The Egyptian Journal of Hospital Medicine (October 2022) Vol. 89 (2), Page 7071- 7081

Perception of Female Health Care Providers Regarding Breast Cancer at El Minia Oncology Center

Amany Mohamed Saad, Marwa Ahmed Hussein*, Aliaa Mohammed Osthman El- Afandey
Department of Community Health Nursing, Faculty of Nursing, Helwan University, Egypt
***Corresponding author:** Marwa Ahmed Hussein, **Mobile:** (+20) 01143002815, **E-Mail:** marwaelhady500@gmail .com

ABSTRACT

Background: Breast cancer is the most common occurring cancer in women worldwide. To guide current breast cancer screening program, the level of knowledge about breast cancer should be evaluated .A high level of knowledge and practice among female health care providers regarding risk factors for breast cancer and screening methods are important in increasing awareness in the general population.

Objective: This study aims to assess perception of female health care providers regarding breast cancer at El-Minia oncology center.**: Design:** Descriptive research design was used for conducting the study. Sample: A convenience sample was used to choose 148 female health care providers. **Setting:** The study was carried out at oncology center at Minia city, Egypt. **Tools:** It consisted of 4 parts: part I: Concerning with demographic characteristics of female health care providers. Part II: female health care providers' knowledge questionnaire. Part III: female health care providers' attitude toward breast cancer. Tool VI: female health care providers' reported practice regarding breast self-examination.

Results: The study result revealed that, 89.9% of female health care providers have satisfactory levels of total knowledge regarding breast cancer. 98.6% of female health care providers have positive attitude toward breast cancer and 97.3% of female health care providers have adequate level of reported practice.

Conclusion: there's highly statistically significant between female health care providers' total perceived breast cancer include total knowledge, total practice and attitude toward breast cancer. **Recommendations:** continuous education program to improve knowledge and practice of female health care providers through carrying out continuing educational programs about how to prevent breast cancer with other organizations and institutions.

Keywords: Female, Health care providers, Breast cancer, Perception of knowledge.

INTRODUCTION

As the most frequent tumor of the breast, breast cancer can affect either sex. Cancer of the breast, the most prevalent cause of death in women, develops from cells within the breast that have grown improperly and multiplied to form a lump or tumor. Women over the age of fifty, many of whom have already gone through menopause, have the highest risk for developing breast cancer. Men can get breast cancer too, but it's extremely rare and accounts for only a small fraction of all breast cancer diagnoses. Women, of any age after puberty, are at risk for developing breast cancer, while the incidence rate rises with age [(1)].

It is projected that by 2020, the global incidence of breast cancer will be highest in industrialized nations, thanks to screening and earlier identification, and lowest in developing countries, with death highest due to limited diagnostic and treatment capacities. Worldwide, 2.3 million women are diagnosed with breast cancer each year, leading to 685,000 deaths; in addition, 7.8 million women are now alive and have been diagnosed with breast cancer during the past five years, making the world the most prevalent region for breast cancer [(2)].

By the year 2020, it is expected that 276,480 new cases of invasive breast cancer in women would be identified in the United States, and that between 3-5 million people will have survived the disease. Pakistan has the highest breast cancer mortality rate in Asia, with an estimated 40.000 women succumbing to the disease each year. Breast cancer accounts for between 17.7 and 19% of all new cancer diagnoses in the Arab world, with rates as high as 32.4% in Egypt, 32% in Jordan, 36% in Kuwait, and 25% in Saudi Arabia [(3)].

Female health care workers are one that consists of professionals with different skills, information and experiences, additionally known as breast care team as (medical doctor, nurse, breast surgeon, social worker). The perception of female health care providers about breast cancer prevention is essential importance that assist in explaining how such beliefs interfere with breast cancer treatment, however, there are a large number of women health care providers didn't know about breast cancer. Female health care providers can accurate look at her breasts by using breast self- examination (BSE) which is useful tool for detect any abnormality especially tender or swollen within side the breasts and must be evaluate technique periodically [(4)]. Perception is a subjective assessment of knowledge that enables individuals to make sense of their vulnerability and reach decisions about fitness behavior. Sources of beliefs inaccuracy were related to a variety of elements which include misinformation or a lack of knowledge, personal experiences and perception. Females usually misjudge their breast cancer risk, in order that the perception may be vital motivator for female health care workers concerning breast cancer to adapt healthy behaviors to understand perceived threats of breast cancer and early diagnosis to prevent any occurrence of disease [(5)].

Community health nurses play an essential role in coordinating the care through collaborating with different team members and performing as central point of contact among physician and client or her family .The nurses have experience in the management, make

Received: 14/07/2022
Accepted: 17/09/2022

referral and follow-up of cases diagnosed with breast cancer. Nurses make sure that all women diagnosed with metastatic breast cancer take all services and meet female's needs and the data regarding breast cancer.

/Nurses are providing an education through explains the technique of breast self-examination, delivering the treatment option , providing emotional support ,assessing women' condition and documenting any unfavorable effects of medication and any complications [(6)].

SIGNIFICANCE OF STUDY

Breast cancer is the most cancer between Egyptian females, most cases were found at a late stage with subsequent bad out comes, in Egypt, number of new cases in 2020 both sex as every ages are predicted 134,632 . Number of widespread cases infected with cancer in breast is 278.165. Number of new dying cases 1n 2020 is 9148. Number of prevalence death with cancer in breast is 89,042. In 2018, prevalence of breast cancer at El-Minia oncology center is estimated 500 women diagnosed with breast malignancy [(7)].

A study through Egyptian ministry of health approximately about demographic, fitness survey project confirmed that only seventeen percentages of surveyed Egyptian women about some form of clinical screening and only 6% perform BSE. This is because of lack of understanding about breast tumor and essential of checking up each breast in early diagnosis [(8)].

Health care employees' exposure to chemical and physical contaminants may also vary considerably among occupations. Solvents, medical equipment, germ-killing chemicals, ionizing radiation, chemotherapy drugs—all of these have been related to an increased risk of breast cancer. Studies of atomic bomb survivors and women who underwent high-dose radiation therapy have shown that radiation exposure raises the risk of breast cancer [(9)]. To that end, the purpose of this research is to gauge the level of worry among female healthcare professionals for breast cancer.

AIM OF THE STUDY

The current study aims to assess beliefs of female health care who working in oncology center about breast cancer at El-Minia oncology center through:

(1) Assessing women health care providers ideas about breast cancer.

(2) Appraising female health care providers' attitude toward of breast cancer.

(3) Determining female health care providers' reported practice about self-examination of breast.

RESEARCH QUESTIONS

1-What is female health care providers' information about tumor of breast?

2-What are female health care providers' attitude toward breast tumor?

3-What are female health care providers' reported practices regarding BSE?

4- Is the correlation between knowledge, attitude, and practice of female health care providers and demographic characteristics?

OPERATIONAL DEFINITIONS

Breast disorders are a tumor wherein cells in the breast develop and divided in an uncontrolled way. The most cancer forms in the lobules or ducts of breast and takes place in both ladies and men

Breast self –exam (BSE): is a screening technique utilized in try and to detect early tumor in breast. The method entails the lady herself looking at and feeling each breast for lumps, distortions or swelling.

SUBJECTS AND METHODS

A descriptive study was carried out, at Oncology Center at Minia City. A convenience sample of 148 from women health care providers who have really worked in El- Minia oncology center was utilized.

Data for this research was gathered through using the following instruments:

Part 1: It includes demographic characteristics of health care providers included 6 questions about (Age, Marital status…,) and the past and current medical histories consist of 4 questions about (have you previous breast problem)

Part 2: Females who work in oncology center about their knowledge concerning malignancy breast as definition of breast cancer, hazard factor.

Scoring system for know-how:

The knowledge question was 6 questions; each question was scored via way of means of one degree for a «Incorrect» answer and two degree for a «Correct » answer. The total information ranged from 0-12, they had been evaluated as follows: Total scoring knowledge:

*Inadequate less than 60% (0 - >7.2).

*Adequate from 60 %:100% (≥7.2- 12).

Part 3: It consisted from 11 questions about women health care providers feel about tumors in breast as I concept that breast checks consuming time also painful.

***Rating system for view point toward breast cancer**:*

The attitude query was 11 questions; every opinion was scored by 1for a «Agree» answer and 2 for a «Not sure» solution, at the same time as 3 for «Disagree» response. The total point of view scores ranged from zero to thirty three, they were evaluated as follows**:** Total score attitude:

- Negative less than 60% (0 - >19.8).
- Positive from 60 %:100% (≥19.8 - 33).

Part 4: Reported practice to assess female workers in oncology institute' practice as breast test steps consist of five steps as starting step by looking at your breasts in the mirror with your shoulders straight and your arms on your hips**.**

Scoring system for stated practice:
Practice contains from 5 steps, each step was scored by 1 for a « Not done» answer and 2 for a «Done incomplete» response, and 3 for « Done» said correct answer. The overall steps of practice rating ranged from 0-15, they were evaluated stated practice:
- Unsatisfactory less than 60% (0 - <9).
- Satisfactory from 60 %:100% (≥9 - 15).

Operational item: It involved *3 phases* namely, preparatory phase, validity and reliability, pilot study and area of work.
Preparatory phase: The investigator travels to the location of the study to become familiar with the personal and study settings. In addition, the investigator gathers historical, contemporary, and national literature and theoretical information on numerous aspects of the study from sources such as books, articles, the internet, periodicals, and magazines in order to broaden the scope of the investigation.

Validity:
The advanced questionnaire was formulated, submitted, and revised with the assistance of the jury of four specialists in community health nursing who work in the college of nursing at Helwan University. This jury reviewed the content of the instrument for comprehensiveness, accuracy, clarity, relevance, and applicability.

Reliability:
The Cronbach's alpha coefficient was used to examine the reliability of the survey's interview questions. The absence of dependability is indicated by a Cronbach's alpha coefficient of 0.00, while perfect reliability would be represented by a value of 1.00. However, a coefficient of dependability of 0.70 is considered satisfactory. Each instrument was put through a Cronbach's alpha reliability test.

Pilot study:
The questionnaire was done pre-examined fourteen participants before the real work start to test the clarity of the questionnaire and to calculate the time required to complete the sheets after obtaining permission from the manager of Oncology Center at El-Minia. It has been worked on ten percentage of the sample equal (14 participants), no adjustment done. The participants of the pilot study had been included in sample.

Field Work:
1. An official letter issued from the dean of Faculty of Nursing Helwan University, and Director of Oncology Institute at El-Minia contains the purpose of the study to obtain license after establishing a trustful relationship each subject interviewed individually by the investigator.
2. A pilot study was done to make sure the extant of scales clarity and applicability. Thereafter, the reliability of the rates was done.
3. Data was gathered within 5 months, 3day per week from 6pm- 8pm of academic year (2022), interview of female who actually worked in Oncology Center after introducing my-self for every health care providers, then define the target of the study for evaluate knowledge, skills for performing breast exam, and view about breast cancer. The study accumulated via the structured questionnaire.
4. The actual area work began from the January 2022 to the end of May 2022 for collecting data.

Administrative Item:
An official permission for this study was acquired via way of means of submission of formal letter issued to the Dean of the Faculty of Nursing at Helwan University to get entry to sample and begin data collecting.

Ethical considerations:
The Scientific Research Ethics Committee has formally approved the proposed study. Women in the healthcare field were given all the information they needed to make an informed decision about participating in the study. Ethical issues included informing participants of the study's rationale and scope, providing an easy way to opt out at any moment, and guaranteeing that no one could view their data without their express consent. This work has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for studies involving humans.

Statistical Analysis
The Statistical Package for the Social Sciences (SPSS) for Windows, version 23, was used to conduct the statistical analysis (SPSS, Inc., Chicago, IL). The process of coding and entering data was reviewed for quality assurance. Frequencies and percentages were used to depict qualitative data, whereas the mean and standard deviation (SD) were used to depict quantitative data. Analysis of variance (ANOVA) was used to test the hypothesis that the row and column variables are independent; the Chi-square (X^2) test was used to compare the qualitative category variables. P-value was set at ≤ 0.05 for significant results.

RESULTS
Table (1): Illustrates demographic characteristics of female health providers. It indicates that 57.4% of the female health care providers their age between 30-<40yrs with Mean ±SD 30.29±6.490 years, however 49.3% were married, 56.8% stay in rural area, concerning educational level, 56.1% of them have bachelor education, and 33.1% worked as nurse, 84.5% of health care providers' their source of information about cancer of breast were via media, television, and awareness campaigns, but 15.5% only through their studies.

Table (1): Frequency distribution of female Health Care Providers according to demographic characteristics (n=148).

Demographic Characteristics	No.	%
Age(year)		
20<30	61	41.2
30<40	85	57.4
40<50	2	1.4
Mean ± SD	**30.29±6.490**	
Range	29	
Marital Status		
Single	69	46.6
Married	73	49.3
Divorced	4	2.7
Widowed	2	1.4
Place of residence		
Urban	64	43.2
Rural	84	56.8
Educational level		
Secondary education	35	23.6
Technical Nursing institute	30	20.3
Bachelor	83	56.1
Work type		
Doctor	30	20.3
Nurse	49	33.1
Laboratory technician	20	13.5
Radiology technician	18	12.2
Pharmacist	31	20.9
Source of information		
Media and campaigns	125	84.5
Through their studies	23	15.5

Figure 1 illustrates years of experience of female health care providers 41.9% of them, their experience less than 2 years**.**

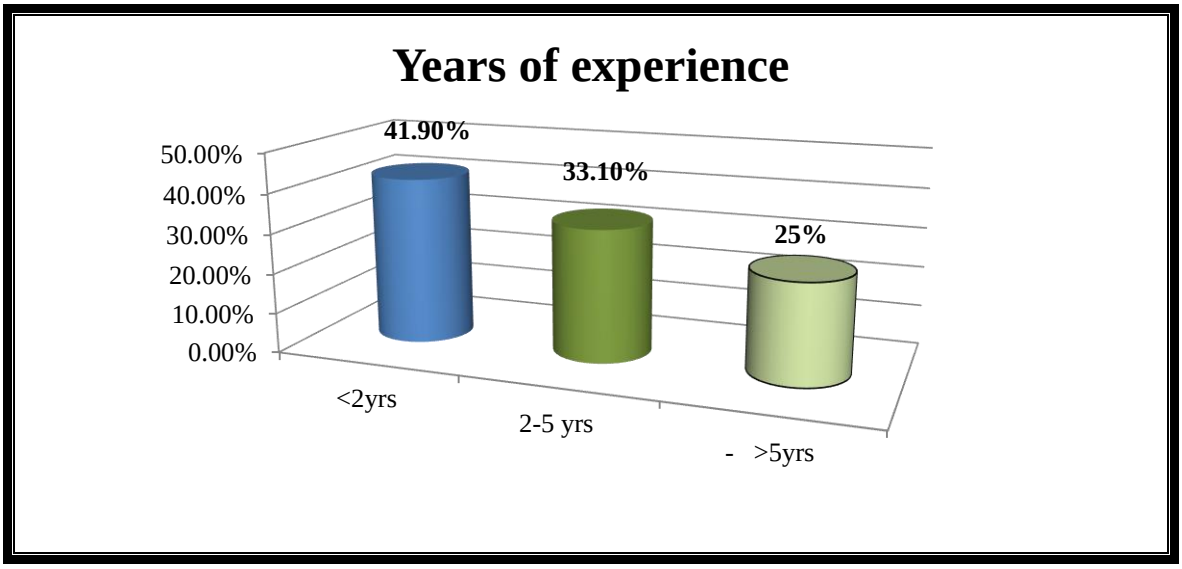

Figure (1): Percentage Distribution of Female Health Care Providers Years of Experience, (n=148).

Table (2): Reveals past and current medical history of study sample, it exhibits 97.3% of them don't have any previous breast disease. 98.6% of them not have family with breast tumor and 68.9% of them not have current breast problem**.**

Table (2): Frequency distribution of Female Health Care Providers regarding past and current medical history (n=148).

Medical History	Yes		No	
	No.	%	No.	%
Previous breast problem	4	2.7	144	97.3
Relatives with breast cancer	2	1.4	146	98.6
Current breast problem	46	31.1	102	68.9

Table (3): Shows sample' knowledge concerning breast carcinoma, 85.1% of female health providers have correct information about meaning of breast cancer, 62.2% of them have correct knowledge regarding risk factors of BC, 88.5 of them have correct knowledge toward sign and symptoms, 89.9 of female health care providers have correct knowledge regarding breast cancer screening methods, 91.2% of them have correct knowledge regarding methods of breast cancer treatment and 87.2% of them have correct knowledge regarding occupational risks that increase risk of breast cancer**.**

Table (3): Frequency distribution of Female Health Care Providers' knowledge regarding breast cancer (n=148).

Knowledge Items	Correct		Incorrect	
	No.	%	No.	%
Meaning of breast cancer	126	85.1	22	14.9
Risk factor of breast cancer	92	62.2	56	37.8
Sign and symptoms of breast cancer	131	88.5	17	11.5
Method of screening to detect breast cancer	133	89.9	15	10.1
Method of treatment breast cancer	135	91.2	13	8.8
Occupational hazards that increase risk of breast cancer	129	87.2	19	12.8

Figure 2 shows that 90% of doctors have excellent knowledge regarding breast cancer, 88% of pharmacists have best knowledge, while 60% of nurses have enough knowledge and 51% of laboratory.

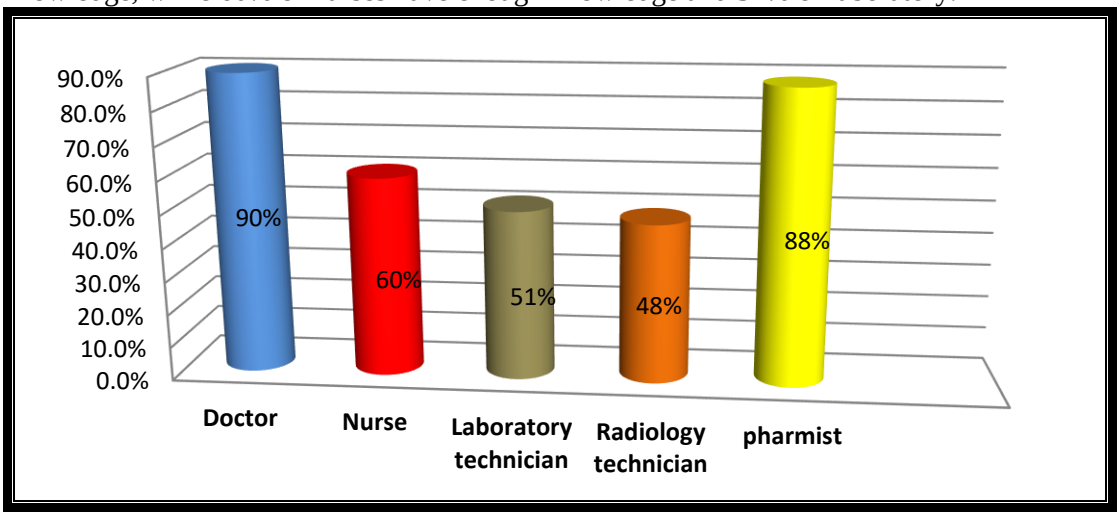

Figure (2): Percentage distribution of Female Health Care Providers work type according total satisfactory knowledge regarding breast cancer (n=148).

Figure 3 reveals that 89.9% of female health care providers had satisfactory levels of total knowledge regarding breast cancer while 10.1% of them had satisfactory levels of overall information about cancer of breast.

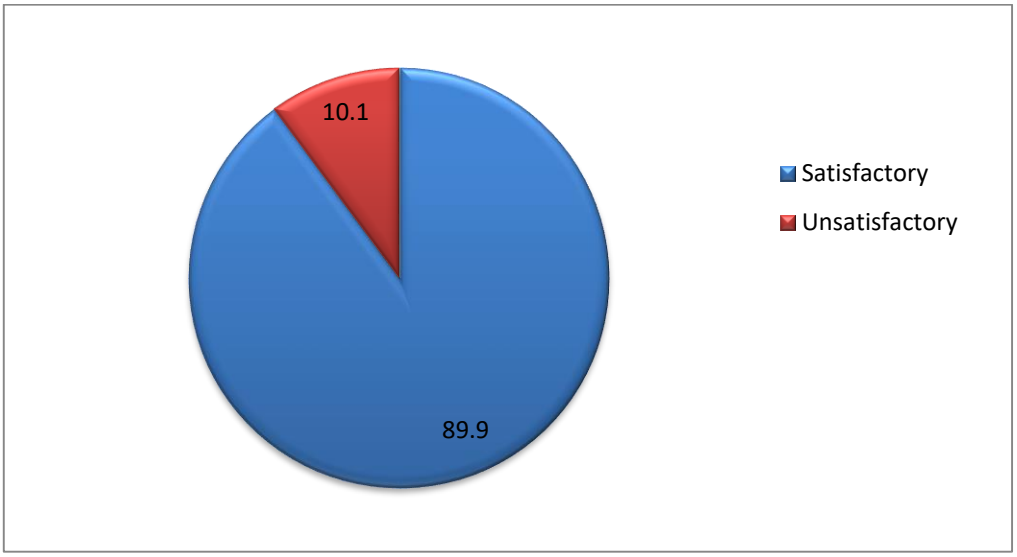

Figure (3): Percentage distribution of Female Health Care Providers' total knowledge score regarding breast cancer (n=148).

Table 4 revealed that 98% of female health care providers agree about breast tests that consuming the time and very painful, while 2% of them not sure. 94.6% of women agree that studied sample were doing breast examination by impolite technique.. 87.2% of them disagree about having other problems in the life than doing breast checks, 10.1% of them don't sure while 2.7% of them agree, 90.5% of them have perception about present barriers of breast cancer screening, while 8.8% of them not sure, 85.8% of them disagree about embarrassing to have breasts examined, while 4.7% of them agree .88.5% agree that Personal hygiene decrease breast cancer risk. 83.1% of them agree that early diagnosis of breast cancer may be prolonged life of person.

Table (4): Frequency distribution of Female Health Care Providers attitude toward breast cancer (n=148).

Attitude items	Disagree		Not sure		Agree	
	No.	%	No.	%	No.	%
I thought that breast exams takes too much time and too painful.	0	0	3	2	145	98
Some women thought that Health care provider doing breast exams by rude method.	0	0	8	5.4	140	94.6
I have other problems more important in my life than doing breast exams.	129	87.2	15	10.1	4	2.7
I thought ,from long period of time, I do breast exams regularly	115	77.7	30	20.3	3	2
I am sad, There is no health center close to my house to have breast exams.	129	87.2	16	10.8	3	2
I thought , health care provider have perception of about present barriers of breast cancer screening	1	0.7	13	8.8	134	90.5
It is embarrassing to have my breasts examined	127	85.8	14	9.5	7	4.7
I think I perform breast self -examination by myself, I cannot detect abnormalities in my breast	15	10.1	53	35.8	80	54.1
I thought that If there is no problem in the breasts, periodic breast examinations by a physician are not required	118	79.7	25	16.9	5	3.4
I thought that Personal hygiene decrease breast cancer risk	2	1.4	15	10.1	131	88.5
I thought that early diagnosis of breast cancer may be prolonged life of person	3	2	22	14.9	123	83.1

Figure 4 indicates that 98.6% of Health Care workers had positive overview toward malignancy, while1.4% of them had negative point of view.

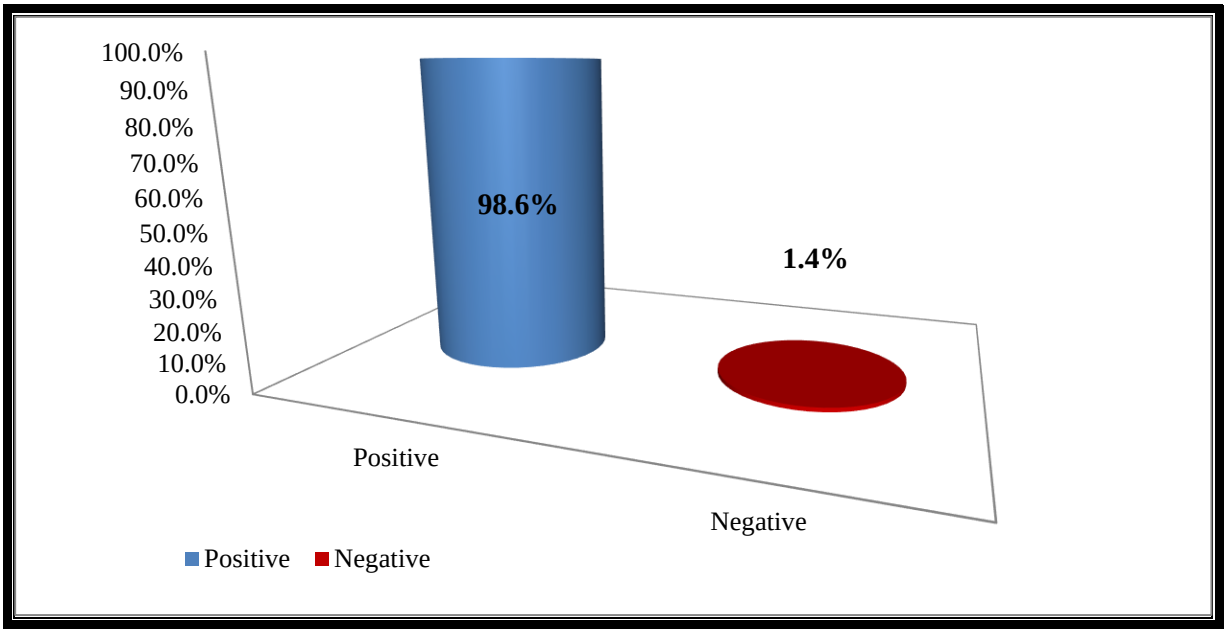

Figure (4): Percentage distribution of Female Health Care Providers' total attitude toward breast cancer (n=148).

Table 5 shows that 77% of female health care providers reported that they practice step 3 and 92.6% of them reported they done step 5 of breast self-examination.

Table (5): Frequency distribution of Female Health Care Providers' reported practice related to breast self-examination (n=148).

Breast self-examination steps	Done		In complete done		Not done	
	No.	%	No.	%	No.	%
Step1:	131	88.5	17	11.5	0	0
Step2:	137	92.6	11	7.4	0	0
Step3:	114	77	26	17.6	7	5.4
Step4:	129	87.1	17	11.5	2	1.4
Step5:	122	82.4	25	16.9	1	0.7

Figure 5 Shows that 97.3% of female health care providers had adequate level of reported practice, while 2.7% of them had inadequate level of reported practice.

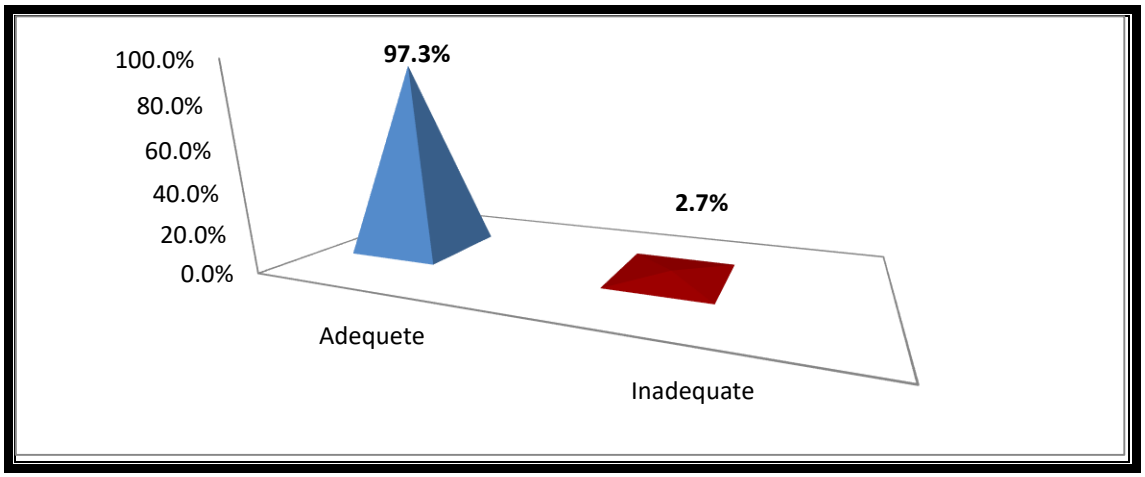

Figure (5): Percentage distribution of Female Health Care Providers' total reported practice scores regarding breast self-examination (n=148).

Table (6): Mentions highly statistically significant correlation among total score of female health care providers and their demographic characteristics, as : education level and years of experience while there are statically significant with age and there were not statically significant with marital status, place of residence as well as work type (p=0.596, 0.60&.0.596) respectively.

Table (6): Relations between Female Health Care Providers' total knowledge and their demographic characteristics (n=148).

Socio-Demographic Characteristic	Satisfactory		Unsatisfactory		$\chi 2$ P value
	No.	%	No.	%	
Age (year)					
20<30	54	40.6	7	46.7	3.697
30<40	77	57.9	8	53.3	0.055 *
40<50	2	1.5	0	0	
Marital Status					
Single	58	43.6	11	73.3	0.281
Married	69	51.9	4	26.7	0.596
Divorced	4	3	0	0	
Widowed	2	1.5	0	0	
Place of residence:					
Urban	59	44.4	5	33.3	0.993
Rural	74	55.6	10	66.7	0.609
Educational level					
Secondary education	35	26.31	0	0	15.708
Technical Nursing institute	30	22.6	0	0	0.000**
Bachelor	68	51.1	15	100	
Work type					
Doctor	28	21.1	2	13.3	0.281
Nurse	45	33.8	4	26.7	0.596
Laboratory technician	17	12.8	3	20	
Radiology technician	15	11.3	3	20	
Pharmacist	28	21.1	3	20	
Years of experience(year)					
<2	47	35.3	15	100	33.191
2-5	49	36.8	0	0	0.000**
>5	37	27.8	0	0	

*Significant (P≤0.05) **Highly Statistically Significant at (P≤0.01).

Table (7): shows that there was positive correlation between total knowledge of female health care providers and their attitude (p=0.000), also, there is positive correlation between total knowledge and their reported practice (p=0.000) toward breast cancer.

Table (7): Correlation between total knowledge, attitude and reported practice of female health care providers regarding breast cancer (n=148).

Total Scores of	Knowledge	
	R	Sig.
Attitude	0.498	0.000**
Reported practice	0.547	0.000**
Mean ±SD	2.809± 0.621	
T test	18.636	
Sig.	0.000**	

**Highly statistically significant (P≤0.001)

DISCUSSION

In relation to female health care providers' demographic characteristics; the finding of current study showed that near half of female health care providers aged between 31-40 years, with mean 30.29 years, near half of female health care providers are married.

These findings are in the same line with **Tesfaw *et al.*** [10] in Debre Tabor about "Level of knowledge and practice of female healthcare providers about early detection methods of breast cancer", that found 49.6% of study sample between age 30-40, the average age of the participants was 31.4 years. Regarding marital status, 64.7% of female healthcare providers are married.

These results disagreed with **Okab** [11] in Al-Sader district about "assessment on nurses knowledge regarding breast cancer at primary health care centers" found that the socio demographic characteristic of forty two percent from nurses were 41-50 years old but twenty sex percent of them between age 30-40 years; 44% were single.

Regarding past and current medical history and source of knowledge, the present study revealed that the majority of them have no previous breast problem and have no relatives with breast cancer and nearly two third of them have no current breast problem. The main source of knowledge is about four fifth of female health care providers about breast cancer through the media, television, and campaigns, as well as their own studies.

These results agreed with **Salem *et al.*** [12] in Menoufia, Egypt, about "knowledge, attitude, and practice of breast self-examination among women attending primary health care facility" findings that 68.4% the major sources of information were the mass media.

Hassan *et al.* [13] who disagreed with the present study, in EI-Minia about "Awareness about Breast Cancer and Its Screening among Rural" mentioned that the main source of knowledge about breast cancer and BSE in his study 26% media, TV, awareness campaigns.

In relation to female health care providers' knowledge; the present study showed that majority of the participants correctly identified the meaning of breast cancer, more than half of study sample know the risk factors of breast cancer, majority of studied sample identified the signs and symptoms of breast cancer, all most of studied sample were able to identify breast cancer screening methods, majority of them knew methods of breast cancer treatment.

These results are in agreement with those reported by **Irani *et al.*** [14] who conduct in Iran about "Knowledge, Attitude, and Practice of Women regarding Breast Cancer Screening Behaviors" demonstrated that 65% of the participants had adequate knowledge about breast cancer signs and symptoms, 34.6% had adequate knowledge about breast cancer risk factors.

These findings disagree with the present study **Al-Mousa *et al.*** [15] who conduct in Jordan about "Knowledge, Attitude and Practice Around Breast Cancer and Mammography Screening Among Women" revealed that knowledge was generally adequate regarding the symptoms of breast cancer. 53.7% of the study sample has knowledge regarding breast cancer risk factors.

The present study found that majority of the total of female health providers had satisfactory total knowledge scores about breast cancer. This is may be due to high levels of knowledge are able to be linked to wealthy backgrounds, but they may also be the result of exposure in the media and friends.

These finding disagree with **Pruitt *et al.*** [16] found that there were significant gaps in the investigated sample's knowledge of breast cancer, with median knowledge scores 50% including an incomplete understanding of breast cancer, its symptoms, risk factors and its prevention.

In relation to female health care providers' attitude; the results of present study founded that 99.4% of the population analyzed has have positive attitude toward breast cancer while1.4% of them have negative attitude toward breast cancer.

These results supported by **Abda *et al.*** [17] who carrying out a study in Morocco about "knowledge, attitudes, and preventive practice towards breast cancer among general practitioner health professionals demonstrated that 99.3% of physicians agreed with the importance of self-examination for early diagnosis of breast cancer. Clinical breast examination was also considered important for the early diagnosis of breast cancer by 99.3%. Concerning mammography, (88.6%) of physicians was entirely consistent with its relevance for the detection of breast cancer.

In relation to female health care providers' reported practice; the present study, Female healthcare providers indicated a satisfactory with the five steps of breast self-examination.

These results in accordance with **Smith *et al.*** [18] who conducts in United States American (USA) about "A review of current American Cancer Society guidelines and current issues in cancer screening" reported that breast self - examination at least every 3 years in women aged from 20 to 39 years and annually, from the age of 40 years.

These findings disagree with **Hassan *et al.*** [13] who found that 95% or more of participants never engaged in BSE and also **Salem *et al.*** [12] reported low rate of ever practice breast self-examination, was 29.2% among the studied.

As regarding to relation between total knowledge score levels of the studied sample and their demographic characteristics of the current study, it noted that there were highly statically significant relation total between

knowledge score levels of the studied sample and their educational level as well as years of experience respectively. While there weren't statically significant relation between knowledge score levels of the studied sample and their marital status, place of residence as well as work type respectively.

These results were to a study conducted by **Alenezi *et al.*** [19] who found that knowledge scores were significantly associated with age group(p 0.039), and level of education (p 0.076) but this study revealed that there were significant ($p<0.05$) connection between health care workers categories and knowledge levels.

These finding disagree with **Almarghoub** [20] in Abha about "Assessment of Knowledge and Attitude and Practice towards Breast Cancer Screening among Female" found that Age and nursing experience do not influence this knowledge which means there were no statistical significant between age and nursing experience and level of knowledge.

As regarding correlation between knowledge of female health care providers and their attitude; this finding demonstrated that there is positive correlation as well as there is positive correlation between knowledge of them and their Reported practice about breast cancer.

These findings are similar to **Irani *et al.*** [14] who found relation between demographic and knowledge and attitude of health care providers regarding breast cancer.

As regarding correlation between knowledge of female health care providers and their attitude and their reported practice; the results of study demonstrated that there were a correlation between total knowledge of female health care providers and their attitude and their practice highly statistically significant.

These findings are similar with the findings of **Rabbani *et al.*** [21] in United Arab Emirates about "Awareness and Perception of Breast Cancer among the Future Healthcare Providers" that revealed presence of positive significant correlation existed between the level of knowledge and the level of perception, attitude and reported practice towards breast cancer, this were pertaining to breast cancer increased their perception towards breast cancer also improved.

CONCLUSION

The current study's findings and the answers to the research questions lead to the following conclusion: there is a highly statistically significant correlation between female healthcare practitioners' total knowledge and total practice with regards to breast cancer. There is also a strong correlation between women's health care providers' overall behavior and their overall outlook. In addition, there is a statistically significant correlation between the overall knowledge of nurses working in the health care industry and certain demographic factors. Total nursing hours worked correlates with certain demographic variables. Total breast cancer perception among female healthcare workers is positively correlated with their levels of expertise, confidence in treating the disease, and overall positive outlook.

RECOMMENDATIONS

In light of the results of this investigation, the following suggestions are made:

- Together with other groups and institutions, we will implement a continuous education program to increase the breast cancer prevention expertise of female health care professionals.
- There needs to be a centralized set of guidelines for treating breast cancer based on evidence that can be accessed by all hospitals and followed by all female doctors and nurses.
- Female health care practitioners who offer palliative care should have access to specific guidelines designed to support their work. Educating and preparing women to work in healthcare in a variety of contexts is crucial to ensuring a steady supply of nurses.

Financial support and sponsorship: Nil.
Conflict of interest: Nil.

REFERENCES

1. **Miller K, Nogueira L, Mariotto A *et al.* (2019):** Breast Cancer screening and diagnosis, NCCN clinical practice guidelines in oncology. Journal of Egyptian National Cancer Institute, 9(3):191-9.
2. **Merikanto S, Aghna N (2020):** Global incidence and mortality rates and trends. Publication of American association of cancer research. American Society of Preventive Oncology, 25(1):16-27.
3. **Baade P, Dasgupta P, Youl P (2020):** Geographical in equalities in treatment breast cancer. Journal of Asian Cancer Prevention, 11(6):1761-9.
4. **Bray F, Kumar S, Iman A *et al.* (2018):** Knowledge, attitude about breast cancer and practice among female care professional. Official Journal of the European Society for Medical Oncology, 12(5):119-33.
5. **Pahwa M, Haines T, Hausheer E *et al.* (2019):** Beliefs and perception among health care provider about diagnosis of breast cancer. Journal of Clinical Oncology, 19(22):4224-37.
6. **Howlader N, Akhigba A, Sammanta R *et al.* (2020):** Determining female physicians and nurses practices and attitudes toward breast cancer. Journal of Egyptian National Cancer Institute, 15(8):265-8.
7. **World Health Organization (WHO) (2020):** Breast cancer**.** https://www.who.int/news-room/fact-sheets/detail/breast-cancer
8. **Ministry of Health and Population in Egypt (MOHP) (2019):** Egypt Health Issue Survey. http://www.reshare.ukdataservice.ac.uk/851845/37/BreastC.last. Accessed 30 May 2019.
9. **Felay L, Boussen H, Nichol A *et al.* (2018):** Treatment and outcomes for patients with breast cancer. International Journal of Adolescent Medicine and Health, 20(10):1133-42.
10. **Tesfaw A, Demis S, Munye T *et al.* (2020):** Patient delay and contributing factors among breast cancer patients at two cancer referral centres in Ethiopia: a cross-sectional study. J Multidiscip Healthc., 13:1391-1401.

11. **Okab A (2019):** Assessment of Nurses' Knowledge Regarding Breast Cancer at Primary Health Care Centers in Al-Sader District. Diyala Journal of Medicine, 17(1):22-7.
12. **Salem M, Al Shazly H, Ibrahem R *et al.* (2020):** Knowledge, attitude, and practice of breast self-examination among women attending primary health care facility, Menoufia Governorate, Egypt. Menoufia Medical Journal, 33(1):44-9.
13. **Hassan E, Seedhom A, Mahfouz E (2017):** Awareness about breast cancer and its screening among rural Egyptian women, Minia District: A population-based study. Asian Pacific Journal of Cancer Prevention, 18(6):1623-8**.**
14. **Irani M, Nosrati S, Ghaffari F *et al.* (2021):** Knowledge, attitude, and practice of women regarding breast cancer screening behaviors in Mashhad, Iran. Journal of Midwifery and Reproductive Health, 9(2):2726-35.
15. **Al-Mousa D, Alakhras M, Hossain S *et al.* (2020):** Knowledge, attitude and practice around breast cancer and mammography screening among Jordanian women. Breast Cancer: Targets and Therapy, 12:231-42.
16. **Pruitt L, Odedina S, Anetor I *et al.* (2020):** Breast cancer knowledge assessment of health workers in Ibadan, Southwest Nigeria. JCO Global Oncology, 6:387-94.
17. **Abda N, Najdi A, El Fakir S *et al.* (2017):** Knowledge, attitudes, and preventive practice towards breast cancer among general practitioner health professionals in Morocco. Asian Pacific Journal of Cancer Prevention, 18(4):963-8.
18. **Smith R, Andrews K, Brooks D *et al.* (2017):** Cancer screening in the United States, a review of current American Cancer Society guidelines and current issues in cancer screening. CA: A Cancer Journal for Clinicians, 67(2):100-21.
19. **Alenezi A, Thirunavukkarasu A, Wani F *et al.* (2022):** Female Healthcare Workers' Knowledge, Attitude towards Breast Cancer, and Perceived Barriers towards Mammogram Screening: A Multicenter Study in North Saudi Arabia. Current Oncology, 29(6):4300-14.
20. **Almarghoub M (2018):** Do nurses have fair knowledge about breast cancer? A cross sectional study in king Abdul-Aziz university hospital. J Cancer Prev Curr Res., 9(5):236-9.
21. **Rabbani S, Mutasem H, Naser R *et al.* (2017):** Awareness and perception of breast cancer among the future healthcare providers of Ras Al Khaimah, United Arab Emirates. J App Pharm Sci., 7(2):142-6.