

A Study to Assess the Knowledge of Breast Cancer and Its Preventive Measures among GNM Students in Tripura, India

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ABSTRACT

BACKGROUND

Breast cancer is the most commonly diagnosed malignancy in women worldwide (22%), and in India (18.5%) it ranks second to cervical cancer. The burden of breast cancer is increasing in both developed and developing countries. India is a vast country with huge population, cultural diversity, geographical variations, diets and habits; sources of information on cancer risk factors are limited. Ageing is the main risk factor for breast cancer. Some of the associated factors related to reproductive and lifestyle includes literacy, diet, age at menarche and menopause, age at first delivery, abortion, and family history of breast cancer. Various pneumonic devices are used in teaching breast self-examination which includes "7Ps" - position, perimeter, palpation, pressure, pattern, practice, and planning, what to do if a change is found in a breast tissue. This study was carried out with the intention of assessing the level of knowledge and prevention of breast cancer and breast self-examination (BSE) in female nursing students.

METHODS

A descriptive study was carried out in the Nurses' Training Institute, Agartala, Tripura. A total of 100 students present on those days of data collection and who gave consent were included in the study.

RESULTS

94 % were in the age group of 18 - 22 (reproductive age group) years. Among the 100 study participants, only 1 % had adequate knowledge followed by 36 % having moderate knowledge and majority (63 %) were under 'inadequate level of knowledge'. Study showed that, there is a significant association between nursing student's religion and educational level with the knowledge score on breast cancer and its preventive measures with chi square = 20.46 and chi square = 31.47 respectively at $P < 0.05$ level of significance.

CONCLUSIONS

This study concluded that the knowledge level of breast cancer among nursing students was poor. Nurse educator has ample opportunity for taking active part in educating the nursing students regarding breast cancer and its prevention. Education is of utmost importance for early detection of breast cancer and reduction of mortality.

KEYWORDS

Breast Cancer, Adequate, Moderately adequate, Inadequate

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BACKGROUND

Cancer is one of the ten leading causes of death in India. It is estimated that there are nearly 2 to 2.5 million cancer cases at any given point of time in India. Over 7 to 9 lakh new cases and 3 lakh deaths occur annually in India due to cancer.¹ Cancer stage at diagnosis, which refers to extent of a cancer in the body, determines treatment options and has a strong influence on the length of survival. In general, if the cancer is found only in the part of the body where it started it is localized (sometimes referred to as stage 1). If it has spread to a different part of the body, the stage is regional or distant.² Breast cancer is the second most common cancer in women after skin cancer. Mammograms can detect breast cancer early, possibly before it has spread.³ For female breast cancer, 62.8 % are diagnosed at the local stage. The 5-year relative survival for localized female breast cancer is 98.9 %⁴ and in India (18.5 %) it ranks second to cervical cancer. The burden of breast cancer is increasing in both developed and developing countries.⁵ Awareness and health seeking practices have been shown to be poor in many developing countries, necessitating the need for proper awareness programs.⁶

Globally, breast cancer is the most frequently diagnosed cancer in women regardless of age. Many developing countries experiencing increasing rates of breast cancer.⁷ There is high mortality due to increasing age, late stage diagnosis as patient usually present at an advanced stage, due to lack of awareness and non-existent treatment programs and the risk of cancer treatment increases with age. Early detection through breast self-examination and prompt treatment offer, the greatest chance of long-term survival.⁸ Breast self-examination includes advice to the adolescent girl to stand in front of the mirror with the torso exposed to the view. Asking her to inspect any signs of dimpling, swelling, or redness on or near the breast, palpates the breast with pads of the finger to feel for lumps or soreness. Finally, advise to squeeze the nipple for any abnormal discharge. For teaching breast self-examination, the acronym "7p" is most useful and it is described as: position, perimeter, palpation, pressure, pattern, practice, and planning for correction if, a change is found in a breast tissue.⁹

The present study aimed at identifying the level of knowledge and prevention of breast cancer among female GNM students undergoing three years GNM course in Nurses' Training Institute, Agartala Government Medical College and GB Panth Hospital, Agartala West Tripura.

Hypothesis

H₁-There is a relationship between knowledge score of GNM students regarding breast cancer and its preventive measures with selected demographic variables.

H₀-There is no relationship between knowledge scores of GNM students regarding breast cancer and its preventive measures with selected demographic variables.

Variables

Dependent Variable

The knowledge of GNM students regarding breast cancer and its preventive measures.

Independent Variable

The main independent variables in this study are age, religion, educational status and type of residence.

Assumption

1. The female GNM students undergoing GNM course would be the best person to provide information regarding breast cancer and its preventive measures in their role as student nurse and female are under reproductive age group.
2. Verbal response of the female GNM students will approximate actual information regarding breast cancer and its preventive measures.

Delimitation

1. The study is to be confined to limited number of female GNM students who are admitted in Nurses' Training Institute, Agartala, Tripura.
2. The study is limited to identifying knowledge regarding breast cancer and its preventive measures.

METHODS

Research Design

Considering the objectives of the study which centred on the identification of knowledge of female GNM students regarding the breast cancer and its preventive measures, the descriptive approach was thought to be most appropriate for the present study.

The aim of descriptive research was to elicit information and obtain an accurate description of the phenomena under study. This approach seeks to answer questions of real facts relating to existing conditions. This furnishes valuable preliminary data which also provides a basis for future research.

The overall purpose of the framework is to make scientific findings meaningful and generalized. It provides a certain framework of reference for clinical practices, education and research. They also provide directions for relevant questions to practical problem.

According to Grove et al. 2013 "A conceptual model broadly explains phenomenon of interest, expresses assumption, and reflects a philosophical stance". A conceptual model is an image of a phenomenon. A theory in contrast represents a set of defined concepts that offers a systematic explanation about how two or more concepts are interrelated. Theories can be used to describe, explain, predict, or control the phenomenon that is of interest to a researcher.

Nola J. Pender (1941 – present) is a Nursing theorist developed the health promotion model in 1982. First published the health promotion model in 1982 and later improved in 1996 and 2002. Her health promotion model indicates preventative health measures and describes the critical function of nurses in helping patients prevent illness by self-care.

According to the model, health promotion and disease prevention should be the principal focus in health care. Each person has unique personal characteristics and experiences that affect subsequent actions. The set of variables for behavioural specific knowledge and affect have important motivational significance. These variables can be modified through nursing actions. Health professionals constitute a part of the interpersonal environment, which exerts influence on persons throughout their life span. So, the investigator felt that Pender's model is suitable as a conceptual framework for the present study, assess the knowledge of female GNM students regarding breast cancer and its preventive measures in Nurses' Training Institute, Agartala, West Tripura.¹⁰

The review provides a basis for future investigation justifies the need for data collection and relates the findings from one study to another to establish a comprehensive body of scientific knowledge in a professional discipline.

Data Collection Technique

On the basis of objectives of the study, it was decided to derive the information directly from the female GNM students. Since the present study aimed at obtaining objective information as far as possible, it was felt necessary to conduct the investigation with the help of a structured interview schedule.

Development of the Tool

The tool has been developed based on the related literature and relevant to the GNM standard. The item for the questionnaire was also drawn from the following sources:

- Consultation with nursing experts
- Discussion with colleagues
- Investigators personal experience.
- To ensure the content validity of the tool it was validated by 5 (five) nursing experts. The criteria for selection of experts were:
- Those who possess a post-graduate degree in nursing
- Those who have been conducted specialization in medical-surgical nursing, obstetrical and gynaecological nursing.

Experts were requested to judge the items of interview schedule for clarity, relatedness and meaningfulness. A few alterations and modifications have been made by the experts. To test the utility and feasibility of the tool, a trial study was conducted on 10 female GNM students of another nursing institution in West Tripura. The trial study was done: i) to find out clarity of questions, ii) to check the language error, iii) to check content validity and reliability of the

instrument. The trial study also helped the investigator to become familiar with the use of tool and to test the effectiveness of the plan for analysis.

Description of the Tool

The tool was designed in two sections. Section I consisted of items developed to obtain socio demographic information (age, educational level, type of family, religion and type of residence) about the female GNM students. Section II consisted of Part - A that includes items related to knowledge of breast cancer and Part - B consists of knowledge of its preventive measures. The number of questions were 20 (section II : Part – A 6 number of questions and in Part – B 14 number of questions).The type of questions were multiple choice questions and dichotomous ("Yes" / "No"). Each question carries equal score. Hence, the total score was 20 for 20 questions. The gradation was decided as 75 % and above, 50 % to 75 % and lower than 50 % which is expressed in terms of "adequate", "moderately adequate" and "inadequate" respectively on the basis of correct response by the study participants.

The present descriptive study was carried out in the student nurse hostel of Nurses' Training Institute, Agartala, Tripura. The population of the study was female GNM students.

The samples were obtained from the female GNM students admitted in the Nurses Training Institute, Agartala Government Medical College and GB Panth Hospital, Agartala West Tripura. The study subjects comprised of female GNM students in the age group 18 – 27 years and above. A total of 100 students present on those days of data collection and who gave consent were included in the study. The study period was from June 2019 to December 2019. A structured self-administered pretested questionnaire was used to collect the relevant data by face to face interview. Care was also taken to ensure privacy and confidentiality.

Plan for Data Analysis

The data obtained was analysed by both descriptive and inferential statistics. The socio demographic information related to the study participants was analysed in relation to age, educational level, type of family, religion and type of residence. The responses were summarized in frequencies and percentages. The data related to knowledge of breast cancer and its preventive measures was analysed in terms of scores obtained by the study participants. The dependent variable knowledge of GNM students on breast cancer and its preventive measures was evaluated by means of analysis of the response among GNM students in terms of "adequate" (score above 15), "moderately adequate" (score 10 to 15) and "inadequate" (score below 10). The selected independent variables were age, religion, educational qualification, type of resident and type of family. Chi-square was computed to identify the relationship between dependent and independent variables (religion, education and type of residence of the female GNM students) under study.

RESULTS

A total of 100 students were present during the time of our study. The age of the study participants ranged between 18 to 27 years and above. The data was analysed and interpreted in the following tables. Table 1 summarised the socio-demographic characteristics that included age, religion, educational level, type of residence and type of family. Table 2 represents the relationship between the levels of knowledge of female GNM students regarding breast cancer and its preventive measures with religion, educational level, and type of residence. Frequency and percentage distribution of female GNM students according to their level of knowledge score on breast cancer and its preventive measures was presented in table 3. Table 4 represents the existing knowledge of female GNM students regarding breast cancer and its preventive measures in terms of mean, median, mode and standard deviation.

Sl. No.	Characteristics	Category	Respondents	
			Frequency (f)	Percentage (%)
1.	Age	18 – 22 years	94	94 %
		23 – 27 years	3	3 %
		27 and above	3	3 %
2.	Religion	Hindu	77	77 %
		Christian	13	13 %
		Muslim	05	5 %
		Buddhist	05	5 %
3.	Educational status	HS + 2 stage	91	91 %
		BA passed	3	3 %
		Higher than	6	6 %
4.	Type of resident	Urban	42	42 %
		Rural	58	58 %
5.	Type of Family	Nuclear	75	75 %
		Joint	23	23 %
		Extended	2	2 %
6.	Previous Knowledge	Yes	45	45 %
		No	55	55 %

Table 1. Socio-Demographic Characteristics of the Students

Demographic Variables	Categories			Tabulated Chi Square Value	Degree of Freedom (df)	Calculated Chi Square Value
		Below Median (14)	Equal or above Median (14)			
Religion	Hindu	39	38	12.59	6	20.46*
	Muslim	5	0			
	Christian	7	6			
	Buddhist	4	1			
Educational status	HS+2stage	50	41	9.49	4	31.47*
	BA Passed	2	1			
	Other Than	3	3			
Type of residence	Rural	33	25	5.99	2	3.41 ^{NS}
	Urban	22	20			

Table 2. Relationship between the Levels of Knowledge of Female GNM Students with Selected Demographic Variables

*Significant at 5 % Level, p < 0.05. NS: Not significant

Level of Knowledge Regarding Breast Cancer and Its Preventive Measures	Score	Frequency (f)	Percentage (%)
Adequate	Above 15	1	1
Moderately adequate	10 to 15	36	36
Inadequate	Below 10	63	63

Table 3. Frequency and Percentage Distribution of Female GNM Students According to Their Level of Knowledge Score with Regard to Breast Cancer and Its Preventive Measures

Category	Mean Score	Median	Mode	Standard Deviation
Knowledge of GNM students	8.39	8	6	3.54

Table 4. Existing Knowledge of Female GNM Students Regarding Breast Cancer and Its Preventive Measures in Terms of Mean, Median, Mode and Standard Deviation

Table 1 - Depicts that among 100 GNM students, 94 % were between the age group of 18 to 22 years, 3 % in 23 to 27 and 3 % were in above 27 years (Fig.1). In religion of the 100 GNM students, 77 % were Hindu, 5 % Muslim, 13 % Christian and 5 % Buddhist (Fig. 2). Educational status of GNM student reveals that, 91 % were HS + 2 stage, 3 % were BA passed and other than above 6 % (Fig.3). The data presented in Table 2 showed that the significant relationship between nursing students' religion and educational level with knowledge score of GNM students on breast cancer and its preventive measures with chi square = 20.46 and chi square = 31.47.

Null Hypothesis: H0 There is no significant relationship between knowledge scores of nursing students regarding breast cancer and its preventive measures with selected demographic characteristics at 0.05 level of significance.

The chi square calculated value for female GNM student's religion and education i.e., (20.46) and (31.47) respectively is more than the chi square table value (12.59) and (9.49) at 5 % level of significance. Hence, the null hypothesis for present study was rejected and research hypothesis was accepted. Table 3 shows that among the 100 study participants, only 1 % had adequate knowledge followed by 36 % having moderately adequate and majority 63 % were under inadequate level of knowledge.

DISCUSSION

Major findings of the study among 100 female GNM students was that majority (94 %) were between the age group of 18 to 22 years. The findings were relevant to the study conducted by Suwarna Madhu kumar et al. and Keegan, T.H., DE Rouen, M.C., Press, D.J. et al. Occurrence of breast cancer in adolescent and young adult women.¹¹ Majority (77 %) were Hindu, 91 % were of HS + 2 stage educational background. 58 % of nursing students were residing in rural area and 42 % were from urban habitat followed by 75 % who belonged to nuclear family. These findings were consistent with the findings of Pakseresh S, et al.¹²

Ibanawadh SK, Alawad MA, conducted a cross sectional study between medical and non-medical person Qassim University during 2014-15 with random sampling method. Data was collected using self-administered questionnaire. Result revealed that, 95 % of the respondents were having family history of breast cancer and medical person have more knowledge than the non-medical person.¹³ Majority 63 % of study participants belonged to inadequate knowledge level regarding breast cancer and its preventive measures. The findings were consistent along with a study conducted by Suwarna Madhukumar et al. reported in their study that, the study participants had poor knowledge regarding risk factors and signs of breast cancer.

Study showed that, there was a significant relationship between female GNM student's religion and educational level with the knowledge score on breast cancer and its preventive measures with chi square = 20.46 and chi square = 31.47 respectively at $P < 0.05$ level of significance. It is relevant to the findings of study conducted by Hasanthika M Ranasinghe, et al. Getu et al. conducted a cross sectional study on assessment of breast self-examination practice and its associated factors among female undergraduate students in Addis Ababa University, Addis, Ababa, Ethiopia, 2016. The findings of the study showed that 21.4 % of the study participants had practiced BSE. Family history of breast cancer, knowledge and attitude of BSE were found to be significantly associated with BSE practiced.¹⁴

According to the study of American-Cancer-Society, ageing is the main risk factor for breast cancer. Other risk factors include previous history of breast cancer, the use of hormone replacement therapy, high cholesterol diet and obesity. Mammography is considered as the most appropriate screening test to detect early stages of breast cancer.¹⁵ Breast self-examination can be performed within 7 to 10 minutes. Health professionals preferably female health workers should conduct one on one health education at regular intervals-monthly for educating female gender regarding breast self-examination.

This will enhance encouragement as well as knowledge of female gender to live the life effectively.¹⁶ Ertem G. Kocer A, 2009 conducted descriptive survey to determine the practice and attitude of nurses and midwives toward BSE. Result showed that 35 % of the sample have knowledge perform BSE and acquired from work place.¹⁷ Nimir A Ahamed M, conducted a study on knowledge and practices of breast self-examination among student in a private higher learning institution in Malaysia during the year 2012 and 200 students were recruited using self-administered questionnaire. Found that, only 19.5 % had sufficient knowledge about BSE.¹⁸ Based on estimates of new cancer cases in 2020, 5.0 % of all new cases occurred among ages 15 to 39. 84.6 % of adolescent and young adults (AYAs) diagnosed with cancer will survive for 5 years after diagnosis. It is estimated that there will be 89,500 new cases of cancer among AYAs and 9,270 deaths due to cancer among AYAs.¹⁹

CONCLUSIONS

This study helps the nurse researcher to develop insight into breast self-examination and preventive measures of breast cancer. Research should be conducted on all warning signs of breast cancer and other risk factors. The study findings have implications in various areas such as, nursing practice, nursing administration, nursing education and nursing research.

Limitations

The study was conducted among 100 subjects who were readily available in the Nurses' Training Institute during the period of six months; and hence, a study can be conducted

on larger sample covering other nursing institutions in the State.

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.

Financial or other competing interests: None.

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