by 30% aged 20–29 years. Twenty-five percent were aged 40–49 years and 10% were aged 50 years or above.

Table 2: Distribution According to Educational Status

Educational status	Frequency	Percentage
Primary education	50	50%
Secondary education	30	30%
Graduate	15	15%
Postgraduate	5	5%
Total	100	100%

Interpretation

Half of the participants (50%) had primary education, 30% had secondary education, 15% were graduates and 5% had postgraduate education.

Table 3: Distribution According to Marital Status

Marital status	Frequency	Percentage
Married	70	70%
Unmarried	30	30%
Total	100	100%

Interpretation

The majority of participants (70%) were married, whereas 30% were unmarried.

Table 4: Distribution According to Monthly Family Income

Monthly family income	Frequency	Percentage
Low	40	40%
Middle	35	35%
High	25	25%
Total	100	100%

Interpretation

Forty percent of women belonged to the low-income group, 35% to the middle-income group and 25% to the high-income group.

Section II: Overall Knowledge Regarding Breast Cancer**Table 5: Distribution of Women According to Overall Knowledge Level**

Knowledge level	Score	Frequency	Percentage
Poor	0–14	35	35%
Average	15–22	45	45%
Good	23–30	20	20%
Total		100	100%

Interpretation

The findings indicate that 35% of women had poor knowledge, 45% had average knowledge, and only 20% had good knowledge regarding breast cancer.

Thus, 80% of participants had either poor or average knowledge, indicating a considerable need for breast cancer awareness and health education.

Section III: Domain-Wise Knowledge**Table 6: Domain-Wise Knowledge Score**

Knowledge domain	Maximum score	Model mean score	Mean percentage
General information	5	3.0	60%
Risk factors	10	5.7	57%
Warning signs	10	6.1	61%
Preventive measures	5	2.9	58%
Overall	30	17.7	59%

Interpretation

The overall mean knowledge score was 17.7 out of 30, corresponding to approximately 59%.

The highest domain-wise mean percentage was observed for warning signs (61%), while knowledge regarding risk factors was 57%. Knowledge regarding preventive measures was 58%.

This indicates that although women had some awareness of breast cancer, knowledge regarding specific risk factors and preventive measures remained incomplete.

Section IV: Association Between Knowledge and Demographic Variables

Table- 7: Association Between Knowledge Level and Selected Demographic Variables

Demographic variable	χ^2 value	df	p-value	Significance
Age	6.11	6	0.411	Not significant
Educational status	12.93	6	0.044	Significant
Marital status	0.30	2	0.861	Not significant
Monthly family income	5.22	4	0.265	Not significant

Overall Interpretation

The analysis demonstrates a statistically significant association between educational status and knowledge level regarding breast cancer. No significant association was found between knowledge and age, marital status or monthly family income.

Therefore, in this model dataset, the null hypothesis was rejected for educational status and retained for age, marital status and monthly family income.

DISCUSSION

The present model study assessed knowledge regarding risk factors, warning signs and preventive measures of breast cancer among 100 women attending selected hospitals of Indore.

The study findings demonstrated that 35% of women had poor knowledge, 45% had average knowledge and only 20% had good knowledge. Thus, a substantial proportion of women had insufficient knowledge about breast cancer.

The finding is important because breast cancer symptoms may be subtle, and awareness of breast changes can facilitate earlier clinical evaluation. WHO identifies breast lumps, thickening, breast shape or size changes, skin changes, nipple abnormalities and abnormal nipple discharge among possible warning signs.

The study also found that educational status was significantly associated with knowledge. Women with higher education were more represented among those with good knowledge. Education may facilitate access to health information and understanding of preventive health messages; however, this association should be interpreted as a finding of this model dataset rather than a causal conclusion.

The absence of a significant association with age, marital status and family income suggests that breast cancer education may be relevant across different demographic groups.

WHO emphasizes that breast cancer prevention and control require health promotion, early detection, timely diagnosis and comprehensive management.

CONCLUSION

The study assessed knowledge regarding breast cancer among women attending selected hospitals of Indore. The model findings showed that 45% of women had average knowledge, 35% had poor knowledge and 20% had good knowledge.

The overall findings suggest that many women may require additional education regarding breast cancer risk factors, warning signs and preventive measures. Educational status demonstrated a statistically significant association with knowledge, whereas age, marital status and monthly family income did not show statistically significant associations.

Breast cancer awareness programmes conducted by nurses in hospitals and communities can provide women with information about breast health, warning signs, appropriate medical consultation and prevention-related practices.

LIMITATIONS

1. The model study included only 100 women.
2. The study was limited to SAIMS hospital of Indore.

3. Convenient sampling may limit generalizability.
4. Data were collected using a structured questionnaire and therefore depended on participants' responses.

RECOMMENDATIONS

1. A similar study may be conducted with a larger sample.
2. A community-based study may be conducted among rural and urban women separately.
3. An experimental study may be conducted to evaluate the effectiveness of a structured teaching programme.
4. A comparative study may be conducted between urban and rural women.
5. Further research may examine barriers to breast cancer screening and early consultation.

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