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Nurses' Knowledge Regarding Breast Cancer at Specialized Hospital in Dhaka, Bangladesh

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ABSTRACT

Research Title: Nurses' Knowledge regarding Breast cancer at Specialized Hospital in Dhaka, Bangladesh. **Background:** Breast cancer is the most common cancer among women and one of the most important causes of death among them. Aim: This study aimed to assess the level of Nurses' knowledge regarding breast cancer at Specialized Hospital in Dhaka, Bangladesh. **Method:** A descriptive type of cross-sectional study was taken to assess the level of Nurses' knowledge regarding breast cancer who was employed in National Institute of Cancer Research and Hospital (NICRH), Mohakhali, Dhaka from July-2023 to June-2024.The population of the study was 240 and sample was 60 nurses. A purposive sampling technique was adopted to conduct the study and a self-administered structured questionnaire was used for data collection. **Result:** the mean age of respondents was 32 years with the range of 24 - 44 years. Most of the respondents, 98% was female and rest of 2% male. The majority of the respondents 58% completed   diploma in nursing, 30% B.Sc nursing and 12% M.Sc. in nursing. Approximately 72% had experience of 1-5 years. Overall findings showed that 38% of respondents had good knowledge, 25% had very good knowledge, 15% had excellent and poor level of knowledge and only 7% had average level knowledge on breast cancer respectively. The overall mean score of respondents' knowledge was 73.58 which indicate the good level of knowledge regarding breast cancer in current study. **Conclusion and Recommendation:** the study findings it is needed to arrange specialization training on oncology nursing to increase the level of nurses' knowledge regarding breast cancer so that nurses' can play a vital role to provide holistic care to the patient with breast cancer.

Keywords: *Breast Cancer, Knowledge, Nurses.*

Introduction

Breast cancer is the most common cancer among women and one of the most important causes of death among them (Momenimovahed & Salehiniya, 2019).Cancer is a disease in which abnormal cells grow in an uncontrolled way. Breast cancer is a malignant (cancerous) growth that begins in the tissues of the breast. It is the most common cancer in women, but it can also appear in men. In the U.S., it affects one in eight women (Ferdowsy, 2020). It is now a worldwide problem, yet it is still detected in its advanced stages due to women's neglect in self-inspecting and clinically examining their breasts (Jasim *et al*., 2022).

The incidence, morbidity, and mortality rate of breast cancer has been increased in both high and low-resource settings due to the increased life expectancy, urbanization and adoption of western lifestyles (Alam *et al*., 2021). Female breast cancer was recognized as the leading cause of global cancer incidence. In 2020, it has been estimated that about 2.3 million new

breast cancer cases were diagnosed, representing about 11.7% of all new cancer cases (worldwide global cancer statistics report, 2020). According to the World Health Organization (WHO, 2020), an estimated 685,000 females died because of breast cancer. Breast cancer becomes epidemic in South Asian countries as the incidence and mortality rate are increasing in a dramatic way. Around 588 million women over 15 years of aged face a rising breast cancer epidemic in these countries. In India, around 100,000 women with breast cancer are diagnosed annually and the mortality rate was 21.5%. In Pakistan 34,066 women were diagnosed in 2018 and the breast cancer mortality rate was 26.76% (Alam *et al*.2021).

Bangladesh is a small and the seventh (nearly 160 million people) most populous country in the world. Recently, the prevalence of breast cancer increasing tremendously but there is no national central cancer registry that can provide the complete nationwide data. Therefore, the actual incidence and mortality of breast cancer is mostly unknown. However, based on cancer registry report 2015–2017 of the National Institute of Cancer Research and Hospital (NICRH), 4930 new breast cancer cases were registered during this period.

According to GLOBOCAN, 13,028 new breast cancer cases were diagnosed in 2020, with an age-standardized incidence rate (ASR) of 17 per 100,000. A report based on the NICRH, the mean age was 41.8 years for the breast cancer patients, maximum (>56%) cases were among reproductive age women (Alam *et al*., 2021).

Breast cancer is a multifactorial disease and a various factors contribute to its occurrence. The etiology of breast cancer is unknown; numerous risk factors may influence the development of this disease including genetic, hormonal, environmental, socio-biological and physiological factors. It is usually first detected as a lesion, dimpling, puckering, lymphedema of the breast, inversion or retraction of the nipple, nipple discharge, enlargement of the nodes in the axilla or in the neck region and enlargement of one breast (Youssif *et al*.,2023). Although the disease occurs all over the world, its incidence, mortality, and survival rates vary considerably among different parts of the world, which could be due to many factors such as population structure, lifestyle, genetic factors, and environment (Momenimovahed & Salehiniya, 2022).

Breast cancer management is a rapidly evolving field, new technologies are being incorporated to better understand the progression of this disease and help to identify the genes involved in its prognosis and responsiveness to therapy, these findings, added to improved risk assessment and prevention strategies, as well as screening, diagnosis and supportive care, create optimism for the future. Education and clinical trials are the key to success. Nursing represents a significant professional resource for facilitating positive changes in breast cancer prevention strategies , nurses are often the health care providers who teach women how to perform breast self-examinations and who carry out clinical breast examinations (Youssif *et al*.,2023). Female nurses play a critical role in increasing women's awareness of early detection and by providing helpful information about BC (Mansour *et al*., 2021).

So, it is important to explore the level of knowledge regarding breast cancer among the nurses' at National Institute of Cancer Research and Hospital (NICRH).

RESEARCH QUESTION
What is the level of Nurses' knowledge regarding breast cancer at Specialized Hospital in Dhaka, Bangladesh?

RESEARCH AIM
To assess the level of Nurses' knowledge regarding breast cancer at Specialized Hospital in Dhaka, Bangladesh.

OBJECTIVES
1. To assess an existing level of nurses knowledge regarding concept of breast cancer (meaning, etiology, risk factors, clinical features, methods of diagnosis and different screening programmes).
2. To explore the level of nurses knowledge regarding management of breast cancer.
3. To find out the level of respondents knowledge regarding the complication of breast cancer.
4. To determine the level of nurses knowledge regarding preventive approaches of breast cancer.
5. To state the socio-demographic characteristics of the respondent.

Research Variables:

Socio-demographic Variables:
- Age (in year)
- Gender
- Religion
- Marital status
- Educational Qualification
  -General Education
  - Professional Education
- Total Service Experience
- Clinical Experience in related area
- Attending Special Training on breast cancer

Knowledge related Variables:
1. Concept of breast cancer:
   - Meaning of breast cancer.
   - Etiology of breast cancer.
   - Risk factors of breast cancer.
   - Clinical features of breast cancer.
   - Methods of diagnosis and different screening programmes of breast cancer.
2. Management of breast cancer.
3. Complications of breast cancer.
4. Preventive measures of breast cancer.

RESEARCH METHODOLOGY
This chapter describes the research methodology of the study which covers the following areas: study design, study place, study population, study period and sample size estimation, sampling technique, selection criteria for the study, Research Instruments, Pre-test and development of the questionnaire, Data collection procedures, Data processing, analysis and presentation and ethical considerations.

Study Design: A descriptive type of cross-sectional study design was conducted at National Institute of Cancer Research and Hospital (NICRH).

Study Setting: This study was conducted at National Institute of Cancer Research and Hospital (NICRH).It is a specialized 500 bedded hospital. National Institute of Cancer Research and Hospital (NICRH) offers an energetic and dynamic environment and staffed by well trained professionals dedicated to cancer patient management, education and research. This is specialized hospital of the country engaged in multi-disciplinary cancer patient management. So, researchers intended to select this study place for data collection.

Study Period: The study was conducted from July 2023 to June 2024.

Study Population: The entire population of the selected study area (National Institute of Cancer Research and Hospital (NICRH), Mohakhali, Dhaka) were 400 nurses. The nurses who have been working at Breast cancer unit, Female and Male medicine ward, Female and Male surgery ward, Operation Theater, Post-operative ward Palliative care unit, Day care unit, Intensive care unit in this hospital. Those 240 nurses were considered as a study population in this study.

Sample Size: The estimated sample size of this study was 60 according to 25% proportion rate nurses from the total number of population (N=240).

Sampling Technique: Purposive sampling technique was adopted during data collection.

Sample Selection Criteria:
Inclusions Criteria:
- Nurses who was working in the NICRH.
- Nurses who was willing to participate.
- Nurses who was available during data collection period.

Exclusion Criteria:
- Nurses who was not meet the inclusion criteria.

Research Instrument:
A structured questionnaire was developed on the basis of the study objectives and variables after reviewing the relevant literatures. There was two parts in the questionnaire:
- Part -1:Socio-demographic characteristics questions
- Part -2: knowledge related questions

Validity: Validity of the questionnaire was assessed by three experts of College of Nursing, Mohakhali, Dhaka. Necessary correction and lapse and gaps was checked. Then it was be accepted for data collection.

Reliability: Reliability was tested to determine the extent to which the items in the questionnaire are related to each other. A pretest was done (mean score-84) in another similar setting among 10 nurses of cancer department at Dhaka Medical College Hospital (DMCH).

Data Collection Method: The data was collected through a self-administered structured questionnaire by the group of researchers with the help of ward incharges of NICRH.

Data Management: After data collection, data were managed by cleaning, categorizing, coding then summarizing the data and shifted to the master chart and organizing compilation of tally and array by the use of computer based on study objectives. All data collected for this study was stored both as hardcopy and softcopy.

Data processing and analysis: Collecting data was checked, organized, entered into the master sheet then was analyzed manually by the researchers with the help of scientific calculator. The descriptive statistics was used for the analysis of the respondents' characteristics, distribution and level of knowledge of breast cancer in terms of frequency, percentages range and mean. The important variables was analyzed to fulfill the objectives of the study.

RESULTS

This chapter provided a detailed description of the results analysis presented with appropriate elaboration, depending on the nature of the variables. The results were presented as simple percentages by using appropriate mean. Initially demographic result was showed and after that knowledgebase result was documented.
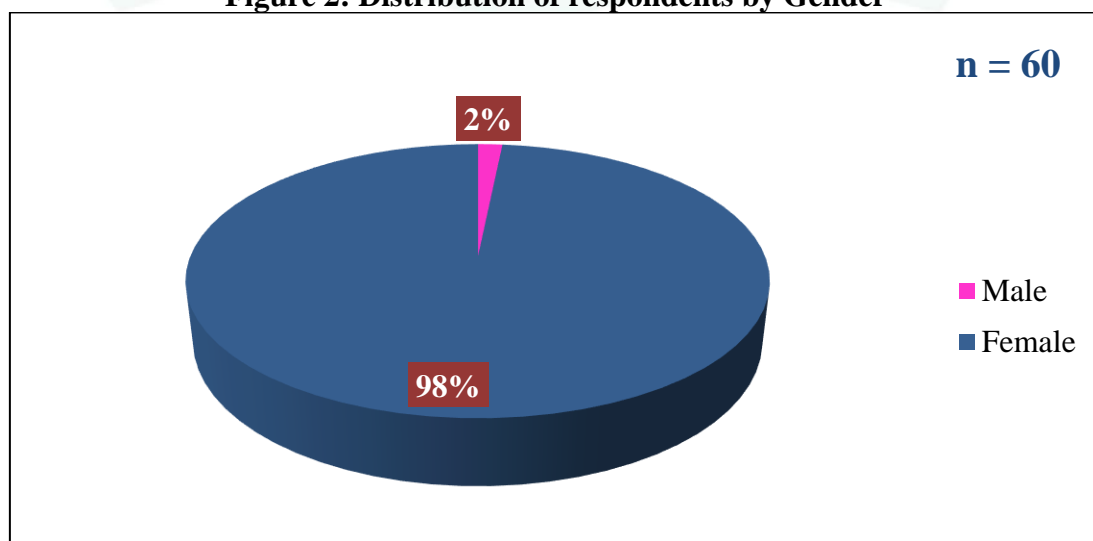
Part A: Socio Demographic Information results

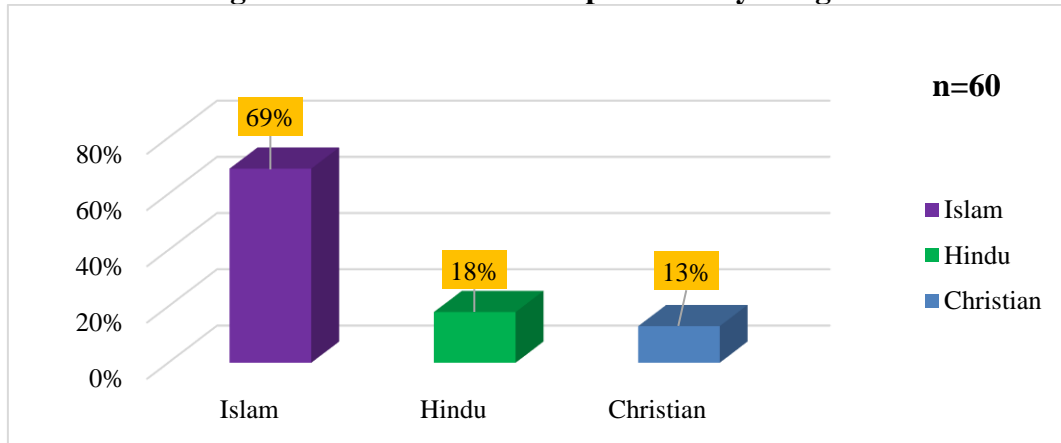**Figure 1: Distribution of respondents by age group**
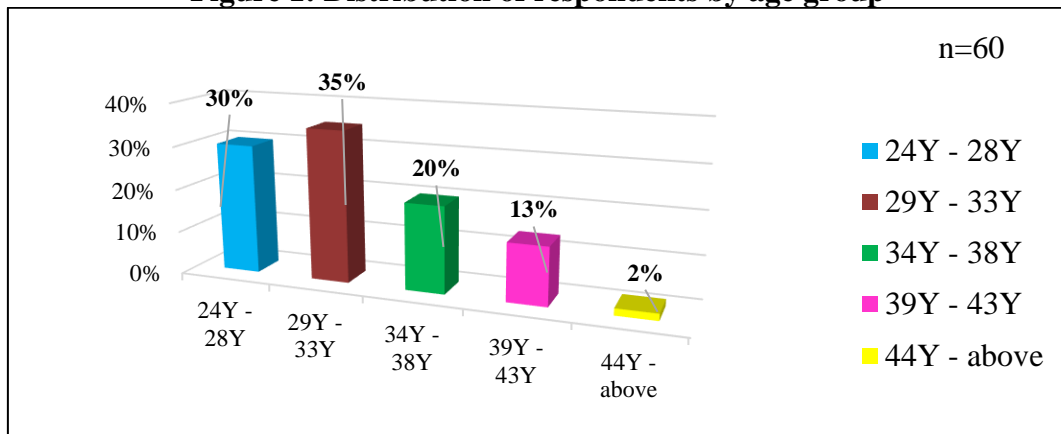
The above bar chart shows that 30% respondents were within 24-28 years, 35% in between 29-33 years, 20% in 34-38 years, 13% in 39-43 years and 2% respondents within 44 years and above. The mean age of respondents 32 years.
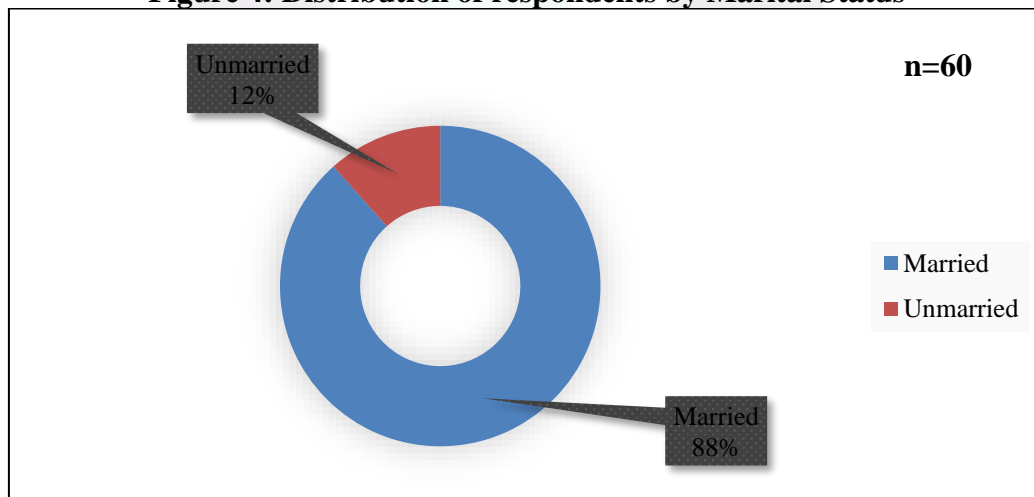
Figure 2: Distribution of respondents by Gender

The above pie chart shows that 98% respondents were female and whereas only 2% respondents were male.

Figure 3: Distribution of respondents by Religion

The above bar chart shows that out of the 60 respondents'69% were Muslim, 18% Hindu and 13% Christian religion.

Figure 4: Distribution of respondents by Marital Status

The above doughnut chart shows that 88% respondents' marital status were married and 12% unmarried.

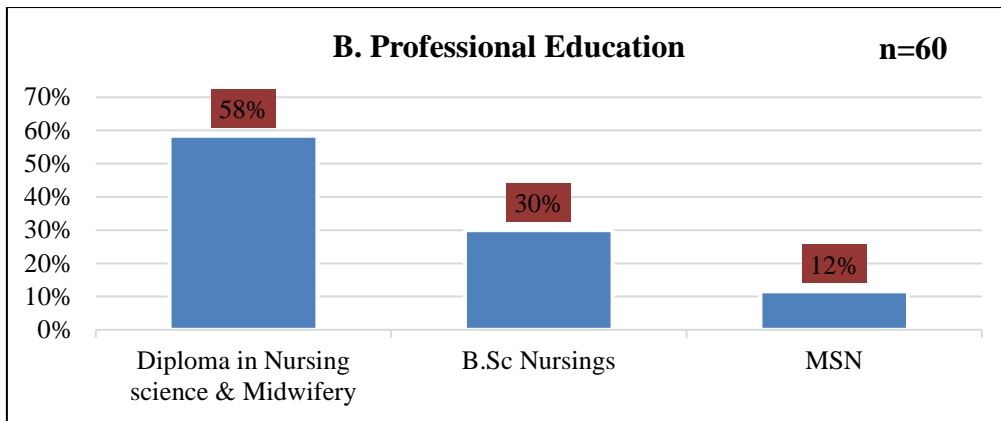**Figure 5: Distribution of respondents by Educational Qualification**
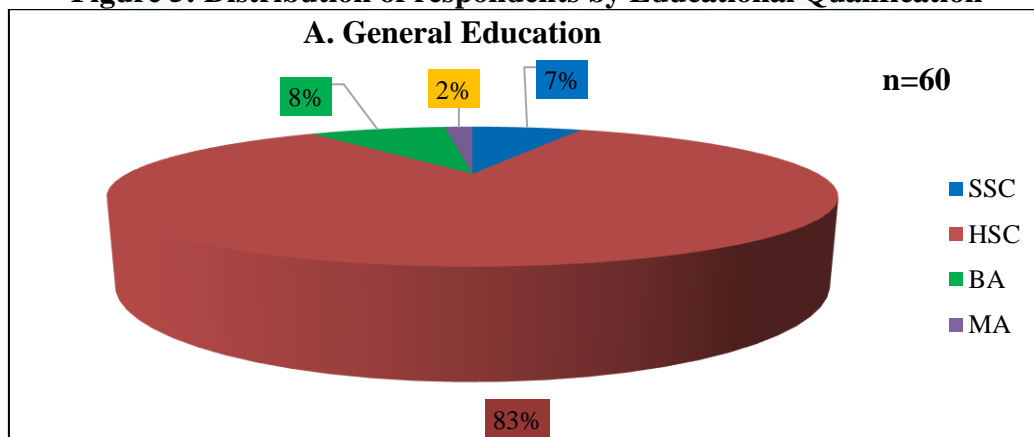
The above pie chart shows that 83% respondents completed HSC, 8% BA, 2% MA in academic qualification and 7% respondents did not obtained higher education after completing SSC degree.

B. Professional Education   **n=60**

The above bar chart shows that 58% completed Diploma in Nursing Science & Midwifery, 30% completed B.Sc. in Nursing,12% completed Masters in Nursing in Professional Education.

Figure 6: Distribution of respondents by Government Service Duration.
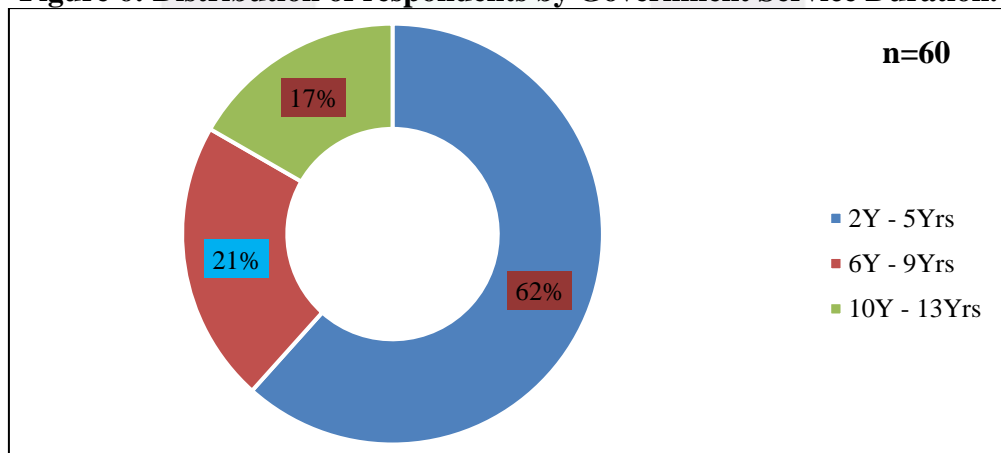
Above the doughnut chart shows that 62% respondents had 2-5 years, 21% had 6-9 years and 17% had 10-13 years of Government service duration.

Figure 7: Distribution of respondents by Service Experience at current place
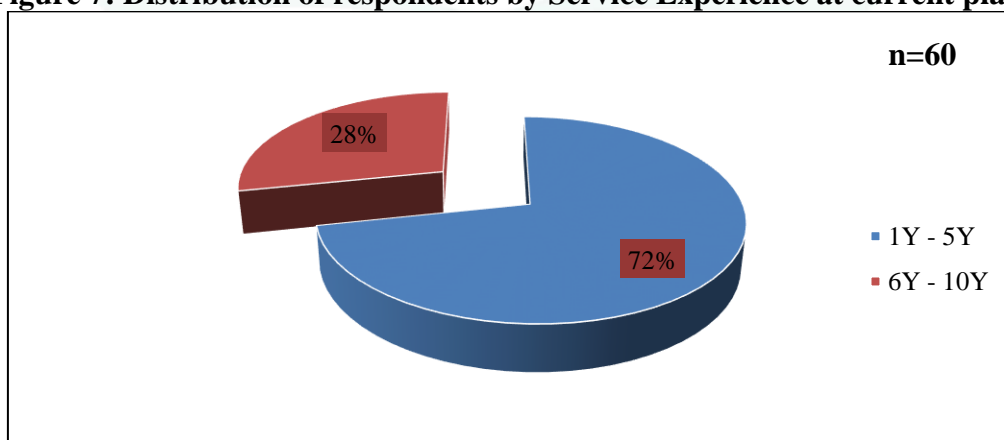
Above the pie chart shows that 72% respondents had 1-5 years and 28% had 6-10 years of Service experience at current place.

Figure 8: Distribution of respondents by Special Training

Above the pie chart shows that 12% respondents got special training and 88% respondents had no training.

Part B: Knowledge Based Information results
In this section results are presented according to objectives of this study.

Table 1: Distribution of the Nurses' knowledge regarding concept of Breast Cancer

n=60

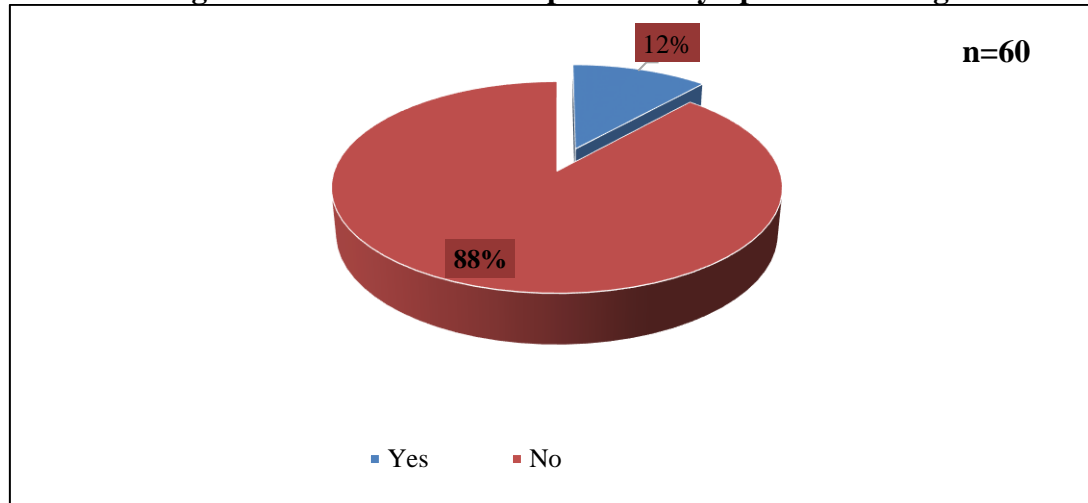| Sl.	Items	Correct Answer		Incorrect Answer	
		(f)	(%)	(f)	(%)
1.	Breast cancer means when cells in the breast begin to grow out of control.	41	68.3	19	31.7
2.	The more vulnerable for developing breast cancer is nullipariety.	42	70	18	30
3.	The metastasis is developed stage -IV.	36	60	24	40
4.	The more common sign of breast cancer in early stage is painless nodule.	38	63.3	22	36.7
5.	The sign/symptom of breast cancer is lump in the breast.	59	98.3	1	1.7
6.	The confirmatory diagnostic test to detect breast cancer is biopsy.	32	53.3	28	46.7
7.	The recommended age for mammography examination to start at the age of 40-44.	22	36.7	38	63.3
8.	The most important screening test for detecting breast cancer is mammography.	59	98.3	1	1.7
9.	The exact time for Breast Self-Examination is 3-5 days after period starts.	34	56.7	26	43.3
10.	The appropriate position for Breast Self-Examination is feel breast with fingers while lying.	29	48.3	31	51.7

The above table 1 shows that the level of knowledge of the concept part of breast cancer. A total10(ten) statements where asked the most of the respondents **(98.3%)** provided correct answer about the sign/symptom of breast cancer is lump in the breast and the most important screening test for detecting breast cancer is mammography, **70%** respondents provided correct answer to the more vulnerable for developing breast cancer is nullipariety, **68.3%**

respondents provided correct answer to the breast cancer means when cells in the breast begin to grow out of control, **63.3%** respondents provided correct answer to the more common sign of breast cancer in early stage is painless nodule, **60%** respondents provided correct answer to the metastasis is developed stage –IV, **56.7%** respondents provided correct answer to the exact time for Breast Self-Examination is 3-5 days after period starts and more than half of the respondents **(53.3%)** provided correct answer to the confirmatory diagnostic test to detect breast cancer is biopsy. On the other hand, more than half of the respondents **(51.7%)** provided incorrect answer to the appropriate position for Breast Self-Examination is feel breast with fingers while lying and **63.3%** respondents provided incorrect answer to the recommended age for mammography examination to start at the age of 40-44.

Table 1.1: Level of the respondents' knowledge regarding concept of breast cancer

n=60

Variable	Level	Grading criteria	(*f*)	(%)	Obtained Score	Mean score
Concept of Breast Cancer	Excellent	90-100%	7	11.7	325	46.4
	Very Good	80-89%	11	18.3	440	40
	Good	70-79%	17	28.3	595	35
	Average	60-69%	11	18.3	330	30
	Poor	<60%	14	23.4	265	19
Total			60	100	1955	
Mean of total Score=32.5(65%)						

Table 1.1 represents that among all of the respondents **28.3%** had good level of knowledge**, 23.4%** had poor level of knowledge, **18.3%** had very good and average level of knowledge and only **11.7%** respondents had excellent level of knowledge regarding concept of breast cancer. Mean of total knowledge score was=**32.5(65%)** out of 50 marks (ten items) which indicates the average level of knowledge in the area of concept of breast cancer.

Table 2: Distribution of the Nurses knowledge regarding management of Breast Cancer

n=60

Sl	Items	Correct Answer		Incorrect Answer	
		(*f*)	(%)	(*f*)	(%)
11.	The common effective medical therapy of breast cancer is Chemotherapy.	60	100		
12.	The significant nursing care for chemotherapy patient is providing plenty of fluid and protein.	54	90	6	10
13.	The appropriate nursing care for radiotherapy is always dry the ink marks area.	42	70	18	30
14.	Consolatory care is necessary for end stage of breast cancer is palliative care.	56	93.3	4	6.7
15.	The name of chemotherapy that given before the surgery of breast cancer is neo adjuvant chemotherapy.	26	43.3	34	56.7
16.	The surgical treatment of breast cancer is total mastectomy.	60	100		

The above table 2 shows that the level of knowledge regarding management of breast cancer, most of the respondents **100%** provided correct answer about the common effective medical

therapy of breast cancer is chemotherapy and the surgical treatment of breast cancer is total mastectomy, **93.3%** respondents provided correct answer to the Consolatory care is necessary for end stage of breast cancer is palliative care, **90%** respondents provided correct answer to the significant nursing care for chemotherapy patient is provide plenty of fluid and protein and **70%** respondents provided correct answer to the appropriate nursing care for radiotherapy is always dry the ink marks area. On the other hand, more than half of the respondents **(56.7%)** provided incorrect answer to the name of chemotherapy that given before the surgery of breast cancer is neo adjuvant chemotherapy.

Table 2.1: Level of the respondents' knowledge regarding management of breast cancer
n=60

Variable	Level	Grading criteria	(*f*)	(%)	Obtained Score	Mean score
Management of Breast Cancer	Excellent	90-100%	20	33.3	600	30
	Very Good	80-89%	24	40	600	25
	Good	70-79%	-	-	-	-
	Average	60-69%	12	20	240	20
	Poor	<60%	4	6.7	55	13.7
Total			60	100	1495	
Mean of total Score=25(83.3%)						

The above table 2.1 shows that respondents' knowledge regarding management of breast cancer. Out of 60 respondents' **40%** had very good knowledge, **33.3%** had excellent knowledge, **20%** had average knowledge, and **6.7%** had poor knowledge regarding management of breast cancer. Mean of total knowledge score was =**25 (83.3%)** out of 30(six items) which indicates the very good level of knowledge in the area of management of breast cancer.

Table 3: Distribution of the Nurses knowledge regarding complications of Breast Cancer
n=60

Sl.	Items	Correct Answer		Incorrect Answer	
		(*f*)	(%)	(*f*)	(%)
17.	The complication of breast cancer is pleural effusion.	45	75	15	25
18.	The most common side effect of Radiotherapy is damage healthy cells.	44	73.3	16	26.7
19.	The late common side effect of chemotherapy is alopecia.	50	83.3	10	16.7

Above table 3 indicates that, among all of the respondents **83.3%** provided correct answer about the late common side effect of chemotherapy is alopecia and **75%** respondents provided correct answer to the complication of breast cancer is pleural effusion. On the other hand less than half of the respondents **26.7%** provided incorrect answer to the most common side effect of Radiotherapy is damage healthy cells.

Table 3.1: Level of the respondents' knowledge regarding complications of breast cancer

n=60

Variable	Level	Grading criteria	(f)	(%)	Obtained Score	Mean score
Complications of Breast Cancer	Excellent	90-100%	28	46.7	420	15
	Very Good	80-89%	-	-	-	-
	Good	70-79%	-	-	-	-
	Average	60-69%	23	38.3	230	10
	Poor	<60%	9	15	45	5
		Total	60	100	695	
		Mean of total Score=11.58(77.2%)				

Table 3.1 reveal that the knowledge regarding complications of breast cancer. Out of 60 respondents **(46.7%)** had excellent knowledge, **38.3%** had average knowledge and only **15%** had poor knowledge. Mean of total knowledge score was =**11.5 (77.2%)** out of 15(three items) which indicates the good level of knowledge in the area of complications of breast cancer.

Table 4: Distribution of respondents' knowledge regarding prevention of breast cancer

n=60

Sl.	Items	Correct Answer		Incorrect Answer	
20	**What is the most common preventive measure of breast cancer?**	(f)	(%)	(f)	(%)
a.	Eating healthy diet			5	8
b.	Regular breast self-examination	54	90		
c.	Regular exercise			1	2
d.	Maintain personal hygiene			0	0
	Total	54	90	6	10

Above the table shows that **90%** respondents provided correct answers on the preventive measure of breast cancer and **10%** respondents provided wrong answers.

Table 5: Level of respondents by overall knowledge on breast cancer according to grading criteria

n=60

Variable	Grading Criteria	Level of Knowledge					Obtained score	Mean Score
		Excellent f(%)	Very Good f(%)	Good f(%)	Average f(%)	Poor f(%)		
Overall nurses' knowledge regarding breast cancer	90-100%	9(15%)					845	73.58
	80-89%		15(25%)				1225	
	70-79%			23(38%)			1655	
	60-69%				4(7%)		255	
	<60%					9(15%)	435	
						Total	4415	

Above the table shows that **38%** of respondents had good knowledge, **25%** had very good knowledge, **15%** had excellent and poor level of knowledge and only **7%** had average level knowledge on breast cancer respectively. The overall mean score of respondents' knowledge was **73.58** which indicate the good level of knowledge regarding breast cancer in current study.

Table 6: Distribution of the Nurses' knowledge regarding Breast Cancer by Professional Level of Education

n=60

Variable	Categories	(f)	(%)	Obtained Score	Mean score
Professional Level of Education	Diploma in Nursing Science &Midwifery	35	58	2470	70.57
	B.Sc in Nursing	18	30	1390	77.2
	Master Degree in Nursing	7	12	555	79.28
	Total	**60**	**100**	**4415**	

Table 6 reveal that the nurses' overall knowledge regarding breast cancer by professional level of education. Out of 60 respondents, the mean of total knowledge score of Master Degree in Nursing was 79.28,B.Sc in Nursing was77.2 whereas Diploma in Nursing Science & Midwifery mean of total knowledge score was 70.57.So this table indicates that nurses' who completed Master Degree in Nursing were more knowledgeable regarding breast cancer than others.

Table 7: Distribution of the Nurses' knowledge regarding Breast Cancer by Service Experience at Cancer Hospital

n=60

Variable	Categories	(f)	(%)	Obtained Score	Mean score
Service Experience at Cancer Hospital	1-5years	43	72	3080	71.6
	6-10years	17	28	1335	78.5
	Total	**60**	**100**	**4415**	

Table 7 represents that the respondents' overall breast cancer knowledge by service experience at cancer hospital. Those respondents had 6-10 years length of service experience at cancer hospital their mean of total level of knowledge score was 78.5 and 1-5 years length of service experience at cancer hospital their mean of total level of knowledge score was 71.6. So this table indicates that those who had 6-10 years length of service experience at cancer hospital had more knowledge than others.

Table 8: Distribution of the Nurses' knowledge regarding Breast Cancer by Special Training

n=60

Variable	Categories	(f)	(%)	Obtained Score	Mean score
Special Training	Yes	7	12	565	80.71
	NO	53	88	3850	72.64
	Total	**60**	**100**	**4415**	

Table 8 shows that the nurses' overall breast cancer by special training. Out of 60 respondents, who had receiving special training the mean of total knowledge score was 80.71 and mean score was 72.64 who did not received any training regarding breast cancer. So this table indicates that trained respondents were more knowledgeable regarding breast cancer than others.

DISCUSSION

A descriptive type of cross-sectional study was design to assess the level of nurses' knowledge regarding Breast Cancer. This chapter focused on knowledge based significant findings and discussed on the factors those varied the level of the nurses' knowledge regarding the Breast Cancer.

Socio-demographics characteristics of nurses'

The present study involved 60 nurses' with the mean age of 32 years and range of 24-44 years and maximum age group within 29-32 years. Among 60 respondents, 98% was female and rest of 2% was male. In the area of marital status, majority of the respondents (88%) were married and 12% were unmarried. In the field of education, the most of the respondents (83%) completed HSC level, 8% completed graduation level, 7% completed SSC level and only 2% respondent completed post-graduation level in general education. Thus in the area of professional education, the majority of the respondents 58% completed diploma in nursing, 30% B.Sc in nursing and 12% completed M.Sc. in nursing. In current study, the most of the respondents were Muslim (69%) 18% Hindu and 13% Christian. Alongside, the study showed that the maximum (62%) respondents' length of government service were (2-5) years and the 72% respondents' current place service experience were (1-5) years. Similarly, a study from Palestine published by Asian Pacific Journal (2021), found that more than half of the study participants were within the age group 35-45 years among 152 nurses. The participants' qualifications were classified as having a diploma, a bachelor's degree, and a master's degree in percentages of 42.8%, 52.6%, and 4.6%, respectively. Approximately 46.7% had experience of 15 years or less (Mansour *et al.*, 2021).

Nurses' Knowledge related to Breast Cancer

This study showed that the most of the respondent's 68% were known that the Breast Cancer starts when cells in the breast begin to grow out of control, stage of the metastasis develop 60%, more vulnerable for developing Breast Cancer 70%, more common sign of Breast Cancer in early stage 63%, which is relatively similar to a study from Gaza Strip-Palestine reported that a good knowledge score was found regarding knowledge of sign (85.3%) and risk factors (77.9%) of BC. The well-known BC risk factors are family history (98.7%), hormonal replacement therapy (92.8%), contraceptives usage (86.8%), nulliparous (86.2%) and age (81.6%). The overall response score for the risk factors BC is 77.9% (Mansour *et al.*, 2021).

In present study, most of the (57%) respondent's knew the exact time for breast self - examination, (48%) respondents' knew the appropriate position for Breast Self-Examination and (98%) respondent's knew that mammography is the most important screening test for detecting breast cancer. Near to similar studies reported that about 32.2% of respondents knew of at least one method of screening for breast cancer including 19.7% knew about breast self -examination (BSE), 12.1% and 5.9% have heard of clinical breast examination (CBE) and mammography. In terms of practice or performing early detection, only 14.7% of women who knew about BSE said they performed it at least once a month. Of those who had heard of CBE and mammography, 87.7% and 91.5% had not received a clinical breast examination or never had received a mammogram (Alam *et al.*, 2021).

The present study showed that overall knowledge on breast cancer, 38% respondents had good knowledge, 25% had very good knowledge, 15% had excellent knowledge, 15% had poor knowledge and only 7% had average knowledge. The overall mean score of respondent's knowledge was 73.58% which indicates the good level of knowledge regarding Breast Cancer.

Near to similar a study found that the nurses demonstrate good knowledge of sings and risk factors of breast cancer with score of (85.3%) and (77.9%), respectively. The majority of the participants correctly define BC & BSE (Mansour et al., 2021).

Association between Socio-Demographic Characteristics and Nurses' knowledge regarding Breast Cancer

The current study shows that the mean of total knowledge score of Master Degree in Nursing was 79.28, B.Sc in Nursing was 77.2 whereas Diploma in Nursing Science & Midwifery mean of total knowledge score was 70.57. Nurses who had Master Degree in Nursing were more knowledgeable regarding breast cancer than others. Continuing nursing education program are very important to improve knowledge level of nurses' regarding breast cancer. Other studies have reported a better awareness among nurses who had a higher qualification or studied in better institutions (Kaur*et al*., 2021).

This study shows that those who had 6-10years length of service experience at cancer hospital had more knowledge than others. Current study revealed that the nurses' who had receiving special training the mean of total knowledge score was 80.71 and mean score was 72.64 who did not received any training regarding breast cancer. Near to similar a study found that respondents who had previous training about CBE have better knowledge (mean score was 77.5) than those who have not (mean score was 69.7). Nurses who had previous training in Clinical Breast Examination (CBE) had significantly better knowledge than those who had not (Mansour *et al*., 2021).

CONCLUSION

From the above discussion it is clear that breast cancer is a major, life threatening, public health concern globally and it remains the most common cancer among women in Bangladesh. The study has highlighted to assess the level of nurses' knowledge regarding breast cancer.

The major findings of this study showed that, the 65% nurses' had knowledge in the area of concept of breast cancer, 83.3% had in the area of management of breast cancer, and 77.2% had in the area of complications of breast cancer. The study revealed that the overall level of nurses' knowledge score had 73.58. But there was a knowledge gap in area of concept due to lack of proper training on breast cancer. Breast cancer knowledge influenced by the respondents' level of professional education, length of service experience at cancer hospital and special training on breast cancer. From the study findings highlighted that only 12% respondents' had special training on breast cancer, that it is needed to arrange specialization training on breast cancer to increase the level of nurses' knowledge regarding breast cancer. So that nurses' can play a vital role to provide holistic care to the patient with breast cancer.

RECOMMENDATIONS

On the basis of the study findings the following recommendations are proposed by the investigators to increase the level of nurses' knowledge for providing quality care to the patients as well as reduce the morbidity and mortality rate of breast cancer.

- Provide specialization training on breast cancer to improve the nurses' knowledge regarding breast cancer as well as ensuring proper care to the patients.
- Local authority should give more emphasis to disseminate of knowledge and increase awareness program among nurses' regarding breast cancer.
- Arrange workshop and seminars should be conducted on breast cancer to improve update knowledge.

- Arrange for periodic breast self-examination session by the expert personnel for both in-door and out-door patients with free of cost.
- Encourage the nurses to conduct more research, and should be organized the seminar to disseminated of research finding to show the existing situation of breast cancer.
- In future a large scale research should be conducted for further study.

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