"Effectiveness of Planned Teaching Programme on Knowledge of Early Detection of Breast Cancer Among School Teachers"

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Abstract:

Back ground of the study: *Medical advances have shown that one-third of all cancers are preventable and further one third, if diagnosed sufficiently early, is potentially curable. This observation demands that cancer control should be of increasing priority in the healthcare programs of developing countries. One potentially important strategy in reducing breast cancer mortality is the use of screening to achieve earlier detection of cancer. The main methods of screening involve mammography, clinical breast examination (CBE), and breast self-examination (BSE). Despite the advent of modern screening methods, more than 90% of cases of cancers of the breast are detected by women themselves, stressing the importance of breast self examination.[11] Planned teaching program is one of the methods through which awareness can be created among women regarding early detection of breast cancer.*

Methodology: *The aim of the study was to assess the knowledge of early detection of breast cancer among school teachers. An evaluative approach with pre-experimental (one group pre-test post-test) design was used for the study. The sample consisted of 60 school teachers selected by purposive sampling technique. Pre-test was conducted by administering a structured knowledge questionnaire. After the pre-test, the PTP was administered and on the eight day post test was conducted. The collected data was analyzed by using descriptive and inferential statistics ('t' test).*

Results: *The mean post-test knowledge score (O2 =24.05) was higher than the mean pre-test knowledge score (O1=12.48). The computed 't' value (24.14) was higher than the table value (t (59) = 1.67) at 0.05 level of significance, suggesting that the PTP was effective in increasing the knowledge of female teachers on early detection of breast cancer.*

Interpretation: *The result showed that the PTP was effective in increasing the level of knowledge of teachers on early detection of breast cancer.*

Conclusion: *The findings of the study showed that the knowledge of teachers was average before the administration of the PTP. The post-test knowledge scores showed significant increase in the level of knowledge of teachers. Hence the PTP is an effective teaching method for providing information and improving the knowledge of teachers.*

Keywords: *Effectiveness; PTP; Knowledge; Early detection; Breast cancer; Schoolteachers.*

I. Introduction

The female body is one of nature's most wonderful and complex creations. It is the origin of all human life. A woman's journey in life is punctuated by many milestones; childhood, puberty, matrimony, pregnancy, childbirth, motherhood and each milestone special in its own way. The female reproductive system includes the external genital organs and the internal reproductive organs and breast is one of the external genital organs. The female breasts contain the mammary glands, which secrete milk. Although the primary function of the breasts is production of milk, the female breasts play an important part in female sexual behaviour. Stimulation of the female breasts enhances the sexual pleasure of a woman. However breast can become a source of malaise, soreness and discomfort.

Breast tumours are caused by a genetic defect in a cell which causes it to multiply uncontrollably, leading to the formation of a lump of tissue. In some cases, tumours are benign, with little risk of spreading to neighbouring organs, and some check on their growth. Benign tumours can still cause health problems, depending on their location, and they may also be viewed as cosmetic defects. Malignant tumours, on the other hand, have the potential to metastasize and they grow very rapidly and aggressively.[1] There are several different forms of benign breast tumours, including phyllodes tumours, granular cell tumours, papillomas, and fibro adenomas. All of these benign growths can cause lumps in the breast or around the milk duct. Classically, a benign breast tumour has smooth edges when it is palpated, and it can be moved around in the breast tissue. Some women also experience fibrocystic changes, lumps in their breasts which wax and wane with the menstrual cycle.[1] Breast cancer is a cancer that starts in the breast, usually in the inner lining of the milk ducts or lobules. There are different types of breast cancer, with different stages of spread, aggressiveness, and genetic makeup. Breast cancer is defined as a group of malignant diseases that commonly occur in the female breast and

infrequently in the male breast.[2] Breast cancer is one of the commonest causes of deaths in many developed counties in the middle aged women and is becoming frequent in the developing countries too.[4] Worldwide, breast cancer is the second most common type of cancer after lung cancer (10.4% of all cancer incidences) and the fifth most common cause of cancer death. The American cancer society estimated that 182,460 women in the United States were diagnosed with breast cancer in 2008 and that 40,480 women died of the disease during the year. Estimated new cases and deaths from breast cancer in the United States in 2010: New cases: 207,090 (female); 1,970 (male). Deaths: 39,840 (female); 390 (male).[17] Among all cancers diagnosed in women, more than 40% is breast cancer by the age of 40, 20% by the age of 30, and slightly more than 2% by 20 years of age. One out of eight females is exposed to the risk of developing breast cancer [3].

Breast cancer is particularly common in women from affluent class. As it involves the sexually important part of the body its treatment sometimes is physically and emotionally mutilating. It affects not only the individuals but also deeply involves the families. It is dreadful for reasons, firstly it is a cancer with relatively bad prognosis and secondly, it implies the necessity of mutilating surgery on a most important body part of the women. The announcement of the diagnosis of breast cancer is always distressing, as with breast cancer the symbol of feminity is compromised [4]. In our country, because of multiple factors, patients come quite late when the disease is already advanced. With such a situation the survival rate goes as low as 0-25%, whereas when early lesions identified and treated the survival rate improves to almost 95% in addition to good cosmetic results.[4]

Breast cancer accounts for 19-34% of all cancer cases in women in India. According to National cancer registries and Regional Cancer Centres, it is the commonest cancer among women in Delhi, Mumbai, Ahmedabad, Kolkota and Trivandrum. In all other cancer registries, it is listed as the second most cancer among women. Moreover, data from national and regional cancer centres from 1984 to 2002 also show that there is an increase in the incidence of breast cancer and found to be gradually overtaking cancer of the cervix [6, 7].

The cause of breast cancer is unknown, but research shows that certain risk factors are associated with the disease. A risk factor is something that increases the chance of getting a disease or condition. Risk factors for breast cancer include: Sex: Female, although men can also get breast cancer, increasing age, 40 and above, personal history of breast cancer, family members with breast cancer, changes in breast tissue, changes in certain genes, increased exposure to oestrogen over a lifetime through: early onset of menstruation, late onset of menopause, no childbearing or late childbearing, absence of breastfeeding, taking hormone replacement therapy for long periods of time, tobacco use, increased breast density, radiation therapy before the age of 30 years old, overuse of alcohol, obesity, diet containing more of fatty food, being on the contraceptive pill for a prolonged period.[2,8,9]

A cross-sectional study was carried out to determine the knowledge and practices of breast cancer screening (BCS) among 425 female secondary school teachers from 20 selected secondary schools in Selangor, Malaysia. A self-administered, structured questionnaire was used for data collection. This study showed moderate to low knowledge on Breast Cancer (BC) and BCS among teachers. Only 19%, 25% and 13.6% eligible women performed BSE, clinical breast examination (CBE) and mammography respectively, on a regular basis. Level of breast cancer knowledge was significantly associated with BSE ($p<0.001$). The study concluded by stating that efforts are needed to increase knowledge and remove misconceptions about breast cancer and screening practices among Malaysian women.[10]

A pre experimental one group pre-test- post-test design undertaken in CSI Kalyani Multispeciality hospital School of nursing, Mylapur, Chennai to assess the effectiveness of structured teaching programme on breast self examination for early detection of breast cancer among nursing assistant students. The samples comprised of 60 nursing assistant students selected by using simple random sampling technique. The data was collected by using structured questionnaire, Likert scale and an observation checklist to measure the knowledge, attitude and practice of breast self examination. The study revealed that 38.33% of students had inadequate knowledge and 55.33 % of them had negative attitude and 80% of them had poor practice. After the intervention 96.67% had adequate knowledge, 78.33% had moderately favourable attitude and majority of them 86.67% good practice[5].

II. Objectives

- To determine the level of knowledge on early detection of breast cancer among school teachers using structured knowledge questionnaire.
- To find the effectiveness of planned teaching programme on early detection of breast cancer among school teachers in terms of gain in knowledge score.
- To find the association between the pre-test knowledge score and selected baseline characteristics (age, marital status, number of children if married and previous source of information).

III. Research Methodology

3.1Research approach: Evaluative approach
3.2Research design: Pre-experimental, one group pre test-post test design
3.3Population: School teachers
3.4Sample: 60 primary and secondary school teachers
3.5Sampling technique: Purposive sampling
3.6Dependent variable: Knowledge of school teachers
3.7Independent variable: Planned teaching programme
3.8Analysis: Descriptive and inferential statistics
3.9Sampling criteria

Inclusion criteria
* Teachers working as fulltime employees
* Teachers willing to participate in the study.
* Teachers between the age group of 21-60 years.

Hypotheses
All hypotheses will be tested at 0.05 level of significance.
H_1: There will be significant difference between the mean pre-test and post-test knowledge scores on early detection of breast cancer among school teachers.
H_2: There will be significant association between the mean pre-test knowledge score and selected baseline characteristics (age, marital status, number of children if married and previous source of information)

Assumptions
The study assumes that:
* School teachers may have some knowledge on early of detection breast cancer.
* School teachers play an important role in communicating information on early detection of breast cancer.

IV. Results

Table4. 1: Percentage distribution of demographic characteristics

Demography characteristics	Percentage
Age	
21-30 yea1rs	40%
31-40 years	40%
41-50 years	15%
51-60 years	5%
Marital status	
Married	68.3%
Single	30%
Widows	1.7%
Living separate	0
No. of children	
One	32%
Two	49%
Three and above	2%
No children	17%
Previous source of information	
Mass media	61.7%
Family and friends	5%
No	33.3%
Health personnel	0

Table4.2: Assessment of the level of knowledge of teachers on early detection of breast cancer

Grading of knowledge level	Percentage of Scores	Frequency	Percentage
Poor (0-12)	0-40	27	45. 0
Average (13-18)	41-60	31	51.7
Good (19-24)	61-80	2	3.3
Very good (25-30)	81-100	0	0.0

The above table depicts that Assessment of the level of knowledge of teachers on early detection of breast cancer revealed that majority 31 (51.7%) of the teachers had average knowledge, and 27 (45%) of the teachers had poor knowledge, whereas 2 (3.3%) of the teachers possessed good knowledge and no one possessed very good knowledge.

Table 4.3: Description of area-wise mean, SD, mean percentage knowledge score

Sl. No.	Knowledge Area	Maximum Score	Mean	SD	Mean Percentage	Level of knowledge
1.	Anatomy of breast and meaning, site of occurrence	7	2.45	1.254	35.00	Poor
2	Risk factors, signs and symptoms	7	2.70	1.331	38.57	Poor
3	Early detection	16	7.33	1.847	45.83	Average
	Overall	30	12.48	3.000	41.61	Average

The data presented in Table 3 indicates that out of 30 maximum possible scores the total mean score was 12.48, which is 41.61% of maximum score. The highest mean percentage (45.83) was found in the area of early detection with mean ± SD of 7.33±1.847 respectively. Area-wise mean percentage knowledge score in the area of anatomy and meaning of breast cancer was 35% with mean ± SD of 2.45 ± 1.254 and in the area of risk factors and signs and symptoms was 38.57% with mean ± SD of 2.70±1.331 respectively.

Table 4.4: Area-wise effectiveness of planned teaching programme with mean, SD and mean percentage of pre-test post-test knowledge scores of teachers

Knowledge Area	Pre-test(O_1) Mean ± SD	Mean%	Post-test (O_2) Mean ± SD	Mean%	Effectiveness (O_2 - O_1) Mean ± SD	Mean%
Anatomy and Meaning	2.45 ± 1.254	35	5.38 ± 1.403	76.90	2.93 ± 1.65	41.90
Risk factors, signs and Symptoms	2.70 ± 1.331	38.57	5.60 ± 1.224	80.00	2.90 ± 1.36	41.43
Early Detection	7.33 ± 1.847	45.83	13.07±1.885	81.67	5.73 ± 2.52	35.83
Over all	12.48± 3.000	41.61	24.05±3.207	80.17	11.57 ±3.71	38.56

Comparison of area-wise mean and SD and mean percentage of the knowledge scores as presented in table 3 and figure 10, shows that in the area of anatomy and meaning the pre-test mean percentage knowledge score was 35 % with mean±SD of 2.45±1.254. The post-test mean percentage knowledge score was 76.90 % with mean±SD of 2.93±1.65 showing the maximum increase of 41.90% mean percentage knowledge score of teachers. In the area of risk factors and signs and symptoms 41.43 increase in the mean percentage knowledge score was observed with 38.57 % in the pre-test and 80% in the post-test respectively
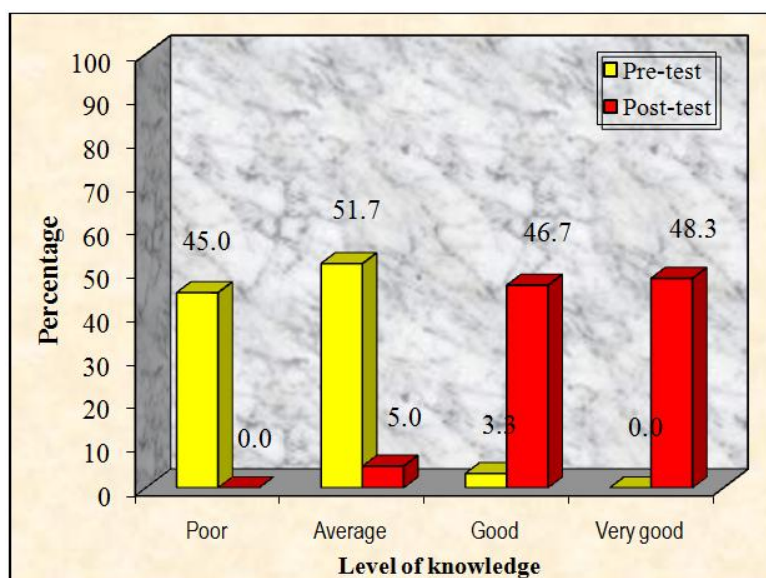

Figure 4.5: Area-wise effectiveness of planned teaching programme with mean, SD and mean percentage of pre-test post-test knowledge scores of teachers

Table4.6: Chi-square test showing the association between pre-test knowledge score and selected baseline characteristics

	Knowledge score		χ^2		
Variable	< Median	≥ Median		P value	Inference
Age in years					
21-30	10	14			
31-40	12	12	0.404	0.817	NS
41-60	5	7			
Marital status					
Single/widow	10	9	0.654	0.419	NS
Married	17	24			
Number of children if married					
None	3	4			
One	6	7	0.221	0.895	NS
Two and above	8	13			
Previous source of Information					
Got information	18	22	0.000	1.000	NS
No information	9	11			
Table value 5.99, 3.84; P <0.05				NS= No Significance	

The data presented in table 5 reveal that calculated chi square values were less than the table value for all the variables. Hence it is inferred that there was no association between the pre-test knowledge score and the selected baseline characteristics. Hence the null hypothesis was accepted for all the baseline characteristics.

Limitations of the study
✓ The study sample was confined to only school teachers.
✓ Lack of random sampling technique hindered the generalization of the result.
✓ A structured knowledge questionnaire was used for data collection, which restricts the amount of information that could be obtained from the respondents.
✓ The study did not have a control group. The investigator had no control over
✓ The events that took place between pre-test and post-test.
✓ No attempts were made to do the follow up to check the retention of knowledge of teachers.

Suggestions
• Health professional can accomplish seminars, workshop and training programmes on early detection of breast cancer.
• Planned teaching programme can be provided to teacher from pre-primary to higher secondary classes.
• Teaching programmes on early detection of breast cancer could be arranged for teachers by health care team in the schools and communities.

Recommendations: On the basis of findings of the study the following recommendations have been made:
✦ The study could be replicated on a larger sample for generalizing the findings.
✦ An experimental study can be done with control group.
✦ A similar study can be conducted among non teaching women.
✦ A descriptive study can be conducted to assess the knowledge attitude and practice of teachers on early detection of breast cancer.
✦ A comparative study can be conducted both in urban and rural female population

V.   Conclusion

The present health care delivery system emphasizes more on preventive rather than curative aspects. The study also implies that health personnel have to be properly trained on educating the school teachers regarding anatomy of breast, meaning of breast cancer, risk factors, signs and symptoms and early detection (BSE, CBE and mammogram) of breast cancer. Nurses have an understanding of the school teachers' role in educating their students and others in early detection of breast cancer. Nursing curriculum should be such that it prepares the prospective nursing students to assist the teachers in all aspects of their health care. The present nursing curriculum although includes content on breast cancer, it needs to lay further emphasis on early detection of breast cancer. The following conclusions were drawn based on the findings of the present study:
✿ BSE is cost effective and it can be practised by every woman for early detection.
✿ Pre-test findings showed that teachers have deficient knowledge on early detection of breast cancer.

* Planned Teaching Programme in the study was found to be effective in increasing knowledge of teachers and this motivated them for early detection.
* PTP with demonstration of breast self examination is an effective method of providing information. It was very much appreciated by the teachers and they suggested that this type of information can be given frequently to upgrade their knowledge to identify breast cancer and treat it at the earliest stage.
* PTP is proved to be one of the effective teaching strategies.
* There was no significant association between the knowledge and baseline characteristics. So it is needed to educate all women on early detection of breast cancer.

Acknowledgement

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