

Explore the Performance and Attitude of Newly Registered Nurses Regarding Breast Cancer Screening in Al-Jouf Hospitals, Kingdom of Saudi Arabia: Quantitative Study

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ABSTRACT

Context: Breast cancer is the most prevalent cancer worldwide, but survival rates are still poor in poorer nations. Early diagnosis and screening are key tactics for early detection. Still, the timeframes for screening may not apply to nations like Saudi Arabia, where awareness is low and patients arrive with metastatic breast cancer.

Aim: To evaluate the performance and attitudes regarding breast cancer screening among newly registered nurses at different hospitals in Al-Jouf, Saudi Arabia.

Methods: The study used a cross-sectional design on a convenient sample of 169 newly registered nurses working at Medical-Surgical Departments at Al-Jouf Hospitals in Saudi Arabia. A structured interview questionnaire collects data regarding nurses' performance and attitudes toward breast cancer screening.

Results: The participants' total knowledge of breast cancer reveals that 62.1% of the nurses had a fair knowledge level. The participants' attitude shows a negative attitude towards breast cancer screening and self-examination among 76.92% of nurses. On the one hand, the newly registered nurses' performance of breast self-examination reveals that 84.7% answered incorrectly about the correct frequency of breast self-examination, 83.9% answered incorrectly about the best time for breast self-examination, and 82.2% answered they had not taught breast self-examination. On the other hand, 87.7% correctly answered the practice of breast self-examination, and 85.8% correctly identified the benefits of breast self-examination. The study also reveals a statistically significant positive correlation between participants' knowledge and attitude toward breast cancer screening and self-examination ($p=0.028$). Years of experience ($p=0.003$) and working hospital ($p=0.027$) were identified as statistically significantly positively correlated with nurses' attitudes toward breast cancer screening and breast self-examination.

Conclusion: The study concluded that the highest percentage of the newly registered nurses exhibit fair knowledge and negative attitudes towards breast cancer, breast cancer screening, and breast self-examination. Also, more than three-quarters of the studied nurses answered incorrect questions about the frequency and timing of breast self-examination. The study's result emphasizes the necessity of providing newly registered nurses with further training and education regarding breast cancer screening. It is crucial to raise their understanding of the risk factors, symptoms, and suitable screening techniques for breast cancer, such as mammography, clinical breast examination (CBE), and breast self-examination (BSE). Assisting in the early detection of breast cancer will enable patients to have a better prognosis and survival rate.

Keywords: Breast cancer, performance, attitude, screening

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1. Introduction

Globally, breast cancer (BC) is the most prevalent cancer that affects women. Thankfully, due to growing awareness of illness and advancements in early detection technology, the survival rate is rising (Bray *et al.*, 2018). Surgery, chemotherapy, radiation, and long-term hormone pill therapy are often used as breast cancer treatments (Sherman *et al.*, 2017).

Although breast cancer treatment has advanced significantly, the prognosis is still bad in nations like Kingdom of Saudi Arabia (KSA). A delayed diagnosis may

be a significant factor in the poor prognosis. An early breast cancer diagnosis is thought to have a favorable prognosis with lower morbidity and fatality rates (Alotaibi *et al.*, 2018). As a result, precautions should be taken to guarantee early discovery and prompt treatment. Early diagnosis and screening are two key tactics for early detection. Increasing the understanding of early cancer signals among doctors, nurses, other healthcare professionals, and the public is vital for early diagnosis. Screening involves using quick tests to spot cancer patients even before they show any symptoms. Mammography, clinical breast examination (CBE), and breast

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self-examination (BSE) are all well-known breast cancer screening techniques (WHO, 2019).

Adequate education and awareness are crucial for efficient screening and early diagnosis. Women in the medical field have the power to significantly alter the way that female patients view screening procedures in general and to have a positive impact on their attitudes and views (Heena et al., 2019). Regardless of their area of expertise, they are also the first people to turn to for guidance regarding breast cancer screening for not only their female patients but also female family members and friends. Usually, women are embarrassed to discuss this matter with their male doctors. As a result, steps must be taken to inform and empower women. Making sure female healthcare workers have the necessary knowledge to impart to their patients, loved ones, and friends is a crucial step in achieving breast cancer screening (Mandal & Basu, 2018).

Heena et al. (2019) study sought to assess the knowledge, attitudes, and practices of female healthcare providers around breast cancer screening. A total of 395 healthcare professionals participated in the survey. The participants were 34.7 years old on average. Among the participants were medical professionals (n=63, 16.0%), nurses (n=261, 66.1%), and allied health workers (n=71, 18.0%). Only 6(1.5%) of participants had a good level of knowledge of breast cancer, and 104(26.8%) of the allied health workers had a fair level of knowledge of breast cancer, respectively. Also, 368(93.2%), 370(93.7%), and 339(85.8%) of the participants, respectively, had heard of mammography, breast self-examination, and clinical breast examination. A total of 295 participants (74.7%) reported self-examining their breasts regularly; 95 (24.1%) had undergone clinical breast exams; and 74(18.7%) had never done mammography.

Another study carried out in 2017 to review the background, present situation, and anticipated trends concerning breast cancer screening. Consequently, it was determined that breast cancer is still a complex, heterogeneous illness. The most efficient way to identify disease early and reduce mortality is through serial screening using mammography. Although politics and economics may hinder structured mammography screening programs in many nations, skillful clinical and breast self-examination can also detect tiny cancers, reducing morbidity (Coleman, 2017).

2. Significance of the study

Despite major advancements in breast cancer treatment, the outlook is still dismal in developing countries like KSA. A delayed diagnosis may significantly impact the prognosis. Lower rates of morbidity and mortality are hypothesized to be associated with early breast cancer diagnosis and a positive prognosis (Alotaibi et al., 2018).

Therefore, precautions must be taken to ensure early identification and prompt treatment. Two important strategies for early detection are early diagnosis and screening. For early diagnosis, it is essential to improve the public's and healthcare professionals' understanding of early cancer signals. The goal of screening, on the other hand, is to identify cancer patients even before they exhibit any symptoms by using rapid tests. Breast self-examination, clinical breast examination, and mammography are all common breast cancer screening methods (WHO, 2019).

International guidelines that focus on developed nations have recently questioned the timing of screening, but this may not apply to developing countries like Saudi Arabia, where knowledge is low and patients frequently present with metastatic breast cancer (Smith et al., 2017).

The opportunity to direct, support, and promote the provision of high-quality screening services for people and communities is an exciting one for oncology nurses. A pragmatic strategy is required to convert the intricacies and debates surrounding breast cancer screening into better treatment results. To our knowledge, no studies were conducted in Al-Jouf hospitals in Saudi Arabia to evaluate knowledge, attitudes, and practices related to breast cancer screening among newly registered nurses. Therefore, this study aims to evaluate the performance and attitudes regarding breast cancer screening among newly registered nurses at different hospitals in Al-Jouf, Saudi Arabia.

3. Aim of the study

This study aimed to evaluate the performance and attitudes of newly registered nurses regarding breast cancer screening in Al-Jouf hospitals in the Kingdom of Saudi Arabia.

- To assess the level of newly registered nurses' performance and attitudes regarding breast cancer screening in Al-Jouf hospitals in Saudi Arabia.
- To determine the demographic characteristics notably associated with attitudes regarding breast cancer screening in Al-Jouf hospitals in Saudi Arabia.

3.1. Operational definition

Nurses' performance is defined in this study as nurses' knowledge of breast cancer, practice of breast cancer screening, and breast self-examination.

4. Subjects & Methods

4.1. Research Design

The study used a cross-sectional study design with newly registered nurses working at Medical-Surgical Departments at Al-Jouf Hospitals in Saudi Arabia. A cross-sectional study has the advantage of enabling researchers to compare a wide range of factors.

4.2. Study setting

This study was conducted in the Prince Motab Ibn Abdulaziz Hospital of the Al-Jouf Region, King AbdulAziz Specialist Hospital, and Maternity and Children Hospital.

4.3. Subjects

A convenient sample of newly registered nurses working in Medical-Surgical Departments at Al-Jouf Hospitals was enrolled in this study. The required study sample was determined based on the inclusion and exclusion criteria from a total of 300 nurses by using the Open-Epi program at a confidence level of 95%, a margin of error of 5%, and a response distribution of 50%. Therefore, the sample size was 169 nurses from the Medical-Surgical Departments at Al-Jouf Hospitals in KSA.

Inclusion criteria

- Newly registered nurses (up to three years in Al-Jouf Hospital).
- Nurses who have completed at least one year in medical-surgical departments.
- Nurses working at Al-Jouf Hospitals from both genders.

Exclusion criteria

- Nurses who are on special leave and have training.
- Nurses with experience of more than three years of experience.

4.4. Tools of data collection

4.4.1. Structured Interview Questionnaire

The researchers developed an interview questionnaire to collect data from the nurses based on *Heena et al. (2019)*. It has four sections. The first is assessing the demographic characteristics of the studied nurses, such as age, marital status, education, years of experience, and working hospital.

The second part consists of three MCQs with multiple correct answers assessing nurses' knowledge regarding breast cancer, such as the potential risk factors (14 correct points), signs and symptoms of breast cancer (12 correct points), and diagnostic methods (4 correct points).

Scoring system

Each correct answer is given one grade, with a total of 30 grades classified as poor (0-4), fair (5-14), and good (15-30).

The third section is a three-point Likert scale questionnaire including ten statements to assess nurses' attitudes regarding breast cancer screening and breast self-examination, such as "any woman is at risk for breast cancer, breast cancer can be prevented, and I can not detect abnormalities with breast self-examination."

Scoring system

Each statement was given three for agree, two for neither agree nor disagree, and one for disagree. The score is reversed for the negatively stated statement. The total score is 30 scores, classified as negative attitude (10-15) and positive attitude (16-30).

The fourth part consists of nurses' practices of breast cancer screening procedures such as breast self-examination (15 MCQs), clinical breast examination (8 MCQs), and use of mammography (7 MCQs).

Scoring system

Each question was corrected against model answers. The answers are then displayed as frequencies and percentages for correct and incorrect answers.

4.5. Procedures

Validity and reliability of the study tools: Tools developed by the researchers after they reviewed related literature. Used tools were tested for content validity by a jury of three experts of nursing faculty staff, and their required modifications were done. The tool was tested for reliability using alpha Cronbach's coefficient test, and the alpha reliability was 0.78.

Ethical approval was obtained from the Ethical Research Committee of Hail University (H-2023-038 on 23/01/2023). Furthermore, the purpose of the study was explained to the

participants, and it was stressed that the information is confidential and that participation in the study is voluntary.

Nurses were selected according to inclusion and exclusion criteria. After obtaining approval from the study participants, the questionnaire was distributed to the participants to fill out; as it was distributed on paper, it took about 30 minutes to complete. The data collection process took about three months to be completed, starting from 11-1-2023 to 12-3-2023, and then the collected data was analyzed.

4.6. Data analysis

Data was analyzed using the Statistical Package of Social Science (IBM SPSS statistics version 22. Ink). The demographic parameters, knowledge, attitude, and practice of breast cancer screening were described using descriptive statistics (i.e., frequencies, percentages, mean, standard deviation). Pearson correlation for knowledge and attitudes was done, in addition to the correlation between sociodemographic variables and attitudes. The level of significance was determined at $p \leq 0.05$.

5. Results

Table 1 shows the sociodemographic characteristics of the studied nurses. The table shows that 50% of the studied nurses were more than 30 years of age, with a mean age of 24.9 ± 0.536 . 60.9% of the studied nurses were married, 78.1% had bachelor's degrees in nursing, and 52.1% had 1-2 years of experience.

Table 2 shows the participants' total knowledge of breast cancer. As, 62.1% of the newly registered nurses had a fair level of knowledge, 30.2% had a good level of knowledge, and 7.7% of them had poor knowledge.

Figure 2 illustrates that 62.13% of the newly registered nurses had a fair knowledge score, and 30.18% had a good knowledge level.

Table 3 indicates responses to statements of attitudes toward breast cancer screening and self-examination. It shows that 60.4% of participants believed that any woman was at increased risk of developing breast cancer, and 51.5% believed that breast cancer could be prevented. Also, 33.1% of the participants believed that they could not detect abnormalities in the breasts through self-examination. 24.3% believed that there was no reason to examine the breast. 47.3% agree that women prefer female doctors for breast examinations. 36.7% believed that early detection methods do not affect treatment.

Figure 3 illustrates that 76.92% of the newly registered nurses had a negative attitude toward breast cancer screening and self-examination, while 23.08% had a positive attitude.

Table 4 shows the frequency and percentage distribution of newly registered nurses' performance (knowledge and practice) regarding breast self-examination. The table shows that 68% of the nurses heard about the breast self-examination, 69.2% answered correctly the question related to the usefulness of BSE in detecting breast cancer, and 77.5% have discovered abnormalities in their breasts. Also, the table shows that 87.7% correctly answered the benefits of BSE, and 87.5% answered correctly the method of conducting the BSE. On the other hand, the table shows that

84.7% answered incorrectly the correct frequency of conducting BSE, 83.9% had mistaken the best time for doing BSE, and 82.2% incorrectly answered the age at which the BSE should be started. Also, the table shows that 78.7% of the nurses answered incorrectly about the time for practicing the BSE, 75.2% answered incorrectly about the actions upon finding an abnormality in the breast on self-examinations, and 73.9% were mistaken in identifying the person responsible for the BSE.

Regarding the nurses' performance of clinical breast examination, 73.9% of the nurses identified correctly the tool used for conducting the CBE, 62.1% identified the CBE as a useful tool for the detection of breast cancer, and 60.4% heard about CBE. On the other hand, 94.1% of the nurses correctly identified the person responsible for CBE, and 81.1% mistake the correct frequency of conducting CBE.

Regarding the screening of breast cancer by mammography, the table shows that 60.9% of the nurses

identified mammography as a useful tool, and 54.5% correctly answered the reason behind not conducting the mammography. On the other hand, 66.3% could not identify the age at which mammography should be started, 57.4% never did mammography, and 53.8% were mistaken about the actual frequency of conducting mammography.

Table 5 shows a significant statistically positive correlation between the nurses' performance (knowledge and practice) and attitude toward breast cancer screening at p -value= 0.028.

Table 6 shows the correlation between the attitudes toward breast cancer screening and demographic characteristics. There was a statistically significant positive correlation between the attitudes toward breast cancer screening with experience in years ($p=0.003$) and the hospital ($p=0.027$).

Table (1): Frequency and percentage distribution of studied nurses' sociodemographic characteristics (n=169).

Variables	N	%
Age		
20-25	3	1.8
25-30	80	47.3
More than 30	86	50.9
Mean	24.9± 0.536	
Marital Status		
Single	65	38.5
Married	103	60.9
Divorced	1	0.6
Level of Education		
Bachelor	132	78.1
Master	37	21.9
Experience in years		
1-2	88	52.1
2-3	81	47.9
Mean	1.75± 0.852	
Hospital		
Prince Mutaib Bin Abdulaziz Hospital	55	32.5
King AbdulAziz Specialist Hospital	55	32.5
Maternity and Children's Hospital	59	34.9

Table (2): Frequency and percentage distribution of participants' total knowledge about breast cancer (n=169).

Participants' total knowledge level	N	%
Poor	13	7.7
Fair	105	62.1
Good	51	30.2

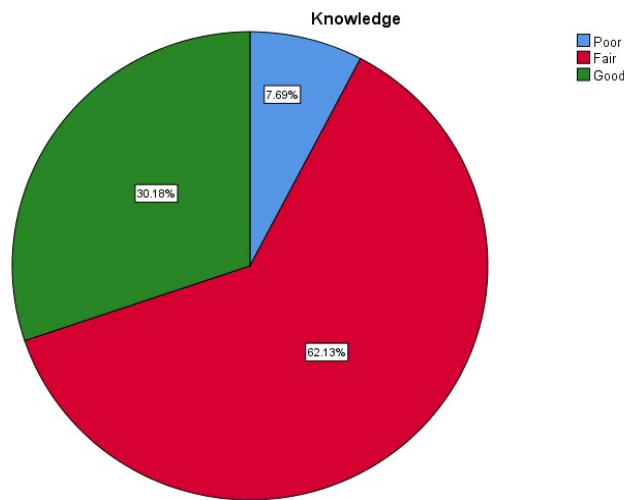


Figure (1): Percentage distribution of total knowledge score (n=169).

Table (3): Frequency and percentage distribution of participants’ attitudes toward breast cancer screening and self-examination (n=169).

Variables	Agree		Neither agree nor disagree		Disagree	
	No.	%	No.	%	No.	%
Any woman is at risk for breast cancer	102	60.4	46	27.2	21	12.4
Breast cancer can be prevented	87	51.5	54	32.0	28	16.6
If I examine my breasts myself, I cannot detect abnormalities in my breasts	56	33.1	67	39.6	46	27.2
There is no reason to examine my breast	41	24.3	59	34.9	69	40.8
If I knew the benefit of breast self-examination, I would have done it by now	89	52.7	54	32.0	26	15.4
Women prefer female doctors for breast examination	80	47.3	53	31.4	36	21.3
If there is no problem in the breasts, periodic breast examinations by a physician are not required	61	36.1	65	38.5	43	25.4
Early detection methods do not affect treatment	62	36.7	52	30.8	55	32.5
Personal hygiene decreases breast cancer risk	72	42.6	57	33.7	40	23.7
By early diagnosis of breast cancer, the person will have a prolonged life	93	55.0	60	35.5	16	9.5

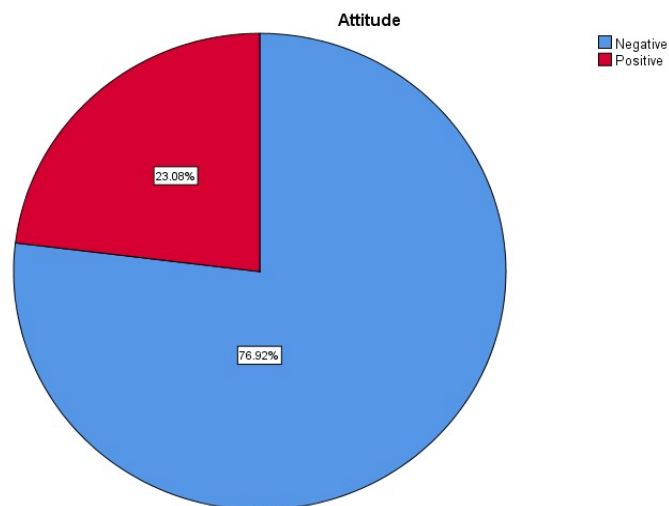


Figure (2): Percentage distribution of total attitude of the newly registered nurses toward breast cancer screening and self-examination (n=169).

Table (4): Frequency and percentage distribution of nurses’ performance (knowledge and practice) of breast self-examination, clinical breast examination, and mammography (n=169).

Variables	Correct		Incorrect	
	N	%	N	%
Nurses’ performance of the breast self-examination (BSE)				
I heard of breast self-examinations	115	68.0	54	32.0
BSE is a useful tool for early detection of breast cancer	117	69.2	52	30.8
I have been taught about breast self-examinations	114	67.5	55	32.5
The age at which the BSE should be started	30	17.8	139	82.2
The correct frequency of breast self-examinations	26	15.4	143	84.7
The best time to do breast self-examinations	71	42.0	98	83.9
The person responsible for breast self-examination	44	26	125	73.9
Methods of conducting the breast self-examination	148	87.5	21	12.4
Action upon finding an abnormality in the breast on self-examinations	42	24.9	127	75.2
Benefits of breast self-examination	145	85.8	24	23.1
Actual practice of breast self-examinations	111	65.7	58	34.3
Time for practicing breast self-examinations	36	21.3	133	78.7
The reason behind not practicing the breast self-examination	73	43.3	96	56.7
I have discovered an abnormality in my breast	74	43.8	95	56.2
BSE is a good practice	131	77.5	38	22.5
Nurses’ performance of the clinical breast examination (CBE)				
I have heard of CBE	102	60.4	67	39.6
CBE is a useful tool for the detection of breast cancer	105	62.1	64	37.9
The correct person to clinically examine the breast	9	5.3	160	94.1
Tools used for conducting the CBE	125	73.9	44	26.0
The correct frequency of conducting CBE	32	18.9	137	81.1
I have undergone CBE	85	50.3	84	49.7
The actual frequency of conducting CBE	84	49.7	85	51.3
The reason behind not conducting CBE	87	51.5	82	48.5
Nurses’ performance in using mammography				
I have heard of mammographic	84	49.7	85	50.3
A mammography is a useful tool for the early detection of breast cancer	103	60.9	66	39.1
Age at which mammography should be started	57	33.7	112	66.3
The correct frequency of mammography	35	46.2	145	53.8
I have done a mammography	72	42.6	97	57.4
Actual frequency of conducting Mammography	78	46.2	91	53.8
The reason behind not conducting Mammography	92	54.5	77	45.5

Table (5): Correlation between nurses’ performance and attitude toward breast cancer screening.

Variables		Knowledge	Attitude
Knowledge	r*	1	0.169
	P-value		0.028
	N	169	169
Attitude	r*	0.169	1
	P-value	0.028	
	N	169	169

*r: Pearson Correlation

Table (6): Correlation between the attitudes toward BCE and Sociodemographic characteristics .

Variables	Attitude	Age	Experience in years	Hospital	Level of Education	Marital Status
Attitude	r*	1	0.079	0.228	0.170	-0.035
	P-value		0.310	0.003	0.027	0.649

*r: Pearson Correlation

6. Discussion

The World Health Organization (WHO) has defined distinct but related two strategies to promote the early detection of cancer. First is the early diagnosis, by recognizing symptomatic cases of an early-stage disease, and second is the screening, which identifies asymptomatic cases in apparently healthy individuals (*da Silva, 2017*). Programs for cancer control should ensure the diagnosis of the disease at an early stage where the treatment will be effective and the cure rate is most likely (*Yip, 2016*). So, the most beneficial and important area of protection issues is screening (*Shyyan et al., 2008*). This study aimed to evaluate the performance and attitudes of newly registered nurses regarding breast cancer screening in Al-Jouf hospitals in the Kingdom of Saudi Arabia.

The current study findings reveal that fifty percent of nurses were thirty, around two-thirds were married, more than three-quarters have a baccalaureate degree in nursing, and more than half had 1-2 years of experience. It means they were near the age of start screening regarding breast cancer. A similar finding was reported by *Ghoneim et al. (2023)*, who conducted a study to measure the extent of awareness of Al-Jouf region residents regarding the importance and methods of breast cancer early detection in females. The results revealed participants aged between 18 and 35 in seventy-seven percent of the studied participants, and nearly two-thirds had a university education.

The results of the study indicate that the overall knowledge of the newly registered nurses regarding breast cancer screening was fair among nearly two-thirds of the participants, and around one-third had a good knowledge level. In contrast, less than one-tenth had a poor knowledge level. This average knowledge may be referred to the establishment of a nationwide center for breast cancer screening programs and the national campaign to increase awareness about the benefits of breast cancer screening to promote national breast cancer early detection programs (*Gosadi, 2019*). *Heena et al. (2019)* reported a contradicting finding that only 1.5% of the participants had a good knowledge level, and 26.8% had a fair level of knowledge regarding breast cancer.

The results of the current study indicate responses to statements of attitudes toward breast cancer screening and self-examination. Around two-thirds of participants believed that any woman was at increased risk of developing breast cancer, and more than half believed that breast cancer could be prevented. However, one-third of the participants believed that they could not detect abnormalities in their breasts through self-examination, and around one-quarter believed that there was no reason to examine the breasts. Also, nearly half of them agree that women prefer female doctors for breast examinations, and more than one-third believed that early detection methods do not affect treatment with a negative attitude toward breast cancer screening among more than three-quarters of the participants, which may indicate a lack of awareness about the importance of breast cancer screening.

Results were similar to the study conducted by *Heena et al. (2019)* which demonstrated that breast cancer screening-

related information, attitudes, and practices were less prevalent than anticipated. It is necessary to take proactive measures to create educational programs for the medical personnel that could equip them to disseminate information and positively impact the attitudes of female hospital patients (*Heena et al., 2019*).

The results of nurses' performance in the current study reveal that more than two-thirds of the nurses heard about the breast self-examination, answered correctly the question related to the usefulness of BSE in detecting breast cancer, and discovered abnormalities in their breasts. Besides, most participants correctly answered the benefits of BSE and the method of conducting the BSE. On the other hand, the study shows that most of the participants answered incorrectly the correct frequency of conducting BSE, had mistaken the best time for doing BSE, and incorrectly answered the age at which the BSE should be started. More than three-quarters of the nurses answered incorrectly the time for practicing the BSE, the actions upon finding abnormality in breast on self-examinations, and mistaken in identifying the person responsible about the BSE. These findings indicate that nurses had little understanding of some points related to breast cancer screening that should be emphasized and corrected, particularly since they are healthcare providers, and their information might affect the awareness levels of their patients.

These results were also shown in a study conducted in Eritrea by *Andegiorgish et al. (2018)*, which reported that despite having little understanding of the potential risk factors for breast cancer, nurses were aware of its signs and symptoms because more than 50% of them mentioned each one.

Regarding the nurses' performance of clinical breast examination, around three-fourths of the nurses identified correctly the tool used for conducting the CBE; nearly two-thirds identified the CBE as a useful tool for the detection of breast cancer and heard about CBE. Besides, most nurses incorrectly identified the person responsible for CBE and mistook the correct frequency of conducting CBE. This finding indicates a need for further education and training on the importance and practical application of CBE. In 2022, a study highlights the need for public health education and promotion initiatives to address poor BC awareness levels and to boost BC screening uptake in Vietnam prior to the planning and implementation of screening programs (*Ngan et al., 2022*).

Regarding the screening of breast cancer by mammography, the study shows that more than half of the nurses identified mammography as a useful tool, and they correctly answered the reason behind not conducting the mammography. In contrast, two-thirds of nurses could not identify the age at which mammography should be started, more than half never did mammography, and were mistaken about the actual frequency of conducting mammography. This finding indicates a need for further education and awareness-raising about the recommended guidelines for mammography. Similarly, *Andegiorgish et al. (2018)* study results showed that there was a dearth of mammography and

clinical breast examination use (only 30 and 11.3%, respectively) (Andegiorgish et al., 2018).

The current study also reveals a statistically significant positive correlation between the nurses' performance (knowledge and practice) and attitude towards breast cancer screening. This finding explains that the rise of nurses' awareness about breast cancer screening could change their attitude toward the practice of these protective strategies against breast cancer. Ghoneim (2023) reported similar findings, as most of their studied participants were aware of the screening program and believed that checkups were valuable. However, only 16.6% had visited the screening clinic.

The current study reveals a statistically significant positive relationship between the attitudes toward breast cancer screening with experience in years and the working hospital. However no statistically significant positive correlation between attitude toward breast cancer screening and age, level of education, and marital status. This finding may be referred to as the increased year of experience would also increase the exposure to more knowledge and practice. The positive relationship between attitude and working hospitals may refer to the local effort exerted by each healthcare setting to empower their healthcare providers with the current knowledge and supportive attitude toward breast cancer screening. Dandash et al. (2007) reported that age and marital status are associated with attitude to practice breast self-examination while having children, income, education, and family history have non-significant associations.

7. Conclusion

The current study concludes that the highest percentage of newly registered nurses have a fair knowledge level and a negative attitude toward breast cancer screening. There is a statistically significant positive relationship between knowledge and attitude towards breast cancer screening. There is a statistically significant relationship between attitudes toward BCE with experience in years and working hospital.

8. Recommendations

Based on the conclusion of the study, we recommend that:

- Education and training programs should be developed and implemented for nurses to enhance their knowledge, attitudes, and practices regarding breast cancer screening.
- Strategies to increase the uptake of breast cancer screening should be implemented in healthcare facilities where nurses work.
- Nurses should be encouraged to act as role models and advocates for breast cancer screening and to educate their patients about the importance of early detection.
- Further research is needed to explore the barriers to breast cancer screening among nurses and to identify effective interventions to improve screening rates.

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