

Female Workers' Knowledge about Breast Cancer at Beni-Suef University: Effect Socio-demographic Characteristics

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Abstract Background: Breast cancer affects women at any age, with increasing rates in later life. Age, height, family history, and racial disparities contribute to the disease's risk. Advanced screening methods, such as smart bras and positron emission mammography, help detect the disease. **Aim:** The current study was conducted to assess female workers' knowledge about breast cancer at Beni-Suef University and evaluate the impact effect socio-demographic characteristics on their knowledge. **Subjects and Methods: Design:** A descriptive design was utilized. **Sample and Settings:** 323 working women at Beni-Suef University. **Tools:** Tool I: A Structured Interviewing Questionnaire Sheet; It was concerned with the personal and socio-demographic details of the studied females (6 questions). Tool II: women's knowledge about breast cancer, breast self-examination, and breast cancer preventive measures sheet; to assess women's knowledge about breast cancer, self-examination, and preventive measures, focusing on 55 questions across three domains: general information, early detection screening, and preventive measures. **Results:** illustrated that 50.8% of the female in the study were between the ages of 30 and under 40, 75.9% of the female were married, and 45.8% of them held a university degree, 72.1%, 76.8%, and 72.4%, respectively, had poor level of general knowledge compared to only 10.2%, 7.4%, and 7.1% that had good knowledge. **Conclusion** There a relation between the socio-demographic characteristics of the studied female workers and their total knowledge about breast cancer, breast self-examination, and breast cancer preventive measures. There was a statistically significant relation between the studied female workers total knowledge score with their educational level, place of residence, and marital status. **Recommendations:** Provide breast self-examination techniques to Beni-Suef University employee ladies in order to develop their practices and facilitate the early diagnosis of any abnormalities.

Keywords: Knowledge, Breast Cancer, Socio-demographic characteristics

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1. Introduction

In 2022, there were 2.3 million women diagnosed with breast cancer and 670,000 deaths globally. Breast cancer occurs in every country of the world in women at any age after puberty but with increasing rates in later life [1]. More advanced in breast cancer screening are smart bras, breast lights, elastography, molecular breast imaging, positron emission mammography, and electrical impedance tomography [2,3,4,5,6].

At now, about 40% of patients with breast cancer are older than 65, and over 80% of patients are over 50. There is a progressive increase in the chance of breast cancer with age: 1.5% at age 40, 3% at age 50, and almost 4% at age 70 [7]. Interestingly, a correlation between a patient's

age and a certain molecular subtype of cancer was found: the aggressive resistant triple-negative breast cancer subtype is most frequently identified in people under 40, whereas the luminal breast cancer subtype is more common in patients over 70 [8-15].

Taller women are more likely than shorter women to develop breast cancer, according to numerous studies. Although the exact causes are unknown, they could be related to early life nutrition, hormones, genetics, or other variables that impact early growth. The frequency of breast cancer rose from 5.1% in women who were 160 cm or less to 6.8% in those who were 175 cm or more in the 51–60 age group, and from 9.2% in those who were 160 cm or less to 12.2% in those who were 171–175 cm in the 60+ age group [16].

One main factor that is significantly linked to an elevated risk of breast cancer is a family history of the

disease. Thirteen to nineteen percent of those with breast cancer report having a first-degree relative with the disease [17-24].

Furthermore, the risk of breast cancer rises dramatically as the number of first-degree relatives affected rises; this risk may even increase if the affected relatives are younger than 50. Regardless of age, all patients with a family history have a noticeably greater incidence of breast cancer. Epigenetic modifications and maybe trigger-producing environmental variables are the driving forces behind this connection [25-31].

Genetic Mutations: It has been shown that many genetic variants are strongly linked to an elevated risk of breast cancer. Breast cancer genes A1 (found on chromosome 17) and BRCA2 (found on chromosome 13) are two important genes with a high penetrance. Their principal association is with an elevated risk of breast carcinogenesis [32].

Racial and racial disparities are still frequently seen among breast cancer patients; the causes underlying this occurrence are yet unknown. In general, white non-Hispanic women continue to have the highest prevalence of breast cancer. On the other hand, Black women experience a far greater death rate from this cancer; also, they have the lowest survival rates [33].

2. Aim of the Study

The current study was conducted to assess female workers' knowledge about breast cancer at Beni-Suef University and evaluate the impact effect socio-demographic characteristics on their knowledge.

3. Subject and Method

Research design:

To accomplish its goals, the study used a descriptive research design.

Subjects and Settings:

It consists of 323 working women at Beni-Suef University.

Tools of data collection:

Tool I: A Structured Interviewing Questionnaire Sheet

It was developed by the researcher based on the review of relevant literature. It aimed to gather information related to women. It was concerned with the personal and socio-demographic details of the studied females, including their age, age of marriage, level of education, marital status, place of residence, and family income (6 Questions).

Tool II: women's knowledge about breast cancer, breast self-examination, and breast cancer preventive measures sheet.

The study aimed to assess women's knowledge about breast cancer, self-examination, and preventive measures, focusing on 55 questions across three domains: general information, early detection screening, and preventive measures. **System of scoring:** A total score of 55 degrees was awarded for all questions, with one point awarded for a correct response and zero points for an incorrect one for

each question. The following categories apply to the distribution of the total knowledge scores: Good scores are $\geq 75\%$; ≥ 40 degrees; average scores are between 50% and 74% to 27%; 40 degrees; and poor scores are less than 50%.

Tools Validity:

A Beni-Suef University jury committee assessed the research instruments' content validity, making sure they were thorough, accurate, and understandable, and made the required adjustments.

Tools Reliability

The Cronbach's Alpha test was used to evaluate the study tools' reliability, and the results showed that the Breast Cancer Preventive Measures and total knowledge scores were 0.886 and 0.897, respectively.

Administrative Design:

Approval to carry out this study was obtained from the dean of the faculty of nursing at Beni-Suef University.

Ethical Consideration:

The study received ethical approval from Beni-Suef University's Faculty of Medicine's Research Ethics Committee.

Pilot study:

A pilot study was conducted on 10% of 32 women.

Statistical Design:

The updated, coded, and computer-entered data were statistically analyzed using the Statistical Package for Social Science (SPSS) version 20. Data were displayed in tables utilizing mean, standard deviation, number, and percentage distribution to compare women's understanding and use of preventive behaviors.

4. Results

The percentage distribution of the female employees under study with respect to their socio-demographic information is displayed in Figure 1. According to the data, 50.8% of the female in the study were between the ages of 30 and under 40. According to the report, 75.9% of the female were married, and 45.8% of them held a university degree. According to their perspective, 84.2% of them had a sufficient monthly income, and 69.0% of them lived in an urban area.

Figure 2 shows female workers' regarding their general knowledge level about breast cancer, breast self-examination, and breast cancer preventive measures; It reveals that 72.1%, 76.8%, and 72.4%, respectively, had poor level of knowledge compared to only 10.2%, 7.4%, and 7.1% that had good knowledge.

Figure 3 illustrates that female workers' regarding their total knowledge level about breast cancer, breast self-examination, and breast cancer preventive measures were 71.80%, 24.2%, 4 with the following levels: poor, average, & good, respectively.

Table 1 reveals the relation between the socio-demographic characteristics of the studied female workers and their total knowledge about breast cancer, breast self-examination, and breast cancer preventive measures. It clarifies that 2.8% & 1.5% of females aged 30 to less than 40 years & their age of marriage was 17-22 years,

respectively, had good knowledge compared to 35% & 36.6% that had poor knowledge. Also, 3.7% & 1.5% of married females who had university education, respectively, had good knowledge compared to 53.6% & 35.6% that had poor knowledge. Moreover, 4.0% & 4.0% of females, who live in urban areas and have enough family income respectively, had good knowledge compared to 43.9% & 57.8% that had poor knowledge. There was a highly statistically significant relation between the studied female workers total knowledge score with their educational level and place of residence, as P-value = 0.000. There was a statistically significant relation with their marital status, as P-value = 0.040.

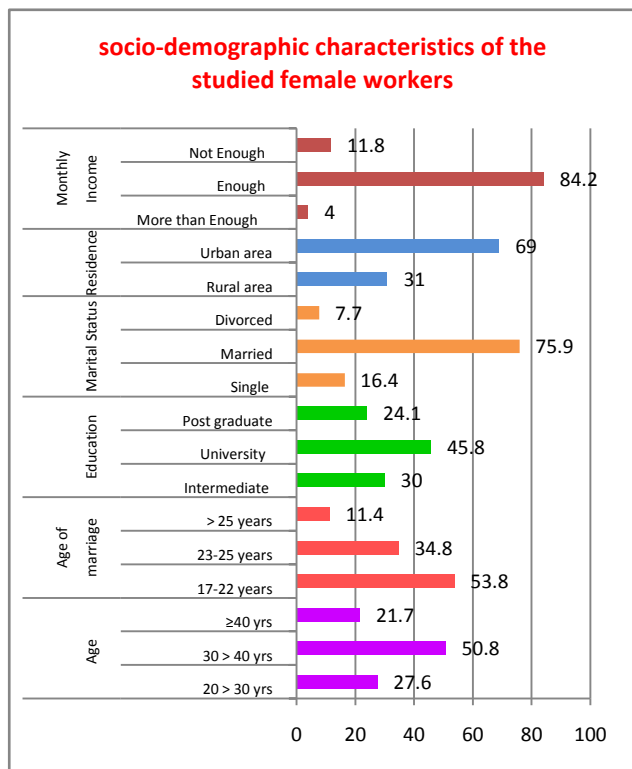


Figure 1. socio-demographic characteristics of the studied female workers

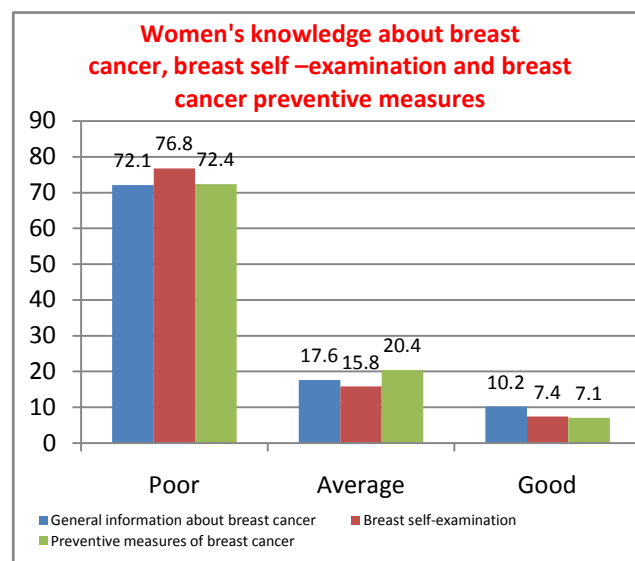


Figure 2. Women's knowledge about breast cancer, breast self-examination and breast cancer preventive measures

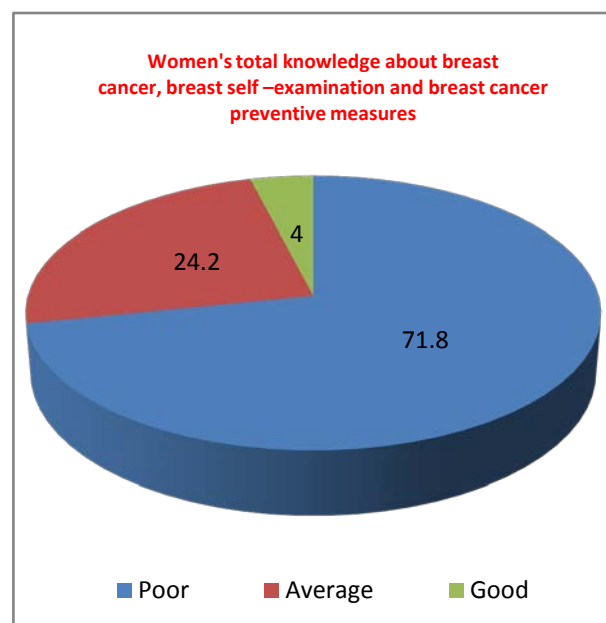


Figure 3. Women's total knowledge about breast cancer, breast self-examination and breast cancer preventive measures

Table 1. Relation between socio-demographic characteristics of the studied female workers and their knowledge about breast cancer, breast self-examination and breast cancer preventive measures (n=323)

Items	No	Poor (n=232)	Average (n=78)	Good (n=13)	X ² (p value)
Age		%	%	%	
20 to > 30 yrs.	89	19.8	6.5	1.2	4.748 (0.314)
30 to > 40 yrs.	164	35.0	13.0	2.8	
≥40 yrs.	70	17.0	4.7	0.0	
Age of marriage					
17-22 years	160	36.6	11.5	1.5	5.382 (0.250)
23-25 years	116	24.1	9.3	2.5	
> 25 days	47	11.1	3.4	0.0	
Educational level					
Intermediate	97	24.1	5.6	0.3	26.074 (0.000**)
University	148	35.6	8.7	1.5	
Above university	78	12.1	9.9	2.2	
Marital status					
Single	53	10.8	5.3	0.3	9.997 (0.040*)
Married	245	53.6	18.6	3.7	
Divorced	25	7.4	0.3	0.0	
Place of residence					
Rural area	100	27.9	3.1	0.0	24.497 (0.000**)
Urban area	223	43.9	21.1	4.0	
Monthly income					
Enough and increases	13	3.4	0.6	0.0	8.680 (0.070)
Enough	272	57.8	22.3	4.0	
Not enough	38	10.6	1.3	0.0	

5. Discussion

The aim of the study was assess female workers' knowledge about breast cancer at Beni-Suef University and evaluate the impact effect socio-demographic

characteristics on their knowledge. The study found that most female workers have poor knowledge about breast cancer, including information about self-examination and preventive measures, compared to those with good knowledge, contradicting previous studies by **Ram (2020)** and **Ibitoye et al. (2021)** [34,35].

In terms of the correlation between the demographic features of the female participants and their overall knowledge score, the current study found that all subgroups had poor information regardless their age, education, marital status, homes, and family income. The study found no significant relationship between age and age of marriage and total knowledge score for females, but poor knowledge was more prevalent among those aged 30-40. This may be due to increased age, and women are overburdened with their work and domestic responsibilities. This finding is supported by **Ahmed et al. (2019)**, but contradicting **Kumarasamy et al.'s (2017)** findings [36,37].

The study found a significant relationship between the total knowledge score of female workers and their educational level, indicating the program's impact on women's education. This is in line with findings of **El-kest et al. (2021)** [38]. The majority of intermediate-educated females had good knowledge, indicating the program's success in providing necessary information.

The study found a significant relationship between female workers' total knowledge score pretest and their place of residence, with less than a tenth of urban females having good knowledge. This aligns with **Al-Mousa et al.'s (2020)** research on breast cancer knowledge among Jordanian women [39].

The study found a significant relationship between the total knowledge score of female workers and their marital status, with a minority of married women having good knowledge, contradicting previous research. This finding is supported **Al-Qazaz et al. (2020)** findings and other researchers [40,41,42,43,44].

The study found no significant correlation between monthly family income and total knowledge score, with less than one-tenth of female workers having good knowledge. The study contradicts previous research, indicating no significant relationship between knowledge and social characteristics, and contradicts previous studies, such as **Heena et al. (2019)** and **Isara & Ojedokun (2011)**, which found no significant association between socio-demographic characteristics and breast cancer knowledge. The researcher suggests that women with sufficient monthly family income prioritize their health and avoid unnecessary expenses [45,46].

6. Conclusion

Based on the findings of the present study, it can be concluded that there a relation between the socio-demographic characteristics of the studied female workers and their total knowledge about breast cancer, breast self-examination, and breast cancer preventive measures. There was a statistically significant relation between the

studied female workers total knowledge score with their educational level, place of residence, and marital status.

Recommendations

- 1- Establish an educational initiative to increase women's awareness of breast cancer and ways to prevent it.
- 2- Provide breast self-examination techniques to Beni-Suef University employee ladies in order to develop their practices and facilitate the early diagnosis of any abnormalities.

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