EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING PROGRAMME ON KNOWLEDGE ON PREVENTION OF SELECTED BREAST DISEASES AND PRACTICE ON BREAST SELF- EXAMINATION (BSE) AMONG WOMEN IN SELECTED VILLAGES, THIRUVALLUR DISTRICT.

THESIS

Submitted to

THE TAMIL NADU Dr.M.G.R MEDICAL UNIVERSITY, CHENNAI

for the award of the degree of
DOCTOR OF PHILOSOPHY
IN
NURSING

By

Mrs. S. BHAGAVATHY, M.Sc.(N)

JANUARY 2017

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Under the Guidance of

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Ph.D RESEARCH GUIDE

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JANUARY 2017

DECLARATION

I hereby declare that this thesis entitled **"EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING PROGRAMME ON KNOWLEDGE ON PREVENTION OF SELECTED BREAST DISEASES AND PRACTICE ON BREAST SELF-EXAMINATION (BSE) AMONG WOMEN IN SELECTED VILLAGES ,THIRUVALLUR DISTRICT"** is my own work carried out under the guideship of **Dr.S.KANCHANA, M.Sc (N), Ph.D(N), Post Doc., (Research),Principal and Ph.D(N) Research Guide, Omayal Achi College of Nursing** and is approved by the Research Committee, The Tamil Nadu Dr.M.G.R.Medical University, Guindy, Chennai.

I further declare to the best of my knowledge that the thesis does not contain any part of work which has been submitted for the award of any degree either in this University or in any other University / Deemed University, without proper citation.

Mrs.S.BHAGAVATHY
RESEARCH SCHOLAR

Place :
Date :

CERTIFICATE

This is to certify that this thesis entitled **"EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING PROGRAMME ON KNOWLEDGE ON PREVENTION OF SELECTED BREAST DISEASES AND PRACTICE ON BREAST SELF-EXAMINATION (BSE) AMONG WOMEN IN SELECTED VILLAGES, THIRUVALLUR DISTRICT** "submitted by **Mrs.S.BHAGAVATHY** , **M.Sc(N).,** for the award of the degree of Doctor of Philosophy in Nursing, is a bonafide record of research done by her during the period of study, under my supervision and guidance and that it has not formed the basis for the award of any other Degree, Diploma, Associate ship, Fellowship or other similar title. I also certify that this thesis is her original independent work. I recommend that this thesis should be placed before the examiners for their consideration for the award of Ph.D. Degree in Nursing.

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LIST OF ABBREVIATIONS

ANDI   -   Aberration of the Normal Development and Involution

ACRIN   -   American College of Radiology Imaging Network

ANOVA   -   Analysis of Variance

BBD   -   Benign Breast Disease

BSE   -   Breast Self Examination

CBE   -   Clinical Breast Examination

BMI   -   Body Mass Index

CI   -   Confidence Interval

EBSCO host   -   Elton B. Stephens Co.

F – Test   -   Fisher's Test

IEC   -   Information Education Communication

OACHC   -   Omayal Achi Community Health Centre

OBG   -   Obstetrics and Gynecology

RR   -   Risk Ratio

OPD   -   Out Patient Department

SD   -   Standard Deviation

SPSS   -   Statistical Package of Social Science

US   -   United States

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ABSTRACT

Effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE) among women in selected villages, Thiruvallur District.

Background: Benign Breast Diseases are the most common breast condition affecting women of the reproductive age group and is known to affect a large portion of the women population. Most women either lack knowledge or usually not perceive themselves as being susceptible or at risk for the disease. Empowering women with information on screening methods like BSE helps for early detection and decrease mortality.

Aim of the study: To assess the effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on Breast Self- Examination (BSE) among women.

Subjects and methods: The study was conducted using experimental research design. 400 women at risk for breast disease residing in the selected villages adopted by Omayal Achi Community Health Centre (OACHC) formed the samples. Data was collected using structured knowledge questionnaire and observational checklist.

Results: The comparison of pre and post test level of knowledge and practice within experimental group revealed a statistically very high significance at $P \leq 0.001$. The calculated student independent 't' test for knowledge and practice showed a very high statistical significance at $P \leq 0.001$. Statistically significant correlation was observed between knowledge and practice gain score. Statistically significant association of demographic variables like age in years, education, family monthly income, family type, previous knowledge and clinical variables like age at menarche, menstrual cycle, contraception, abortion and breast feeding was identified in the experimental group.

Conclusion: The study concluded that the technology enabled learning programme was an effective intervention strategy in improving the level of knowledge on prevention of selected breast diseases and practice on BSE among women which in turn helps in early identification of breast disease and thus reducing the rate of breast cancer.

Keywords: Breast diseases, breast self examination, technology enabled learning programme, knowledge, practice

INTRODUCTION

Benign Breast Disease (BBD) is a neglected entity despite the fact that it constitutes the majority of breast problems and accounts for 90% of the clinical presentation related to breast. About half of the women population suffers from benign breast diseases in their lifetime. The incidence of benign breast disease is of 1.5/1000 of total hospital admissions, 6.4/1000 of surgical admissions and 8.1 /1000 of adult female admissions. During the second decade of life the incidence begins to increase and peaks in the fourth and fifth decade.

With no reliable statistics available for the country the incidence of BBD is thought to exceed that of carcinoma breast by a factor of ten or more. Even though the prevalence of BBD seems to be high not much literature is available on the patterns and its prevalence in India. The incidence discussed in various studies were mainly based on hospital based studies and clinic-pathological findings

Three most common presenting symptoms related to female breast were breast pain, nipple discharge and palpable breast mass. Benign diseases are under reported and cancer is one of the leading causes of mortality in women. In spite of their high prevalence benign breast problems have been neglected and trivialized by both the medical professionals and women with the problems. There are many reasons for the problem to become unreported but the most important reasons are the stigma attached to see a doctor and communicate about their breast related problem, fear of having cancer and the general neglect that women show towards their health.

To concentrate on this fast growing health problem there was a need to know the overall situation concerning incidence, prevalence, risk group, diagnosis and treatment. Knowledge regarding risk factors in the development of breast disease helps in developing targeted risk reduction strategies.

In developing countries like India and especially in rural areas, the treatment of breast diseases poses a problem because of illiteracy, poverty, lack of accessibility to good healthcare and most important of all superstition. Despite the fact that a range of awareness programmes have been undertaken in some cities, in general there is a lack of uniform Information, Education and Communication (IEC) policy for cancer prevention.

Health seeking behaviour among rural population is not up to the expected level with reference to breast diseases in particular to early detection of cancer breast and risk reduction due to lack of proper knowledge and awareness about available screening programmes like self breast examination, clinical breast examination, triple assessment.

The investigator identified that the rural woman had no specific information on breast diseases and the impact of such diseases. Considering this the investigator perceived the need to assess the knowledge and practice and determine the effectiveness of technology enabled learning programme which focuses on prevention of selected breast diseases and demonstration of BSE.

Objectives of the study:

1. To assess and compare the pre and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women in experimental and control group.

2. To assess the effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on BSE among women.

3. To correlate the mean differed knowledge scores with practice scores on BSE among women in experimental and control group.

4. To associate the selected demographic variables with the mean differed knowledge scores and practice scores in experimental and control group.

5. To compute odds ratio of knowledge and practice with presence of risk factors of women.

The Null hypotheses formulated for the study are:

NH$_1$: There is no significant difference in the pre and post test level of   knowledge on prevention of selected breast diseases and practice on BSE among women between experimental and control group at p<0.05 level.

NH$_2$: There is no significant relationship between the mean differed knowledge scores on prevention of selected breast diseases with practice scores on BSE among women in experimental and control group at p<0.05 level.

NH$_3$: There is no significant association of selected demographic variables with the mean differed knowledge scores and practice scores in experimental and control group at p<0.05 level.

The research process for this study was guided by the conceptual framework based on Wiedenbachs prescriptive theory and Penders Health promotion model.

METHODOLOGY

Experimental research design was undertaken for the study. The independent variable for the study was technology enabled learning programme and the dependent variable was the knowledge on prevention of selected breast diseases and practice on breast self examination. The study was conducted at selected villages adopted by Omayal Achi Community Health Centre. The samples for the study were the women at risk aged between 20-40 years of age residing in six selected villages and the sample size was 400 (200 each for experimental and control group). Probability sampling was undertaken wherein simple random sampling using lottery method was done to select 6 villages from the 18 beneficiary villages and of which through cluster randomization the villages were grouped as experimental and control group. Women who were identified with the risk in the 6 villages, who fulfilled the inclusion criteria and present during data collection were chosen for the study.

The data collection instrument was structured knowledge questionnaire and observational checklist. The data was collected by structured interview schedule. The intervention package technology enabled learning programme which included:

• Knowledge - Video assisted group teaching on definition, causes, risk factors, signs and symptoms, diagnosis, treatment, complications and prevention of selected breast diseases.

• Practice - Video show on the steps for performing Breast Self Examination

   ➤ Demonstration on performing the steps of Breast Self Examination using breast model

   ➤ Return demonstration on the steps of Breast Self Examination using breast model

> ➤ Pictorial booklet for reinforcement on prevention of selected breast diseases and BSE.

The data collection was processed with identifying the women at risk followed by knowledge assessment on prevention of selected breast diseases and practice on breast self examination. On the same day technology enabled learning programme was implemented. Post test was carried out at 1st, 3rd and 6th month interval. The obtained data was analysed using descriptive and inferential statistics.

RESULTS AND DISCUSSION

The pre test mean knowledge score among the experimental and control group was 7.62 and 7.81 respectively with scores representing very low awareness towards prevention of selected breast diseases. In the post test conducted at 1st, 3rd and 6th month after intervention the mean scores were 17.45, 18.43, 20.09 and 8.04, 8.28, 8.87 among experimental and control group respectively.

The pre test mean practice score among the experimental and control group was 2.46 and 2.53 respectively with scores representing poor practice of BSE. In the post test conducted at 1st, 3rd and 6th month after intervention the mean scores were 10.47, 11.30, 13.17 and 2.69, 2.83, 3.16 among experimental and control group respectively.

The comparison of pre and post test level of knowledge and practice within experimental group revealed a statistically very high significant score of F=989.16 and F=786.12 at P≤0.001. The calculated student independent 't' test value for knowledge was 25.32, 31.45 , 41.26 and for practice 14.59,29.18,31.45 in the post test 1,2 and 3 respectively, showed a very high statistical significance at P≤0.001.

There was a significant positive moderate correlation observed between the women's knowledge gain score and practice gain score among the experimental group at p<0.001 level.

The overall analysis on effectiveness technology enabled learning programme revealed that there was a high statistically significant difference at P≤0.001 thus indicating that the interventional package was effective in enhancing the knowledge and thereby improving the practice of BSE among women.

The study has also revealed that the BSE education has helped the women to identify their own breast problems like mastalgia, lump and nipple discharge.

CONCLUSION

The study concluded that the technology enabled learning programme was an effective intervention strategy in improving the level of knowledge on prevention of selected breast diseases and practice on BSE among women. Hence, the study recommended the utilization of technology enabled learning programme by community health nurses, nurse researchers, nurse administrators, nurse educators and health care professionals to improve the knowledge on prevention of selected breast diseases and practice on BSE among women in turn helps in early identification of breast disease and thus reducing the rate of breast cancer.

CHAPTER – 1

INTRODUCTION

Women's breast has always been a vital part of fertility and also a symbol of womanhood. Because of the presence of the breast or "mamma" human beings are classified as mammalians. It is a modified sweat organ and has a considerable measure of significance for its lactating capacity as well as for a cosmetic reason. It is one of the organs which are affected by different endocrinological challenges and coaxed without stopping for even a minute by different hormones.[1]

1.1 BACKGROUND OF THE STUDY

This dynamic organ under the influence of various hormones is subjected to constant physiological variations (pubescence, pregnancy, lactation and menopause) throughout reproductive life and beyond giving rise to various sorts of lesion and lump.[1-3] At the point when these typical changes outperform their cutoff and raise concern for the women, they are named as Benign Breast Disease (BBD).

BBD constitute a heterogeneous group of lesions including developmental abnormalities, incendiary lesions, epithelial and stromal proliferation, and neoplasms. Benign breast lesions present with a lump in the breast, pain, and nipple discharge.

As indicated by the Aberration of the Normal Development and Involution (ANDI) classification of BBD do not have the lucidity of differentiating between typical physiological and pathological changes. Nashville grouping which was contrived by Love S et al.,[4] is classified by 2 systems. Pathologically, BBDs are classified as non-

proliferative lesions, proliferative lesions Section without atypia and atypical proliferative lesions. Clinically, it has been classified as physiologic swelling and tenderness, nodularity, breast pain, palpable lumps, nipple discharge and infections or inflammation.

Breast diseases are more prevalent among females as compared to males because of the fact that estrogen consistently stimulates breast development during their reproductive life. Benign breast diseases are more prevalent as compared to malignant and inflammatory, as observed all through the world.[5] Around 200,000 cases of breast diseases are diagnosed annually.[6]

Even though BBD is a neglected entity it constitutes the majority of breast problems. It accounts for 90% of the clinical presentation related to breast.[7] 50% of the women population suffers from benign breast diseases in their lifetime. The incidence of benign breast disease is of 1.5/1000 of total hospital admissions, 6.4/1000 of surgical admissions and 8.1 /1000 of adult female admissions.[8] During the second decade of life the incidence begins to increase and peaks in the fourth and fifth decade.

Incidences of malignant conditions of the breast are significantly higher when compared with benign conditions. Kumar et al [9] (2010) says that the BBD's are 5 to 10 times more common than breast cancers in Indian rural population ; while Aisha Memon et al (2007) referred that benign breast lesions are 10 times more common than breast cancers in west.

In light of a 25 year review in Nigeria, age wise distribution of major BBDs is potrayed in fig 1.1.1
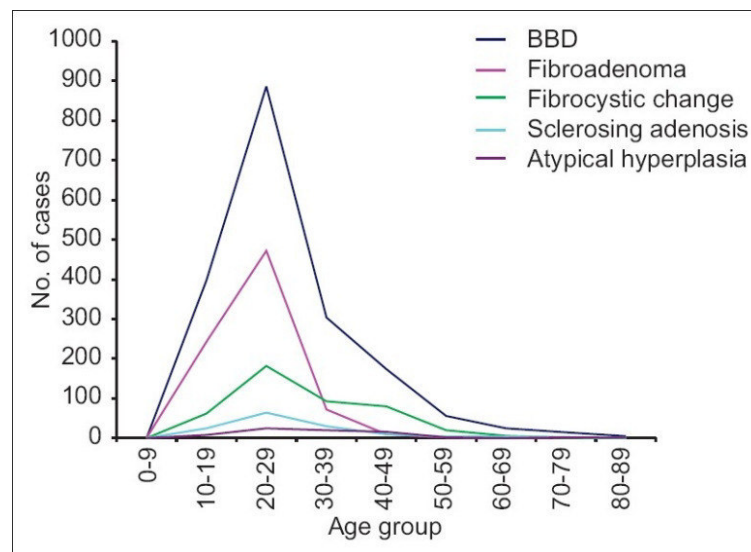
Fig 1.1.1 Age wise distribution of major BBDs

Source : A. N. Olu-Eddo, Ezekiel Enoghama Ugiagbe, Niger Med J. 2011. Oct-Dec[10]

The Peak Age incidence of benign breast disease[12] based on various studies is depicted in table 1.1.1

Table 1.1.1: The Peak Age incidence of benign breast disease based on various studies

S.No	Studies by various authors	Age incidence	Percentage (%)
1.	Shukla et al[11]	21-30	43
2.	Naveen et al[12]	21-30	50
3.	Karki et al[13]	21-40	67
4.	Dahri et al[14]	21-30	44
5.	Mourouguessine Vimal[15]	21-30	50

Source: Journal of Research in Medical and Dental Science April – June 2016[15]

According to a clinic-pathological study conducted in a referral hospital in Madhya Pradesh, India by Savita Bharat Jain, Isha Jain, Jyoti Shrivastav and Bharat Jain among patients presenting in Surgery OPD the age wise distribution of benign, malignant and inflammatory lesions is depicted in Fig:1.1.2
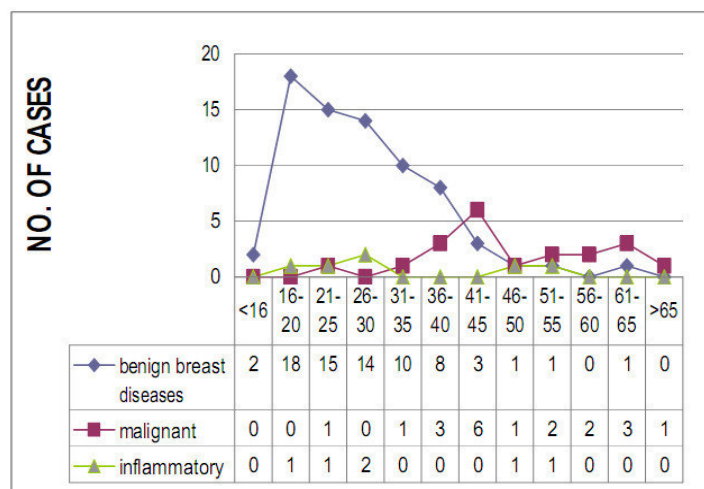
Fig 1.1.2: Age wise distribution of benign, malignant and inflammatory lesions

Source: International Journal of Current Microbiology and Applied Sciences (2015)[16]

The distribution of breast diseases is depicted in Table1.1.2 as per the survey conducted among 2500 rural and urban women in Amritsar by Bhupinder Singh Walia, Venita Kapur, Shreedevi K.N[17]

Table 1.1.2: Frequency and percentage distribution of benign and malignant breast disease among urban and rural women in Amritsar

Breast diseases	No. of cases –Urban		No. of cases-Rural	
	F	%	F	%
Benign	293	54.1	249	45.9
Malignant	57	58.8	40	41.2

Source: International Journal of Health Sciences & Research, April 2017[17]

Globally the spectrum of benign breast diseases is portrayed in table 1.1.3 as per the clinicopathological findings.

Table 1.1.3 Percentage distribution of various benign breast diseases globally

Author name	Place /Year of study	Sample size	Mastalgia %	Fibroadenoma %	Fibrocystic changes %	Simple cyst %	Nipple discharge %
Christopher et al[18]	Sub Saharan Africa 2012	195	-	57.0	21.0	-	-
Phillipo L. Chalyae t al.[19]	Tanzania 2009-2013	346	14.7	60.0	19.0	02.4	02.0
Hafiz Muhammad Aslam et.al[20]	Pakistan 2010-2012	254	24.5	73.2	14.4	-	-

With no reliable statistics available for the country the occurrence of BBD is thought to surpass that of carcinoma breast by a factor of at least ten. Despite the fact that the predominance of BBD seems to be high, minimal literature was available on the patterns and its prevalence in India. The incidence of BBD discussed were mainly based on hospital based studies and clinicopathological findings which is depicted in table1.1.4 and 1.1.5

Table 1.1.4 Percentage distribution of various benign breast diseases in India

Author name	Place /Year of study	Sample size	Mastalgia %	Fibroadenoma %	Fibrocystic changes %	Simple cyst %	Nipple discharge %
Bhupinder Singh et al[17]	Amritsar 2016	639	-	26.9	39.6	-	01.1
Kanpurwala Shaheen Hatim et al.[21]	Mumbai Aug 2014-2016	210	-	77.6	04.3	-	-
B.V.Amruthavalli[22]	Andhra Pradesh 2008-2011	175	26.0	43.2	31.8	-	17.5
OB Karki et.al[13]	Nepal 2015	160	41.0	27.0	14.0	-	08.0
Vijayalakshmi et.al[23]	Telangana Jan2013- Dec 2015	100	10.0	70.0	20.0	-	05.0
Dhirendranath et.al[24]	Assam 2015	83	07.4	27.3	21.5	-	-
Shanker et.al[25]	Karnataka Sep 2013-Mar 2015	50	37.0	48.0	18.0	01.0	05.0

Table 1.1.5 Percentage distribution of various benign breast diseases in TamilNadu

Author name	Place /Year of study	Sample size	Mastalgia %	Fibroadenoma %	Fibrocystic changes %	Simple cyst %	Nipple discharge %
Mourouguessine Vimal et al[15]	Puducherry 2016	74	11.0	55.4	27.0	-	12.0
Selvakumaran S et al.[26]	Chidambaram 2008-2010	168	06.0	55.9	20.8	01.2	-
Kumar, et al.[27]	Madurai 2015	100	36.0	35.0	25.0	08.0	14.0
B.V.Sreedevi[28]	North Chennai 2014	200	55.0	43.0	-	-	07.0
Kalyani et.al[29]	Thiruvarur Jan-Dec 2015	129	-	37.2	19.3	-	-
Kavasseri et.al[30]	Puducherry Sep2013-Aug2015	1000	12.0	36.0	10.0	-	-
Shanthakumar et.al[31]	Vellore May 2015-Jun2016	128	-	45.0	19.0	-	01.0
Christina Mary Paul et.al[32]	Thiruniravur PHC 2013	400	38.0	08.5	47.5	-	0.80

According to a study conducted by Dr. Christina Mary Priya Paul[32] in sub-center areas of Thiruninravur primary health center, and Poonamallee block of Thiruvallur district the prevalence of BBD is depicted in Fig 1.1.3.
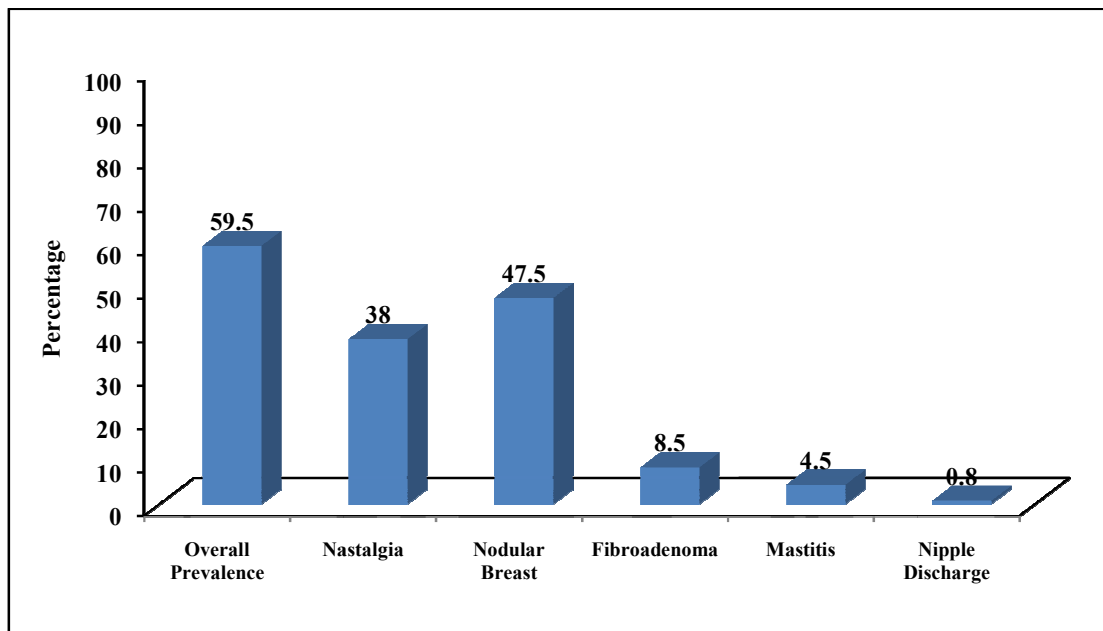
Fig1.1.3: Prevalence of BBD in rural population Thiruvallur Dist

Source: Christina Mary Priya Paul, Global Research Analysis, 2013[32]

The most commonly affected age group was 35-45 years; incidentally it is also an age group of cancer. The etiology of BBD is poorly understood though it has been extensively studied. The pattern of breast diseases and their etiology varies among different countries and ethnic groups[33]. Based on the literatures the risk factors of breast disease include reproductive and menstrual history, exogenous hormone utilize, family history of breast disease, demographic characteristics, dietary factors, smoking, alcohol, lifestyle factors, and anthropometric measurements. It creates an impression that endocrine factors are associated with BBD; however, the associations found are weak and conflicting. Obesity has been distinguished as one of the main predictable hazard factors for BBD. Conflicting outcomes have been found for most hazard factors including exogenous hormone utilize, smoking, liquor and caffeine consumption.

Pain in the breast, discharge from the nipple and palpable breast mass are the three most common presenting symptoms related to female breast, of all breast disorders, mastalgia being the first common presentation whereas palpable breast lump is second most common presentation.

Mastalgia or mastodynia is characterized by breast pain and tenderness with or without nodularity. It is been categorized as either cyclical or non-cyclical pain. Cyclic mastalgia normally affects women in the third decade and approximately 66% of women presenting with breast pain to clinics have cyclic mastalgia. Cyclical mastalgia is bilateral and the intensity of pain varies throughout the menstrual cycle but is typically more severe premenstually. Noncyclic mastalgia pain is unilateral, not temporally related to the menstrual cycle and typically occurs in women older than 40 years.

Breast pain, or mastalgia, is common and varies markedly in severity and clinical significance. It affects an estimated 10–30% of women however minority of them, less than 5%, may experience moderate or severe mastalgia that could heavily affected that on quality of life.[4]

The prevalence of mastalgia is profoundly variable ranging from 41–79% and seems to vary widely in various nations. In western societies mastalgia is a common complaint that may affect 70% of women in their lifetime with no basic pathology whereas in Asian cultures it is less common affecting as few as 5%.[34]

The revealed predominance rate in view of concentrates among grown-up populace in US was 68%[35] and 11% for repetitive mastalgia while in UK and Canada it

has been accounted for as 32% and 51.5% individually. In India the prevalence among grown-up urban populace is by all accounts comparative with a revealed predominance of 51-54%.[36]

Despite the fact that mastalgia causes a lot of morbidity like sleep disturbance the routine activities can be managed effectively by simple reassurance and health education. Benign breast diseases constituted 70-79% of breast lumps in states such as Uganda, Trinidad and Nigeria and these were mostly fibroadenoma and fibrocystic change.[16]

Fibroadenomas are benign breast lump where tissues and ducts around a milk producing lobe grow and thickens over it. The lump will be firm, smooth, rubbery lump with a definite shape, moves under skin when touched and non-tender.

Fibroadenoma may occur at any age and are common among young girls in their teens and women in their thirties. It is the common cause of a benign breast lump in premenopausal women and occurs in about 10% of all women and account for about half of the 1.6 million breast biopsies doctors perform each year in US. (**National Institute of Health**).

Globally, Jamal reported that fibroadenoma was present in 47% of the females and the most widely recognized breast lesion in their population in Jeddah, Saudi Arabia.[37] Fibroadenoma in Nepal, was the least common lesion, present in 21.6% of the female patients and is not a common breast lesion everywhere.[38] The utilization of contraceptive pills before age 20 is linked to the risk of fibroadenomas. Risk of breast

cancer is increased among women with fibroadenomas which is about 11/2 to 2 times the risk of women with no breast changes.[36]

The frequency of fibroadenomas tops at age 20-24. As indicated by the epidemiologic audit, Virginia (2009) the occurrence of fibrocystic breast changes and fibroadenoma was given in light of the age group as displayed in table 1.1.6

Table1.1.6. Incidence of Fibrocystic changes and fibroadenoma per 100,000 women across age group

S.No.	Age group	Fibrocystic changes/100,000women	Fibroadenoma /100,000women
1.	15-24	100-150	100-150
2.	25-34	50-100	150-200
3.	35-44	0-100	350-400
4.	45-49	0-50	350-400

Source: Epidemiologic review, Virginia (2009)

Fibrocystic disease is a histological term that refers clinically to a large group of syndrome presented as lump or lumpiness affecting an estimated 30-60% of women and at least 50% of women of child bearing age **(Fibrocystic breast disease an update and review 2012)**.

The exact incidence of this condition is difficult to determine since there is no clear definition or diagnostic criteria and often a diagnosis of exclusion. The peak incidence of symptoms occurs in the third and fourth decades of life. Histological evidence from autopsy studies found that fibrocystic changes occur in 54% of clinically normal breasts.[39]

According to American Cancer Society 60% of women will have lumpy breasts in their reproductive years and according to literature up to 90% of autopsied breasts show evidence of fibrocystic breast disease. The prevalence rates of nodular breast were found to be lower in the Indian rural population.[32]

The incidence of fibrocystic changes varies geographically. Authors like Adesunkanmi AR and Agbakwuru EA and Ihekwaba FN found that the incidence of the fibrocystic changes ranged from 29.5-42.2% for the benign breast lumps.[40]

After palpable mass and pain the third most common presenting symptom to the breast clinic was nipple discharge. Approximately 50%-80% of women can express one or more drop of fluid from the breast in their reproductive life. Approximately 55% of patients presenting with nipple discharge have an associated mass out of which 19% are malignant. Benign nipple discharge is usually bilateral, multiductal, and occurs with breast manipulation. Discharge when it is unilateral, from a single duct, persistent, spontaneous, clear, serous, serosanguinous or blood stained in character are more suspicious and have the increased risk of cancer.[41]

Galactorrhoea (milky discharge) can be cause by benign conditions or by certain medications including oral contraceptives serotonin reuptake inhibitors, tricyclic antidepressants, methyldopa and morphine.[42]

Breast cysts are common masses found among women in the premenopausal, perimenopausal, and postmenopausal period. According to American College of Radiology Imaging Network (ACRIN) in a prospective study of 2809 women at

increased risk of breast cancer development, cysts were identified in 37.5 percent of all women screened, with the peak incidence between 35 and 50 years of age.[42]

BBD when compared to malignancy is a neglected entity the in depth understanding of its significance and right treatment is essential to avoid long term follow-up. Triple assessment is currently considered as a gold standard approach for diagnosing breast disease which includes clinical examination, imaging and histopathological examination.[26] Screening for breast disease includes mammography, Clinical Breast Examination by a physician, and Breast Self Examination. Despite the fact that mammography has been established as an effective technique for early identification of breast pathologies, mammographic screening owing to its high cost cannot be supported as a priority of an outsized population in India.[43]

Breast Self- Examination is a useful and essential screening strategy, especially when used in combination with regular physical examination and mammography. Breast Self- Examination involves regular monthly systematic examination of the breasts and axillary area, both visually and by palpation, for any signs of abnormality. Breast self-examination benefits women to become familiar with both the appearance and feel of their breast and detect any changes in their breast as early as possible

The American cancer society established evidence based guidelines for breast cancer screening in women[44]

- Mammogram for women ages 40years and above
- Clinical breast examination by a health professional at least every 3 years for women 20-40 years

High prevalence, impact on women's quality of life, and, for some histologic types, its cancerous potential, benign breast disease deserves attention. Identification of risk factors for benign breast disease could improve our understanding about the disease and help to define preventive strategies.

1.2 SIGNIFICANCE AND NEED FOR THE STUDY

The most commonly encountered disease among women is breast diseases either benign or malignant. Benign Breast Diseases are the most common breast condition affecting women of the reproductive age group and is known to affect a large portion of the women population. Benign diseases are under reported and cancer is one of the leading causes of mortality in women. Despite their high prevalence benign breast problems have been ignored and trivialized by both the medical professionals and women with the problems. There are many explanations behind the issue to wind up noticeably unreported however the most essential reasons are the shame appended to see a specialist and convey about their breast related issue, dread of having disease and the general disregard that women appear towards their wellbeing.

To focus on this quickly developing health problem there is a need to know the overall situation concerning incidence, prevalence, risk group, diagnosis and treatment. Knowledge regarding risk factors in the development of breast disease helps in developing targeted risk reduction strategies.[16]

The awareness regarding the risk factors for breast disease from various studies among the general female population of India is depicted in Fig.1.1.4
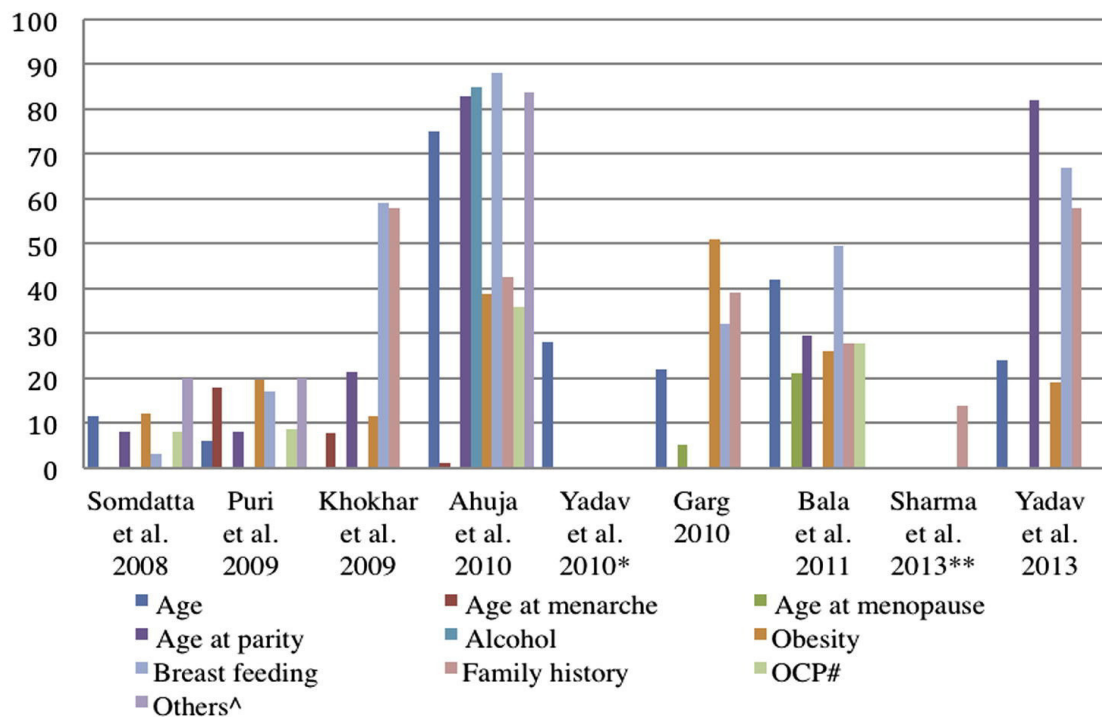
Fig.1.1.4: Awareness of breast disease risk factors from various studies in the general female population of India.

Source: European journal of cancer, Sep 2015[45]

Breast care and disease management is an exceptionally concentrated field. There are a number of benign or non-cancerous breast conditions and diseases that if correctly diagnosed are relatively easy to treat and keep under control. Breast cancer prevention organization recommends that all women ought to routinely perform BSE as part of taking care of them and thus lower the risk for breast cancer.

Breast health is a vital piece of our general wellbeing and prosperity. Breast awareness is the goal of the breast health movement. Being breast healthy means being breast aware; knowing about risk factors; understanding about the personal risk for the disease; proactive approaches to help decrease the hazard; and being educated about screening for the earlier detection of breast cancer.[46]

To promote breast health, consider doing regular breast self-exams. It should be mandatory for every woman to examine her breasts on a monthly basis. Regular Breast Self Examination helps us in identifying any variations in the breast and nipple. However, in order to safely eliminate the possibility of breast cancer, it is imperative to contact and consult physician immediately, making quick move could well spare life.

In developing countries like India and particularly in rural areas, the treatment of breast diseases poses a problem due to ignorance, destitution, absence of availability to great social insurance and most critical of all superstition.[47] Regardless of the way that a scope of mindfulness programs has been embraced in a few urban communities, in general there is a lack of uniform Information, Education and Communication (IEC) policy for cancer prevention.

To obtain single overall risk estimates information from published case-control studies on BBD was pooled utilizing standard statistical methods. This investigation demonstrated that higher financial status (pooled relative risk, RR = 1.24, 95% confidence interval, CI = 1.13-1.37), later menopause (pooled RR = 1.87, 95%, CI = 1.67-2.11) and late age at first birth (pooled RR = 1.30, 95%, CI = 1.13-1.50) were associated with an increased risk of benign breast disease.[48]

A study conducted at Medical College, Hospital, Mumbai to evaluate the occurrence of various benign breast lesions among 500 females in child bearing age group using a specially designed proforma for recording the findings of clinical examination and further data was analyzed. The investigation uncovered that 35% of them had fibroadenoma, 28.33% had fibroadenosis, 15% had breast abscess and 1.67%

had sebaceous cyst, duct papilloma, lipoma and galactocele respectively. The study inferred that fibroadenoma and fibroadenosis were the commonest lesions identified. Consequently in a nation like ours education with respect to breast self examination and appropriate follow up is exceedingly suggested so early treatment is sought.[49]

A cross sectional study was conducted to estimate the prevalence of certain clinically recognizable benign breast problems like mastalgia, nodular breast, fibroadenoma, mastitis and nipple discharge among the rural population served by Thiruninravur Primary Health Center in Thiruvallur district. 400 women in the reproductive age group after the completion of the interview schedule and anthropometric measurement were subjected to clinical breast examination . The outcomes uncovered that the overall prevalence was 59.5% with 95% CI of 54.7 – 64.3 of all the five benign breast problems. The prevalence of mastalgia, nodular breast, fibroadenoma, mastitis and nipple discharge were 38%, 47.5%, 8.5%, 4.5% and 0.8% respectively. The study concluded that simple reassurance and health education can help reduce morbidity by lessening a considerable measure of mental stress.[32]

A pre experimental study was conducted to assess the level of awareness regarding breast disease among 864 Kashmiri females using a self designed questionnaire. The results revealed that out of 864 participants, 703(81.37%) had poor breast disease awareness and 103(11.92%) had average awareness. Only 58(6.71%) had good awareness about breast disease. The study concluded that the level of awareness regarding breast disease in Kashmiri females is very low and there is a need to spread awareness about this disease among the general population.[50]

A cross-sectional descriptive study was conducted to assess the practice of breast self-examination and knowledge of breast disease among 2186 female university students in Korea using breast Cancer and Heredity Knowledge Scale. The participants displayed a medium-level score (total score: 5.33 ± 2.70, range: 0-11) on knowledge about breast disease. Predictors for breast self-examination were age (odds ratio = 1.15, P < 0.001), major (odds ratio = 1.80, P < 0.001), and knowledge of breast disease (odds ratio = 1.16, P < 0.001). The study concluded that the results are valuable in developing educational programs that can increase knowledge related to breast disease, as well as the practice of breast self-examination, to support health promotion among young women.[51]

A descriptive cross sectional study was conducted to examine the knowledge, attitude and practice of Breast Self Examination among 406 secondary school female teachers in Ilorin using a structured questionnaire designed by the researchers. The results revealed that 95.6% respondents were aware of Breast Self Examination and the major source of information was the electronic media. The attitude of teachers was positive towards health information on Breast Self Examination, with a fairly high degree of acceptability of the idea. Despite the positive attitude to Breast Self Examination, its practice was low (54.8%). The study recommended that public awareness on the importance of Breast Self Examination to be intensified using the mass media and that health workers should promote Breast Self Examination during their contacts with female patients / clients.[52]

A pre experimental study was conducted to assess the effectiveness of the health education session on knowledge and awareness of women regarding breast disease and practice of women on breast self examination, at selected urban slums, New Delhi. Data

was collected using structured interview schedule30 women from urban slum. The results revealed that the mean knowledge score before intervention was 3.60 and after intervention was 10.66. The intervention program was effective (p value = 0.00) in raising women's awareness about Breast disease, and of regular screening procedures. The findings of this study identified a wide gap in knowledge about breast disease and its risk factors among women. This indicates that in spite of massive efforts done globally and nationally, for awareness of breast disease, knowledge has not reached at the community level.[53]

Community based descriptive cross sectional analysis was conducted to determine the knowledge of women about breast disease and its risk factors at Field practice and adjoining areas of urban health training center of Department of community medicine, Government medical college and hospital, Chandigarh among 463 women more than 30 yrs of age. Awareness about breast mass/lump was known to 47.2% of respondents. The two main causes of breast disease according to respondents were late initiation of breast feeding (15.3%) or not practicing breast feeding (16.9%). 55(5.9%) were aware that late marriage being a risk factor and relation of obesity with breast disease was known to only 89(9.1%). BSE the main preventive modality was known by only (33%), of those who knew about correct methodology was only 1/4th of respondents (25.9%). The study concluded that women do have knowledge deficits about breast disease and various factors related to it.[54]

Descriptive cross sectional study on knowledge of breast cancer awareness and its risk factors was conducted among 258 rural women in Puducherry. The findings revealed that there is lack of awareness and knowledge regarding common risk factors as

well as the signs and symptoms of breast cancer. By imparting greater health education methods using suitable audio visual aids there is a need to promote the knowledge on breast cancer. Breast cancer awareness education programme should be integrated into existing health education programme within the community, hospital and government level.[55]

An experimental study was conducted to evaluate the short-term effectiveness of breast self-examination teaching program on women's knowledge about Breast Self Examination, proficiency in performing Breast Self Examination, and motivation to perform Breast Self Examination among 68 women attending the clinic in a regional cancer centre using the Toronto Breast Self Examination Instrument. There were statistically significant changes following the teaching program in the areas of knowledge about the correct technique for performing Breast Self Examination, proficiency performing Breast Self Examination, and confidence about finding changes when performing Breast Self Examination. Even though group scores did improve following the education no significant changes were observed in motivation to practice Breast Self Examination. The video presentation and the review of Breast Self Examination information pamphlets were found to be the most helpful components of the Breast Self Examination teaching program.[56]

A Narrative Review on BSE and Attitude of women towards Breast Self-Examination. Between July-October 2012 literature search had been conducted to explore the published articles regarding awareness of breast cancer and BSE in Asian settings. The reviews included studies which assessed the knowledge regarding breast cancer and attitude, practice and barriers to Breast Self Examination by using qualitative

(one-to-one interview, concept mapping) or quantitative methods (cross-sectional survey) or both. Breast cancer, breast cancer awareness, statistics of breast cancer, breast self-examination, etc were the keywords used to initiate the search. The electronic databases included were Science Direct, Sage, Life Science, Springer Link, BioMed Central, Proquest and EBSCOhost. Only seventeen full text articles were included in review since the search was limited to full paper articles published in English between 2000- 2012. The studies from Hong Kong, Australia, UK, Iran, Qatar, Nigeria, and Malaysia were included in this review. The highlights of the review were awareness of breast cancer by means of Breast Self Examination and attitude towards Breast Self Examination. To enhance screening, practice Breast Self Examination and to create awareness of breast cancer among women proactive educational measures by healthcare professionals and mass media campaigns are therefore suggested.[57]

Breast disease is silently killing women mainly those who are not aware or continue to be ignorant about the disease and its screening methods for early detection. Most women either lack knowledge or usually not perceive themselves as being susceptible or at risk for the disease. In India, often women do not present for medical care early enough due to various reasons such as illiteracy, lack of awareness and financial constraints. Education plays a vital role in modifying the risk factors, making the women to be aware about the condition and empowers women to take a proactive approach to their health. Empowering women with information on screening methods like BSE helps for early detection and decrease mortality.

The need for this study aroused out of the experience the investigator had during her clinical exposure and after undertaking the gynecological assessment in a

community. Health seeking behaviour among rural population is not up to the expected level with reference to breast diseases, in particular to early detection of breast diseases and its risk reduction, due to lack of proper knowledge and awareness about available screening programmes like self breast examination, clinical breast examination, triple assessment. Most of the studies done on BBD were hospital based and among urban women. The investigator identified that the rural woman had no specific information on breast diseases and the impact of such diseases. Hence the investigator felt the need for undertaking a study on breast diseases at rural communities.

1.3 CONCEPTUAL FRAMEWORK

1.3.1 CONCEPTUAL FRAMEWORK – GENERAL CONCEPTS (WIEDENBACH'S PRESCRIPTIVE THEORY AND PENDERS HEALTH PROMOTION MODEL)

According to Wiedenbach[58] nursing is nurturing and caring for someone in a motherly fashion that care is given in the immediate present and care can be given by a caring person.

Nursing wisdom is acquired through meaningful experience. Nursing is a helping service that is rendered with compassion, skill and understanding to those in need of care, counselling and confidence in the area of health. Sensitivity alerts the nurse to an awareness of inconsistencies in a situation that might signify a problem, it is a key factor in assisting the nurse to identify patients need for help. The nurse's beliefs and values regarding reverence for the gift of life, worth of the individual and the aspirations of each human being determine the quality of nursing care.

Wiedenbach states that the characteristics essential for the professional nurse include the following.

1. **Clarity** – of purpose

2. **Mastery of skills and knowledge**- essential for fulfilling the purpose.

3. **Ability** -to establish and sustain purposeful working relationship with professional and non-professional individuals.

4. **Interest**- in advancing knowledge in the area of interest and in creating new knowledge

5. **Dedication**- to furthering the good of mankind

The practice of nursing comprises of a wide variety of services.

a. Identification of the patient's need for help

b. Ministration of the help needed

c. Validation that the help provided was indeed helpful to the patient.

THE CENTRAL PURPOSE

The Nurse's central purpose in nursing defines the quality of health she desires to affect or sustain in her patient and specifies what she recognizes to be her special responsibilities in caring for the patient.

Wiedenbach identifies three essential components for nursing philosophy.

1. A reverence for the gift of life

2. A respect for the dignity, worth, autonomy and individuality in each human being

3. A resolution to act dynamically in relation to one's beliefs.

THE PRESCRIPTION

A prescription is a directive to the activity. It specifies both the nature of the action that will most likely lead to fulfillment of nurse's central purpose and the thinking process that determines it.

Prescription is a directive voluntary action.

1. Mutually understood and agreed upon action

2. Recipient directed action

3. Practitioner directed action

THE REALITIES

Realities consist of all factors physical, physiological, psychological, emotional and spiritual that is at play in a situation. There are five realities.

1. **Agent-** who is the practicing nurse.

2. **Recipient-** is patient who is characterized by personal attributes, problems, capacities, aspirations and most importantly the ability to cope with the concerns or problems being experienced.

3. **Goal-** is the desired outcome the nurse wishes to achieve.

4. **Means-** comprises the activities and devices through which the practitioner is enabled to attain her goal.

5. **Framework-**consists of human, environmental, professional and organizational facilities that not only make up the context within which nursing is practiced but also constitute its currently existing limits.

a. **IDENTIFICATION OF THE PATIENT'S NEEDED HELP**

The nurse observes the patient looking for an inconsistency between the expected behavior and the apparent behavior. So she attempts to clarify what the

inconsistency means. She also determines the cause of it and at last she validates with the patient that her help is needed.

b. **MINISTRATION OF THE HELP NEEDED**

In ministering to her patient the nurse may give advice or information, make referral, apply a comfort measure or carry out a therapeutic procedure.

c. **VALIDATION**

After the help has been ministered the nurse validates that the action were indeed helpful. Evidence must come from the patient that the purpose of the nursing actions has been fulfilled.
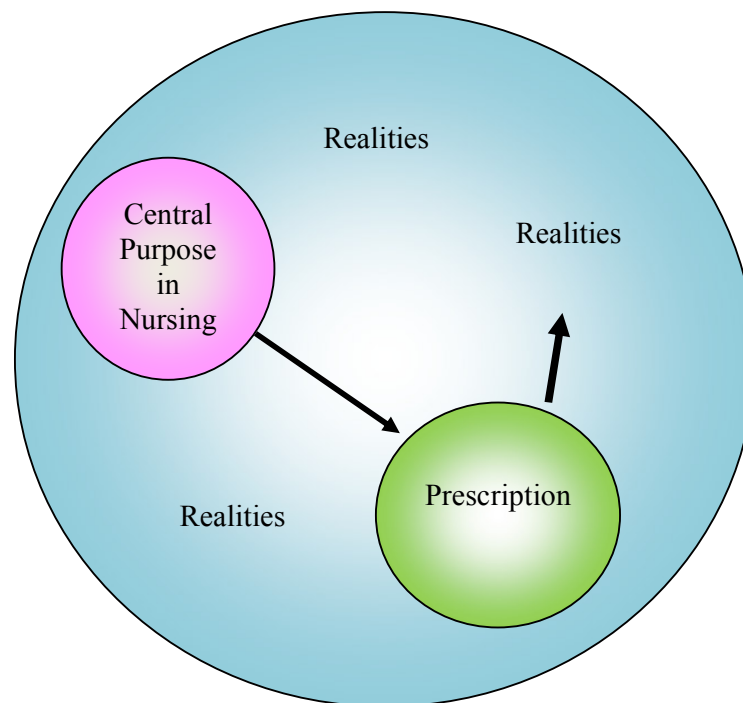
Fig.1.3.1(a): Wiedenbach's prescriptive theory

PENDER'S HEALTH PROMOTION MODEL

The health promotion model[58] guide nursing care in relation to assisting the recipients of nursing care in choosing and carrying out behaviors to increase well being.

INDIVIDUAL CHARACTERISTICS AND EXPERIENCES

The combination of individual characteristics and experiences is unique to each person and the importance of any characteristics, experience or combination of them varies with the behavior.

Prior related behaviors are best predictor of future behavior. The indirect effects of prior related behaviors are associated with perception of self efficacy, perceived benefits and barriers and positive or negative activity related effect, which indicates that the nurse can help the client more toward health. Promoting behavior by focusing on the benefits. **Personal Factors** are described as biological, psychological, psychosocial, sociocultural.

BEHAVIOR SPECIFIC COGNITIONS AND AFFECT

Behavior specific cognitions and affect are viewed as of major motivational importance and are considered the core for intervention since they are most amenable to change through nursing intervention.

Perceived benefits of actions may be intrinsic (feeling better) or extrinsic(time to socialize with practicing the target behavior). Perceived benefits may influence the behavior both directly and indirectly. Prior personal experience with positive outcome or observations of others with such outcomes, increases the motivational importance of the target behavior and relates to the expectation of positive or negative outcomes.

Perceived barriers to action

Perceived barriers may influence action directly by blocking that action or directly by decreasing any commitment to act. A key in this construct is that the barriers are perceived- they may be real as seen by others, or they may be imagined by the person. It is the perception of the barrier that influences the decision making about participating in the target behavior. Barriers may relate to degree of availability of access or resources, costs in money and time, and degree of perceived difficulty. Perceived barriers are more likely to lead to avoidance of a behavior. With low readiness and perceptions that barriers are high, change in behavior is not likely; with high readiness to act and perception of low levels of barriers, action is more likely.

Perceived self- efficacy

Perceived self efficacy or one's judgement of one's ability to carryout an identified action, relates not to a person's skills but to that person's judgement about what can be accomplished with those skills. It is the perception of whether the person can achieve the desired behavior, not the perception of the potential consequences of the behavior. The person who believes he or she can do it and do it satisfactorily will be encouraged to engage in the target behavior. Four types of help form the perception of self-efficacy: having engaged in the behavior and met one's own standards or received positive feedback from others, having observed others successfully perform the behavior and be evaluated positively, being persuaded by others than one has the ability to successfully engage in the target behavior, and physiologic states such as calmness, anxiety and the fear that influence one's judgement of competency. Health promotion model proposes that perceived self- efficacy is influenced by activity- related affect. It indicates that there is a reciprocal relationship between perceived self efficacy and

activity related affect. As affect becomes more positive, self efficacy is viewed as greater; the more positive the view of self- efficacy, the more positive the affect. Also, as self-efficacy is perceived more positively, the perceptions of barriers decrease.

Activity related affect

Activity related affect may vary from mild to quite strong and will be cognitively labeled, remembered and continued to be associated with thoughts about the particular behavior. There are three components to this affect: the act related emotional arousal, the self related self acting and the context related environment in which the behavior occurs. Both repetition of the behavior and long term continuance of the behavior are influenced by this affect. It is important to consider the affect before, during and after the action.

Interpersonal influences

Interpersonal influences are the person's thoughts or beliefs about the behaviors, attitudes and beliefs of others and may or may not accurately reflect those behaviors, attitudes or beliefs. Sources of these influences include family, peers and health care providers as primary sources and also include norms or expectation of significant others, social support from others and modeling or learning from watching others. All three of these influence a person's likelihood of engaging in health promoting behaviors. Individuals will vary in the degree to which of these influence their decision making and action. Some people are more dependent upon the expectations and encouragement of others; other people may decide to participate because they observe others enjoying engaging in a health promoting activity.

Situational influences

Situational influences include the options perceived as being available, demand characteristics and environmental features. The options may include participating or not participating in a variety of ways.

Commitment to plan of action

Commitment to plan of action initiates the behavior. The underlying cognitive processes are a commitment to carry out a specific action at a given time and place and with specified persons or alone.

Immediate competing demands and preferences

Immediate competing demands and preferences are alternative behaviors that intrude into consciousness as possible course of action immediately prior to the intended occurrence of a planned health promoting behavior. Competing demands are behaviors over which the person has little control, such as work or family responsibilities and are situation in which a failure to respond may have very negative consequences for the person or significant others.

BEHAVIORAL OUTCOME

The desired behavioral outcome is health promoting behavior. The purpose of the health promoting behavior is for the client to realize positive health outcomes such as improved functional ability or improved quality of life. The intention is that by carrying out the plan of action, health promoting behavior as identified in the plan of action will lead to better health for the client. Health promoting behavior may involve increasing

healthy behaviors already in place, replacing risky or unhealthy behaviors or both of these.

INDIVIDUAL CHARACTERISTICS AND EXPERIENCES

BEHAVIOR-SPECIFIC COGNITIONS AND AFFECT

BEHAVIORAL OUTCOME

Perceived benefits of action

Perceived barriers to action

Prior related behavior

Perceived self-efficacy

Immediate competing demands (low control) and preferences (high control)

Activity-related affect

Personal factors: biological, psychological, sociocultural

Interpersonal influences (family, peers, providers), norms, support, models

Commitment to a plan of action

Health-promoting behavior

Situational influences: options, demand characteristics, aesthetics

Fig.1.3.1(b): PENDER'S HEALTH PROMOTION MODEL

1.3.2 APPLICATION OF CONCEPTUAL FRAMEWORK

The nurse investigator in the Omayal Achi Community Health Centre context had perceived the reverence for gift of women health and so makes an attempt to identify the need for help as central purpose. According to Wiedenbach prescriptive theory the investigator integrates the Pender's Health Promotion theory to assess the individual characteristics by identifying the women at risk of breast disease and also observe and identify the prior related behaviors towards breast health along with performs the risk assessment. The investigator also collects the details of biological, psychological and socio-cultural factors along with demographic and clinical variables for both experimental and control group women.

In Pender's Health Promotion, the Interim aspect is behavior specific cognitions and affect. So the nurse investigator perceives the benefits of breast health and explore the barriers towards it, the nurse investigator also identify and perceive the self efficacy towards breast health. Nurse investigator devices the activity related to breast health that is Breast Self Examination. The nurse investigator also appraises the interpersonal influences (family, peers, providers, norms, support, and models) and situational influences (lifestyle, dietary practice, family factor, personal risk factor). The nurse investigator fulfills the immediate competing demands (create awareness among women on breast health, raise awareness on BSE, raise awareness early detection of breast disease) and plans for commitment to a plan of action by devising the Technology Enabled Learning Programme (video assisted teaching, video show on BSE, BSE demonstration, return demonstration and reinforcement with pictorial booklet).

According to Wiedenbach theory the ministering of help needed is accomplished by administration of technology enabled learning programme. The investigator intervenes the Technology Enabled Learning Programme package by educating the group of women with video assisted teaching and the investigator demonstrates the BSE using breast model. Investigator reinforces the intervention through pictorial booklet. According to the Health Promotion Model expected behavioural outcome is adequate knowledge and good practice. As the investigator ensures the refined behaviour the women are aware of breast health and disease and also be able to identify the risk and perform the periodic BSE. Thus the investigator aids towards reduction of risk for breast disease, which ultimately contributes to the promotion of women's health.
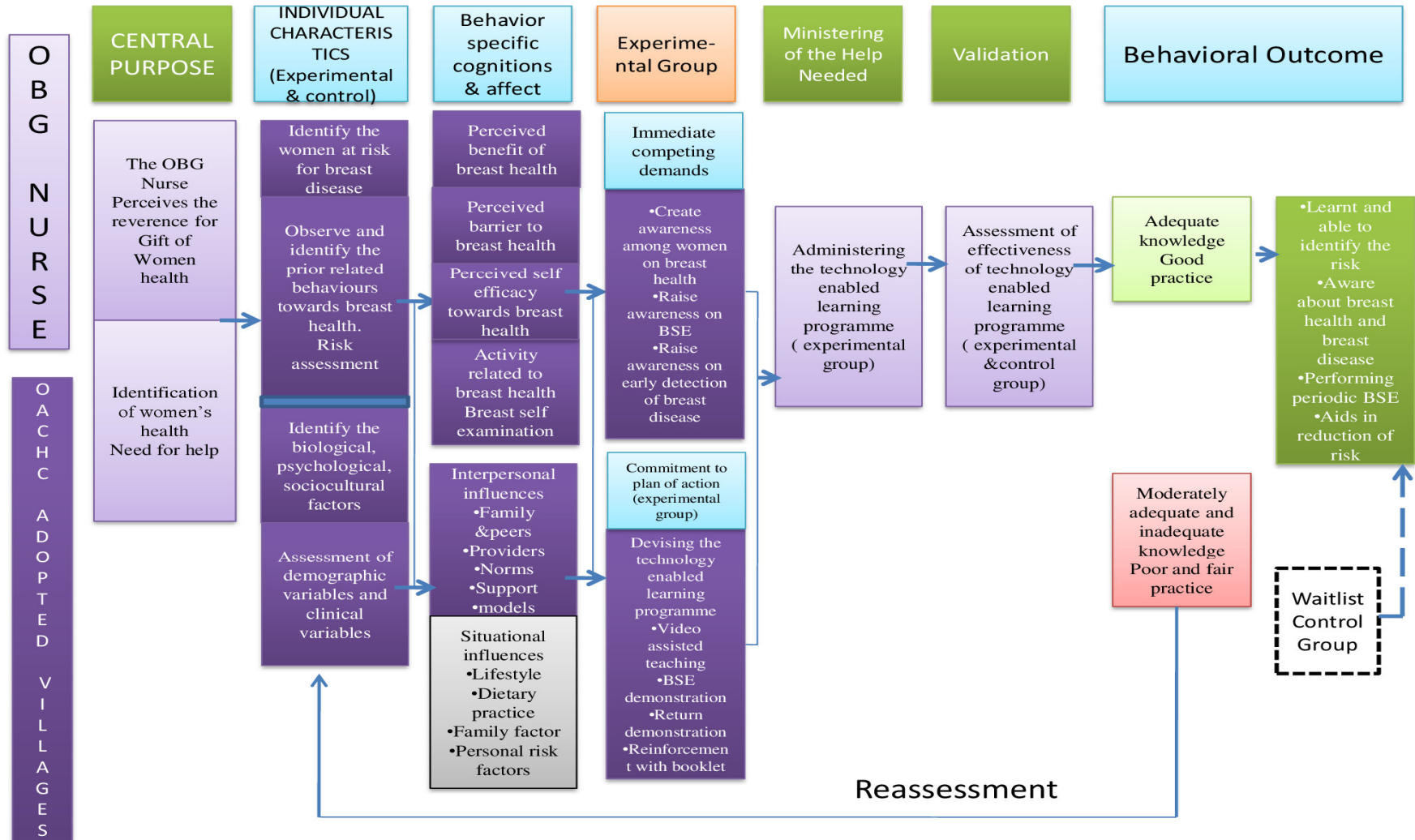
FIG.1.3.2: APPLICATION OF CONCEPTUAL FRAMEWORK BASED ON CONCEPTS RELATING TO WIEDENBACH PRESCRIPTIVE THEORY AND PENDER'S HEALTH PROMOTION MODEL

CHAPTER - 2

AIMS AND OBJECTIVES

2.1 TITLE

Effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on Breast Self- Examination (BSE) among women in selected villages, Thiruvallur district.

2.2 STATEMENT OF THE PROBLEM

An experimental study to evaluate the effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE) among women in selected villages, Thiruvallur District.

2.3 AIMS OF THE STUDY

- To identify the women at risk for breast diseases.
- To create awareness among women on selected breast diseases.
- To raise awareness among women on BSE as an early detection method for breast diseases.

2.4 OBJECTIVES OF THE STUDY

1. To assess and compare the pre and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women in experimental and control group.

2. To assess the effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on BSE among women.

3. To correlate the mean differed knowledge scores with practice scores on BSE among women in experimental and control group.

4. To associate the selected demographic variables with the mean differed knowledge scores and practice scores in experimental and control group.

5. To compute odds ratio of knowledge and practice with presence of risk factors of women.

2.5 NULL HYPOTHESES

NH_1: There is no significant difference in the pre and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women between experimental and control group at $p<0.05$ level.

NH_2: There is no significant relationship between the mean differed knowledge scores on prevention of selected breast diseases with practice scores on BSE among women in experimental and control group at $p<0.05$ level.

NH_3: There is no significant association of selected demographic variables with the mean differed knowledge scores and practice scores in experimental and control group at $p<0.05$ level.

2.6 OPERATIONAL DEFINITIONS:

2.6.1 Effectiveness

It referred to the outcome of technology enabled learning programme on knowledge regarding selected breast diseases and practice on BSE which was assessed

by structured knowledge questionnaire and observational checklist respectively with the time interval of six months.

2.6.2 Technology enabled learning programme

In this study it referred to an interventional package prepared by the investigator which has instructional events to learners by using video assisted group teaching regarding prevention of selected breast diseases and demonstration of BSE among women. The learning package included

- Knowledge- Video assisted group teaching on definition, causes, risk factors, signs and symptoms, diagnosis, treatment, complications and prevention of selected breast diseases was given using a laptop.
- Practice- Video show on the steps for performing Breast Self Examination was shown using a laptop.
- Demonstration on performing the steps of Breast Self Examination using breast model.
- Return demonstration on the steps of Breast Self Examination using breast model.
- For reinforcement, pictorial booklet was given on prevention of selected breast diseases and BSE.

Video assisted teaching was given regarding prevention of selected breast diseases for 45mins by gathering a small group of 4-5 members in a common place(Balwadi/ House) and breast self examination demonstration was done for 30mins using breast model.

2.6.3 Knowledge on prevention of selected breast diseases

In this study it is referred to the ability of the women at risk to respond to the questions on definition, causes, signs and symptoms, risk factors, diagnosis , treatment, complications and prevention of selected breast diseases like mastalgia, nipple discharge, fibrocystic changes, simple cysts, fibroadenomas and galactorrhoea which is assessed by structured knowledge questionnaire prepared by the investigator.

2.6.4 Practice on Breast Self Examination

In this study it referred to the skill acquired by the women at risk to follow the steps of Breast Self Examination in order to identify any lump, changes in size, shape, colour of nipples and discharge from the nipple which is assessed by observational checklist prepared by the investigator.

2.6.5 Women

Women at risk for breast diseases aged 20 - 40 years who are assessed using risk assessment tool prepared by the investigator and also who are residing in the selected villages.

2.7 ASSUMPTIONS

- Technology enabled learning programme may enhance the knowledge on prevention of selected breast diseases.
- Enhanced knowledge may improve the level of practice on BSE.
- Routine practice of BSE may pave way for early identification and treatment of breast diseases.

2.8 DELIMITATIONS

- The study was delimited to only 6 villages adopted by Omayal Achi Community Health Centre in Thirvallur district.

CHAPTER – 3

REVIEW OF LITERATURE

This chapter deals with the theoretical literature about breast disease and critical literature review about the existing empirical literature on various aspects involved in the present study such as the prevalence of breast diseases, knowledge on selected breast diseases, practice on BSE, effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on BSE.

Extensive search was done for literatures from online databases and websites using keywords such as breast disease, prevalence, risk factors, knowledge, intervention, health education, awareness, screening, practice and BSE. Relevant studies with good sample size were included in the review.

The review of Literature was organized and presented as follows

3.1 Overview of Breast disease

3.1.1 Breast and breast disease

3.1.2 Risk factors for breast disease

3.1.3 Diagnosis and Management for breast disease

3.1.4 Preventive strategies for breast disease

3.2 Research studies related to Prevalence of selected breast diseases

3.2.1 Prevalence of mastalgia

3.2.2 Prevalence of fibroadenoma

3.2.3 Prevalence of fibrocystic changes, nipple discharge

3.3 Research studies related to knowledge on breast disease

3.3.1 Knowledge on selected breast disease

3.3.2 Knowledge on risk factors for breast disease

3.3.3 Knowledge on warning signs and symptoms for breast disease

3.3.4 Knowledge on management/ screening methods for breast disease

3.4 Research studies related to preventive strategies for breast disease

3.5 Research studies related to knowledge and practice on BSE

3.6 Research studies related to effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on BSE.

3.7 Summary, Gaps in the existing literature and new information's added by the present study to the literature.

3.8 Conceptual framework based on Wiedenbachs helping art of clinical nursing theory and Health promotion model

3.1 OVERVIEW OF BREAST DISEASE

3.1.1 Breasts and breast disease

Breasts are the accessory organs of the female reproductive system. Breasts are positioned over the pectoral muscles of the chest wall and attached to it by fibrous strands called Coopers ligaments. They are made up of glandular tissue (specialized tissue) that produces milk and stromal (supporting) tissues which include fatty and fibrous connective tissue. Breasts are soft in consistency because of fatty tissue and the size of the breast is determined by the amount of fat. Connective tissue and ligaments provide support to the breast and give it its shape.

Breast is organized into 15 to 20 sections, called lobes; within each lobe are smaller structures, called lobules, where milk is produced. Once milk is produced it

travels through a network of tiny tubes called ducts. These ducts connect and come together into larger ducts, and exit the skin in the nipple. The dark area of skin surrounding the nipple is called the areola. The breast contains blood vessels, lymph vessels, lymph nodes and nerves gives sensation to the breast.

Changes in the glandular or stromal areas may cause symptoms of benign breast conditions. Women can recognize early signs of possible abnormalities if they are familiar with the normal anatomy and physiology (function) of their breasts.[59]

Benign Breast Diseases (BBDs) is a heterogeneous group of breast diseases which is not malignancy. The most common cause of breast problems in females is BBD and is more frequent than the malignant ones. Though majority of the breast lesions are benign and commoner than the malignant one, significant attention was not given as compared to the malignancy. Around 50% of women in their life time would have had the sign or symptom of BBD and upto 30% of the women who suffer from BBDs will require treatment. Benign breast lesions deserve attention because of their high prevalence and can be a predisposing risk factor for developing malignancy in later part of life. Hence awareness about benign breast diseases should be there amongst women.[12,59]

3.1.2 Risk factors for breast disease

 ➢ Early menarche

 ➢ Late menopause

 ➢ First child birth at or above the age of 30

 ➢ Family history of cancer

➢ Nullipara

➢ Use of oral contraceptives

➢ History of infertility

➢ Use of hormone replacement therapy

Possible causes

Lifestyle factors

➢ Increased intake of fatty diet

➢ Increased caffeine intake

➢ Smoking

➢ Alcohol consumption

➢ Use of tobacco

➢ Pattern of job(shift duty)

➢ Use of deodorants/ antiperspirants

➢ Physical inactivity

➢ Obesity

➢ Radiation exposure

Infection/injury

➢ Breast infection

➢ Inflammation and clogging of the breast ducts (mammary duct ectasia)

➢ Excessive breast stimulation

➢ Injury to the breast

Medical problems

➢ Severe hypothyroidism (underactive thyroid gland)

➢ Hormone imbalance(oestrogen, prolactin)

➢ Non-cancerous brain tumors

➢ Small growth in the breast that is usually not cancer (intraductal papilloma)

➢ Fibrocystic breast (normal lumpiness in the breast)

Use of certain medicines

➢ Hormone replacement therapy

➢ Antihypertensive

➢ Antidepressants

3.1.3 Diagnosis and Management for breast disease

Triple assessment is now considered as a gold standard approach for diagnosing breast disease which includes clinical examination, imaging and histopathological examination. Screening for breast disease includes mammography, Clinical Breast Examination (CBE) by a physician, and Breast Self Examination (BSE). Timely diagnosis and making a treatment plan within 72 hours of the first consultation, helps in giving accurate treatment.[26]

3.1.4 Preventive strategies for breast disease

❖ **Limit or eliminate caffeine intake**

❖ **Limit alcohol intake-** The more alcohol intake, greater the risk of developing breast disease.

❖ **Avoid smoking-** one of the best things we can do for our overall health was not to smoke.

❖ **Weight control-** The risk of breast disease increases being overweight or obese

- ❖ **Be physically active-** Physical activity helps to maintain a healthy weight, which, in turn, helps to prevent breast disease.

- ❖ **Breast-feeding-** Breast-feeding for a longer duration, greater the protective effect.

- ❖ **Limit dose and duration of hormone therapy**

- ❖ **Avoid exposure to radiation and environmental pollution.**

- ❖ **Dietary changes-** Eat more fruits and vegetables, increase fibre intake, fresh garlic and other members of onion family offer protection. (Broccoli, Cabbage, Cauliflower), consume low fat dairy products and eat more complex carbohydrates

3.2 RESEARCH STUDIES RELATED TO PREVALENCE OF SELECTED BREAST DISEASES

The limited available literature on BBD suggests that it is one of the common problems in developing countries.[60] The incidence of benign breast disease varies among different geographical areas and is significantly higher than the malignant conditions. Aisha Memon et al says that BBD'S are 10 times more common than breast cancers in west; while Kumar et al asserted that it is 5-10 times more common than cancer breast among Indian rural population.[9] In contradictory a survey of breast diseases among women in Amritsar done by Bhupinder Singh et al reveals that the prevalence of both benign and malignant disease was more common among urban population.[17]

When compared with malignant lesions BBD'S begins to rise in the second decade of life and peaks in the fourth or fifth decade.[11] The peak age incidence based on studies by Kumar et al and Hatim et al[21] was 11-30 years whereas studies by Dhirendra

Nath Choudhury[24], Bhupinder Singh et al[17] , Akshara Gupta[61],Olu-Eddu[10] and Onuka reported that most commonly affected age group was 21-30 years. A clinicopathological study by Bagale et al identified that majority of cases with BBD were between the age group of 21-40years.

The spectrum of breast lesions were studied among 72 cases by Shukla et al[11]over a period of three years and identified 80.7% benign lesions of various etiology whereas Malik[62] studied over a period of 20 years among 1724 cases and reported benign lesions in 72.9%. A study done on patterns and prevalence of BBD'S in western India by Hatim et al[21] noted that out of 260 specimens received in the histopathology department 80% were benign breast lesions. Rasheed et al[63] in their three years study on breast lesions among 15-70years old women in north India noted 77.7% of benign breast lesions , and Sarma et al[64] identified 70% in east India. Similar results were obtained by Mayun etal[65] and Iyer[49] et al. A study of north ,south and east Maharashtra done by Bagale et al[66] ,Pudale et al[67] and Kumar et al[9] noted 78.52%,71.15% and 70% of benign breast lesions.

Study of breast lesions in the tertiary health care centre Tamilnadu done by Kalyani[29] reported that 77.5% had benign lesions and according to Uma Krishnaswamy[68] the reported incidence in Chennai among an urban population was 12.75%.According to a study conducted by Dr. Christina Mary Priya Paul[32] in sub-center areas of Thiruninravur primary health center, and Poonamallee block of Thiruvallur district the prevalence of BBD is 59.5%.

3.2.1 Prevalence of mastalgia

The most commonly encountered breast problem among women is mastalgia and it has been extensively studied by various authors and reported. A study done among patients attending a breast clinic concluded that 79% of them had cyclical mastalgia and 48% had consulted a doctor and another survey done among western women concluded that 69% of them had mastalgia. Smith et al.,[69] had done a study among 1171 women who attended gynaecology OPD and noted that 69% of them experienced mastalgia as a pre menstrual symptom. Similar result was reported by Coskun et al.[70] in his study on the prevalence of mastalgia among women attending breast screening program and Ader et al [71] study among women aged 18–44 years .

A study among 271 cases of mastalgia done by Khan et al revealed with 50% prevalence of non cyclical mastalgia whereas in an Indian study among urban population conducted by Uma et al.,[68] revealed that out of 58 cases with mastalgia 57% experienced cyclical mastalgia and 43% experienced non-cyclical mastalgia , Christina et al.,[32] study among rural population identified 38% experienced mastalgia and Sreedevi[28] study among north Chennai population revealed that 65% present with cyclical mastalgia and non-cyclical mastalgia was present in 18%.In Salzmann et al.,[72] study it was noted that 66% of women experienced mastalgia. In another study conducted by Kavasseri et al.,[30] they identified that the prevalence of cyclical mastalgia was more common.

3.2.2 Prevalence of fibroadenoma

One of the most common breast lesions among young women was fibroadenoma. Women who consult medical center with complaints of breast lump are anxious due to the fear of malignancy. Foncroft LM et al.,[73] in their study on presentation and diagnosis

of breast disease among women who attended Wesley breast clinic found out that 87.4% had presented with lump in the breast, while Ratana Chaikanont[74] by doing clinical breast examination identified 72.3% had breast lumps out of 331 benign patients. Griffith[75], Shukla[11] and Dixon et al[76] in their studies on benign breast diseases identified fibroadenoma as the most common presenting symptom.

Studies done by various authors across India among urban and rural population reports fibroadenoma as the common benign lesion. The reported incidence was (50%)Bhargava,[77] (56.4%) Abhijit et al[7].,(34 37%) Shashikala et al.,[78] (45%) Gupta et al.[79](71.4%) Rasheed et al[63].and (39.8%) Raju GC et al.[80]

A prospective Cohort study by Khanzada et al.,[81] in Pakistan and Thobhani et al.[82] in Yemen found that fibroadenoma was the common lesion with mean age of presentation of 22.2 years.

Shanker et al[25] in their prospective observational study on benign breast diseases among rural population identified 48% of their patients had fibroadenoma. Similar results were obtained by various authors namely Umanah et al [83] (54.8%), Sangma et al.[84] (48%),Naveen et al.[12] (52%), Malik et al[6]. (49%) and Greenberg et al.[85] (50%).

This implies that the occurrence of breast lump seems to more common among urban than rural women and the commonly affected age group were the teens. The trend may be due to literacy and mass media exposure which creates awareness among the public about breast cancer screening.

3.2.3 Prevalence of fibrocystic changes, nipple discharge

A series of postmortem studies conducted yields a result that one out of two women had some form of fibrocystic changes. A study conducted in a tertiary hospital, Uganda identified 21% of women were affected with fibrocyctic disease whereas in Yemen the reported incidence according to Thobhani et al.,[82] was 27.4%. Sangma et al[84] clinicopathological study among North Eastern population of India and Shanker et al.,[25] prospective observational study among rural population results were similar that 18% of the subjects had fibrocystic changes. 39.6% was the reported incidence by Bhupinder et al[17] and Baptist SJ et al[86] reported similar finding. Fibrocystic disease was more common in Khalid et al.,[87] retrospective study whereas it is the second most common lesion in a clinico-pathological profile of BBD by Talpur[88]. Due to cultural, socioeconomic, geographical and religious variations there might be some differences in the incidence.

According to Sakorafas[89] the incidence of nipple discharge was 8% which was almost similar to the study by Leis HP et al.,[90] that the reported incidence was 9%. Shirish Chandanwale et al.[91] study on Pattern of benign breast lesions on FNAC in consecutive 100 cases, Dixon et al and Santen RJ[92] studies had similar findings(5%). Another study done by Kavasseri et al.,[30] on profile of BBD by clinical examination revealed that out of 1000 women screened 0.2% women complaints of nipple discharge. This study shows a very low incidence because the study samples were post pubertal women. Another study by Akshara Gupta et al.,[61] on clinical profile of BBD 3.75% had nipple discharge while Uma Krishnasamy[68] reported 6.8% in her study.

3.3 RESEARCH STUDIES RELATED TO KNOWLEDGE ON BREAST DISEASE

3.3.1 Knowledge on selected breast disease

Studies from Arab countries on women's knowledge and attitude about breast disease revealed that in Qatar women had adequate knowledge about the disease which is significantly related to the educational status[93] whereas studies from Riyadh[94] and Kuwait[95] shows a contrary result that they have insufficient knowledge about breast disease.

A cross sectional descriptive study on knowledge of breast disease among 2186 female university students in korea displayed a medium level score (total score: 5.33 ± 2.70) about the disease condition.[51] Another cross sectional study on knowledge about breast disease at Tehran among 410 female health workers concluded that eventhough 75% of them have heard about breast disease only 52% had overall awareness about the condition.[96] Breast Cancer awareness and screening practices among 770 Iranian women a population-based study was conducted and the results indicated a significant difference between literate and illiterate women. Providing equal opportunities is necessary in order to improve the health status among women.[97]

Linsell et al.,[98] conducted a survey in the United Kingdom to elicit the level of breast disease awareness among older women and reported that women were less aware about the disease condition. In another study from California among American Asian Indian women about breast disease knowledge, attitude and screening behaviours by Sadler et al,[99] concluded that majority of the women reported that their knowledge level

was inadequate even though education programs being developed to promote awareness among women.

Level of awareness regarding breast cancer was assessed among 864 kashmiri females, identified that majority of them had low level of awareness and suggested to create awareness among the general population about the disease.[50] A community based descriptive cross sectional studies from Chandigarh[52] and Mumbai[43] on the awareness of women above 30years about breast cancer and screening practices revealed that majority of them had heard about the disease.

Pawan Kumar et al., conducted a study to assess the knowledge, attitude and preventive practices towards breast cancer among three hundred community-dwelling women from rural and peri-urban neighborhoods in Medchal mandal of Andhra Pradesh province concluded that the study participants had poor knowledge on breast cancer.[100] Senthil kumar et al.,[101] in their cross sectional study among women aged 30years or more in villupuram district on acceptance of cervical and breast cancer screening and awareness about the disease revealed that 70% have heard about the disease. Anantha Lakshmi Satyawathi et al.[102] Study from south India on prevention of breast cancer says that their study were in the age group of 21-40 years and 96.1% were aware about the disease.

3.3.2 Knowledge on risk factors for breast disease

A survey in United Kingdom on breast disease awareness among older women reported that the understanding of women about the risk factors was poor although they demonstrate awareness about the condition.[98] Peltzer and Pengpid[103] did a study across

Asia, Africa and America among 10,242 undergraduate university students in 24 countries revealed that 35.4% were not aware of any risk factors influencing breast disease.

A Turkish study on awareness of breast and cervical cancer risk factors and screening behaviours among nurses concluded that risk factors were generally well known except early menarche and late menopause as risk factor for breast disease.[104] Another study from rural area in western Turkey among women says that when women learn about the risk and benefits of early detection of breast cancer in their young age are more likely to follow screening practices.[105]

In a study conducted in Riyadh on knowledge on risk factors for breast disease identified moderate level of knowledge among women about risk factors and protective factors which is been positively correlated with the educational status.[94] A cross sectional survey on knowledge about risk factors among female teachers in Saudi Arabia and Kuwait reported knowledge on several risk factors like nulliparity, poor breast feeding, family history and increasing age.[106] Data among Pakistini females yields the similar finding. In order to conquer the escalating burden of the disease among Saudi females' public awareness interventions were considered as necessary.[107-108]

Study among King Khalid University Students reported that hereditary factors, smoking, non lactating mothers, use of contraceptive hormones, increase fatty diet are the more common factors and infertility, early puberty, late delivery are less common factors causing breast disease.[109] Baig et al.,[110] did a population based survey on knowledge and awareness of breast cancer in Malaysia among 320 women belonging to

different age group and ethnicities in Sungai Petani a suburban area concluded that knowledge on risk factors was better among Malay women whereas Chinese women knowledge level was better towards the disease.

Sonia Puri etal.,[54] studied the awareness of risk factors among North Indian women and found out that only few respondents were aware of risk factors like late marriage, obesity and late initiation or not practicing breast feeding may cause breast disease. Vikas Fotedar et al.,[111] conducted a cross sectional study on knowledge of breast cancer risk factors among nurses in Indira Gandhi medical college, Himachel Pradesh, identified that B.sc nurses had more knowledge on risk factors compared to diploma nurses.

Hemalatha Kumarasamy[112] study on determinants of awareness and practice of BSE among rural women in Trichy showed that early menarche, late menopause as a risk factor was known by one third of women and one fourth of women agreed that long term intake of oral contraceptives, first child birth at or above the age of 30 are risk for breast disease. The findings from a cross sectional study among women in Chennai conducted by Shalini[113] revealed that women were aware of risk factors like nulliparity, family history, intake of high fatty diet, radiation exposure, obesity and prolonged horomonal therapy.

3.3.3 Knowledge on signs and symptoms for breast disease

An exploratory correlational analysis among 200 Saudi women aged 20 and more were assessed for their awareness regarding breast cancer claimed that Saudi women level of awareness was inadequate and 1/8th of the women say breast lump as a

warning sign.[108] In an Iranian study[103] on awareness of women regarding warning signs of breast cancer revealed that they were aware about signs such as painless lump, nipple retraction and bloody discharge from the nipple additionally pain in the breast, breast ulcer are also considered as warning signs by Pakistani females.[107]

Alharbi et al.,[94] studied about the breast disease awareness among Kuwaiti female school teachers revealed that lump, bloody nipple discharge, pain, sagging of breast, skin changes as the major signs for breast disease. Similar study carried out among female School teachers in Lagos reported that teachers were aware about a mass in the breast as the commonest recognized symptom.[115] A study among a Nigerian population also reported the similar finding.

The survey by Linsell et al.,[98] in eliciting the awareness of breast disease among older women in United Kingdom indicated that women have some knowledge about the symptoms. A study among household women in Northern Ethiopia done by Befikadu Legesse and Teeri Gedi[116] says that lump, pain and rashes in the nipple as warning signs.

Mamoona Noreen[117] study on awareness of early warning signs for breast disease among medical students indicated that a lump in the breast may be a noticeable indicator but mastalgia does not always indicate the presence of cancer breast and they are also aware of any potential warning signs like change in skin color of the breast, bloody discharge from the nipple, change in the color or shape of nipple, a lump in the neck or armpit and asymmetry of the breasts cause cancer breast.

Shinde SD et al.[118] did a community based cross sectional study among 235 women in a suburban area of Mumbai concluded that only few women were aware of the signs and symptoms like change in the size and shape of the breast, discharge from the nipple, painless lump in the breast.

A community based cross sectional study conducted by Hemalatha Kumarasamy[112] among 200 rural women in Trichy on awareness level revealed that women were aware of common signs like breast pain, nipple discharge and lump in the breast. Similar findings was reported in a cross sectional study conducted by Shalini[113] among rural women in Chennai.

3.3.4 Knowledge on management/ screening methods for breast disease

American cancer society guidelines recommend annual Clinical Breast Examination(CBE) and mammography for women above 40 years. Veena KS et al[119] in their study among rural women ruled out that few of them had heard about mammography. She further reports that in developing countries mammography practice was poor when compared with developed nations it is significantly higher.

Yuan Huang et al.,[120] conducted a cross sectional study among 1162 Chinese women regarding knowledge on breast cancer screening behavior identified women were interested in knowing about the screening and they found out that medical insurance funds to be increased so that screening attendance can be improved. A study among Pakistani females concluded that only few women were aware of CBE, BSE, mammography and fine needle aspiration as diagnostic measures[107] whereas a study

among women in Iran reported inadequate knowledge on effective screening methods like CBE and mammography.[114]

In a Malaysian study among 20 selected secondary school teachers Anderson et al., [121] identified moderate to low level of knowledge regarding screening practices and concluded by stating that more efforts to be taken to increase the knowledge and to remove misconceptions about screening.

A cross sectional study conducted by A. O. Akhigbe and V. O. Omuemu[122] in Pamukkale University hospital, Denizli obtained a result that awareness of mammography as a screening method was found to be low whereas awareness was high in stating that mammography as a diagnostic method. Another cross sectional study carried out in Benin City among female health workers had a relatively low level of knowledge about BSE as a screening method.[104]

A cross sectional questionnaire based survey among 1750 Arabic women was done by Bener, Alvash,Miller and Denic[93] ruled out a low level of knowledge about breast disease screening methods. Studies among Kuwaiti[95] and Saudi Arabia[106] female teachers concluded that the study samples exhibited a low level of knowledge in recognizing BSE and mammography as screening methods. A study among Qatar women identified a low level of screening rates for CBE, BSE and mammography whereas these being performed by young women with higher level of education.[93]

Arkierupaia Shadap, Maria Pais & Anusuya Prabhu[123] descriptive study from Karnataka identified a low level of knowledge on mammography as a screening method.

In a community based cross sectional study among rural women in Trichy concluded that CBE was known by 36.5% women and very few women were aware of BSE, ultrasonogram and mammography as screening methods for breast disease.[112] Another study conducted by Shalini[113] in Chennai found that women were aware of mammogram as a screening tool.

The pain response can be exacerbate by emotional stress Fox et al in their study demonstrated the benefit of relaxation therapy among women with mastalgia. Lazaraviciute G, Chaturvedi S[124] in their review article have mentioned that a survey was done among female marathon runners in 2012 London Olympics showed that 32% of them experienced mastalgia however they didn't seek medical advice and didn't use simple preventive measures. This highlights the public awareness was lacking on mastalgia management.

From the above reviews it is been concluded that the factors that may have an impact in the knowledge of women on various aspects of breast disease was women between 20-50 years, those who are married, contraceptive pill users, with a history of child death, women belonging to higher income group, literacy and occupation. The information was mainly gained through health professionals, friends/neighbors, TV/Radio, printed materials and awareness programs. The reason why women are not interested in knowing about the disease or not undergoing any screening were due to neglect, they don't have any symptoms and need being not sensed.

3.4 RESEARCH STUDIES RELATED TO PREVENTIVE STRATEGIES FOR BREAST DISEASE

Caffeine is commonly listed as a causal factor for mastalgia however its consumption has conflicting evidence. As per the study by Minton et al.,[125] those who consume excess tea and coffee has a less reporting rate of mastalgia this may be due to presence of methylxanthine which causes dilatation of blood vessels. Although there is a lack of randomized controlled trials(RCTs) evidence from Benito-Garcia et al.,[126]study says that a well- fitting bra may provide a relief for mastalgia. Similar finding was reported by Hadi MS.

Evidence from observational studies, Iowa Women's Health Study, Nurses' Health Study, National Surgical Adjuvant Breast Project P-I and STAR SERM trials indicates that weight loss either during pre- or post-menopausal period reduces the risk of post-menopausal breast cancer.[127]

Albuquerque and colleagues performed a systematic review of dietary patterns and breast cancer and concluded that diets with larger portion of vegetables, fruits, fish, soy, proper dietary fiber intake as well as Mediterranean dietary pattern are associated with a decreased risk of breast cancer.[128]

Reviewing 73 observational studies regarding association of physical activity and breast disease risk gave the evidence that the risk reduces by an average of 25% in pre and post menopausal women who performs moderate to vigorous physical activity when compared with inactive women. Self report questionnaires have been used to measure physical activity in observational studies which is the major limitation. There is a need

for randomized controlled trials which is quite challenging because of the expense for long term follow up to collect data and large sample size required.[129]

American Cancer Society has published guidelines[130] in 2012 on nutrition and physical activity measures. Lifestyle choices recommended were

i)   Achieve and maintain a healthy weight throughout life

ii) Physically active life style to be adopted

iii) Healthy diet to be consumed, emphasizing intake of plant foods

iv) Limiting consumption of alcohol

To instill protective practices in lifestyle and to create awareness among public pink chain campaign to be conducted more widely and frequently.[25] It is important that not only middle and late age women, even younger women after menarche should be aware of lifestyle prevention.

3.5 RESEARCH STUDIES RELATED TO KNOWLEDGE AND PRACTICE OF BSE

A simple and economical method to detect any abnormalities earlier is BSE. Despite the fact that there is no clear evidence about the effectiveness of doing routine BSE in detecting abnormalities earlier it still act as a preventive strategy in most of the developing countries where there is lack of resources for screening programs like mammography.

Study among nurses of Ege University, Turkey, on knowledge and BSE practice concluded that nurses were aware of breast self examination but their practice was poor and very few perform BSE on monthly basis.[131] Another Turkish study among nurses on awareness of breast and cervical cancer screening came to a conclusion that study participants identified BSE as a beneficial screening method and showed a positive attitude towards BSE.[104] Similarly a descriptive correlational study from Ordu city,Turkey[132] and Pinar Erbay[133] study from western Turkey found that although women indicated knowledge about BSE the performance was low and very small percentage claimed to be regular performers.

Chaudhury and Srivasatava[134] study among south Asian women residing in Toronto found that only few women practice BSE on monthly basis. Friedman et al.,[135] noted that majority knew the recommended steps of BSE but their practice was poor and the frequently reported reason was forgetting or being too busy. Based on literature review on BSE practice Coleman[136] reported that there is no strong evidence whether they perform the procedure correctly.

In a survey conducted by Zahra Ghodsi et al[137] about BSE practice among Iranian women they claimed that women practice BSE and few of them have started doing by 20years of age. Studies from Nigeria conducted among Qena architecture and education students and Lagos University concluded that BSE is being practiced by the students and they were aware that BSE to be done on monthly basis.[138-140] Similarly a cross sectional descriptive study among female University students of Korea revealed that students displayed a medium level of knowledge on practice of BSE.[51]

A cross sectional survey on practice of BSE among Kuwaiti school teachers identified that most of them were aware about BSE but they are not aware about steps to practice BSE and those who knew the procedure didn't practice.[95] Another cross sectional survey among women attending Primary Health centers in Quassim region, Saudi Arabia noticed that women have not heard about BSE but had a positive attitude to learn BSE.[141]

A study from North western Germany found high rates of BSE and this may be due to public awareness campaigns which have influenced the knowledge on BSE among the public.[142] Legesse[116] study among Ethiopian women yields the same result as level of education has a significant influence on knowledge and practice of breast self examination. In a study among Jordanian women's knowledge and practice of BSE women who have finished their high school were knowledgeable in practicing breast self examination[143] whereas study by Iam et al identified graduates has more knowledge about BSE in contrary study by Yucel et al states that there is no relationship between knowledge and educational level.

Cross sectional studies done among women in a tertiary care hospital, Mumbai and nurses in Indira Gandhi Medical College, Shimla concluded that even though they have knowledge about BSE they practice BSE at least once in a year. The reason why they are not practicing BSE was women were not aware about the correct method.[37,114] A study from Mangalore by Soumya Thomas[144] revealed that the mean knowledge score on BSE was 9.23.

A study among female patients attending Rural Health centre, Kanchipuram district on knowledge, attitude and practice of BSE concluded that most of them have heard about BSE and very few had the practice but not on a regular basis.[145] Similar study was conducted by Evangeline Mary[146] in a tertiary care hospital, Chennai found that two fifth of the women were aware of BSE out of which 28% practice BSE. Those who practice the frequency were irregular. It is quite alarming that women undergoing master health check up are considered to be health conscious but their BSE practice was poor. Another study among South Indian population identified that eventhough women were aware about breast disease but their knowledge and practice towards BSE was fair.[147] Similar report was yielded in Hemalatha et al.,[112] study on determinants on awareness and practice of BSE among rural women in Trichy.

Above reviews concluded that knowledge was gained mainly through mass media, friends and health care professionals. The most common reason for not performing BSE was lack of knowledge, laziness, forgetfulness and a lack of confidence in skills. Tailored health education, awareness campaigns, health promotion programs to be developed based on women's health beliefs to promote BSE practice among women.

3.6 RESEARCH STUDIES RELATED TO EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING PROGRAMME

A randomized controlled trial was conducted on effectiveness of a nurse-delivered breast health promotion program on breast cancer screening behaviors among 197 non-adherent Turkish women. The outcome of the study mainly focused on the impact of the intervention program on their proficiency and frequency of BSE which was measures at three and six month's interval. Initiation to perform BSE among women in

the intervention group had increased to 36.1% from baseline at three months and at six months interval it was 26.8%. Even though there is a decline in percentage of performers the overall outcome was successful in increasing the practice of BSE and enhanced their ability to rule out lump in the breast.[148]

Another study from Hong Kong led by Sophia to investigate the effectiveness of breast health education program among 777 women >20 years. The content was prepared based on the educational level and cultural background. The understanding of women before and after the program was found to be effective. Women were able to narrate the steps of BSE, how and when to perform. Most of the women state that they will share their gained knowledge with family, friends and ready to seek medical advice if any abnormalities detected. Since the study was conducted in a highly motivated area the researcher was unable to rule out the gap between pre and post test comparison.[149] Similarly Anakwenze et al.,[150] reported statistically significant difference in women's knowledge after an educational program in Jamaica and Lee-Lin et al.,[151] in their randomized clinical trial among Chinese American immigrants yielded similar result after a breast health intervention.

Shadia study among nursing students in King Abdulaziz University, Jeddah, Saudi Arabia noted a significant difference between the pre and post training program on knowledge and practice of BSE at $p<0.01$. 6 months follow up showed that majority students started practicing BSE on monthly basis. The result was similar in another study conducted among women in Ain Shams University, Egypt by Nadia and Magda. Also a study among Saudi nurses by Balkaya et al., found a significant improvement in Knowledge and practice of BSE and further reported that this significance may be due to

immediate effect of workshop. To say the effectiveness of the program knowledge retention need to be assessed.[152]

Hussein et al.,[153] in their study on knowledge, attitude and practice of BSE among women states that significant improvement was noted in their level of knowledge. There was a significant difference in practice between baseline and six months. 53.6% of women ever practiced BSE at baseline out of which 36.3% started practicing BSE after six months. Lewin et al.,[154] study to assess the effectiveness of awareness program by lay health workers yielded a contrary result that before intervention the knowledge (CI 95%, -0.77 to -0.15) and attitude 93.2% indexes were high which shows no significant difference after the intervention.

A survey was carried out in Nigeria to rule out the effectiveness of Health Education on Breast Cancer awareness among 158 Female Undergraduates, University of Calabar. The results revealed that for knowledge of symptoms, risk factors of breast disease the chi square value of 14.5, breast cancer awareness on practice of BSE the chi square value was 7.85 and effectiveness of health education yielded the value of 11.27 at 0.05 level of significance which indicates that health education has an impact in the knowledge of students which in turn improved the practice of BSE.[155]

Another study by Maha Mousa and Mohamed Moussa[156] on effectiveness of educational program on knowledge, attitude and practice among 134 nursing students in Damietta and Port Said cities reported that all three domains were low before the intervention, three months later assessment revealed a statistically significant difference. This study was also done among 50 female students in Port Said governate by Mona Abd Elsabour[157] on impact of health intervention program on knowledge and practice of BSE

using self administered questionnaire and observational checklist. Statistically significant difference in knowledge and practice after the intervention was identified at P <0.001. The researchers recommend that continuous health education programs on breast cancer prevention need to be conducted in order to make them aware as well as to sustain the knowledge.

Bala Hemant Gameti[158] conducted a health education intervention study among 250 women beneficiaries attending Ahmedabad urban health centers revealed that significant improvement on knowledge and practice was observed. After three months post test the investigator identified that 20% of women practiced BSE. Furthermore, Hajian et al.,[159] study in a semi-urban area of Madhya Pradesh, on impact of health education intervention program regarding BSE by women identified that there was a significant improvement in the level of knowledge regarding all aspects of breast self examination in the intervention group.

Another study conducted to assess the effectiveness of health education session among 30 urban slum women in New Delhi regarding women's awareness towards breast disease and BSE practice using structured interview schedule. Mean knowledge score before intervention was 3.60 and after intervention was10.66. The intervention program was effective (p value = 0.00) in raising women's awareness about Breast disease, and of regular screening procedures. The findings of this study depicted a wide gap in knowledge about breast disease and its risk factors among women. Most of them were not aware of breast disease and breast self examination. This indicates that in spite of massive efforts done globally and nationally, for awareness of breast disease, knowledge has not reached at the community level.[160]

Sudha Ramalingam et al.,[161] in their study about effectiveness of interventional health education among 34 female school teachers on knowledge and attitude about breast disease and breast self examination The scores obtained in the pre test was 16.75 and 22.50in the post test showing a 23% increase and showed statistically significant difference at $p<0.05$. Findings of the study revealed that health education was an effective strategy to empower women with knowledge and skill. They further planned to implement this program to all schools in their field practice and schools in rural areas.

Study conducted by Amutha[162] among 60 nursing assistant students in CSI Kalyani multispeciality hospital School of Nursing to assess the effectiveness of structured teaching program on BSE as early detection method for cancer breast using structured questionnaire, Likert scale and an observation checklist and concluded that majority of their knowledge was inadequate, had negative attitude and poor practice before the intervention whereas in the post test majority (96.67%) had gained knowledge, had favourable attitude and 86% of their practice was good.

3.6 SUMMARY, GAPS IN THE EXISTING LITERATURE AND NEW INFORMATION'S ADDED BY THE PRESENT STUDY TO THE LITERATURE.

3.6.1 Summary of Literature:

Extensive review of literature was conducted under the topic of breast diseases, its sub components and interventions for prevention of them. Studies have showed high prevalence rates of benign conditions of breast than malignant conditions. Studies also reported that among Indian rural population the benign breast diseases are 5 to 10 times more common than breast cancers. The most common reasons for not doing BSE were

lack of knowledge and not believing in its necessity. Studies also reported that laziness, forgetfulness, lack of confidence in skills as a key barrier to BSE.

3.6.2 Gaps in the Literature:

Studies were mainly concentrated on malignant conditions than benign conditions. There were limited Indian studies on prevalence of selected breast diseases among rural population. Interventional studies for the rural population were also very much limited. Nursing studies were very minimal in Indian context.

3.6.3 What will the present study add to the existing literature:

The study would add to the rural statistics of women at risk for breast diseases. The community based nursing interventions would guide the rural women to gain skill in practicing BSE in turn preventing breast diseases among the women in the community. The present study would add evidence to the Indian context and also generate evidence on community participatory model of prevention.

CHAPTER – 4

MATERIALS AND METHODS

RESEARCH METHODOLOGY

The present study was conducted to evaluate the effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE) among women in selected villages, Thiruvallur District.

This chapter of the study includes selection of the research design, variables, setting of the study, population, sample, sampling technique, sample size, development of tool, content validity, reliability, ethical considerations, data collection procedure and plan for statistical analysis.

4.1 RESEARCH APPROACH

The research approach of this study was Quantitative experimental approach. In this study the investigator evaluates the effectiveness of technology enabled learning programme on Knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE).

4.2 RESEARCH DESIGN

An experimental design was adopted in this study. The effectiveness of technology enabled learning programme can be proved only if there is a comparison between groups. Hence the investigator adopted experimental design which is depicted below.

Schematic framework of the study design

Randomization at village level	Risk assessment for selected breast diseases	Group	Pretest O_1	Intervention	Posttest (After1 month) O_2	Posttest (After 3 months) O_3	Posttest (After 6 months) O_4
		Experimental	Assessment of Knowledge and Practice	Technology Enabled Learning Program	Assessment of Knowledge and Practice		
		Control		Routine lifestyle			

4.3. VARIABLES

4.3.1. Independent Variable

Technology enabled learning programme comprising of Video assisted teaching on definition, causes, risk factors, signs and symptoms, diagnosis, treatment, complications, prevention of selected breast diseases and steps for performing Breast Self Examination and demonstration on performing the steps of Breast Self Examination using breast model

4.3.2. Dependent Variables

Referred to Knowledge on prevention of selected breast diseases and Practice on BSE.

4.3.3. Extraneous Variables

Extraneous variables that were identified through literature and the researchers experience were age, educational status, occupation, type of family, family monthly income, religion, marital status, clinical variables like dietary, lifestyle, medical, reproductive, familial and personal risk factors, BMI.

4.4 SETTING OF THE STUDY

Omayal Achi Community Health Centre, Arakambakkam is an NGO of MR Omayal Achi MR Arunachalam trust. It was established in the year 1998 and provides basic health care services to the adopted villages. The study was conducted in six selected villages from among the 18 villages adopted for intensive health care services by Omayal Achi Community Health Centre (OACHC).

The villages Guruvoyal, Lakshminathapuram, Thamaraipakkam were the experimental group and Kannadapalayam, Morai, vellanoor were the control group. These villages are located at about 5 kms radius in geographically opposite directions from the Omayal Achi Community Health Centre.

4.5. POPULATION

Population is the entire aggregation of all individuals with specified characteristics.[164] Population comprised of target and accessible population.

4.5.1. Target population

Comprised of all women at risk aged between 20-40 years of age residing in villages and the investigator had chosen this for the purpose of generalization.

4.5.2. Accessible population

It refers to the aggregate of women with whom the specified criteria's are conformed and accessible to the investigator. Thus the accessible population for this study were 400 women who were at risk aged between 20 to 40 yrs and residing in the six selected villages.

4.6. SAMPLE AND SAMPLE SIZE

A sample is the basic element of the population about whom the information is collected to represent the concept of interest.[164] The samples of the study consisted of women at risk aged between 20-40 years of age residing in six selected villages adopted by OACHC and who fulfilled the sample selection criteria.

4.6.1 SAMPLE SIZE CALCULATION

The sample size was calculated based on the pilot study findings of knowledge and practice scores. The effect size derived from the pilot study was 0.35. The calculated sample size using the effect size of 0.35 at power 0.90 and 0.05 level of significance was estimated to be 173 in each group. Calculating the attrition of 15% the final sample size was fixed to 200 in each group. The final sample size consisted of a total of 400 women with 200 each in the experimental and control group. There was no attrition as all the women were permanent residents of the villages and with regular follow up by the investigator.

Formula for sample size calculation (Comparing two group means)

$$n = (Z_{\alpha/2} + Z_{\beta})^2 \times 2x \ \sigma^2/d^2$$

where $Z_{\alpha/2}$ is the critical value of the normal distribution at $\alpha/2$, Z_{β} is the critical value of normal distribution at β, σ^2 is the population variance and d is the difference we would like to detect.

Table 4.6.1: Description of sample size

Name of the village	Total no. of women (20-40yrs)	No. of women screened (available during data collection)	No. of women at risk	Sample size
Guruvoyal	200	183	80	80
Lakshminathapuram	25	20	20	20
Thamaraipakkam	183	162	100	100
Kannadapalayam	124	119	65	65
Morai	198	184	68	68
Vellanoor	115	91	67	67
Total	845	759	400	400

4.7. SAMPLING TECHNIQUE:

Probability sampling was undertaken wherein simple random sampling using lottery method was done to select 6 villages from the 18 intensive service villages and of which through cluster randomization the villages were grouped as experimental and control group.

Women who were identified with the risk in the 6 villages, who fulfilled the inclusion criteria and present during data collection were chosen for the study.

4.8. SAMPLE SELECTION CRITERIA:

4.8.1 Inclusion criteria: Women

- who are willing to participate in the study.

- who can understand Tamil.

- who attained menarche.

- residing in selected villages.

4.8.2 Exclusion criteria: Women

- who have been diagnosed with breast diseases and on treatment.

- Who are mentally challenged

- Who have limitations to use their upper limbs for doing BSE

4.9. DEVELOPMENT OF THE TOOL

The data collection instrument was prepared by the investigator after doing an intensive review of literature and with expert's guidance. The tool used for the present study consisted of the following:

4.9.1. Data Collection Tool

Part A: Risk assessment

Part B: Demographic and clinical variables

Part C: Assessment of knowledge using structured interview schedule.

Part D: Observational checklist to assess the skill

Data collection tool consists of

Part A: Risk assessment

Assessing the risk of women aged between 20-40 years for breast disease using breast disease risk assessment tool prepared by the investigator. The tool consisted of 13 items. Women presenting with anyone of the risk factor are considered to be at risk.

Part B: Demographic and clinical variables

Age, educational status, occupation, type of family, family monthly income, religion, marital status, clinical variables like dietary, lifestyle, medical, reproductive, familial and personal risk factors, BMI.

Part C: Assessment of knowledge using structured knowledge questionnaire

The interview schedule consisted of 25 questions. This questionnaire comprised of questions about

Structured knowledge questionnaire

S.no.	Dimensions	No. Of questions
1.	General information	3
2.	Possible causes / Risk factors	2
3.	Selected breast diseases	6
4.	Investigations	2
5.	Management, Home care management	4
6.	Preventive measures	8
	Total	**25**

Scoring key

Each item was an objective type and closed ended with a single correct answer. Every correct answer was given a score of "1" mark and wrong answer was given "0" mark. The total score of the tool was 25. The raw score was converted to percentage to interpret the level of knowledge.

Interpretation of Level of knowledge

Percentage	Level of knowledge
>75%	Adequate
75%-50%	Moderately adequate
<50%	Inadequate

Part D: Observational checklist to assess the skill in performing Breast Self Examination

The checklist consisted of the steps to be followed while performing Breast Self Examination. It consisted of 16 items and for "Yes" score of "1" was given for "No" score of "0" was given. The raw score was converted to percentage to interpret the level of practice.

Interpretation of Level of Practice

Percentage	Level of Practice
>75%	Good practice
75%-50%	Fair practice
<50%	Poor practice

4.9.2. SECTION II- INTERVENTION TOOL (Technology Enabled Learning Programme)

The technology enabled learning programme which included:

• Knowledge - Video assisted group teaching on definition, causes, risk factors, signs and symptoms, diagnosis, treatment, complications and prevention of selected breast diseases using laptop.

• Practice - Video show on the steps for performing Breast Self Examination using laptop.

- Demonstration on performing the steps of Breast Self Examination using breast model

- Return demonstration on the steps of Breast Self Examination using breast model

- Pictorial booklet for reinforcement on prevention of selected breast diseases and BSE.

After the assessment of pretest level of knowledge and practice in experimental group the investigator created awareness among women regarding prevention of selected breast diseases and steps of performing BSE using the intervention package ie technology enabled learning programme on the same day. Video assisted teaching was given regarding prevention of selected breast diseases for 45mins by gathering a small group of 4-5 members in a common place (Balwadi/ House) and breast self examination demonstration was done for 30 mins using breast model.

4.10. CONTENT VALIDITY

Content validity was obtained from 3 medical experts (Community medicine, Gynaecologist and Oncologist) and 7 nursing experts (Community Health Nursing, and Obstetrics & Gynaecology Nursing).

The expert suggestions were incorporated in designing the final tool for the study in consultation with Guide, Advisory committee members and Statistician for its appropriateness.

4.11. RELIABILITY OF THE TOOL

Reliability is the degree of consistency with which an instrument measures the target attribute which it is designed to measure. It is the major criterion for assessing the quality and adequacy of an instrument[153].

To test the reliability the tool was administered to 50 samples from selected villages adopted by OACHC. The reliability of the data collection tools was assessed using test-retest and inter-rater method and the correlation coefficient r–value obtained was 0.88 for the structured knowledge questionnaire and 0.86 for the observational checklist. These correlation coefficient values were high and hence these tools were reliable enough for assessing the effectiveness of technology enabled learning programme on Knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE) among women in selected villages, Thiruvallur District.

4.12. ETHICAL CONSIDERATIONS

The investigator considered and followed the ethical principles throughout the investigation. The investigator adhered to the following actions in order to protect the ethical rights of the study subjects.

a. **Human rights**

1. Ethical committee approval was obtained from International Centre for Collaborative Research which is the official ethics review board of Omayal Achi College of Nursing.

2. Written consent was obtained from the Head of the institution, and the in-charge of the Omayal Achi Community Health Centre (OACHC), and the village leaders.

3. Content validity was obtained from various experts in the field of Obstetrics and Gynaecology, Oncology and Community Health Nursing.

b. Beneficence and Non- malficience

4. Explained about importance of assessing the risk for breast disease and identified high risk subjects were referred to the hospital.

5. The investigator explained the procedure (return demonstration of BSE using breast model) and nature of the study to the study subjects inorder to create awareness and eliminate the stigma attached to communicate breast related problems.

c. Dignity

6. Informed consent was obtained from the study subjects related to the study, purpose, and type of data, nature of commitments, participation and procedure.

7. Privacy was ensured while demonstration and return demonstration of BSE.

8. Pilot study was executed to check the feasibility and reliability.

9. Right to withdraw/withhold information was ensured before collecting data.

10. Investigator's contact information was given to the study subjects.

11. Anonymity was maintained through study process

d. Confidentiality

12. Confidentiality was maintained throughout the study.

13. Informed consent was obtained from the study subjects if disclosure is necessary.

e. Justice

14. Control group was given the same intervention as wait list control group.

15. Identified high risk cases were referred to OACHC.

4.13. PILOT STUDY

After obtaining the formal administrative approval from the Head of the institution, and the in-charge of the Omayal Achi Community Health Centre (OACHC), and the village leaders the pilot study was executed in Karani, Thootakaran street (experimental) and Kanniamman nagar, Vinonagar(control)

Phase 1: Assessed the risk of women aged between 20 -40 years for breast diseases using breast disease risk assessment tool prepared by the investigator.

Sample selection- Women who were identified with the risk in the 6 villages, who fulfilled the inclusion criteria and present during data collection were selected 25 samples each in the experimental and control group respectively from the selected villages.

Phase 2: After the brief introduction about self and the purpose of the study the data collection for each sample was done. Informed consent from the samples were obtained. Women were made to sit comfortably in a well ventilated room. The demographic data was collected and the pre-test knowledge was assessed using structured knowledge questionnaire using interview technique and practice was assessed using observational checklist in experimental and control group. On the same day video assisted group teaching was given regarding prevention of selected breast diseases using laptop for 45 mins and breast self examination demonstration was done for 30 mins using breast model to the experimental group. Samples were given pictorial booklet on prevention of selected breast diseases and BSE.

Phase 3: Post test on knowledge and practice was assessed.

A similar scheme of data collection was implemented for the samples in control group with the exception of interventions by the investigator. After the post test same intervention package was executed for the control group.

Major findings of the Pilot study report were

- The risk factors identified among women revealed that most of the women attained menarche before 12 years in experimental group and in both the groups they had irregular menstrual cycle, had a history of abortion and had breastfed their babies <12months. Some of them had a family history of breast disease and breast cancer in both the groups.

- Comparison of pre and post test level of knowledge on prevention of selected breast diseases show that on an average, women in the experimental group had gained 40.6% of knowledge score after technology enabled learning programme and whereas in the control group the gain score was only 4.8%.

- Comparison of pre and post test level of practice on BSE reveals on an average, women in the experimental group had gained 53.2% of practice score indicating that technology enabled learning programme was effective and in the control group the gain score was only 3.5%.

- There was a positive moderate correlation which had significant difference between women's knowledge gain score and practice gain score in the experimental group whereas in the control group there was an insignificant, positive poor correlation.

The results indicated that assessment tools used, namely the risk assessment tool, structured interview schedule and the observational checklist were highly reliable and appropriate for assessing the knowledge and practice respectively.

The pilot study also showed that the random sampling technique based on the set inclusion and exclusion criteria was appropriate for sample selection. The method of administering the Technology Enabled Learning Programme, the teaching methods selected and the proposed analytical measures were suitable for the study.

4.15. DATA COLLECTION PROCEDURE:

After obtaining formal ethical approval from the International Centre for Collaborative Research which is the official ethics review board of Omayal Achi College of Nursing, consent was obtained from the head of the institution, the in-charge of the Omayal Achi Community Health Centre (OACHC), and the village leaders. The investigator visited the villages weekly 3 days from July 2015 to June 2016. The investigator assured the clients that the anonymity and confidentiality will be maintained.

Probability sampling was undertaken wherein simple random sampling using lottery method was done to select 6 villages from the 18 intensive service villages of OACHC and of which through cluster randomization the villages were grouped as experimental and control group.

Phase 1: Assessed the risk of women aged between 20 - 40 years for breast diseases using breast disease risk assessment tool prepared by the investigator.

• **Sample selection-** Women who were identified with the risk in the 6 villages, who fulfilled the inclusion criteria and present during data collection were selected 200 each in the experimental and control group respectively.

Phase 2: After the brief introduction about self and the purpose of the study the data collection for each sample was started. Informed consent was obtained from the samples and they were made to sit comfortably in a well ventilated room. The demographic data was collected and the pre-test level of knowledge and practice was assessed using structured knowledge questionnaire using interview technique and observational checklist respectively in experimental and control group. Approximately the investigator collected data from 4-5 samples per day. On the same day the samples were gathered in small group of 4-5 members in a common place (Balwadi/ House) and video assisted group teaching was given regarding prevention of selected breast diseases for 45 mins and breast self examination demonstration was done for 30 mins using breast model to the experimental group. Provided the samples with pictorial booklet on prevention of selected breast diseases and BSE.

Phase 3: (1 month later) Post test 1 level of knowledge and practice was assessed.

Phase 4: (3 months later) Post test 2 level of knowledge and practice was assessed.

Phase 5: (6 months later) Post test 3 level of knowledge and practice was assessed.

A similar scheme of data collection was implemented for the samples in control group with the exception of interventions by the investigator. After the post test same intervention package was executed for the control group.

Fig 4.15: Schematic Representation of Data Collection Process

4.16. DATA ANALYSIS PROCEDURE

Data analysis is the systematic organization and synthesis of research data and testing of null hypotheses using those data.

Identification of risk for breast disease was assessed among 759 women and found that 400 women were at risk. The effectiveness of technology enabled learning programme was assessed among 400 women (200 each in experimental and control group) and was analyzed using descriptive and inferential statistics.

4.16.1 Descriptive statistics

- Frequency and percentage distribution was used to analyze the risk for breast disease and demographic data among women in experimental and control group.

- Mean and standard deviation was used to assess the pre and post test level of knowledge and practice among women in experimental and control group.

4.16.2 Inferential statistics

- Chi square was used to associate the selected demographic variables among women in experimental and control group.

- Repeated measures ANOVA was used to compare the pre and post test level of knowledge and practice among women within experimental and control group.

- Student independent 't' test was used to compare the pre and post test level of knowledge and practice among women between experimental and control group.

- Karl Pearson correlation coefficient was used to analyze the relationship between the mean differed level of   knowledge on prevention of selected breast diseases with practice on BSE among women in experimental and control group

- Association of selected demographic variables with the mean differed level of knowledge and practice in experimental and control group was analyzed using oneway analysis of variance and student independent t-test.

- Influencing factors for gain score was analysed using univariate and multivariate logistic regression methods and respective odds ratio with 95% confidence interval was given.

CHAPTER – 5

DATA ANALYSIS AND RESULTS

This chapter deals with analysis and interpretation of data collected to analyze the effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on BSE.

Descriptive and inferential statistics were used to analyze the data. In this study the risk for breast disease and demographic data among women in experimental and control group were presented in frequency and percentage distribution. Mean and standard deviation was used to assess the pre and post test level of knowledge and practice among women in experimental and control group. Repeated measures ANOVA was used to compare the pre and post test level of knowledge and practice among women within and between experimental and control group. Karl Pearson correlation coefficient was used to analyze the relationship between the mean differed level of knowledge on prevention of selected breast diseases with practice on BSE among women in experimental and control group. Association of selected demographic variables with the mean differed level of knowledge and practice in experimental and control group was analyzed using oneway analysis of variance and student independent t-test. Influencing factors for gain score was analysed using univariate and multivariate logistic regression methods and respective odds ratio with 95% confidence interval.

ORGANIZATION AND PRESENTATION OF DATA

The substantive summary of the analysis is organized under the following sections.

Section 5.1: Description of risk for breast diseases among women in the experimental and control group.

Section 5.2: Description of demographic and clinical variables of women in experimental and control group.

Section 5.2.1: Distribution of demographic variables of women in the experimental and control group.

Section 5.2.2: Distribution of clinical variables of women in the experimental and control group.

Section 5.3: Assessment and comparison of pre and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women

Section 5.3.1 Assessment of pre-test and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women in the experimental and control group.

Section 5.3.2 Comparison of pre-test and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women in the experimental and control group.

Section 5.4: Effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on BSE among women

Section 5.5: Correlation of mean differed level of knowledge with practice among women in the experimental and control group.

Section 5.6: Association of selected demographic variables with mean differed level of knowledge and practice in the experimental and control group.

Section 5.6.1: Association of selected demographic variables with mean differed level of knowledge in the experimental and control group.

Section 5.6.2: Association of selected demographic variables with mean differed level of practice in the experimental and control group.

Section 5.7: Odds ratio of knowledge and practice with presence of risk factors of women

SECTION 5.1: DESCRIPTION OF RISK FOR BREAST DISEASES AMONG WOMEN IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 5.1.1: Frequency and percentage distribution of risk for breast diseases in experimental group villages

N=200

Risk factors	Experimental group (n=200)					
	Guruvoyal n=80		Lakshminathapuram n=20		Thamaraipakkam n=100	
	n	%	n	%	n	%
Attained menarche before 12yrs	19	23.7	4	20.0	19	19.0
Irregular menstrual cycle	23	28.7	9	45.0	38	38.0
Nulliparous women	1	01.2	1	05.0	1	01.0
History of abortion	11	13.7	2	10.0	10	10.0
First childbirth after the age of 30	0	00.0	0	00.0	0	00.0
Oral contraceptives usage	13	16.2	2	10.0	12	12.0
Breast fed your baby<12months	34	42.5	9	45.0	33	33.0
Family history of breast disease	2	02.5	1	05.0	3	03.0
Family history of breast cancer	1	01.2	0	00.0	1	01.0
History of breast injury	2	02.5	0	00.0	2	02.0
Hormone replacement therapy	2	02.5	2	10.0	2	02.0
History of radiological exposure(chest area)	3	03.7	0	00.0	1	01.0
Habit of using tobacco	2	02.5	0	00.0	0	00.0

The above table revealed that the major risk identified among women in experimental group were most of the women attained menarche before 12 years , had irregular menstrual cycle, have a history of abortion and had breastfed their babies <12months. Very few had a family history of breast disease and breast cancer or had a breast injury

Table 5.1.2: Frequency and percentage distribution of risk for breast diseases in control group villages

<div align="right">N=200</div>

Risk factors	Control group(n=200)					
	Kannadapalayam (n=65)		Morai (n=68)		Vellanoor (n=67)	
	n	%	n	%	n	%
Attained menarche before 12yrs	13	20.0	14	20.5	17	25.3
Irregular menstrual cycle	23	35.3	22	32.3	21	31.3
Nulliparous women	2	03.0	0	00.0	2	02.9
History of abortion	10	15.3	9	13.2	13	19.4
First childbirth after the age of 30	0	00.0	0	00.0	0	00.0
Oral contraceptives usage	9	13.8	10	14.7	13	19.4
Breast fed your baby<12months	31	47.6	20	29.4	33	49.2
Family history of breast disease	3	04.6	2	02.9	3	04.4
Family history of breast cancer	1	01.5	1	01.4	1	01.4
History of breast injury	2	03.0	2	02.9	2	02.9
Hormone replacement therapy	3	04.6	2	02.9	2	02.9
History of radiological exposure(chest area)	2	03.0	1	01.4	3	04.4
Habit of using tobacco	1	01.5	1	01.4	2	02.9

The above table revealed that the major risk identified among women in control group were most of the women attained menarche before 12 years , had irregular menstrual cycle, have a history of abortion and had breastfed their babies <12months. Very few had a family history of breast disease and breast cancer.

Table 5.1.3: Overall frequency and percentage distribution of risk for breast diseases in experimental and control group

N=400

Risk factors	Group				
	Experimental (n=200)		Control (n=200)		Two sample Binomial Proportion test
	n	%	n	%	
Attained menarche before 12yrs	42	21.0	44	22.0	Z=0.37 P=0.70
Irregular menstrual cycle	70	35.0	66	33.0	Z=0.41 P=0.67
Nulliparous women	3	01.5	4	02.0	Z=0.37 P=0.70
History of abortion	23	11.5	32	16.0	Z=1.30 P=0.19
First childbirth after the age of 30	0	0.00	0	00.0	Z=0.00 P=1.00
Oral contraceptives usage	27	13.5	32	16.0	Z=0.92 P=0.35
Breast fed your baby<12months	76	38.0	84	42.0	Z=0.81 P=0.41
Family history of breast disease	6	03.0	8	04.0	Z=0.53 P=0.58
Family history of breast cancer	2	01.0	3	01.5	Z=0.44 P=0.63
History of breast injury	4	02.0	6	03.0	Z=0.64 P=0.52
Hormone replacement therapy	6	03.0	7	03.5	Z=0.26 P=0.67
History of radiological exposure (chest area)	4	02.0	6	03.0	Z=0.64 P=0.52
Habit of using tobacco	2	01.0	4	02.0	Z=0.82 P=0.41

The above table revealed that most of the women attained menarche before 12 years and had irregular menstrual cycle in both the groups, have a history of abortion and had breastfed their babies <12months. Few of them had a family history of breast disease and breast cancer in both the groups.

5.1.1-5.1.3 Tables described the breast disease risk among women in experimental and control group.

SECTION 5.2: DESCRIPTION OF DEMOGRAPHIC VARIABLES OF WOMEN IN EXPERIMENTAL AND CONTROL GROUP.

Section 5.2.1: Distribution of demographic variables of women in the experimental and control group.

Table 5.2.1(a): Frequency and percentage distribution of demographic variables age, education, occupation, religion in the experimental and control group.

N=400

Demographic Variables	Group				Chi square test
	Experimental (n=200)		Control (n=200)		
	n	%	n	%	
Age in years					χ^2=0.38 p=0.82 DF=2 NS
20- 25	61	30.5	64	32.0	
26- 30	63	31.5	66	33.0	
> 30	76	38.0	70	35.0	
Education					χ^2=2.92 p=0.71 DF=5 NS
Graduate and above	10	05.0	13	06.5	
Higher Secondary	22	11.0	23	11.5	
High School	23	11.5	30	15.0	
Middle School	54	27.0	42	21.0	
Primary School	62	31.0	61	30.5	
Non literate	29	14.5	31	15.5	
Occupation					χ^2=2.55 p=0.94 DF=7 NS
Profession	5	02.5	7	03.5	
Semi Profession	5	02.5	7	03.5	
Clerical, shop-owner, farmer	4	02.0	6	03.0	
Skilled worker	6	03.0	8	04.0	
Semi-skilled worker	28	14.0	22	11.0	
Unskilled worker	51	25.5	47	23.5	
House wife	94	47.0	96	48.0	
Others	7	03.5	7	03.5	
Religion					χ^2=1.03 p=0.59 DF=2 NS
Hindu	166	83.0	160	80.0	
Christian	25	12.5	32	16.0	
Muslim	9	04.5	8	04.0	

Not significant P >0.05

The table given above revealed that most of the women in both the groups were aged more than 30 years, completed primary school, were house wife and belonged to Hindu religion.

Table 5.2.1(b): Frequency and percentage distribution of demographic variables income, marital status, family type, previous source of information in the experimental and control group.

N=400

Demographic Variables	Experimental (n=200)		Control (n=200)		Chi Square Test
	n	%	n	%	
Family monthly income in rupees					
>17,000	3	01.5	4	02.0	χ^2=0.91
8000-17,000	57	28.5	60	30.0	p=0.82
4000-8000	83	41.5	87	43.5	DF=3 NS
2000- 4000	57	28.5	49	24.5	
Marital status					χ^2=1.01
Married- living with partner	195	97.5	197	98.5	p=0.31
Others	5	02.5	3	01.5	DF=1 NS
Family Type					χ^2=0.51
Nuclear family	129	64.5	134	67.0	p=0.77
Joint family	68	34.0	62	31.0	DF=2 NS
Extended family	3	01.5	4	02.0	
Previous source of information					χ^2=0.34
Yes	25	12.5	29	14.5	p=0.55
No	175	87.5	171	85.5	DF=1 NS
If yes -Source of information					
Newspaper /Magazine	3	12.0	7	24.1	χ^2=4.00
Friends / Relatives	1	04.0	3	10.3	p=0.26
Radio / TV	17	68.0	12	41.5	DF=3 NS
Health professionals	4	16.0	7	24.1	

Not significant P >0.05

The above table revealed that most of the women in both the groups earned a family income of Rs.4000- 8000, were married, lived in a nuclear family and had not received information regarding breast diseases.

All the above variables in table 5.2.1(a) and (b) showed no statistical significance, when compared between the two groups using chi square test, thus indicating homogeneity between groups.

SECTION 5.2.2: DISTRIBUTION OF CLINICAL VARIABLES OF WOMEN IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 5.2.2(a): Frequency and percentage distribution of dietary risk factors in experimental and control group.

N=400

Dietary risk factors	GROUP				Chi square test
	Experimental (n=200)		Control (n=200)		
	n	%	n	%	
Diet					χ^2=0.76
Vegetarian	24	12.0	20	10.0	p=0.68
Non vegetarian	174	87.0	179	89.5	DF=2 NS
Ova vegetarian	2	01.0	1	00.5	
Frequency/wk					χ^2=1.13
One	106	60.9	111	62.0	p=0.56
Two	37	21.3	43	24.0	DF=2 NS
Three	31	17.8	25	14.0	
Coffee					χ^2=0.26
Yes	193	96.5	191	95.5	p=0.61DF=1 NS
No	7	03.5	9	04.5	
No of times(if yes)					χ^2=0.16
Two	140	72.5	142	74.3	p=0.92
Three	51	26.5	47	24.7	DF=2 NS
Four	2	01.0	2	01.0	

Not significant P >0.05

The above tables revealed that majority of the women in both the groups were non vegetarians and used to eat once a week and they have the habit of drinking coffee two times a day.

Table 5.2.2(b): Frequency and percentage distribution of lifestyle risk factors in experimental and control group.

N=400

Lifestyle risk factors	Group				Chi square test
	Experimental (n=200)		Control(n=200)		
	n	%	n	%	
Use of Brassier					$\chi^2=1.50$
No	37	18.5	47	23.5	p=0.22
Yes	163	81.5	153	76.5	DF=1 NS
Hrs/day(if yes)					$\chi^2=0.29$
4 -6 hours	53	32.5	48	31.4	p=0.86
7 -9 hours	54	33.1	48	31.4	DF=2 NS
>9 hours	56	34.4	57	37.2	
Use of Deodorants					$\chi^2=0.04$
No	187	93.5	186	93.0	p=0.84
Yes	13	06.5	14	07.0	DF=1 NS
Frequency/week(if yes)					$\chi^2=0.03$
Two	7	53.8	8	57.1	p=0.86
Three	6	46.2	6	42.9	DF=1 NS
Habit of Exercise					$\chi^2=0.07$
No	192	96.0	193	96.5	p=0.79
Yes	8	04.0	7	03.5	DF=1 NS
Days/week(if yes)					$\chi^2=0.04$
1 -2 days	5	62.5	4	57.1	p=0.83
3 -4 days	3	37.5	3	42.9	DF=1 NS
Tobacco use					$\chi^2=0.67$
No	198	99.0	196	98.0	p=0.41
Yes	2	01.0	4	02.0	DF=1 NS
Alcohol consumption					$\chi^2=0.00$
No	200	100.0	200	100.0	p=1.00
					DF=1 NS
Breast Self Examination					$\chi^2=0.07$
Yes	7	03.5	8	04.0	p=0.79
No	193	96.5	192	96.0	DF=1 NS
If , Yes					$\chi^2=0.26$
Whenever I feel	6	85.7	6	75.0	p=0.60
Monthly once	1	14.3	2	25.0	DF=1 NS
Job shift Pattern					$\chi^2=0.00$
No	200	100.0	200	100.0	p=1.00
					DF=1 NS

Not significant P >0.05

The above table revealed that most of the women in both the groups don't have the habit of wearing brassier, using deodorants, doing exercise, tobacco chewing, smoking, alcohol consumption and doing BSE. They don't have any shift pattern in their job.

Table 5.2.2(c): Frequency and percentage distribution of medical risk factors in experimental and control group.

N=400

Medical risk factor	Group				Chi square test
	Experimental(n=200)		Control(n=200)		
	n	%	n	%	
Radiological Exposure No	196	98.0	194	97.0	χ^2=0.41 p=0.52 DF=1 NS
Yes	4	02.0	6	03.0	
If, Yes 4 - 5 times	3	75.0	3	50.0	χ^2=0.62 p=0.42
6 - 7 times	1	25.0	3	50.0	DF=1 NS
Hormone replacement therapy No	194	97.0	193	96.5	χ^2=0.07 p=0.77 DF=1 NS
Yes	6	03.0	7	03.5	
If, Yes 1 -2 years	47	95.9	52	98.1	χ^2=0.43 p=0.51
3 -4 years	2	04.1	1	01.9	DF=1 NS
Antihypertensive No	196	98.0	194	97.0	χ^2=0.41 p=0.52
Yes	4	02.0	6	03.0	DF=1 NS
If, Yes 1 -2 years	2	50.0	4	66.7	χ^2=0.27 p=0.59
3 -4 years	2	50.0	2	33.3	DF=1 NS
Antidepressants No	200	100.0	200	100.0	χ^2=0.00 p=1.00 DF=1 NS

Not significant P >0.05

The above table revealed that most of the women in both the groups have not been exposed to radiation, only few have underwent hormone replacement therapy and they were not on antihypertensive or antidepressants.

Table 5.2.2(d): Frequency and percentage distribution of reproductive risk factors in experimental and control group.

N=400

Reproductive risk factors	Group				Chi square test
	Experimental (n=200)		Control (n=200)		
	n	%	n	%	
Age at menarche(yrs)					χ^2=1.51 p=0.47 DF=2 NS
11 -12	87	43.5	76	38.0	
13 -14	105	52.5	113	56.5	
15 -16	8	04.0	11	05.5	
Menstrual Cycle					χ^2=0.17 p=0.67 DF=1 NS
Regular	130	65.0	134	67.0	
Irregular	70	35.0	66	33.0	
Irregular cycle (in months)					χ^2=0.89 p=0.34 DF=1 NS
1- 2	6	08.6	3	04.5	
2- 3	64	91.4	63	95.5	
Age at marriage(yrs)					χ^2=0.03 p=0.98 DF=2 NS
15 -20	89	44.5	90	45.0	
21 -25	92	46.0	92	46.0	
26 -30	19	09.5	18	09.0	
Parity					χ^2=2.53 p=0.28 DF=2 NS
Primipara	167	83.5	157	78.5	
Multipara	9	04.5	10	05.0	
Nullipara	24	12.0	33	16.5	
Age at first Child Birth(yrs)					χ^2=0.25 p=0.88 DF=2 NS
15-20	75	42.6	72	43.2	
21-25	82	46.6	77	46.1	
26-30	19	10.8	18	10.7	
Contraception					χ^2=0.06 p=0.80 DF=1 NS
No	58	65.2	66	63.5	
Yes	31	34.8	38	36.5	
Contraception Type					χ^2=0.11 p=0.95 DF=1 NS
Copper-T	2	06.5	3	07.9	
Oral pills	27	87.0	32	84.2	
Natural methods	2	06.5	3	07.9	
Contraception duration					χ^2=2.59 p=0.10 DF=1 NS
< 12 months	18	30.5	12	31.5	
1 -2 years	13	69.5	26	68.5	

Not significant P >0.05

The above table revealed that most of the women in both the groups have attained menarche at 13-14 yrs and had regular menstrual cycle. Most of the women got married at the age of 21-25 yrs in experimental and control group and were primiparous gave their first childbirth at the age of 21-25yrs and had adopted oral pills as their type of contraception.

Table 5.2.2(d): Frequency and percentage distribution of reproductive risk factors in experimental and control group.

N=400

Reproductive risk factor	Group				Chi square test
	Experimental(n=200)		Control(n=200)		
	n	%	n	%	
Abortion					χ^2=0.62
Yes	23	26.4	32	31.7	p=0.43
No	64	73.6	69	68.3	DF=1 NS
Abortion Type					χ^2=0.00
Missed	23	100.0	32	100.0	p=1.00
					DF=1 NS
Abortion Times					χ^2=0.85
One	19	82.6	23	71.9	p=0.35
Two	4	17.4	9	28.1	DF=1 NS
Breast feeding					χ^2=1.77
Yes	176	88.0	167	83.5	p=0.18
No	24	12.0	33	16.5	DF=1 NS
Breast feeding Duration(in months)					χ^2=2.97
1 -6 months	33	18.8	51	30.5	p=0.22
6 -12 months	43	24.4	33	19.8	DF=2 NS
>12 months	100	56.8	83	49.7	
Infertility					χ^2=0.00
No	198	99.0	198	99.0	p=0.99
Yes	2	01.0	2	01.0	DF=1 NS
Infertility Duration					χ^2=0.00
a.1 -5 years	2	100.0	2	100.0	p=1.00DF=1 NS
Type of treatment					χ^2=0.00
Ovulation induction	2	100.0	2	100.0	p=1.00DF=1NS

Not significant P >0.05

The above table revealed that few of the women in both the groups had missed abortion for 1-2times, most of the women had breastfed their babies for more than 12months and only few had underwent treatment for infertility ie ovulation induction.

Table 5.2.2(e): Frequency and percentage distribution of familial and personal risk factors in experimental and control group.

N=400

Familial and personal risk factor	Group				Chi square test
	Experimental(n=200)		Control(n=200)		
	n	%	n	%	
Family history of breast disease					χ^2=0.29 p=0.58 DF=1
No	194	97.0	192	96.0	
Yes	6	03.0	8	04.0	NS
Family history of breast disease type					χ^2=0.00 p=1.00 DF=1NS
Mastalgia	6	100.0	8	100.0	
Family history of breast cancer					χ^2=0.20 p=0.65 DF=1NS
No	198	99.0	197	98.5	
Yes	2	01.0	3	01.5	
Specify the relationship Paternal	2	100.0	1	100.0	χ^2=0.00 p=1.00 DF=1NS
Family history of cancer No	195	97.5	196	98.0	χ^2=0.11 p=0.73 DF=1NS
Yes	5	02.5	4	02.0	
If, Yes Abdomen	2	50.0	2	66.7	χ2=0.19 p=0.65DF=1NS
Stomach	2	50.0	1	33.3	
History of breast surgery Yes	1	00.5	2	01.0	χ^2=0.33 p=0.56 DF=1NS
No	199	99.5	198	99.0	
History of breast injury Yes	4	02.0	6	03.0	χ^2=0.41 p=0.52 DF=1NS
No	196	98.0	194	97.0	
History of thyroid disorder Yes	2	01.0	3	01.5	χ^2=0.20 p=0.63 DF=1NS
No	198	99.0	197	98.5	

Not significant P >0.05

The above table revealed that most of the women in both the groups don't have the familial and personal risk factors like family history of breast disease, breast cancer, breast surgery, injury to the breast and thyroid disorder. All the above clinical variables, when compared between the two groups using chi square test, showed no statistical significance, thus indicating homogeneity between groups.
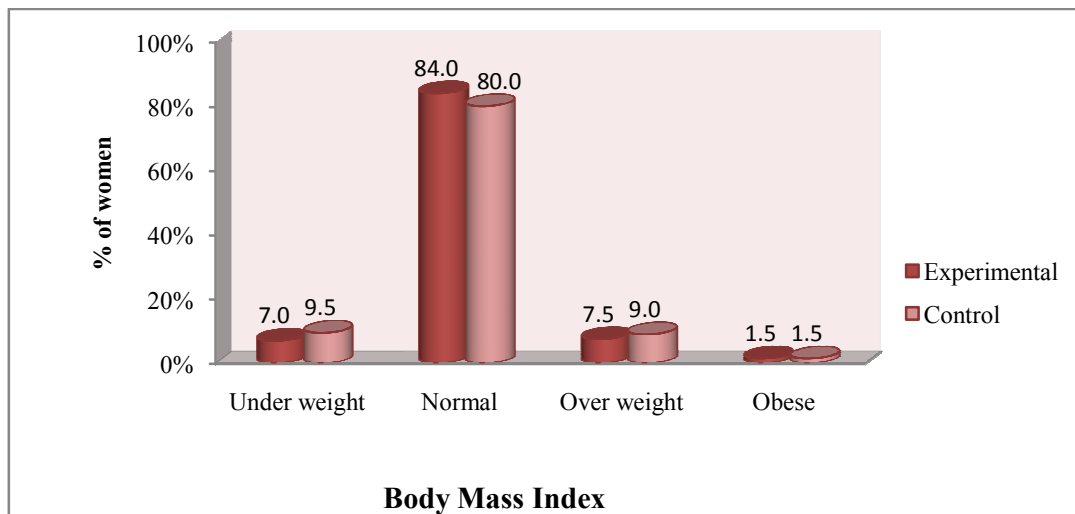
Fig.5.2.1: Frequency and percentage distribution of BMI in experimental and control group

The above figure revealed that most of the women in both the groups had normal BMI.

5.1.1-5.2.2 tables and figure inferred the description of demographic and clinical variables among women in experimental and control group.

SECTION 5.3: ASSESSMENT AND COMPARISON OF PRE AND POST TEST LEVEL OF KNOWLEDGE ON PREVENTION OF SELECTED BREAST DISEASES AND PRACTICE ON BSE AMONG WOMEN

Table 5.3.1(a): Frequency and percentage distribution of knowledge items in experimental group.

N=200

Knowledge questionnaire	Pre test		Post test					
			1st month		3rd month		6th month	
	n	%	n	%	n	%	n	%
The texture of breast skin should be smooth	90	45.0	170	85.0	180	90.0	187	93.5
Both the breast should appear symmetrical	60	30.0	134	67.0	142	71.0	157	78.5
Breast disease means group of disorder causing changes in glandular and connective tissue	76	38.0	128	64.0	130	65.0	145	72.5
Breast disease is most common among Nullipara	45	22.5	130	65.0	136	68.0	149	74.5
First child at or above the age of 30 increases the risk for breast disease	55	27.5	160	80.0	168	84.0	182	91.0
Cyclical and non-cyclical are the types of breast pain	50	25.0	121	60.5	133	66.5	148	74.0
Red colour discharge from the nipple is more significant	67	33.5	130	65.0	140	70.0	155	77.5
Galactorrhoea means milky nipple discharge	63	31.5	156	78.0	164	82.0	177	88.5
Firm ,Painless lump with distinct borders is the specific symptom for fibroadenoma	42	21.0	154	77.0	162	81.0	175	87.5
Fluid filled sac within the breast is known as breast cysts	52	26.0	166	83.0	175	87.5	188	94.0
Benign painful lumps are the effects of fibrocystic breast	62	31.0	154	77.0	162	81.0	177	88.5
Breast Self Examination is the easiest method to identify breast disease	75	37.5	115	62.5	123	61.5	140	70.0
Mammography means examination of the breast by x-ray	68	34.0	116	58.0	122	61.0	132	66.0
Simple analgesia, vitamin E	55	27.5	130	65.0	136	68.0	149	74.5

Knowledge questionnaire	Pre test		Post test					
			1st month		3rd month		6th month	
	n	%	n	%	n	%	n	%
supplementation is the medical treatment for breast disease								
Low carbohydrate, low fat, fruits and vegetables rich in antioxidants are the type of diet which is advisable to prevent breast disease	46	23.0	134	67.0	142	71.0	154	77.0
Limiting caffeine intake and use of firm supportive bra are the lifestyle factors which could prevent breast disease	44	22.0	145	72.5	153	76.5	162	81.0
Use of hot or cold compress is the home remedy for mastalgia	44	22.0	148	74.0	154	77.0	163	81.5
The purpose of performing Breast Self Examination is to become familiar with one's own breast and identifying any changes	62	31.0	138	69.0	146	73.0	162	81.0
The correct age to perform Breast Self Examination is 20yrs	67	33.5	138	69.0	146	73.0	162	81.0
Breast Self Examination means standing in front of the mirror and looking at the breast and feeling the breast with finger pads for any changes	74	37.0	114	57.0	125	62.5	144	72.0
The correct day to perform Breast Self Examination during post menstrual period is 5th day	46	23.0	134	67.0	146	73.0	159	79.5
One with irregular periods should examine the breast on the same day every month	76	38.0	138	69.0	143	71.5	156	78.0
Observation and palpation of the breasts is the correct technique of performing breast self examination	50	25.0	133	66.5	141	70.5	158	79.0
The findings to be noted while performing BSE is shape, size, nipple discharge	50	25.0	170	85.0	175	87.5	184	92.0

Knowledge questionnaire	Pre test		Post test					
			1st month		3rd month		6th month	
	n	%	n	%	n	%	n	%
While performing breast self examination the room should be well ventilated and bright	60	30.0	134	67.0	142	71.0	159	79.5

The above table depicted the item wise analysis of knowledge level of women and shows that in the pretest only few women had knowledge regarding the general information, selected breast diseases, preventive measures and most of the women were aware of the risk factors causing the disease whereas in the post test most of the women gained knowledge in all aspects in the experimental group.

Table 5.3.1(b): Frequency and percentage distribution of knowledge items in control group.

N=200

Knowledge questionnaire	Pre test		Post test					
			1st month		3rd month		6th month	
	n	%	n	%	n	%	n	%
The texture of breast skin should be smooth	87	43.5	88	44.0	92	46.0	95	47.5
Both the breast should appear symmetrical	75	37.5	74	37.0	78	39.0	81	40.5
Breast disease means group of disorder causing changes in glandular and connective tissue	79	39.5	81	40.5	85	42.5	88	44.0
Breast disease is most common among Nullipara	52	26.0	52	26.0	55	27.5	59	29.5
First child at or above the age of 30 increases the risk for breast disease	62	31.0	62	31.0	66	33.0	72	36.0
Cyclical and non-cyclical are the types of breast pain	52	26.0	52	26.0	56	28.0	64	32.0
Red colour discharge from the nipple is more significant	71	35.5	71	35.5	75	37.5	80	40.0
Galactorrhoea means milky nipple discharge	70	35.0	71	35.5	75	37.5	80	40.0
Firm ,Painless lump with distinct borders is the specific symptom for fibroadenoma	46	23.0	47	23.5	51	25.5	58	29.0
Fluid filled sac within the breast is known as breast cysts	60	30.0	57	28.5	61	30.5	67	33.5
Benign painful lumps are the effects of fibrocystic breast	65	32.5	66	33.0	70	35.0	77	38.5
Breast Self Examination is the easiest method to identify breast disease	70	35.0	70	35.0	74	37.0	77	38.5
Mammography means examination of the breast by x-ray	63	31.5	63	31.5	67	33.5	70	35.0
Simple analgesia, vitamin E supplementation is the medical treatment for breast disease	51	25.5	51	25.5	55	27.5	58	29.0

Knowledge questionnaire	Pre test		Post test					
			1st month		3rd month		6th month	
	n	%	n	%	n	%	n	%
Low carbohydrate, low fat, fruits and vegetables rich in antioxidants are the type of diet which is advisable to prevent breast disease	50	25.0	50	25.0	54	27.0	57	28.5
Limiting caffeine intake and use of firm supportive bra are the lifestyle factors which could prevent breast disease	49	24.5	52	26.0	56	28.0	61	30.5
Use of hot or cold compress is the home remedy for mastalgia	50	25.0	52	26.0	56	28.0	61	30.5
The purpose of performing Breast Self Examination is to become familiar with one's own breast and identifying any changes	64	32.0	64	32.0	68	34.0	76	38.0
The correct age to perform Breast Self Examination is 20yrs	69	34.5	69	34.5	72	36.0	75	37.5
Breast Self Examination means standing in front of the mirror and looking at the breast and feeling the breast with finger pads for any changes	75	37.5	72	36.0	75	37.5	78	39.0
The correct day to perform Breast Self Examination during post menstrual period is 5th day	47	23.5	44	22.0	48	24.0	55	27.5
One with irregular periods should examine the breast on the same day every month	74	37.0	75	37.5	78	39.0	85	42.5
Observation and palpation of the breasts is the correct technique of performing breast self examination	63	31.5	61	30.5	64	32.0	67	33.5
The findings to be noted while performing BSE is shape, size, nipple discharge	56	28.0	56	28.0	60	30.0	67	33.5
While performing breast self examination the room should be well ventilated and bright	62	31.0	62	31.0	65	32.5	68	34.0

The above table depicted the itemwise analysis of knowledge level of women and shows that in the pretest and post test only few women had knowledge regarding the general information, selected breast diseases, preventive measures and were aware of the risk factors causing the disease.

Fig.5.3.1 (a): Frequency and percentage distribution of Pre and Post test level of knowledge on Prevention of Selected Breast Diseases among women in experimental group (Domain wise analysis).

The above figure represents the level of knowledge among women in experimental group and shows that it was inadequate in pretest and there was a gradual increase in the level of knowledge in the 1st, 3rd and 6th month.
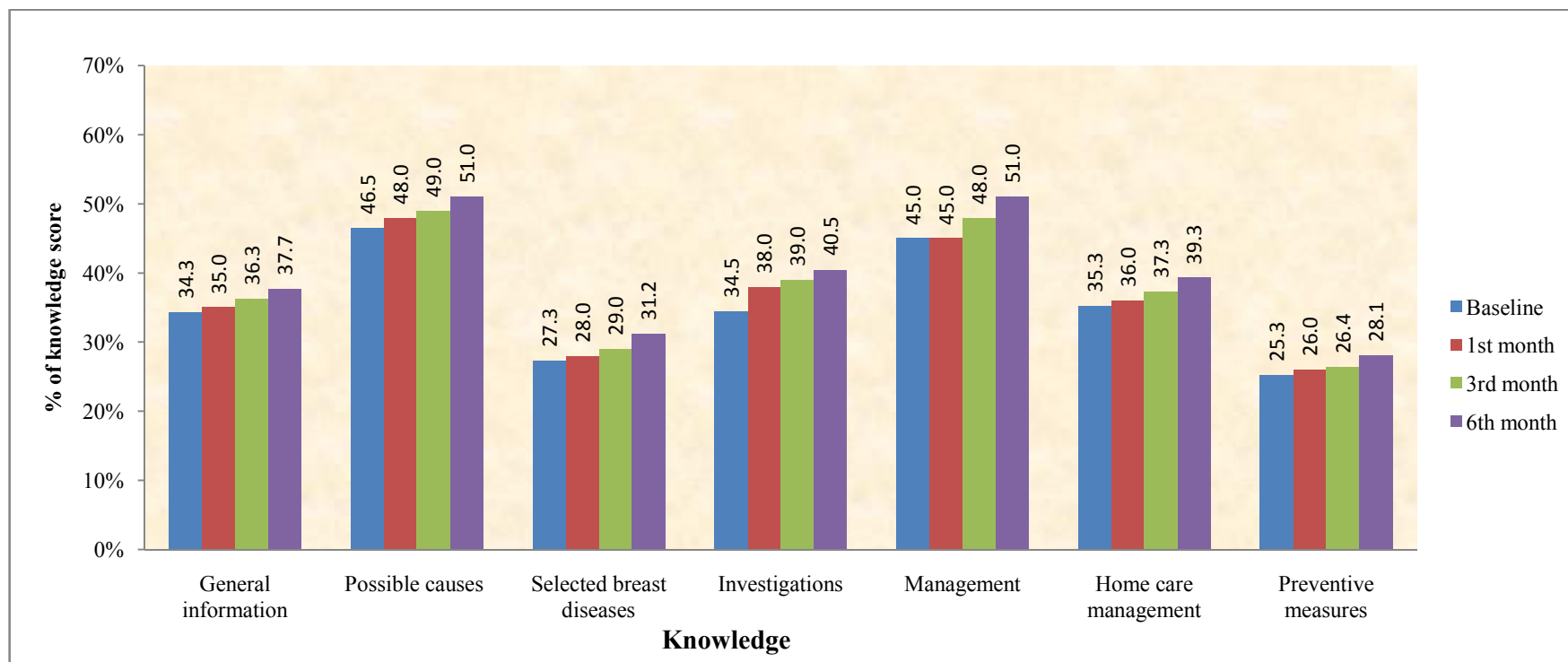
Fig.5.3.1 (b): Frequency and percentage distribution of Pre and Post test level of knowledge on Prevention of Selected Breast Diseases among women in control group (Domain wise analysis)

The above figure represents the level of knowledge among women in the control group was inadequate in pretest and 1st, 3rd and 6th month.

Table 5.3.1(c): Overall frequency and percentage distribution of pre test and post test level of knowledge on prevention of selected breast diseases among women in the experimental and control group.

N=400

Assessment	Level of Knowledge	Group			
		Experimental (N=200)		Control (N=200)	
		n	%	n	%
Pre test	Inadequate	197	98.5	195	97.5
	Moderately adequate	3	01.5	5	02.5
	Adequate	0	00.0	0	00.0
Post Test 1st Month	Inadequate	29	14.5	194	97.0
	Moderately adequate	123	61.5	6	03.0
	Adequate	48	24.0	0	00.0
3rd Month	Inadequate	12	06.0	190	95.0
	Moderately adequate	106	53.0	10	05.0
	Adequate	82	41.0	0	00.0
6th Month	Inadequate	0	00.0	187	93.5
	Moderately adequate	72	36.0	13	06.5
	Adequate	128	64.0	0	00.0

The above table revealed that in the pre test the knowledge level among women in the experimental group regarding prevention of breast disease was found to be inadequate indicating the need for education for the women whereas in the post-test conducted after one, three and six month's majority of women had gained knowledge on prevention of breast diseases.

Table 5.3.1(d): Frequency and percentage distribution of pretest and posttest level of practice among women in experimental group.

N=200

Steps in BSE	Pre Test		Post Test					
			1ˢᵗ month		3ʳᵈmonth		6ᵗʰ month	
	n	%	n	%	n	%	n	%
Privacy	27	13.5	84	42.0	101	50.5	137	68.5
Does the procedure in good light	27	13.5	84	42.0	101	50.5	137	68.5
Position : Stands in front of the mirror	27	13.5	116	58.0	129	64.5	160	80.0
Inspection								
Checks the size of the both breasts	27	13.5	144	72.0	153	76.5	174	87.0
Checks the shape of the both breasts	38	19.0	129	64.5	140	70.0	167	83.5
Checks the nipple for retraction	38	19.0	129	64.5	140	70.0	167	83.5
Palpation standing								
Keeps one arm behind the head	38	19.0	133	66.5	142	71.0	155	77.5
Palpate the right breast with left hand's palmer surface of the middle three fingers in all areas in a circular manner	28	14.0	145	72.5	152	76.0	167	83.5
Palpates the armpit for any swelling	36	18.0	170	85.0	175	87.5	186	93.0
Repeats the same procedure to the left breast and armpit	36	18.0	183	91.5	186	93.0	193	96.5
Palpation lying down								
Lies down on a flat surface and put a pillow under the shoulder and place the left arm behind the head	35	17.5	183	91.5	186	93.0	193	96.5
With the right hand's palmer surface of the middle three fingers palpate the left breast in all areas in a circular manner	41	20.5	135	67.5	145	72.5	168	84.0
Palpate the left armpit for any swelling	33	16.5	135	67.5	145	72.5	168	84.0
Repeat the same with the left hand's palmer surface to the right breast and right armpit	22	11.0	122	61.0	134	67.0	161	80.5
Gently compress the nipple between the thumb and forefingers and looks for discharge.	22	11.0	107	53.5	121	60.5	154	77.0
Records the findings	16	08.0	94	47.0	110	55.0	147	73.5

The above table shows that in the pretest only few women had the skill to perform Breast Self Examination as per the steps whereas in the post test majority of the women developed skill in performing BSE as per steps in the experimental group indicating that technology enabled learning programme empowered the women with the skill for doing BSE.

Table 5.3.1(e): Frequency and percentage distribution of pretest and posttest level of practice among women in control group.

N=200

Steps in BSE	Pre Test		Post Test					
			1st month		3rd month		6th month	
	n	%	n	%	n	%	n	%
Privacy	24	12.0	25	12.5	24	12.0	25	12.5
Does the procedure in good light	24	12.0	26	13.0	24	12.0	26	13.0
Position : Stands in front of the mirror	27	13.5	30	15.0	28	14.0	30	15.0
Inspection								
Checks the size of the both breasts	27	13.5	30	15.0	28	14.0	30	15.0
Checks the shape of the both breasts	37	18.5	41	20.5	39	19.5	41	20.5
Checks the nipple for retraction	37	18.5	42	21.0	40	20.0	42	21.0
Palpation standing								
Keeps one arm behind the head	37	18.5	48	24.0	41	20.5	48	24.0
Palpate the right breast with left hand's palmer surface of the middle three fingers in all areas in a circular manner	27	13.5	37	18.5	30	15.0	37	18.5
Palpates the armpit for any swelling	33	16.5	44	22.0	35	17.5	44	22.0
Repeats the same procedure to the left breast and armpit	33	16.5	42	21.0	37	18.5	42	21.0
Palpation lying down								
Lies down on a flat surface and put a pillow under the shoulder and place the left arm behind the head	33	16.5	43	21.5	36	18.0	43	21.5
With the right hand's palmer surface of the middle three fingers palpate the left breast in all areas in a circular manner	46	23.0	59	29.5	50	25.0	59	29.5
Palpate the left armpit for any swelling	36	18.0	45	22.5	38	19.0	45	22.5
Repeat the same with the left hand's palmer surface to the right breast and right armpit	32	16.0	45	22.5	33	16.5	45	22.5
Gently compress the nipple between the thumb and forefingers and looks for discharge.	32	16.0	43	21.5	32	16.0	43	21.5
Records the findings	20	10.0	33	16.5	22	11.0	33	16.5

The above table shows that in the pretest and posttest only few women had the skill to perform Breast Self Examination as per the steps in control group indicating that they gained skill through media as per the demographic data.

Table 5.3.1(f): Overall frequency and percentage distribution of post test level of practice on BSE among women in the experimental and control group.

N=400

Assessment	Level of Practice	Group			
		Experimental (n=200)		Control (n=200)	
		n	%	n	%
Pre test	Poor	183	91.5	178	89.0
	Fair	17	08.5	22	11.0
	Good	0	00.0	0	00.0
Post Test 1st Month	Poor	28	14.0	174	87.0
	Fair	52	26.0	26	13.0
	Good	120	60.0	0	00.0
3rd Month	Poor	23	11.5	171	85.5
	Fair	44	22.0	29	14.5
	Good	133	66.5	0	00.0
6th Month	Poor	0	00.0	166	83.0
	Fair	39	19.5	34	17.0
	Good	161	80.5	0	0.00

The above table revealed that in the pre-test the level of practice on BSE among women in the experimental and control group was poor indicating the need to improve the skill among women regarding BSE whereas in the post-test conducted after one, three and six month's interval, skill in performing BSE was good among women in the experimental group.

Section 5.3.2 Comparison of pre-test and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women in the experimental and control group.
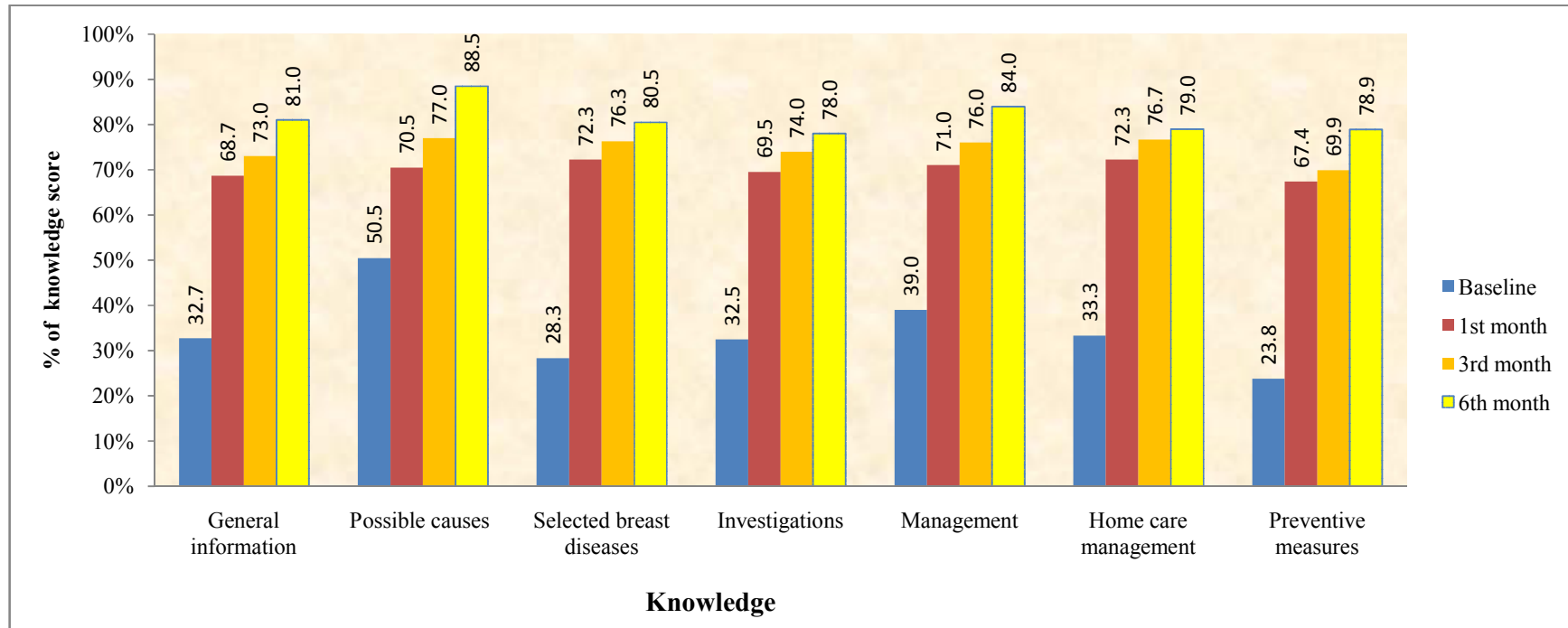
Fig.5.3.2(a): Comparison of pre test and post test level of knowledge on prevention of selected breast diseases among women in experimental and control group.

This graph showed that women in the experimental group gained more knowledge on prevention of selected breast diseases in comparison to women in the control group thereby indicating that technology enabled learning programme enhanced the knowledge of women.
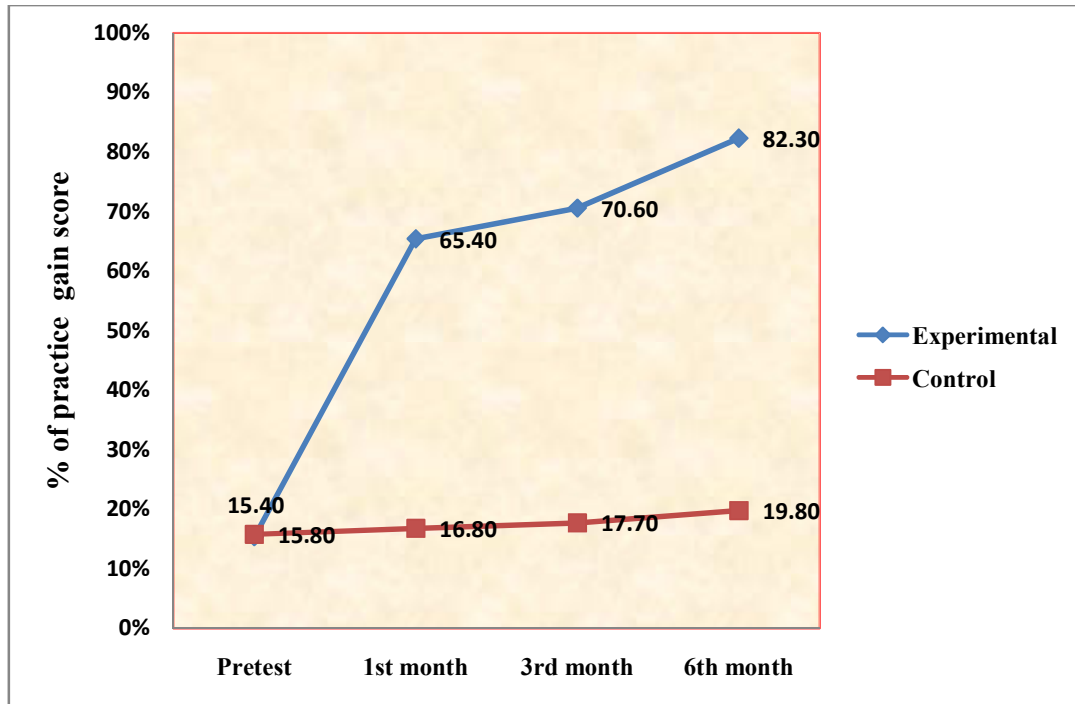
Fig.5.3.2(b): Comparison of Pretest and post test (1st month, 3rd month and 6th month) level of practice on BSE among women in experimental and control group.

The above line graph showed that women in the experimental group had gained skill in doing BSE when compared to women in the control group indicating the effectiveness of technology enabled learning programme in improving the skill among women.

5.3.1-5.3.2(b) tables and figures inferred the assessment and comparison of pre and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women

SECTION 5.4: EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING PROGRAMME ON KNOWLEDGE ON PREVENTION OF SELECTED BREAST DISEASES AND PRACTICE ON BSE AMONG WOMEN

Table 5.4.1: Comparison of pre test and post test mean knowledge score on prevention of selected breast diseases among women in experimental group.

N=200

| Dimensions | Pretest | | Post test | | | | | | Mean difference | Repeated measures ANOVA F-test |
| | | | 1st month | | 3rd month | | 6th month | | | |
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
General information	0.98	0.88	2.06	0.88	2.19	0.90	2.43	0.84	1.45	F=413.42 P=0.001***(s)
Possible causes	1.01	0.66	1.41	0.72	1.54	0.69	1.77	0.55	0.76	F=109.34 P=0.001***(s)
Selected breast diseases	1.70	1.15	4.34	1.28	4.58	1.30	4.83	1.27	3.13	F=557.30 P=0.001***(s)
Investigations	0.65	0.52	1.39	0.70	1.48	0.71	1.56	0.64	0.91	F=245.75 P=0.001***(s)
Management	0.39	0.49	0.71	0.45	0.76	0.43	0.84	0.41	0.45	F=179.12 P=0.01**(s)
Home care management	1.00	0.71	2.17	1.09	2.30	1.02	2.37	0.77	1.37	F=297.90 P=0.001***(s)
Preventive measures	1.90	0.88	5.39	1.21	5.59	1.43	6.31	1.26	4.41	F=606.74 P=0.001***(s)
Overall	7.62	2.16	17.45	3.37	18.43	3.94	20.09	2.79	12.47	F=835.06 P=0.001***(s)

Highly significant at P≤0.01   * very highly significant at   P≤0.001

The above table revealed that in the post-test a statistically very high level of significance was identified using repeated measures ANOVA at p ≤0.001. This showed that women in the experimental group gained knowledge on prevention of selected breast diseases indicating that technology enabled learning programme was effective.

Table 5.4.2: **Comparison of pre test and post test mean knowledge score on prevention of selected breast diseases among women in control group.**

N=200

| Dimensions | Pretest | | Post test | | | | | | Mean difference | Repeated measures ANOVA F-test |
| | | | 1st month | | 3rd month | | 6th month | | | |
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
General information	1.03	0.91	1.05	0.90	1.09	0.91	1.13	0.93	0.10	F=2.48P=0.11
Possible causes	0.93	0.64	0.96	0.62	0.98	0.64	1.02	0.69	0.09	F=2.29P=0.13
Selected breast diseases	1.64	1.10	1.68	1.11	1.74	1.11	1.87	1.23	0.23	F=2.73P=0.10
Investigations	0.69	0.51	0.76	0.55	0.78	0.54	0.81	0.60	0.12	F=3.70P=0.06
Management	0.45	0.50	0.45	0.50	0.48	0.50	0.51	0.58	0.06	F=0.90P=0.30
Home care management	1.06	0.70	1.08	0.76	1.12	0.76	1.18	0.79	0.12	F=2.88P=0.10
Preventive measures	2.02	0.90	2.08	0.90	2.11	0.90	2.25	0.90	0.23	F=3.46P=0.08
Overall	7.81	2.19	8.04	2.29	8.28	2.30	8.87	2.75	1.06	F=3.55P=0.07

Not significant P >0.05

The above table revealed that in the post-test there was no statistically significant difference identified among women regarding their knowledge in the control group using repeated measures ANOVA.

Table 5.4.3: Comparison of Pretest and post test (1st month, 3rd month and 6th month) mean practice score on BSE among women in experimental and control group.

N=400

Group	Pretest	Post test			Repeated measures ANOVA F-test
		1st month	3rd month	6th month	
	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	
Experimental	2.46±2.68	10.47±2.96	11.30±3.31	13.17±3.23	**F=786.12P=0.001*** (s)**
Control	2.53±2.77	2.69±2.85	2.83±2.82	3.16±2.87	F=3.59 P-0.07

***Very highly significant at P≤0.001

The above table shows the comparison of pre and post test practice score which was calculated using ANOVA. Statistically there was a very highly significant difference at p<0.001 in experimental group whereas in the control group there was no significant difference. This showed that technology enabled learning programme and demonstration using breast model helped in improving their skill level in doing BSE.

Table 5.4.4: Overall comparison of pre-test and post test mean knowledge score on prevention of selected breast diseases and practice on BSE among women in experimental and control group.

N=400

Variable	Group	Pretest	Post test			Repeated measures ANOVA F-test
			1st month	3rd month	6th month	
		Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	
Knowledge	Experimental	7.62±2.16	17.45±3.73	18.43±3.93	20.09±2.75	**F=989.16 P=0.001*** (s)**
	Control	7.81±2.19	8.04±2.29	8.28±2.30	8.87±2.75	F=3.70 P-0.06
Practice	Experimental	2.46±2.68	10.47±2.96	11.30±3.31	13.17±3.23	**F=989.16 P=0.001*** (s)**
	Control	2.53±2.77	2.69±2.85	2.83±2.82	3.16±2.87	F=3.70 P-0.06

***Very highly significant at   P≤0.001

The above table shows the comparison of pre and post test knowledge and practice score which was calculated using ANOVA. Statistically there was a very highly significant difference at $p<0.001$ in experimental group indicating that technology enabled learning programme was effective whereas in the control group there was no significant difference.

Table 5.4.5: Comparison of pretest and post test mean knowledge score among women between experimental and control group.

N=400

Knowledge assessment	Group				Mean Difference	Student independent 't' test
	Experimental (n=200)		Control (n=200)			
	Mean	SD	Mean	SD		
Pre test	7.62	2.16	7.81	2.19	0.19	t = 0.85 p= 0.39
Post test 1st month	17.45	3.37	8.04	2.29	9.41	t = 25.32 p= 0.001*** (S)
3rd month	18.43	3.94	8.28	2.30	10.15	t = 31.45 p= 0.001*** (S)
6th month	20.09	2.79	8.87	2.75	11.22	t = 41.26 p= 0.001*** (S)

***Very highly significant at   P≤0.001

Table 5.4.5 shows the comparison of pre and post test mean knowledge score between experimental and control group which was calculated using student independent't' test. There was a gradual increase in the mean difference and the calculated 't' value shows a high significant difference at   P≤0.001.This indicates that technology enabled learning programme was effective in enhancing the knowledge among women in experimental group when compared with the control group.
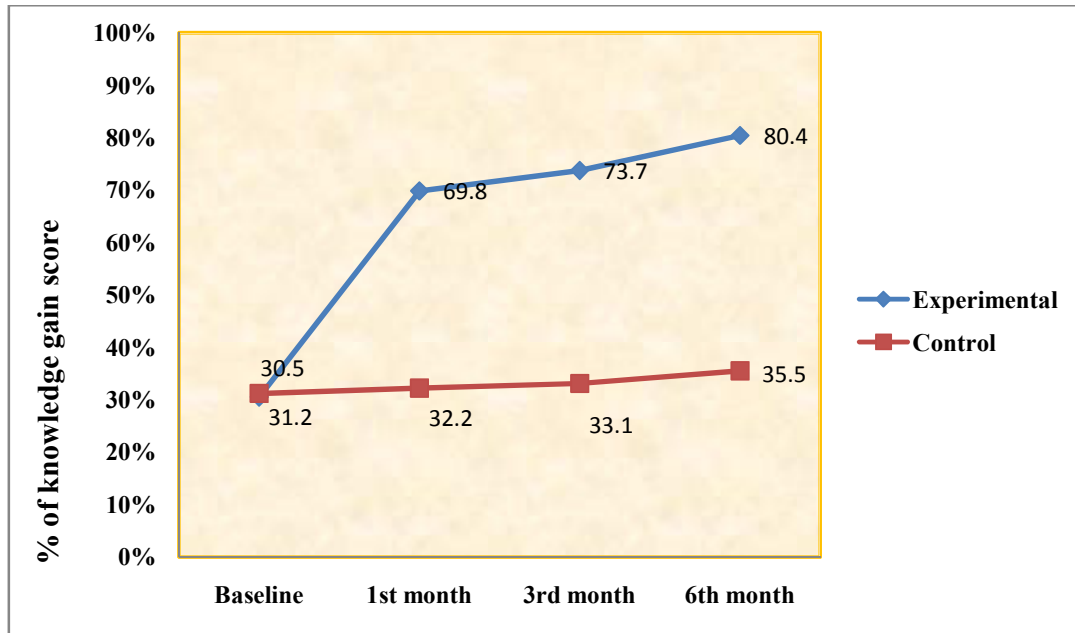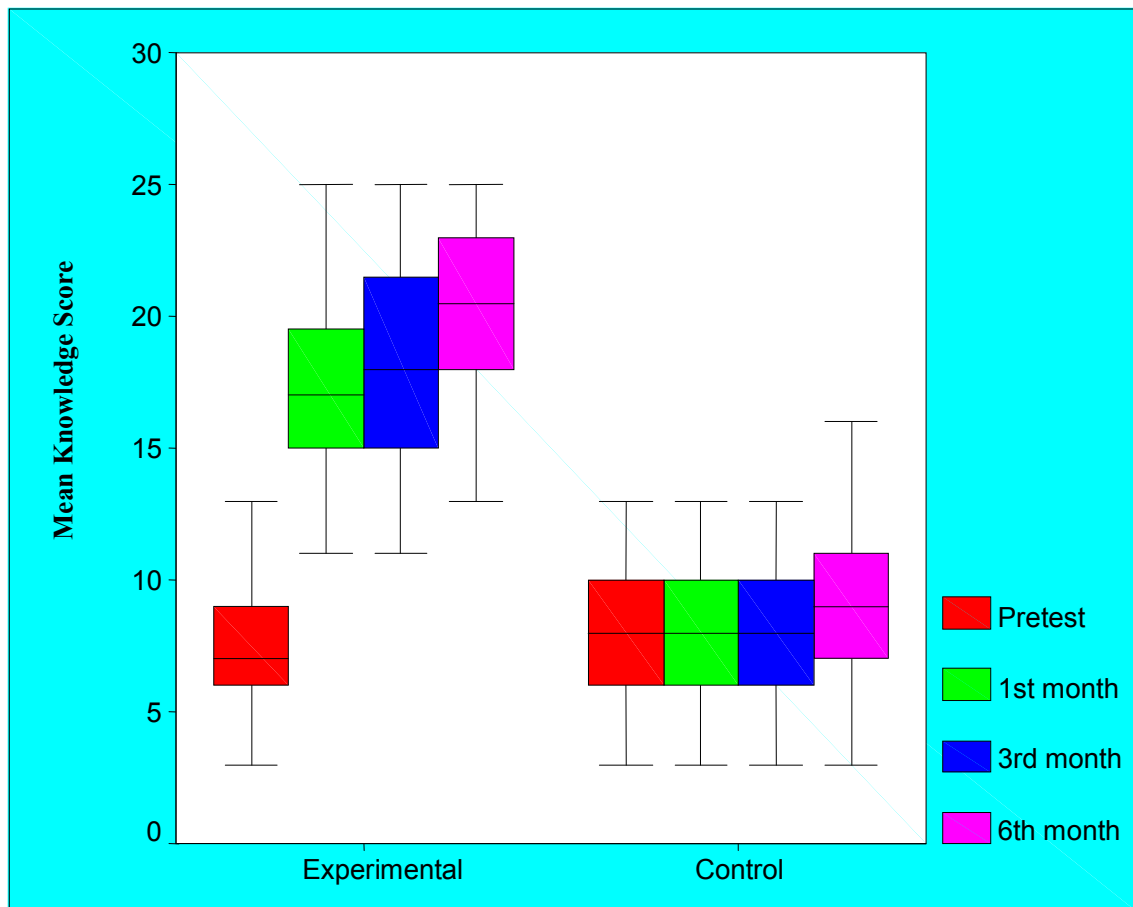
Fig 5.4.5 (a): Comparison of pre-test and post test level of knowledge on prevention of selected breast diseases among women between experimental and control group.

The above figure presented the box plot comparing the pre and post test level of knowledge between experimental and control group. There was a statistical significant difference identified among the experimental group after the intervention whereas no statistical significant difference was noted among the control group.

Table 5.4.6: Comparison of pre test and post test mean practice score on BSE among women between experimental and control group.

N=400

Practice Assessment	Group				Mean Difference	Student independent 't' test
	Experimental (n=200)		Control (n=200)			
	Mean	SD	Mean	SD		
Pre test	2.46	2.68	2.53	2.77	0.07	t = 0.57 p= 0.56
Post test 1st month	10.47	2.96	2.69	2.85	7.78	**t = 14.59** **p= 0.001***** **(S)**
3rd month	11.30	3.31	2.83	2.82	8.47	**t = 29.18** **p= 0.001***** **(S)**
6th month	13.17	3.23	3.16	2.87	10.01	**t = 31.45** **p= 0.001***** **(S)**

***Very highly significant at P≤0.001

Table 5.4.6. shows the comparison of pre and post test mean practice score among women between experimental and control group which was calculated using student independent post test. There was a significant improvement in the skill on performing BSE among women after the intervention. The calculated 't' value shows a highly significant difference at P≤0.001. This indicates that technology enabled learning programme was effective and the demonstration using breast model was more effective in improving the skill among women in experimental group than the control group.

SECTION 5.5: CORRELATION OF MEAN DIFFERED KNOWLEDGE SCORES WITH PRACTICE SCORES AMONG WOMEN IN THE EXPERIMENTAL AND CONTROL GROUP.

Table 5.5.1: **Correlation of mean differed knowledge scores with practice scores among women in the experimental and control group.**

N=400

Group	Variable	Mean difference± SD	Karl Pearson correlation coefficient	Interpretation
Experimental	**Knowledge**	12.47±2.80	**r=0.52p=0.001*** significant**	Moderate (+)
	Practice	9.98±3.67		
Control	**Knowledge**	1.07±1.83	r=0.18 p=0.21 not significant	Poor (+)
	Practice	0.88±1.83		

Not significant P >0.05   * very highly significant at   P≤0.001**

The above table depicts the correlation of mean differed knowledge score with practice scores, analyzed using Karl Pearson's correlation coefficient. The analysis revealed a moderate positive correlation at P≤0.001 level significant among women in experimental group. This indicates that when knowledge increases their practice also increases moderately. In the control group insignificant positive poor correlation was identified. This indicates if knowledge does not improve their practice will be less.

SECTION 5.6: ASSOCIATION OF SELECTED DEMOGRAPHIC VARIABLES WITH MEAN DIFFERED KNOWLEDGE SCORES AND PRACTICE SCORES IN THE EXPERIMENTAL AND CONTROL GROUP.

Section 5.6.1: Association of selected demographic variables with mean differed knowledge scores in the experimental and control group.

Table 5.6.1(a): Association of selected demographic variables with knowledge gain score among women in the experimental group

N=200

Demographic variables	No. of women	Knowledge gain score						Oneway ANOVA F-test/t-test
		Pretest		Posttest		Gain score		
		Mean	SD	Mean	SD	Mean	SD	
Age in years 20- 25	61	7.39	2.12	18.98	2.80	11.59	2.27	**F=4.89 P=0.01**(s)**
26- 30	63	7.90	2.15	20.44	2.95	12.54	2.74	
> 30	76	7.57	2.21	20.73	2.66	13.16	3.58	
Education Graduate and above	10	7.79	2.46	21.62	2.19	13.83	3.11	**F=10.52 P=0.001*** (s)**
Higher Secondary	22	7.77	2.31	21.24	2.53	13.47	2.52	
High School	23	7.22	2.45	20.00	1.93	12.78	2.26	
Middle School	54	7.22	2.45	18.78	1.93	11.56	2.06	
Primary School	62	7.59	2.04	18.45	3.63	10.86	3.14	
Non literate	29	7.40	1.17	16.80	1.03	9.40	1.17	
Family monthly income (Rupees) >17,000	3	8.33	1.53	20.66	5.51	12.33	4.04	**F=5.94 P=0.001*** (s)**
8000-17,000	57	7.49	2.28	20.67	2.22	13.18	2.41	
4000-8000	83	7.87	2.20	20.27	2.97	12.40	2.82	
2000- 4000	57	7.35	2.00	18.39	2.76	11.04	2.15	
Family Type Nuclear family	129	7.91	2.17	20.05	3.01	12.15	2.97	**F=4.41 P=0.01**(s)**
Joint family	68	7.10	2.10	20.29	2.27	13.19	2.30	
Extended family	3	7.00	.00	17.00	2.65	10.00	2.65	
Previous knowledge Yes	25	7.64	2.29	21.36	2.61	13.72	2.81	**t=2.46 P=0.01**(s)**
No	175	7.62	2.15	19.91	2.78	12.29	2.77	

Not significant P >0.05   ** highly significant at P≤0.01   * very highly significant at   P≤0.001**

The above table shows the association between knowledge gain score and demographic variables among women in the experimental group. Women aged more than 30 years, graduate, having monthly income of Rs.8000-17,000, living in joint family and with previous source of information have gained knowledge than others. The above mentioned variables showed high and very high level of significance at p≤0.01 and 0.001 with the gain score when computed using F test / t test.

Table 5.6.1(b): Association of clinical variable (women reproductive risk factors) and knowledge gain score among women in the Experimental group.

N=200

Reproductive risk factors	No. of women	Knowledge gain score						Oneway ANOVA F-test/t-test
		Pretest		Posttest		Gain score		
		Mean	SD	Mean	SD	Mean	SD	
Age at menarche(yrs)								**F=7.37**
11 -12	87	8.33	1.96	19.51	2.79	11.17	2.92	**P=0.001***
13 -14	105	7.77	2.30	20.45	2.74	12.68	2.70	**(s)**
15 -16	8	8.75	1.98	21.75	2.31	13.00	2.93	
Menstrual cycle								**t=2.11**
Regular	130	7.59	2.24	19.61	2.77	12.02	2.79	**P=0.04*(s)**
Irregular	70	7.67	2.03	20.57	2.85	12.90	2.84	
Contraception								**t=3.60**
No	169	7.26	2.25	18.71	3.04	11.45	2.95	**P=0.01**(s)**
Yes	31	8.16	2.23	21.64	2.25	13.48	2.47	
Abortion								**t=2.19**
Yes	23	8.83	2.52	22.65	.93	13.82	2.15	**P=0.03*(s)**
No	177	7.67	2.06	20.14	2.58	12.47	2.85	
Breast feeding								**t=2.10**
Yes	171	7.41	2.09	18.58	2.69	13.16	2.83	**P=0.04*(s)**
No	29	11.00	2.01	23.00	2.05	12.00	2.17	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very highly significant at P≤0.001

The above table shows the association between knowledge gain score and women clinical variables. Women who attained menarche between 15 to 16 years, having irregular menstrual cycle , using contraception, who had history of abortion and breast feeding women has gained more knowledge than others showing statistically significant difference which was computed using F test / t test.

SECTION 5.6.2: Association of selected demographic variables with mean differed practice scores in the experimental and control group.

Table 5.6.2(a): Association of selected demographic variables with practice gain score among women in the Experimental group

N=200

Demographic variables	No. of women	Practice gain score						Oneway ANOVA F-test/t-test
		Pretest		Posttest		Gain score		
		Mean	SD	Mean	SD	Mean	SD	
Age in years 20- 25	61	2.41	2.92	12.48	3.20	10.07	3.83	**F=6.49**
26- 30	63	2.59	2.45	13.15	3.55	10.56	3.70	**P=0.01**(s)**
> 30	76	2.38	2.70	14.45	3.00	12.07	2.77	
Education Graduate and above	10	1.50	3.10	15.30	2.31	13.80	2.94	
Higher Secondary	22	1.27	2.43	12.59	2.61	11.32	3.36	**F=3.23**
High School	23	.91	1.62	11.70	2.46	10.78	3.10	**P=0.05*(s)**
Middle School	54	1.63	2.53	11.96	3.59	10.33	3.43	
Primary School	62	3.48	2.62	13.76	3.22	10.28	3.00	
Non literate	29	3.21	2.41	12.21	2.09	9.00	2.66	
Family monthly income >Rs.17,000	3	2.14	2.65	13.58	2.83	11.44	3.06	**F=5.20**
Rs.8000-17,000	57	2.25	2.51	12.95	3.21	10.70	3.41	**P=0.01**(s)**
Rs.4000-8000	83	2.91	2.92	13.28	3.49	10.37	3.38	
Rs.2000- 4000	57	5.33	1.53	9.33	5.03	4.00	4.58	
Pre knowledge Yes	25	2.05	2.45	12.88	3.17	10.83	3.09	**t=2.13**
No	175	5.28	2.64	14.12	3.73	8.84	4.26	**P=0.05*(s)**

* significant at P≤0.05 ** highly significant at P≤0.01 *** very highly significant at P≤0.001

The above table shows the association between practice gain score and demographic variables among women in the experimental group. Women aged more than 30 years, graduate having family monthly income of > Rs.17,000 with previous source of information have gained more practice scores than others. The above mentioned variables showed high level of significance at p≤0.01 and 0.05 with the gain score when computed using F test / t test.

Table 5.6.2(b): Association of clinical variable (women reproductive risk factors) and practice gain score among women in the Experimental group.

N=200

Reproductive risk factors	No. of women	Practice gain score						Oneway ANOVA F-test/t-test
		Pre test		Post test		Gain score		
		Mean	SD	Mean	SD	Mean	SD	
Age at menarche(yrs)								F=3.36
11 -12	87	2.09	2.85	12.11	3.19	10.02	3.66	P=0.05*
13 -14	105	2.64	2.56	13.82	3.16	11.18	3.18	(s)
15 -16	8	2.00	1.85	13.98	3.31	11.98	3.14	
Menstrual cycle Regular	130	2.50	2.78	12.58	3.31	10.18	3.50	t=3.50 P=0.01** (s)
Irregular	70	2.37	2.53	14.33	3.12	11.96	3.29	
Parity Primipara	167	2.17	2.65	13.26	3.20	11.08	3.27	F=8.0
Multipara	4	4.75	.50	12.75	5.85	8.00	5.35	P=0.01*
Nullipara	29	3.83	2.68	12.29	3.11	8.46	3.12	(s)
Contraception No	169	3.43	2.61	12.09	3.69	8.65	3.93	t=4.32 P=0.01**
Yes	31	3.54	2.52	14.56	2.47	11.02	3.55	(s)
Abortion Yes	23	2.73	2.89	13.67	2.67	10.94	3.13	t=2.80
No	177	3.43	2.61	12.09	3.69	8.65	3.93	P=0.01** (s)
Breast feeding Yes	171	2.20	1.00	13.20	2.10	11.00	2.22	t=3.16 P=0.01**
No	**29**	**2.78**	**2.83**	**12.23**	**2.71**	**9.45**	**3.49**	(s)

* significant at P≤0.05 ** highly significant at P≤0.01

The above table shows the association between practice gain score and women clinical variables. Women who attained menarche between 15 to 16 years, having irregular menstrual cycle, primiparous, using contraception, having history of abortion and breast feeding women has gained more skill than others showing statistically significant difference which was computed using F test / t test.

The findings in table 5.6.2.(a) and (b) revealed that the specified variables in the experimental group had statistically significant association whereas in the control group non of the demographic and clinical variables showed any significant association.

Table 5.6.1(a)- 5.6.2(b) revealed the association of selected demographic and clinical variables with knowledge and practice gain score among women in experimental group.

SECTION 5.7: ODDS RATIO OF KNOWLEDGE AND PRACTICE WITH PRESENCE OF RISK FACTORS OF WOMEN

Table 5.7.1: Identification of influencing factors for knowledge gain score using Multivariate logistic regression   **N=400**

Influencing factors	Univariate analysis		Multivariate analysis	
	p-value	Unadjusted OR(95%CI)	p-value	Adjusted OR(95%CI)
Age(>25 years Vs ≤ 25 years)	0.02*	2.1(1.1 - 4.0)	0.04*	1.5(1.0 – 3.4)
Education(Above primary Vs Upto primary)	0.04*	1.8(1.0 - 3.4)	0.05*	1.6(1.0- 3.6)
Income(> Rs.8000 Vs < Rs.8000)	0.01**	2.4(1.2 - 4.7)	0.05*	1.9(1.2 – 4.6)
Type of family(Joint family Vs nuclear family)	0.01**	3.7(1.3 - 10.6)	0.23	0.7(0.3 -1.2)
Pre knowledge(Yes Vs No)	0.05*	2.9(1.1 - 8.2)	0.61	2.1(0.4- 9.2)
BMI(Normal Vs others)	0.01**	3.0(1.2 - 7.5)	0.38	1.8.(0.6 – 6.8)
Age at menarche(> 12 yrs Vs ≤ 12 yrs)	0.03*	1.8(1.1 - 3.4)	0.04*	1.3.(1.2 – 3.7)
Menstrual cycle(Irregular Vs Regular)	0.04*	1.9(1.0 - 3.5)	0.18	1.5.(0.3 – 5.7)
Contraception (Yes Vs No)	0.01**	2.9(1.2 - 7.1)	0.01**	1.8.(1.4 – 6.8)
Breast feeding(Yes Vs No)	0.01**	3.1(1.2 - 8.0)	0.01**	1.7.(1.2 – 7.3)

* significant at P≤0.05 ** highly significant at P≤0.01

The above table revealed that the univariate analysis identified elder, more educated, earning more income, residing in joint family, having previous knowledge, who had abortion, with normal BMI, attained early menarche, having irregular cycle, using contraception and breast feeding women gained more knowledge than others. Unadjusted odds ratio was given with 95% confidence interval.

Multivariate analysis logistic regression identified elder, more educated, earning more income, attained early menarche, using contraception and breast feeding women gained more knowledge score than others. Adjusted odds ratio was given with 95% confidence interval.

Table 5.7.2: Identification of influencing factors for practice gain score using univariate analysis

N=400

Influencing factors	Level of practice gain				Total	Chi square test	OR(95%CI)
	Below average(<10.71)		Above average(>10.71)				
	N	%	n	%			
Age in years						χ^2=10.40 P=0.001***	2.8(1.4 - 5.5)
> 25 years	59	42.4	80	57.6	139		
≤ 25 years	41	67.2	20	32.8	61		
Education						χ^2=7.28 P=0.01**	2.2(1.2 - 4.0)
Above primary	45	41.3	64	58.7	109		
Upto primary	55	60.4	36	39.6	91		
Income						χ^2=6.10 P=0.01**	2.2(1.2 - 4.3)
>Rs.8000	22	36.7	38	63.3	60		
≤ Rs.8000	78	55.7	62	44.3	140		
Parity						χ^2=9.15 P=0.01**	4.4 (1.5 - 14.7)
Primi/multi	79	46.2	92	53.8	171		
Nulli	19	79.2	5	20.8	24		
Previous knowledge						χ^2=5.53 P=0.01**	2.9(1.1 - 8.2)
Yes	7	28.0	18	72.0	25		
No	93	53.1	82	46.9	175		
Abortion						χ^2=11.05 P=0.01**	5.6 (1.7 - 20.5)
Yes	4	17.3	19	82.7	23		
No	96	54.2	81	45.8	177		
Body Mass Index						χ^2=5.36 P=0.02*	2.5(1.1 - 6.2)
Normal	78	46.4	90	53.6	168		
Abnormal	22	68.8	8	31.2	32		
Age at menarche						χ^2=4.58 P=0.03*	1.8(1.1 - 3.4)
> 12 years	49	43.3	64	56.7	113		
≤12 years	51	58.6	36	41.4	87		
Menstrual Cycle						χ^2=5.63 P=0.02*	2.0(1.1 - 3.9)
Irregular	27	38.5	43	61.5	70		
Regular	73	56.1	57	43.9	130		
Contraception						χ^2=6.45 P=0.01**	2.9(1.2 - 7.1)
Yes	9	29.0	22	71.0	31		
No	91	53.8	78	46.2	169		
Breast feeding						χ^2=9.07 P=0.01**	3.7 (1.4 - 10.2)
Yes	78	45.6	93	54.4	171		
No	22	75.8	7	24.2	29		

*significant at P≤0.05 ** highly significant at P≤0.01 * very highly significant at P≤0.001**

The above table revealed that the univariate analysis identified elder, more educated, earning more income, parity, having previous knowledge, who had abortion, with normal BMI, attained early menarche, having irregular cycle, using contraception and breast feeding women gained more practice score than others. Unadjusted odds ratio was given with 95% confidence interval.

CHAPTER – 6

DISCUSSION

The present study was aimed to assess the effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on BSE among women in selected villages Thiruvallur district. The findings of the study have proved that there was a significant improvement in the level of knowledge and practice among women in the experimental group after the administration of technology enabled learning programme and demonstration of BSE using breast model. The findings of the present study have been discussed based on the objectives and presented below.

Identification of women at risk for Breast diseases

Among the 759 women from 6 villages screened 400 women were identified to have any one of the risk for breast diseases. The present finding was supported by the studies conducted among urban population in India with a reported prevalence of 51% to 54%.[164]

The important determinant of subsequent breast disease risk was age at menarche. When considering the subsequent risk for breast disease child bearing and breast feeding are of importance. In this study among the 400 women most of the women attained menarche before 12 years in experimental group and in both the groups they had irregular menstrual cycle, have a history of abortion and had breastfed their babies <12months. Some of them had a family history of breast disease and breast cancer in both the groups. These results were consistent with those of many studies.

The statistical information pooled from the analysis of 21 studies revealed that premenopausal(9%) and postmenopausal(4%) breast disease risk decreases for each additional year of postponement of menarchial age. The Meta analysis of three large case control studies shows that women who had early menarche the risk increases by 20-30% when compared with those who attained menarche at or above age 15. In this study 21% in experimental group and 22% of women in control group attained menarche before 12 years of age. Early menarche leads to an early exposure to estrogen and the simultaneous presence of progesterone increases the risk of breast disease.[165]

A study on risk for breast disease among 4266 women by Weisstock et al.,[166] found that 3.5% of women were found to have risk factors. Due to globalization and western life style adoption by Indian women there was a delay in their marriage which in turn late conception and breast feeding practice was also poor which are the main risk determinants for breast disease as per the evidence from various studies.[167,168] 38% in experimental group and 42% in control group had breast fed their babies less than 12 months. Study results say that for every 12 months of breast feeding the risk is reduced by 4%, first trimester abortion whether spontaneous or induced the risk increases by 2.4 fold, having a family history of breast disease the risk increases by 2-3 fold.

Hence the present study emphasized that the core need among women is to educate them regarding prevention of breast disease.

The first objective was to assess and compare the pre and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women in experimental and control group.

The findings in table 5.2.1(a) & (b) represent the description of demographic variables of women in experimental and control group. The majority of each variable is discussed below. 38% of the women in experimental group and 35% in control group were aged more than 30 years, 31% in both experimental and control group completed primary school, 47% in experimental group and 48% in control group were house wife, 83% in experimental group and 80% in control group belonged to Hindu religion. 41.5% of the women in experimental group and 43.5% in control group had a family income of Rs.4000- 8000, regarding marital status 97.5%in experimental group and 98.5% in control group were married. With regard to family type 64.5% in experimental group and 67% in control group lived in a nuclear family, 87.5% in experimental group and 85.5% in control group had not received information regarding breast diseases.

Table 5.2.2(a) – (f) presented the clinical variables of women in experimental and control group. With regard to dietary risk factors 87% in experimental group and 89.5% in control group were non vegetarians. Regarding habit of drinking coffee 96.5% in experimental group and 95.5% in control group have the habit of drinking coffee. With regard to lifestyle risk factors both the groups don't have the habit of wearing brassier, using deodorants, doing exercise, tobacco chewing, smoking, alcohol consumption and doing BSE. They don't have any shift pattern in their job. Regarding medical risk factors most of the women in both the groups have not been exposed to radiation, only few have underwent hormone replacement therapy and they were not on antihypertensive or antidepressants. With regard to reproductive risk factors most of the women in both the

groups have attained menarche at 13-14 yrs and had regular menstrual cycle. Most of the women got married at the age of 21-25 yrs in experimental and control group and were primiparous gave their first childbirth at the age of 21-25yrs and had adopted oral pills as their type of contraception. Few of the women in both the groups had missed abortion for 1-2times, most of the women had breastfed their babies for more than 12months and only few had underwent treatment for infertility ie ovulation induction. Regarding familial and personal risk factors most of the women in both the groups don't have the familial and personal risk factors like family history of breast disease, breast cancer, breast surgery, injury to the breast and thyroid disorder. Regarding BMI most of the women in both the groups had normal BMI.

Chi square analysis was done for both demographic and clinical variables which showed no statistical significance between both groups thus indicating the homogeneity between two groups.

The data findings in table 5.3.1(c) presented the pre test and post test level of knowledge among women in the experimental and control group. In the pre test 98.5% of women in the experimental group and 97.5% in the control group had inadequate knowledge on selected breast diseases. There was no statistical significant difference found between the groups. The post test level of knowledge gain was measured at one, three and six month's interval which revealed that 24% had adequate level of knowledge in the 1st month assessment whereas in the 3rd and 6th month 41%, 64% had adequate level of knowledge respectively.

The findings of the present study was supported by the study from India conducted by Sadler et al., among 194 women identified that majority of women had inadequate knowledge about breast disease. Another study by Dundar et al.,[105] carried out in a rural area in western Turkey among 244 women revealed that 44% had insufficient knowledge and those who gained information were through health professionals. The overall awareness was 52% about breast disease among 57 South Asian women in Choudhury and Srivastava[134] study from Toronto whereas a study among 563 women from Chennai led by Evangeline Mary et al.,[146] says that 78% were aware about breast cancer and have gained knowledge through mass media, friends and neighbours. Similarly a study among rural women in Puducherry regarding knowledge and attitude of breast self examination led by Veena[119] revealed that 75.5% had inadequate knowledge about breast disease.

Fig 5.3.2(a) shows the comparison of pre and post test level of knowledge among women in experimental and control group. The baseline knowledge score was 30.5% whereas after the intervention the score was 80.4% at the end of 6th month. Women in the experimental group have gained 49.9% of knowledge score whereas in the control group the gain score was only 4.2%.

Similar result was yielded in a study by Bala Hemant and Gameti[158] among 250 women beneficiaries of urban health centres of Ahmedabad. Even though the pretest level of knowledge was ranging from 21% -49% the post test conducted after 3months shows a significant difference in the knowledge level ranging from 36.8% to 68.4% A study among rural women in India on effectiveness of breast health awareness

programme by Rao et al.,[167] identified a significant increase (z=-15.807; P<0.001) in overall awareness about breast disease.

Table 5.3.1(f) presented the pre test and post test level of practice among women in experimental and control group. 91.5% of women in experimental group and 89% in control group practice level were found to be poor. Due to poor information about the risk factors causing breast disease in turn lead to the low prevalence of BSE practice. Most of the studies reported that BSE aids in early detection of breast disease and is highly effective in increasing the sense of ownership about their health. Eventhough BSE has more benefits but the practice remains low in countries like England (54%), Nigeria (43.2%) and India (52%).[169,170] Study conducted by Veena et al.,[119] reported that only 12% women practiced BSE regularly. This was similar to the result found by Choudhary. The reason for poor practice was most of them felt that the procedure was not important since they don't have any symptoms. A study among Buea University students, the reason for not practicing BSE was due to lack of knowledge about the procedure. This highlights the need to create awareness on Breast self examination from their early adolescence by conducting educational programs.[171]

The post test level of practice among women in experimental and control group was assessed at one, three and six months interval which revealed that 60%, 66.5% and 80.5% respectively had good practice in experimental group. Fig 5.3.2(b) shows the comparison of pre and post test level of practice among women in experimental and control group. In the baseline 15.4% was the practice score whereas after intervention it was 82.3% at the end of 6th month. The practice gain score was 66.9% among women in experimental group whereas in control group it was only 4.0%.

In a survey conducted by Zahra Ghodsi et al[137] about BSE practice among Iranian women they claimed that women practice BSE and few of them have started doing by 20years of age. Studies from Nigeria conducted among Qena architecture and education students and Lagos University concluded that BSE is being practiced by the students and they were aware that BSE to be done on monthly basis.[138-140]

Study conducted in Ain Shams University, Egypt on knowledge and practice of BSE among working women yielded a similar result as only 5.2% were practicing BSE before the training program whereas the post program practice score was 86%. Also study among Saudi nurses after workshop showed a significant improvement in the practice score. Six months follow up was carried out and the researcher identified that 60% started practicing BSE out of which 41% started doing it on a regular basis.[152]

The findings of the second objective revealed that women had inadequate knowledge regarding prevention of selected breast diseases and BSE practice was poor in both experimental and control group.

The second objective was to assess the effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on BSE among women between experimental and control group.

The comparison of pre and post test mean knowledge scores and practice scores within the experimental and control group was depicted in table 5.4.4. The results showed that the pre test mean knowledge score among the experimental and control group was 7.62 and 7.81 respectively with scores representing very low awareness

towards prevention of selective breast diseases. In the post test after intervention the mean scores was 17.45, 18.43, 20.09 and 8.04, 8.28, 8.87 among experimental and control group respectively. The intervention had significantly improved the knowledge scores among the experimental group.

The pre test mean practice score among the experimental and control group was 2.46 and 2.53 respectively with scores representing poor practice of BSE. In the post test after intervention the mean scores was 10.47, 11.30, 13.17 and 2.69, 2.83, 3.16 among experimental and control group respectively. The intervention had significantly improved the practice scores among the experimental group.

Table 5.4.5 and 5.4.6 showed the comparison of pre and post test level of knowledge and practice among women between experimental and control group. The results showed that the calculated student independent 't' test value of 0.85 for knowledge and 0.57 in the pretest was found to show statistical significance whereas in the post test conducted at 1st, 3rd and 6th month interval for knowledge the calculated 't' value was 25.32, 31.45, 41.26 and for practice the calculated 't' value was 14.59,29.18, 31.45 respectively showed a very high statistical significance at p≤0.001 in the experimental group. Hence it is inferred that technology enabled learning programme was effective in enhancing the knowledge, practice and the demonstration using breast model was more effective in improving the skill among women.

The findings were supported by the following studies.

Hussein et al.,[153] in their study on knowledge, attitude and practice of BSE among women states that significant improvement was noted in their level of knowledge.

There was a significant difference in practice between baseline and six months. 53.6% of women ever practiced BSE at baseline out of which 36.3% started practicing BSE after six months. Lewin et al.,[154] study to assess the effectiveness of awareness program by lay health workers yielded a contrary result that before intervention the knowledge (CI 95%, -0.77 to -0.15) and attitude 93.2% indexes were high which shows no significant difference after the intervention.

A survey was carried out in Nigeria to rule out the effectiveness of Health Education on Breast Cancer awareness among 158 Female Undergraduates, University of Calabar. The results revealed that for knowledge of symptoms, risk factors of breast disease the chi square value of 14.5, breast cancer awareness on practice of BSE the chi square value was 7.85 and effectiveness of health education yielded the value of 11.27 at 0.05 level of significance which indicates that health education has an impact in the knowledge of students which in turn improved the practice of BSE.[155]

The findings of the study was also supported by the study conducted by Gupta & Hajian *et al.*,[159] on the impact of a health education intervention program regarding breast disease information and breast self examination by women in a semi-urban area of Madhya Pradesh, India, found that there was a significant improvement in knowledge regarding all aspects of and breast disease, breast self examination of the intervention group from pre- to post-test. 590 (59%) women had gained knowledge out of which 90.7% practiced (BSE). An overall increase in the awareness of 43% and 53% of BSE practice was observed in the study group after intervention.

Statistical analysis had showed that there was significant difference between the post test scores among experimental and control group and hence the hypothesis NH_1 stated earlier that **"There is no significant difference in the pre and post test level of knowledge on prevention of selected breast diseases and practice on BSE between experimental and control group"** was not accepted**.**

Thus the application of concepts of Wiedenbach's prescriptive theory and Pender's health promotion model guided the investigator to identify the women at risk, to assess the knowledge and practice among women and aided to accomplish the study objectives. The administration of technology enabled learning programme enhanced the knowledge on prevention of selected breast diseases and improved the skill in performing BSE among women.

The third objective was to correlate the mean differed knowledge scores with practice on BSE among women in experimental and control group.

Correlation of mean differed level of knowledge with practice was depicted in table 5.5.1.There was a significant positive moderate correlation observed between the women knowledge gain score and practice gain score among the experimental group at r=0.52 and p<0.001 level. The findings showed that knowledge had positive influence in enhancing the practice of BSE among women, whereas there was no significant correlation noted among the control group.

Various studies have shown the effectiveness of intervention program in increasing the knowledge and practice of BSE among women. The findings of the study was supported by study conducted by Wood *et al.,* in their study about the effect of an educational intervention on promoting breast self-examination, found that the

intervention was effective in increasing knowledge about breast cancer risk and screening and BSE proficiency and showed a positive correlation r=0.80.[172]

Statistical analysis had showed that there was significant difference between the post test scores among experimental and control group and hence the hypothesis NH_2 stated earlier that **"There is no significant relationship between the mean differed knowledge scores on prevention of selected breast diseases with practice on BSE"** was not accepted in experimental group and accepted in the control group.

The fourth objective was to associate the selected demographic variables with the mean differed knowledge scores and practice scores in experimental and control group.

The association of knowledge scores with demographic variables in table 5.6.1(a) showed women aged more than 30 years, graduate, having monthly income of Rs.8000-17,000, living in joint family and with previous source of information showed high and very high level of significance at $p \leq 0.01$ and 0.001 with the knowledge gain score when computed using F test / t test.

Association of clinical variables were presented in table 5.6.1(b) which stated that women who attained menarche between 15 to 16 years, having irregular menstrual cycle , using contraception, who had history of abortion and breast feeding women has gained more knowledge than others showing statistically significant difference which was computed using F test / t test.

With regard to practice score association table 5.6.2(a) shows women aged more than 30 years, graduate having family monthly income of > Rs.17,000 with previous source of information showed high level of significance at p≤0.01 and 0.05 with the practice gain score when computed using F test / t test.

Table 5.6.2(b) represented the association between practice gain score and women clinical variables. Women who attained menarche between 15 to 16 years, having irregular menstrual cycle, primiparous, using contraception, having history of abortion and breast feeding women has gained more skill than others showing statistically significant difference which was computed using F test / t test.

The finding was supported by the study conducted by Karayurt et al[173] as age, school grade and information about breast disease showed statistically significant association with BSE practice.

Hence the hypothesis NH$_3$ stated earlier that "**There is no significant association of selected demographic variables with the mean differed knowledge scores and practice scores in experimental and control group"** was not accepted for above mentioned variables in the experimental group and accepted for other variables in the experimental group and variables of control group.

6.6 To compute odds ratio of knowledge and practice with presence of risk factors of women

The findings in table 5.7.1 infer the identification of influencing factors for knowledge gain score using univariate analysis identified elder, more educated, earning

more income, residing in joint family, having previous knowledge, who had abortion, with normal BMI, attained early menarche, having irregular cycle, using contraception and breast feeding women gained more knowledge than others. Unadjusted odds ratio was given with 95% confidence interval.

Multivariate analysis logistic regression identified elder, more educated, earning more income, attained early menarche, using contraception and breast feeding women gained more knowledge score than others. Adjusted odds ratio was given with 95% confidence interval.

The findings in table 5.7.2 infer the identification of influencing factors for practice gain score using univariate logistic regression identified elder, more educated, earning more income, parity, having previous knowledge, who had abortion, with normal BMI, attained early menarche, having irregular cycle, using contraception and breast feeding women gained more practice score than others. Unadjusted odds ratio was given with 95% confidence interval.

The discussion of this present study finding represents that most of the women were at risk for breast disease. This study also proved that there was a statistically significant difference in knowledge and practice among women which shows the effectiveness of technology enabled learning programme. Hence educating the women at risk helps to reduce the incidence of breast cancer.

CHAPTER – 7

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATION

The present study was aimed to assess the effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on BSE among women in selected villages Thiruvallur district.

7.1 SUMMARY

Breast diseases are more prevalent among females as compared to males and the pattern of breast diseases and their etiology varies among different countries and ethnic groups [3]. Benign breast diseases are more prevalent as compared to malignant and inflammatory, as seen throughout the world [4].

Although Benign Breast Disease (BBD) has been extensively studied, the etiology of this disease is still poorly understood. It appears that endocrine factors are associated with BBD, however, the associations found are weak and inconsistent. Obesity has been identified as one of the only consistent risk factors for BBD. Inconsistent results have been found for most risk factors including exogenous hormone use, smoking, alcohol and caffeine intake. No studies have examined whether radiological tissue density is a risk factor for BBD.

Benign lesions of breast are the most common lesions which account for 90% of the clinical presentation related to breast. About half of the women population suffers from benign breast diseases in their lifetime. Of all breast disorders, mastalgia being the

first common presentation whereas palpable breast lump is second most common presentation.

Breast cancer organisation believes that breast self- examination is a useful and essential screening strategy, especially when used in combination with regular physical exams and mammography. Breast self-examination benefits women in two ways. Women become familiar with both the appearance and feel of their breast and detect any changes in their breast as early as possible[10]

Health seeking behaviour among rural population is not up to the expected level with reference to breast diseases in particular to early detection of cancer breast and risk reduction due to lack of proper knowledge and awareness about available screening programmes like self breast examination, clinical breast examination, triple assessment. The investigator identified that the rural woman had no specific information on breast diseases and the impact of such diseases.

A critical element in the fight against breast disease is education. Spreading awareness and the knowledge of screening heralds a welcome shift from reactive medicine to a more proactive approach to health care, in which information about risk factors would help the patient take measures to reduce those risks.

The statement of the problem was

An experimental study to evaluate the effectiveness of technology enabled learning programme on Knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE) among women in selected villages, Thiruvallur District.

The objectives of the study were

1. To assess and compare the pre and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women in experimental and control group.

2. To assess the effectiveness of technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on BSE among women.

3. To correlate the mean differed knowledge scores with practice scores on BSE among women in experimental and control group.

4. To associate the selected demographic variables with the mean differed knowledge scores and practice scores in experimental and control group.

5. To compute odds ratio of knowledge and practice with presence of risk factors of women

The null hypotheses formulated were

NH$_1$: There is no significant difference in the pre and post test level of knowledge on prevention of selected breast diseases and practice on BSE among women between experimental and control group at $p<0.05$ level.

NH$_2$: There is no significant relationship between the mean differed knowledge scores on prevention of selected breast diseases with practice scores on BSE among women in experimental and control group at $p<0.05$ level.

NH$_3$: There is no significant association of selected demographic variables with the mean differed knowledge scores and practice scores in experimental and control group at $p<0.05$ level.

The major assumptions of the study were

1. Technology enabled learning programme may enhance the knowledge on prevention of selected breast diseases.

2. Enhanced knowledge may improve the level of practice on BSE.

3. Routine practice of BSE may pave way for early identification and treatment of breast diseases.

The conceptual framework adopted for the study was Wiedenbach's prescriptive theory and Pender's Health promotion model.

Experimental design was adopted for this study. The independent variable was technology enabled learning programme and the dependent variable was knowledge on prevention of selected breast diseases and practice on BSE. The study was conducted in 6 adopted villages of Omayal Achi Community Health Centre.

Women at risk for breast disease were identified by using breast disease risk assessment tool prepared by the investigator which consists of 13 items. Presence of any one risk factor among women was considered as samples.

To assess the level of knowledge on prevention of selected breast diseases structured knowledge questionnaire was used to collect the data through interview schedule. The questionnaire consists of 25 multiple choice questions among which 3 items in general information, 2 items in possible causes/risk factors, 6 items in selected breast diseases, 2 items in investigations, 4 items in management/home care management and 8 items in preventive measures.

To assess the level of practice on BSE observational checklist was used which consisted of 8 items on steps of BSE. Various experts in the field of Community medicine, Gynaecologist, Oncologist, Community Health Nursing and Obstetrics & Gynaecology Nursing.

The reliability of the data collection tools was assessed using test-retest and inter-rater method and the correlation coefficient r–value obtained was 0.88 for the structured interview schedule and 0.86 for the observational checklist. These correlation coefficient values are very high and hence these tools are reliable enough for assessing the effectiveness of technology enabled learning programme on Knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE) among women in selected villages, Thiruvallur District.

Probability sampling was undertaken wherein simple random sampling using lottery method was done to select 6 villages from the 18 villages adopted for intensive health services by OACHC and of which through cluster randomization the villages were grouped as experimental and control group. Women who were identified with the risk in the 6 villages, who fulfilled the inclusion criteria and present during data collection were chosen for the study. The sample size was calculated based on the pilot study findings of knowledge and practice scores. The effect size derived from the pilot study was 0.35. The calculated sample size using the effect size of 0.35 at power 0.90 and 0.05 level of significance was estimated to be 173 in each group. Calculating the attrition of 15% the final sample size was fixed to 200 in each group. The final sample size consisted of a total of 400 women with 200 each in the experimental and control group.

The data collection was processed in five phases.

Phase 1: Assessed the risk of women aged between 20 - 40 years for breast diseases using breast disease risk assessment tool prepared by the investigator.

- **Sample selection-** Women who were identified with the risk in the 6 villages, who fulfilled the inclusion criteria and present during data collection were selected 200 each in the experimental and control group respectively.

Phase 2: After the brief introduction about self and the purpose of the study the data collection for each sample was done. Informed consent from the samples were obtained and women were made to sit comfortably in a well ventilated room. The demographic data was collected and the pre-test level of knowledge and practice was assessed using structured knowledge questionnaire using interview technique and observational checklist respectively in experimental and control group. On the same day video assisted teaching was given regarding prevention of selected breast diseases for 45mins and breast self examination demonstration was done for 30mins using breast model to the experimental group. Provided the samples with pictorial booklet on prevention of selected breast diseases and BSE.

Phase 3: (1 month later) Post test 1 level of knowledge and practice was assessed.

Phase 4: (3 months later) Post test 2 level of knowledge and practice was assessed.

Phase 5: (6 months later) Post test 3 level of knowledge and practice was assessed.

A similar scheme of data collection was implemented for the samples in control group with the exception of interventions by the investigator. After the post test same intervention package was executed for the control group.

The investigator considered and followed the ethical principles throughout the data collection process. The investigator adhered to the human rights, privacy, beneficience, non malficience, dignity, confidentiality and justice.

Descriptive and inferential statistics were used to analyze the data. Frequency and percentage distribution was used to analyze the risk for breast disease and demographic data among women in experimental and control group. Mean and standard deviation was used to assess the pre and post test level of knowledge and practice among women in experimental and control group. Repeated measures ANOVA was used to compare the pre and post test level of knowledge and practice among women within and between experimental and control group. Karl Pearson correlation coefficient was used to analyze the relationship between the mean differed level of knowledge on prevention of selected breast diseases with practice on BSE among women in experimental and control group . Association of selected demographic variables with the mean differed level of knowledge and practice in experimental and control group was analyzed using oneway analysis of variance and student independent t-test. Influencing factors for gain score was analysed using univariate and multivariate logistic regression methods and respective odds ratio with 95% confidence interval was given.

The major findings of the study were

- The major risk identified among women in experimental group were most of the women attained menarche before 12 years , had irregular menstrual cycle, have a history of abortion and had breastfed their babies <12months. Some of them had a family history of breast disease and breast cancer.

- The analysis revealed that in the post-test a statistically very high level of significance was identified using chi square test at p ≤0.001. This showed that women in the experimental group gained knowledge on prevention of selected breast diseases indicating that technology enabled learning programme was effective whereas there was no statistically significant difference identified among women in the control group.

- The comparison of pre and post test practice score which was calculated using ANOVA, showed that there was very high statistically significant difference at p<0.001 in experimental group whereas in the control group there was no significant difference.

- It was evident that there was a significant, positive moderate correlation between women knowledge gain and practice gain score in experimental group whereas in control group insignificant, positive poor correlation was identified.

- It was evident that there was statistically significant association between knowledge gain score and demographic variables among women in the experimental group. Women aged more than 30 years, graduate, having monthly income of Rs.8000-17,000, living in joint family and with previous source of information have gained knowledge than others. The above mentioned variables showed high and very high level of significance at p≤0.01 and 0.001 with the gain score when computed using F test / t test.

- The association between knowledge gain score and clinical variables among women revealed that women who attained menarche between 15 to 16 years, having irregular menstrual cycle , using contraception, who had history of abortion and breast feeding women has gained more knowledge than others

showing statistically significant difference which was computed using F test / t test.

- It was evident that there was statistically significant association between practice gain score and demographic variables among women in the experimental group. Women aged more than 30 years, graduate having family monthly income of > Rs.17,000 with previous source of information have gained more practice scores than others. The above mentioned variables showed high level of significance at $p \leq 0.01$ and 0.05 with the gain score when computed using F test / t test.

- The association between practice gain score and women clinical variables were women who attained menarche between 15 to 16 years, having irregular menstrual cycle, primiparous, using contraception, having history of abortion and breast feeding women has gained more skill than others showing statistically significant difference which was computed using F test / t test.

- Hence the technology enabled learning programme had a significant impact in improving the knowledge and practice in the experimental group, hence there was a statistical significant difference in the level of knowledge and practice between the experimental and the control group. The Null hypothesis earlier framed was not accepted by the investigator thereby concluding that the technology enabled learning programme was effective in improving the level of knowledge and practice among women.

7.2 CONCLUSION

The study concluded that the technology enabled learning programme was an effective intervention strategy in improving the level of knowledge on prevention of selected breast diseases and practice on BSE among women. The study has also revealed

that this helped the samples to identify their own breast problems like mastalgia, lump and nipple discharge. Hence, the study recommended the utilization of technology enabled learning programme by community health nurses, nurse researchers, nurse administrators, nurse educators and health care professionals to improve the knowledge on prevention of selected breast diseases and practice on BSE among women for identifying the onset of breast disease or breast cancer.

Hence the investigator concluded that the strategies to reduce the burden of breast cancer are

- BSE can be used as a tool of creating breast health awareness among women and trained female health workers can play a promising role in disseminating this knowledge among women to carry out BSE.

- Health seeking behavior among Indian women is majorly governed by emotional status and may not be influenced by their health related knowledge. So along with increasing the knowledge of these women we have to strengthen their emotional status and could be only done by the community outreach awareness program.

- The whole process of training the women through trained community health workers would be like a nuclear chain reaction leading to the generation of home to home trained personals without any extra financial burden on our health system. This might be a simple approach, could save a lot of precious life which we are losing owing to this menace.

7.3 NURSING IMPLICATIONS

The investigator has devised the following implications that may be vital for the Community Health Nurses, Community Health Administrators, Nurse Educators and Researchers.

7.3.1 COMMUNITY HEALTH NURSES

- Community health nurses should target the late thirties for the purpose of screening.

- Community health nurses should identify the risk factors for all women in order to take preventive measures.

- Community health nurses should create awareness among the public regarding breast health and breast awareness.

- Community health nurses should empower the women, family and relatives with information about prevention of breast diseases and early detection methods.

- Since there is a visible increase in the incidence of male breast cancer every effort has to be taken to encourage the practice of BSE not only among women but also among men.

- Community health nurses should organize and conduct public health education program to inculcate the practice of breast self-examination among women to minimize the fear, denial, myths and misconceptions.

- Community health nurse should conduct regular screening programme to detect breast disease among women and to create awareness of the need for early detection.

- Community Health Nurse can disseminate the information regarding the impact of Technology enabled learning programme on prevention of selected breast diseases and BSE to the entire population

7.3.2 COMMUNITY HEALTH NURSE ADMINISTRATOR

- Coordination and communication with the media to provide programs on prevention of breast diseases, early detection methods, importance of BSE on TV, radio, local cable channels, news paper.

- Nurse administrator should organize awareness programme and proper education for the community women regarding breast disease and identification of risk factors for early detection in turn prevention of morbidity and mortality.

- Nurse administrator should organize training programme to train the public health workers on clinical breast examination.

- Nurse administrator should rope in the governmental and non governmental agencies/ organizations to play a major role to create awareness about breast disease among the general public.

- Nurse administrator should organize to distribute pamphlets and illustration posters in regional languages to have a better prevention.

- The nurse administrator can allocate the budget exclusively to focus on screening programme while devising the community health programme.

- Nurse administrator should organize to involve local celebrities to promote the cause which will further strengthen the awareness activities.

7.3.3 NURSING EDUCATION

- Strengthen the curriculum focusing on breast awareness and screening methods.

- Nurse educator must strengthen the concept of breast health and breast awareness.

- The concept of technology enabled learning programme can be emphasized as part of the curriculum for better effectiveness of care and can be imparted to the students for application in to practice.

- Enhancement of counselling skills in education need to be incorporated to enable the students to effectively counsel the women to minimize the fear, denial, myths and misconceptions.

- Health workers should intensify health education on importance of BSE when they come in contact with women in antenatal clinic and immunization clinics.

7.3.4 NURSING RESEARCH

- The study lays foundation to plan and organize breast disease screening program in the community settings.

- Results derived from these studies will help the program managers and healthcare professionals to modify / emphasize / strengthen the existing strategies.

- The study emphasises the need to explore what customized interventions could be implemented to improve the uptake and practice of BSE and other methods for early detection.

- The risk factor analysis gives guidelines for planning preventive strategies for breast disease.

7.4 RECOMMENDATIONS

1. Technology enabled learning programme can be utilized in the obstetrics and gynaecology clinic of OACHC to reduce the risk of breast disease among rural women.

2. Technology enabled learning programme can be utilized in the obstetrics and gynaecology clinic and the wards at Sir Ivan Stedeford Hospital and also can be recommended to the other affiliated health care institutions

3. Effectiveness of Technology enabled learning programme can be assessed on reduction of risk factors for breast disease

4. Comparative study to assess the effectiveness of Technology enabled learning programme on knowledge on prevention of selected breast disease and practice on BSE among rural and urban women.

5. Impact of Technology enabled learning programme on knowledge on prevention of selected breast disease and practice on BSE on modification of lifestyle factors can be explored.

6. The association between reproductive factors (e.g. breastfeeding and parity) and dietary patterns among women and the subsequent risk of breast disease can be explored

7. Effectiveness of breast health promotion counselling can be assessed on breast disease screening behaviour among rural women

8. A cross sectional study can be conducted to assess the knowledge of risk factors for breast disease and early detection methods among women

9. Prevalence of clinically detectable benign breast diseases and its main determinants among women in reproductive age group

10. Community based study on profile of breast disease among pubertal and menopausal women.

11. Risk factor for breast disease among rural and urban women can be assessed

12. Awareness and willingness of rural women on examination, evaluation and treatment for breast disease- a qualitative approach

13. Factors influencing and barriers to breast cancer screening among rural women: a qualitative approach

14. Knowledge of risk factors and early detection methods and practices towards breast disease among nurses / school teachers / adolescence

15. Acceptability and effectiveness of breast health awareness programme among rural women.

16. Case control study of epidemiological risk factors for breast disease

17. Factors influencing nurses to teach BSE among women

7.5 LIMITATION

As village level randomization was done total enumeration of women who were at risk and available during study period were taken from every village.

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THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

No.69, ANNA SALAI, GUINDY, CHENNAI - 600 032.

Website : www.tnmgrmu.ac.in   ☎ : 22353574, 22353576 - 79, 22301760 - 63, 22353094
E-mail   : mail@tnmgrmu.ac.in   Fax : 91-44-22353698

Dr. S.T. RADIGHA, M.D.,

ACADEMIC OFFICER. i/c.

Ref. No.ACI(2)/30073/2012   Dated: 04.07.2013

To

     Dr. S. Kanchana, M.Sc.(N)., Ph.D.,
     Principal
     Omayal Achi College of Nursing,
     45, Ambathur Road,
     Puzhal, Chennai 600 066.
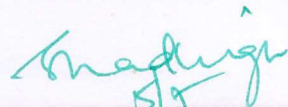
Madam,

Sub:	Academic – The Tamil Nadu Dr. M.G.R. Medical University, Chennai – Mrs. S. BHAGAVATHY - Application for PART – TIME Ph.D. Registration – Provisional Registration- Reg.
Ref:	1. Ph.D. Application dated 27.07.2012. 2. Minutes of the Meeting in the Screening Committee in the Speciality of 'NURSING' held on 31.01.2013.

****

     I enclose herewith, the PART - TIME Research Provisional Registration Certificate in respect of Mrs. S. BHAGAVATHY for the research leading to the award of Ph.D. Degree.

     I am to request you, to obtain and forward the Joining Report of the candidate to this University within 30 days from the date of receipt of this order. Failing which, her Registration for Ph.D. Programme will be automatically cancelled.

                                         Yours faithfully,

                                     ACADEMIC OFFICER i/c.

                                  5/7/13   3/6

Copy to :

     Mrs. S. BHAGAVATHY, Ph.D. candidate.

/ 2011

Dr. S.T. RADIGHA, M.D.,

ACADEMIC OFFICER i/c.

Dated: 04.07.2013

PROVISIONAL REGISTRATION CERTIFICATE FOR Ph.D.

1)	Name of the Candidate	:	Mrs. S. BHAGAVATHY
2)	Qualification	:	M. Sc. (N)
3)	Duration of the Research		PART - TIME - 4 YEARS
4)	Name and Designation of Guide	:	Dr. S. Kanchana, M.Sc.(N)., Ph.D., Principal, Omayal Achi College of Nursing, Chennai.
5)	Name and Designation of Co-Guide	:	--------
6)	Department in which candidate is conducting Research	:	Community Health Nursing
7)	Name of the Institution	:	Omayal Achi College of Nursing, Chennai.
8)	Broad Topic of Research	:	Community Health Nursing
9)	Provisional Title of Research	:	"EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING PROGRAMME ON KNOWLEDGE ON PREVENTION OF SELECTED BREAST DISEASES AND PRACTICE ON BREAST SELF-EXAMINATION (BSE) AMONG WOMEN IN SELECTED VILLAGES, THIRUVALLUR DISTRICT.
10)	Faculty & Branch	:	NURSING & COMMUNITY HEALTH NURSING
11)	Date of Registration i.e. session	:	01.01.2013
12)	Date of conduct of Methodology Examination	:	01.01.2014
13)	Last Date for completion of Methodology examination	:	31.01.2014
14)	Last date for submission of Synopsis	:	01.10.2016
15)	Prescribed date for submission of Thesis	:	01.01.2017
16)	Last date for submission of Thesis	:	01.01.2018

ACADEMIC OFFICER.i/c.

5/7/13

4/6

/ 2011

Dr.C.SRIDHAR, MD
CONTROLLER OF EXAMINATIONS i/c

Ref.No.EXII(1)/30073/2012   **Dated: 16.06.2014**

To

Dr.S.Kanchana, M.Sc.(N), Ph.D.,
Principal, Omayal Achi College of Nursing,
45 Ambattur Road,
Puzhal, Chennai 600 066

Madam,

       Sub: The Tamil Nadu Dr. M.G.R.Medical University, Chennai – Research leading
               to Ph.D.– **Mrs.S.BHAGAVATHY** - Part I Methodology Examination
               JANUARY 2014 – Confirmation of Provisional Registration
               Order for Ph.D. – Regarding.

       Ref: 1. This University's Letter of even number dated 09.05.2014
               2. Your letter received on 26.05.2014
                              *****

      In the reference first cited, It is informed that the Part I - Paper I Methodology
Examination was conducted on 22.01.2014 at University Premises and also Paper II & Paper III
conducted by the Doctoral Advisory Committee on 30.01.2014 and 31.01.2014 in respect of the
Candidate **Mrs.S.BHAGAVATHY** and the report sent thereon is hereby approved by this
University, to proceed with the course for Ph.D. degree.

      2. In the reference second cited, a sum of Rs.5,000/- (Five thousand rupees only) has
been received from you. In view of this, the provisional registration of the candidate for Ph.D.
Degree as   **PART-TIME** candidate is hereby confirmed with effect from **01.01.2013.** The
candidate Registered Number is **141320003**.

           Last date for submission of Synopsis   : 01.10.2016

           Prescribed date for submission of Thesis : 01.01.2017

           Last date for submission of Thesis   : 01.01.2018

      All the members of the Doctoral Advisory Committee may kindly be informed
accordingly.

                                                      P.T.O.

The candidate should submit 6(six) copies of the Synopsis through the Guide along with the prescribed application form together with the fee prescribed and the necessary original certificates along with xerox copy. While submitting the Synopsis and Thesis, kindly ensure that the title of research should be as per the title approved by this University. **The wrapper of the Thesis should be in PINK colour.**

It is informed that the said candidate has not permitted for change of title as per Ph.D. Regulation.
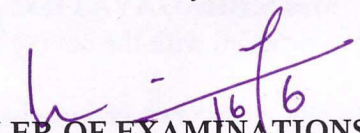
30.5 As per the provisions existing in the Ph.D. Regulations, the candidates are permitted for change of title of the thesis before the Methodology Examination. The Research candidates who apply for change of title after their methodology Examination, may be instructed to apply as a fresh candidate with new title and proposal.

Regulation for Ph.d. 2010 is available in the University Website www.tnmgrmu.ac.in for information and necessary action.

The number and date of this communication should be quoted in all future correspondence.

All the communications relating to the candidate should be addressed only by the guide and any communication by the candidate directly to the University will not be considered.

Yours Faithfully,

CONTROLLER OF EXAMINATIONS i/c

Copy to:

Mrs.S.BHAGAVATHY,
Ph.D., Scholar, Omayal Achi College of Nursing,
45 Ambattur Road,
Puzhal, Chennai 600 066

The candidate should attach this alongwith the application while submitting the synopsis.

PhD NURSING PROGRAMME EXECUTION PLAN (GANTT CHART)

	ACADEMIC CALENDAR MONTHS	JAN 2013-DEC 2013						JAN 2014-DEC 2014						JAN 2015-DEC 2015						JAN 2016- DEC 2016					
A	**Conceptual phase**																								
1	Problem identification	2																							
2	Literature review		2	2	2																				
3	Clinical fieldwork					2	2																		
4	Theoretical framework							2																	
5	Hypothesis formulation								2																
B	**Design & planning phase**																								
6	Research design									2															
7	Intervention protocol										2	2													
8	Population specification												2												
9	Sampling plan													2											
10	Data collection plan														2										
11	Ethics procedure															1									
12	Finalization of plans															1									
C	**Empirical phase**																								
13	Data collection																1	1	1	1	1	1			
14	Data preparation																1	1	1	1	1	1			
D	**Analytical phase**																								
15	Data analysis																						2		
16	Interpretation of results																							2	
E	**Dissemination phase**																								
17	Presentation or report																								2
18	Utilization of findings																								
	Calendar months	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48

ETHICAL CLEARANCE CERTIFICATE

Valid from: January 2013

Valid to: December 2017

Time duration: 4 years

Name of the Principal Investigator: Mrs. S Bhagavathy,

The **ICCR** Ethical Committee meeting had reviewed the project titled **"EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING PROGRAMME ON KNOWLEDGE ON PREVENTION OF SELECTED BREAST DISEASES AND PRACTICE ON BREAST SELF-EXAMINATION (BSE) AMONG WOMEN IN SELECTED VILLAGES, THIRUVALLUR DISTRICT"**. The proposal was found to be acceptable on ethical grounds. The Principle Investigator has the responsibility and accountability for any other administrative / regulatory approvals that may pertain to this research project, and for ensuring that the authorized research is carried out according to the conditions outlined in the original protocol submitted for ethics review.

This certificate of approval is valid for the time period provided, there is no change in the methodology protocol or consent process and documents.

Any significant change should be reported to Director for Research Committee considerations in advance for its implementation.

Signature of Research Director :

Signature of Researcher :

OMAYAL ACHI COMMUNITY HEALTH CENTRE

ARAKKAMBAKKAM, CHENNAI - 600 055.

☎ 26841126

IEC CERTIFICATE

Valid From: January 2013

To: December 2017

Time duration: 4 years

Name of the Principal Investigator: Mrs. S. Bhagavathy
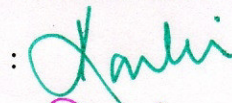
The **IEC** committee meeting had reviewed the IEC materials - **"Video assisted teaching and pictorial booklet on Prevention of selected breast diseases and BSE, video show on steps of BSE".**

The proposal was found to be acceptable on principles of AV AID preparation. It is certified that the intervention tool based on IEC materials are appropriate to administer for the research project titled "EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING PROGRAMME ON KNOWLEDGE ON PREVENTION OF SELECTED BREAST DISEASES AND PRACTICE ON BREAST SELF-EXAMINATION (BSE) AMONG WOMEN IN SELECTED VILLAGES, THIRUVALLUR DISTRICT".
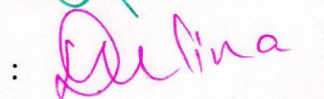
This certificate of approval is valid for the time period provided.

Any significant change should be reported to coordinator / Director for research committee considerations in advance for its implementation.

Signature of the IEC Director   :
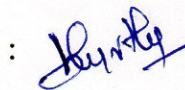
Signature of the IEC Coordinator   :

Signature of the H.O.D   :

Signature of the Researcher   :

Date   : JANUARY 2013

25 YEARS OF EXCELLENCE

OMAYAL ACHI
COLLEGE OF NURSING
—— 1992 - 2017 ——

MR
AR
Love to Serve
அழைத்து விரும்பு
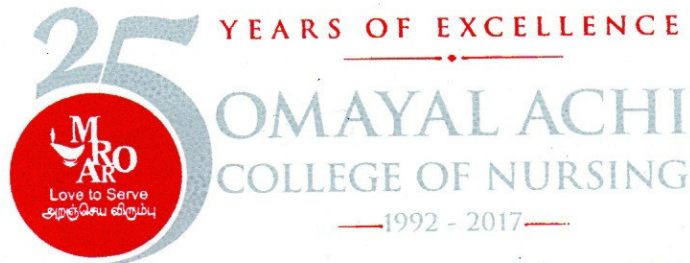
Approved by Govt. of Tamilnadu, Indian Nursing Council, New Delhi & Tamilnadu Nurses and Midwives Council, Chennai.
Affiliated to the Tamilnadu Dr. M.G.R. Medical University, Guindy, Chennai

11.01.2016.

The Centre Incharge,
Omayal Achi Community Health Centre,
Arakkambakkam.

Dear Mrs.Mythili,

Sub: Request for permission to conduct
Research Study-Reg.

Mrs.S.Bhagavathy is a bonafide student doing her research leading to the award of Ph.D., degree in the field of Nursing and she is conducting "AN EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING PROGRAMME ON KNOWLOEDGE ON PREVENTION OF SELECTED BREAST DISEASES AND PRACTICE ON BREAST SELF EXAMINATION (BSE) AMONG WOMEN IN SELECTED VILLAGES, THIRUVELLUR DISTRICT" in the adopted villages of Omayal Achi Community Health Centre.

This is for the research project to be submitted to The Tamilnadu Dr.M.G.R.Medical University in partial fulfillment of the University requirement for the award of Ph.D., Degree in Nursing.

Further details of the proposed project will be furnished by the student personally. She will not hinder your routine in any way and she will abide by the rules and regulations of the Institution. The information collected from your Institution will be kept confidential. I kindly request you to grant her permission to conduct the study at your Esteemed Institution.

Thanking you,

Yours sincerely,

Cc to:

The Village Leaders

PRINCIPAL
OMAYAL ACHI COLLEGE OF NURSING
No.45, Ambattur Road,
PUZHAL, CHENNAI - 600 066.

Urkund Analysis Result

Analysed Document: plagiarism S Bhagavathy.doc (D33545631)

Submitted: 12/9/2017 10:39:00 AM

Submitted By: bagu1978@yahoo.co.in

Significance: 13 %

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136

The Tamil Nadu Dr. M.G.R. Medical University

69, Anna Salai, Guindy, Chennai - 600 032.

CME 30 CREDIT POINTS

This Certificate is awarded to Dr. / Mr. / Mrs. ....S. BHAGAVATHY..................

for participating in the Workshop on

"XXIX Research Methodology & Biostatistics"

organized by the Department of Epidemiology,

The Tamil Nadu Dr. M.G.R. Medical University

from 24th to 28th June, 2013.

Dr. JHANSI CHARLES, M.D.,
REGISTRAR

Prof. Dr. D. SHANTHARAM, M.D., D.Diab.,
VICE-CHANCELLOR

UNIVERSITY OF SASKATCHEWAN

This is to certify that ~~Dr./Prof./Mr.~~/Ms. _Bhagavathy_ was the resource person on the topic _Analysis And Interpretation In Mixed Methods Research_ for the **"TRAINING PROGRAMME ON RESEARCH METHODOLOGY"** Organized by the **INTERNATIONAL CENTRE FOR COLLABORATIVE RESEARCH (ICCR)**, Omayal Achi college of Nursing. We thank him / her for his / her valuable contribution in making the training programme a success. The CNE credit points awarded by Tamilnadu Nursing Council is 15 credit point & 30 credit hours _+2_.

Date : _23ʳᵈ to 27ᵗʰ Sep. 2013_.

Dr. K.R. RAJANARAYANAN,
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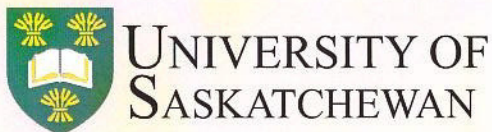
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This is to certify that .... *BHAGAVATHY* .... has participated as Delegate /

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Theme: ..... WORKSHOP ON "RESEARCH METHODOLOGY"

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Certificate of Participation

This is to certify that **Mrs. S. Bhagavathy**

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has participated in a Clinical Training Workshop on "Low-tech

Screen and Treat Methods for Cervical Cancer" held at RUHSA

Department, Christian Medical College, Vellore from 25.11.2014 to

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has participated in the International Conference on:

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was the resource person on the topic _Tools & Data collection methods in Quantitative research &_ _ethical Consideration_ for the **4**th **TRAINING PROGRAMME ON "RESEARCH METHODOLOGY"**

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CERTIFICATE FOR RESEARCH PUBLICATION/ PRESENTATION

This is to certify that **MS.BHAGAVATHY, M.Sc(N),** pursuing her PhD Programme in Nursing from Omayal Achi College of Nursing, affiliated to The Tamil Nadu Dr.M.G.R. Medical University, Guindy, has published/ presented the following papers in journals/ international conference during her period of study, under my supervision and guidance. The copies of the publication and certificate of presentation has been attached.

INDEX OF THE RESEARCH PUBLICATION/PRESENATION

S.No	Author(s)	Title	Journal Details
	JOURNAL PUBLICATIONS		
1.	Bhagavathy, Sambavadas Kanchana	Pilot study on effectiveness of Technology Enabled Learning Progamme on knowledge on prevention of selected breast diseases and practice on Breast Self Examination (BSE) among women in selected villages, Thiruvallur district.	ICCRJNR, Dec 2016,1(2):103-112. Available from:http://www.iccrjnr.com ISSN:2456-0200
2	P.V.Jayanthi S.Bhagavathy R.Vijayalakshmi S.Kanchana	Effectiveness of educational interventional package on knowledge regarding reproductive cancer.	TJPRC:IJNPSC,Jun 2017, 2 (1): 49-54. Available from www.tjprc.org
3.	Priyadharshini.T S.Bhagavathy S.Kanchana	Effectiveness of health care package on knowledge and attitude regarding minor ailments during postnatal period.	TJPRC:IJOGNN,Dec 2016,1(1):1-4 Available from www.tjprc.org

RESEARCH GUIDE,

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Effectiveness of a Technology Enabled Learning Programme on Knowledge for the Prevention of Selected Breast Diseases and Practice of Breast Self-Examination (Bse) among Women in Selected Villages, Thiruvallur District

Bhagavathy.S, Kanchana.S

Abstract:

Background: A woman's breasts are an integral part of her feminity and identity. Around 200,000 cases of breast diseases are diagnosed annually. Breast diseases are more prevalent among females as compared to males and the pattern of breast diseases and their etiology vary among different countries and ethnic groups. Benign lesions of breast are the most common lesions which account for 90% of the clinical presentations related to the breast. About half of the women population suffers from benign breast diseases in their lifetime. Benign breast problems, in spite of their high prevalence, have been neglected and trivialized by both the medical professionals as well as by women with the problems. The reasons for this could be many but the most important reasons are the stigma attached to seeing a doctor and communicating about their breast related problem, fear of having cancer and the general neglect that women show towards their health. Objective: The objective of the study was to evaluate the effectiveness of a technology enabled learning programme on knowledge for the prevention of selected breast diseases and practice of Breast Self-Examination (BSE) among women. Methods: Quantitative research approach with true experimental design was used. A total of 50 women at risk aged between 20-40 years formed the samples, with 25 women each in the experimental and control groups. Random sampling technique - cluster randomization was used for the selection of villages and for the selection of samples, total enumeration technique was followed. Data was collected using a structured interview schedule and observation checklist. Results: Both the data collection tools were found to be highly reliable. Statistical analysis of the background and clinical variables revealed homogeneity between the experimental and control group in the pre-test. The statistical comparison of the level of knowledge and practice revealed that the experimental group 'Z' value was 5.89 and the practice gain score of 53. 2% showed a very high statistical significance at p=0.001. Positive moderate correlation was identified between the level of knowledge and practice, thus indicating that the technology enabled learning programme was effective.

[Full Text Article in pdf]

EFFECTIVENESS OF EDUCATION INTERVENTIONAL PACKAGE

ON KNOWLEDGE REGARDING REPRODUCTIVE CANCER

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ABSTRACT

Effectiveness of Education interventional Package on knowledge regarding reproductive cancer among 60 opinion leaders (30 in experimental group and 30 in control group). Knowledge was assessed using structured knowledge questionnaire. Pre and post test was done. Intervention regarding reproductive cancer was done using education interventional package. The mean post test knowledge regarding reproductive cancer in experimental group was significantly high t= 20.839 (p < 0.001) respectively.

KEYWORDS: Education Interventional Package, Knowledge on Reproductive Cancer

INTRODUCTION

Reproduction is an essential process for the survival of all living things. All living beings in the earth reproduce. Human reproductive system functions to reproduce and bear live offspring. The organs and structures of the female reproductive system give women the ability to produce a new life. They also provide a place for the fetus to grow and develop. Since the female reproductive system plays such an important role throughout the life of a woman, it receives special consideration.

Reproductive health is a universal concern, but is of special importance for women particularly during the reproductive years. During the period of reproductive life many changes occurs in a women's body as a results of hormonal influences and adaptation to the physiological process. Several female reproductive disorders may affect the health status and overall quality of life of woman. A healthy reproductive system makes the miracle of life possible.

Cancer as a dreadful disease has a relentless, very painful and debilitating curse and if not treated properly in time, results in death. Cancer is major public health problem affecting million of people worldwide. The prevalence of cancer is increasing in developing world due to increase in life expectancy, increased urbanization and adoption of western life style

Reproductive cancer starts in the organ related to reproduction. These organs are located in the pelvis. It

Original Article

includes breast cancer, cervical cancer, endometrial cancer and ovarian cancer

The Problem

A quasi-experimental study to assess the effectiveness of education interventional package on knowledge regarding reproductive cancer among opinion leaders at selected schools, Thiruvannamalai district

Objectives

- To assess and compare the pre and post test level of knowledge regarding reproductive cancer among opinion leaders in experimental and control group.

- To assess the effectiveness of education interventional package on knowledge regarding reproductive cancer among opinion leaders.

- To associate the selected demographic variables with the mean differed knowledge score regarding reproductive cancer in experimental and control group.

Assumptions

- Opinion leaders may have some knowledge regarding reproductive cancer.

- Education interventional package will enhance the knowledge of opinion leaders regarding reproductive cancer.

Null Hypotheses

Ho_1: There will be no significant difference between the pre and post test level of knowledge regarding reproductive cancer among opinion leaders between experimental and control group at the level of $p<0.05$

Ho_2: There will be no significant association between the mean difference in knowledge and selected demographic variables among opinion leaders.

MATERIALS AND METHODS

Education interventional package**:** It refers to the information provided by the investigator to create awareness among opinion leaders regarding reproductive cancer (breast, cervical, endometrial, and ovarian cancer) which was given by means of lecture cum discussion on definition, causes, signs and symptoms, treatment, and preventive strategies.

Knowledge: It refers to the ability of the opinion leaders to respond to the questions regarding reproductive cancer which was assessed by structured knowledge questionnaire prepared by the investigator which include definition, causes, signs and symptoms, risk factor, investigation, treatment of breast, cervical, Endomertirum and ovarian cancers.

The content was administered using

- Lecture cum discussion with power point presentation on general information, definition, causes, risk factor, signs and symptoms, investigation, and preventive strategies on reproductive cancer.

- Slide show on breast self examination.

- Reinforcement through pamphlet- on preventive strategies.

Effectiveness

It refers to the outcome of education interventional package on knowledge regarding reproductive cancer among opinion leaders, which was assessed by structured knowledge questionnaire prepared by the investigator

Opinion Leaders

It refers to the teachers who were working at selected schools Thiruvannamalai district.

The conceptual framework, of the present study was based on "King's Goal Attainment Model" (1989). The research approach utilized in this study was quantitative research approach. The research design adopted for this study was quasi experimental non equivalent control group design. The independent variable for the study was the education interventional Package. The dependent variables for the study were knowledge regarding reproductive cancer among opinion leaders. The extraneous variables were age, designation, marital status, type of family, family history of cancer, previous knowledge and source of information. The study was conducted at Government schools, Thiruvannamalai district. Total numbers of schools were 250 and permission was obtained from Chief Educational Officer for 4 schools. The samples consisted of 60 opinion leaders were selected by purposive sampling technique.

Section A

Demographic Variables

Consisted of demographic variables which included age, designation, marital status, type of family, family history of cancer, previous knowledge and source of information.

Section B

Tool on knowledge regarding reproductive cancer

A structured knowledge questionnaire was developed to assess the knowledge regarding reproductive cancer among opinion leaders

Components of Knowledge Questionnaire

Table 1

Items	Number of Questions
General information	3
Information related to breast cancer (causes, signs and symptoms, risk factors)	4
Endometrial, cervical, ovarian cancer (causes, signs and symptoms, risk factors)	4
Treatment	3
Preventive strategies	11
Total	**25**

Each item was objective type and closed ended with a single correct answer. Every correct answer was given a score of "1" mark and wrong answer was given "0" mark. The total score of the item was 25. The raw score was converted to percentage to interpret the level of knowledge.

Reproductive Cancer

The intervention consisted of education interventional package on reproductive cancer prepared by the investigator which includes definition, causes, signs and symptoms, risk factor, investigation, treatment of breast, cervical, Endomertirum and ovarian cancers and phamplet.

Data Collection Procedure

The investigator selected 60 samples, who fulfilled the sample selection criteria using purposive sampling technique. 30 samples were selected from Government girl's higher secondary school, Thandrambattu and Municipality girl's higher secondary school, Thiruvannamalai which was considered as experimental group and 30 samples were selected from Government girl's higher secondary school, Vettavalam, Government girl's higher secondary school, Kizhpennathoor which was considered as control group. The data collection for the study was collected within the period of four weeks.

The investigator gave brief introduction about self and purpose of the study to opinion leaders. They were made to sit comfortably in a well ventilated room and confidentiality regarding the data was assured to win their cooperation during data collection. After obtaining verbal and written informed consent for willingness to participate in the study, the pretest level of knowledge was assessed using structured knowledge questionnaire which took about 15-20 minutes. On the next day the opinion leaders were made to sit comfortably in well ventilated room. The investigator administered Education interventional package on reproductive cancer using lecture cum discussion with the power point presentation which took about 30-40 minutes for opinion leaders in Government girl's higher secondary school, Thandrambattu between 12 pm-12.45 pm and in Municipality girl's higher secondary school, Thiruvannamalai between 4pm-5pm. The doubts of the opinion leaders were clarified and a pamphlet on preventive strategies was given to sustain the knowledge of opinion leaders. After 7 days posttest level of knowledge was assessed using structured knowledge questionnaire.

For control group same data collection procedure was executed without intervention (wait list control group).

Findings

With regard to age in years, 18(60%) in experimental group and 22(73.33%) in control group were between the age group of 30-40 years, 26(86.67%) in experimental group and 16(53.33%) in control group were graduates, 30(100%) were married in both experimental and control group, 18(60%) belonged to nuclear family in both experimental and control group respectively. family history of cancer, in experimental group 4(13.33%) had family history of cancer, out of which 4 opinion leader family member 2(50%) had uterine and lung cancer. Whereas in control group 3(10%) had family history of cancer, Out of 3 opinion leaders family members 2(66.67%) had lung cancer and 1(33.33%) had oral cancer. Regarding source of information 11 (36.67%) in experimental group and 15(50%) in control group had received information on reproductive cancer out of which 5(45.45%) in experimental group have gained information through newspaper/ magazine, health care personnel, 8(53.33%) in control group have gained information through health care personnel.

With regard to over all pretest level of knowledge in experimental group majority 27(90%) had inadequate knowledge, 3(10%) had moderately adequate knowledge, similarly 23(76.67%) had inadequate knowledge, 7(23.33%) had moderately adequate knowledge in control group.

With regard to post test level of knowledge in experimental group 24(80%) had adequate knowledge, 6(20%) had moderately adequate knowledge where as in control group majority 23(76.67%) had inadequate knowledge and 7(23.33%) had moderately adequate knowledge
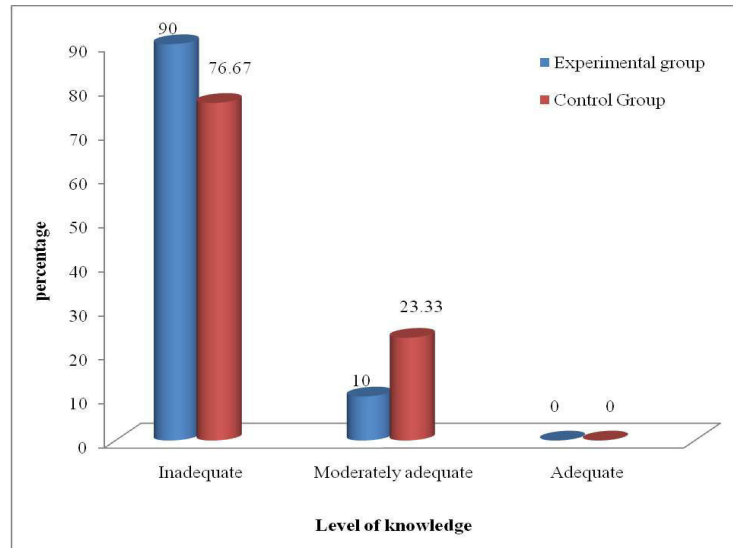
**Figure 1: Percentage Distribution of the Overall
Pretest Level of Knowledge Regarding Reproductive Cancer
among Opinion Leaders in the Experimental and Control Group**
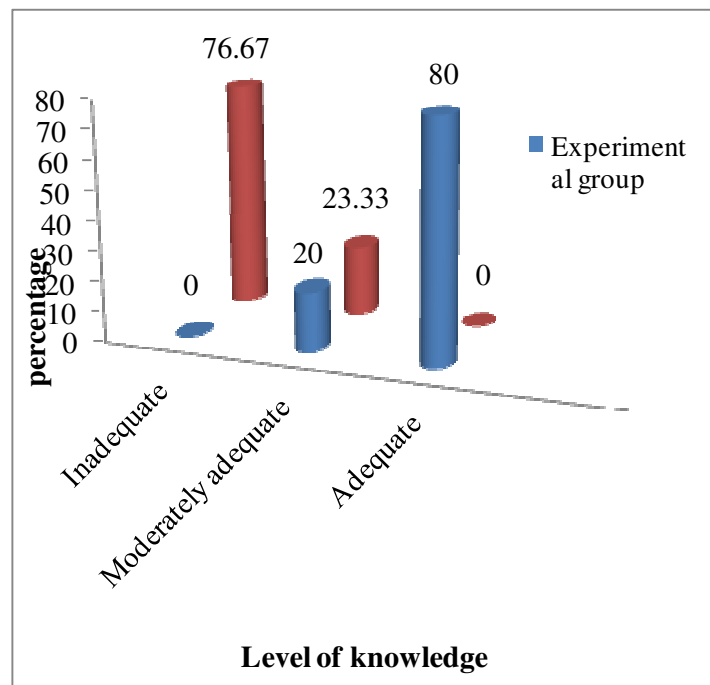
**Figure 2: Percentage Distribution of the Overall Posttest
Level of Knowledge Regarding Reproductive Cancer among
Opinion Leaders in the Experimental and Control Group**

**Table 2: Comparison of Pre and Post Test Level of Knowledge
Regarding Reproductive Cancer among Opinion
between Experimental and Control Group N = 60**

Knowledge	Experimental Group		Control Group		Unpaired 't' Value
	Mean	S.D	Mean	S.D	
Pretest	10.20	1.52	10.70	2.32	t = -0.987 p = 0.328 (NS)
Posttest	20.67	2.19	10.67	2.68	t = 15.827*** p = 0.001 (S)

***p < 0.001, S – Significant, NS – Not Significant

The mean post test knowledge among experimental group was significantly high, M=20.67, t=15.827 (p<.001). In control group mean post test knowledge, M=10.67, t=-0.987 (p>.05) it was not statistically significant.

The demographic variables type of family, family history of cancer, had showed low statistically significant association at p<0.05 level and other demographic variables did not reveal any significant association with the mean differed knowledge score regarding reproductive cancer among opinion leaders in experimental group.

CONCLUSIONS

The midwives play an important role in educating women through specially designed educational programs in the clinical setting, as well as, through community outreach strategies that suit our social and cultural setting. In addition, they constitute an important source of information within their social networks. Midwives have a vital role to educate the opinion leaders and to build their knowledge, understanding in relation to reproductive cancer. Midwives should possess professional responsibility in educating opinion leaders that encompass teaching, counseling and clinical roles. The findings of this study will act as a catalyst to carry out more extensive and cost effective research in promoting knowledge and early detection of reproductive cancer.

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EFFECTIVENESS OF HEALTH CARE PACKAGE ON KNOWLEDGE AND ATTITUDE REGARDING MINOR AILMENTS DURING POSTNATAL PERIOD

PRIYADARSHINI. T, BAGAVATHY. S & S. KANACHANA

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ABSTRACT

A Quasi-experimental study was conducted to assess the effectiveness of Health care package on knowledge and attitude among postnatal mothers at selected hospitals, Chennai. 60 postnatal mothers who satisfy the inclusion criteria were selected as samples using purposive sampling technique. Health care package was administered. The pre and post test level of knowledge and attitude was assessed using structured knowledge questionnaire and modified 4 point likert scale. The findings revealed that there was a high statistical difference in the level of knowledge and attitude regarding minor ailments during postnatal period among postnatal mothers in experimental group. The correlation of the post test mean knowledge with attitude score in experimental group, showed (r=0.55) a moderate positive correlation. The analysis revealed that there was a significant association of occupation with the mean differed knowledge score at p < 0.01 level and number of gravida with mean differed attitude score at p < 0.01 level. Thus Health care package was an effective technique in improving knowledge and attitude regarding minor ailments during postnatal period.

KEYWORDS: Minor Ailments of Postnatal Period, Prevention of Postnatal Minor Ailments

Original Article

INTRODUCTION

Postnatal period (Post meaning 'after' and natal is meaning 'of birth') is the time beginning immediately after birth of a child and extends for about a period of 6 weeks. Postpartum indicates the period of the restoration, during which the body tissues, in particular the genital and pelvic organs, return to their pre pregnancy state.

Being a mother is never too easy. The postpartum period is a time for mothers to adjust to the new role of motherhood, because of the rapid changes which are taking place in early puerperium mother experiences some discomforts although they are considered normal. Common discomforts which may upset the women during puerperal period are breast engorgement, cracked and sore nipple, after pain, sub involution of uterus, episiotomy wound infection, constipation and postnatal blues.

The incidence of breast engorgement varies from a few to 33% of lactating women and from developed countries the incidence varies between 0.04% and 8.9%. Breast problems include engorgement, sore or cracked nipples, mastitis and breast abscess. **(World Health Organization 2009).**

STATEMENT OF THE PROBLEM

A quasi experimental study to assess the effectiveness of Health Care Package on knowledge and attitude regarding minor ailments during postnatal period among postnatal mothers at selected hospitals, Chennai.

OBJECTIVES

- To assess and compare the pre and post test level of knowledge and attitude regarding minor ailments during postnatal period in experimental and control group.

- To assess the effectiveness of Health care package on knowledge and attitude regarding minor ailments during postnatal period

- To correlate the post test level of knowledge with attitude regarding minor ailments during postnatal period among postnatal mothers in experimental and control group

- To associate the selected demographic variables with mean differed knowledge score and attitude score regarding minor ailments during postnatal period in experimental group

NULL HYPOTHESES

NH_1: There is no significant difference between the pre and post test level of knowledge and attitude regarding minor ailments during postnatal period between experimental and control group at p <0.05.

NH_2: There is no significant relationship in the post test level of knowledge with attitude regarding minor ailments during postnatal period in experimental and control group at p <0.05.

NH_3: There is no significant association of selected demographic variables with mean differed knowledge score and attitude score regarding minor ailments during postnatal period in experimental group at p <0.05.

METHODOLOGY

Quasi experimental non equivalent control group design was used. The study was conducted at Sir Ivan Stedeford Hospital and Vijaya Hospital, Chennai, 60 postnatal mothers who satisfy the inclusion criteria were selected as samples using purposive sampling technique. Demographic data was collected. Pretest level of knowledge was assessed using structured knowledge questionnaire and attitude using modified 4 point likert scale. On the same day the mothers in the experimental group were made to sit comfortably in group and Health care package was regarding minor ailments during postnatal period was administered to postnatal mothers by using lecture cum discussion with power point presentation which took about 20 – 25 minutes. After 7 days post test level of knowledge was assessed using structured knowledge questionnaire and attitude by modified 4 point likert scale. For control group same data collection procedure was executed without intervention and hospital routine was followed. Health care package was administered after the post test for the control group

DATA ANALYSIS

Data analysis was done using both descriptive and inferential statistics. The findings of the study revealed that pre and post test level of knowledge and attitude in experimental group t value was 25.290 and 26.473 which was significant at p < 0.001 level and in control group t value was 1.000 and 1.439 which was not significant. The findings revealed that there was a high statistical significant difference in the level of knowledge and attitude regarding minor ailments during postnatal period among postnatal mothers in experimental group**.** The correlation of the post test mean knowledge with attitude score in experimental group, showed (r=0.55) a moderate positive correlation. The analysis revealed that there was a significant association of occupation with the mean differed knowledge score at p < 0.01 level and number of

gravida with mean differed attitude score at p < 0.01 level.

N = 60
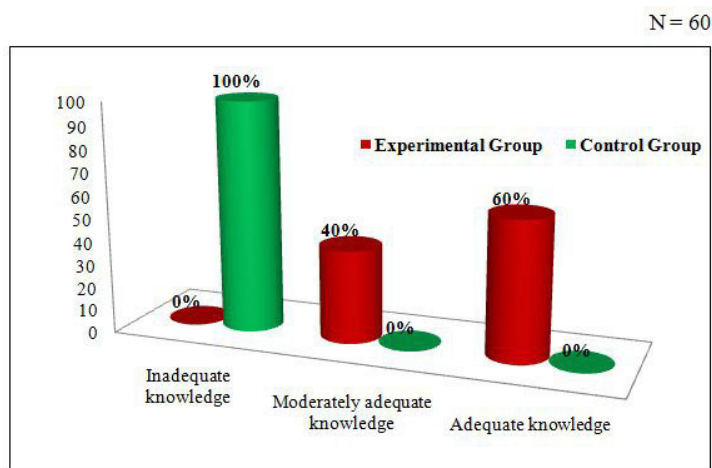
**Figure 1: Overall Post Test Level of Knowledge Regarding
Minor Ailments during Postnatal Period**

Table 1: Posttest Level of Attitude Regarding Minor Ailments during Postnatal Period

N = 60

Attitude	Unfavourable Attitude <50%)		Moderately Favourable Attitude (50 – 75%)		Favourable Attitude (>75%)	
	No.	%	No.	%	No.	%
Experimental Group	-	-	2	6.67	28	93.33
Control Group		-	30	100.0	-	-

**Table 2: Comparison of pre and Post Test Level of Knowledge
On Minor Ailments during Postnatal Period**

N = 60

Knowledge	Experimental Group		Control Group		Unpaired 'T' Value
	Mean	S.D	Mean	S.D	
Pretest	10.83	2.44	10.53	1.79	t = 0.543 p = 0.589 (NS)
Posttest	22.87	1.74	10.50	1.74	t = 27.576*** p = 0.001 (S)

***p < 0.001, S – Significant NS – Not Significant

**Table 3: Comparison of Pre and Post Test Level of Attitude
on Minor Ailments during Postnatal Period**

N = 60

Knowledge	Experimental Group		Control Group		Unpaired 'T' Value
	Mean	S.D	Mean	S.D	
Pre test	22.93	2.15	24.87	2.11	t = 3.514*** p = 0.001 (S)
Post test	32.97	1.88	24.80	2.11	t = 15.823*** p = 0.001 (S)

***p < 0.001, S – Significant NS – Not Significant

**Table 4: Correlation of the Posttest Mean Knowledge Score with Attitude Score
regarding Minor Ailments during Postnatal Period in Experimental Group**
N = 30

Post Test	Mean	S.D	'R' Value
Knowledge	22.87	1.74	r = 0.557***
Attitude	32.97	1.88	p = 0.001(S)

***p < 0.001, S – Significant

RESULTS AND DISCUSSIONS

There was an enhancement in the level of knowledge after administration of Health care package which in turn created a favourable attitude among postnatal mothers in experimental group. Thus Health care package was an effective education technique in improving knowledge and attitude regarding minor ailments during postnatal period

CONCLUSIONS

Midwives practicing in the clinical area have a good opportunity to educate the women regarding minor ailments during postnatal period like breast engorgement, cracked and sore nipple, sub involution of uterus, constipation etc. Research based practice is a hall mark of professional nursing. The students should be encouraged, given responsibility, independence and opportunities to practice varied procedures founded upon evidence based practice. The findings of this study will act as a catalyst to carry out more extensive, qualitative focused and cost effective research in prevention of puerperal complications

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5. *Monicka Berns (2011) Knowledge and Attitude regarding postnatal discomforts. Journal of Obstetrics and Gynecology: vol 2*

CONTENT VALIDITY CERTIFICATE

This is to certify that the tools developed by **Mrs. S. Bhagavathy**, Research Scholar, for her PhD thesis titled **"Effectiveness of technology enabled learning programme on Knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE) among women in selected villages, Thiruvallur District.** under the guidance of **Dr. S. Kanchana**, Omayal Achi college of Nursing, Chennai affiliated to The Tamil Nadu Dr.M.G.R Medical University, Guindy has been validated for appropriateness, depth of content, simplicity and clarity.

Tools validated:

1. Risk assessment
2. Demographic and clinical variables
3. Assessment of knowledge using structured interview schedule.
4. Observational checklist to assess the skill
5. Technology Enabled Learning Programme

Comments:

Suggestions/Recommendations:

Signature of the expert:

Designation and institutional address:

Seal:

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VIJAYA HOSPITAL
(UNIT OF VIJAYA MEDICAL & EDUCATIONAL TRUST)

TO WHOMSOEVER IT MAY CONCERN

Calibration Certificate

This is to certify that the Weighing Scale Utilized by Associate Prof. Bhagavathy.S, Ph.D (N) scholar, for the purpose of measuring Weighing of the samples for the research study "An experimental study to evaluate the effectiveness of Technology enabled learning programme on knowledge on Prevention of selected Breast diseases and practice on Breast Self Examination (BSE) among women at selected village, Thiruvallur District" from OMAYAL ACHI COMMUNITY HEALTH CENTRE is validated for its accuracy and appropriateness.

For Vijaya Group of Hospital,

M.SARAVANAN
Sr.Bio Medical Engineer

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the thesis work executed by Mrs. Bhagavathy. S, Ph.D Scholar, under the guidance of Dr.S. Kanchana, Principal and Research Director, Omayal Achi college of Nursing, affliated to The Tamil Nadu Dr. M.G.R Medical University, Guindy, on the Topic **"Effectiveness of Technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE) among women in selected villages, Thiruvallur district,"** during Jan 2013- Jan 2017 is edited by me for English language appropriateness and found to be correct.

Place : POOCHIATHIPATTU

Date : 19. 12. 2017

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Signature of the Language Expert

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TO WHOM-SO-EVER IT MAY CONCERN

This is to certify that the thesis work executed by **Mrs.Bhagavathy.S,** Ph.D scholar, under the guidance of Dr. S. Kanchana, Principal and Research Director, Omayal Achi College of Nursing, affiliated to The Tamilnadu Dr. M.G.R. Medical University, Guindy, on the topic of **"Effectiveness of Technology enabled learning programme on knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE) among women in selected villages, Thiruvallur district,"** during Jan 2013 - Jan 2017 is edited by me for Tamil language appropriateness and found to be correct.

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INFORMED CONSENT FORM

I have been informed that Ms. Bhagavathy.S , PhD Scholar at Omayal Achi College of Nursing, is doing her research on the topic "An experimental study to evaluate the effectiveness of technology enabled learning programme on Knowledge on prevention of selected breast diseases and practice on Breast Self-Examination (BSE) among women in selected villages, Thiruvallur District". I have been explained that the data collection for the study involves disclosure of my personal information regarding demography, risk factors, and details regarding breast diseases along with demonstration of BSE.

I understand that my identity and all information disclosed by me will be kept confidential. I also realize that there are no risks associated and my participation in this study is entirely voluntary. I have also been informed that I may choose to discontinue my participation at any point if wish and will continue to be treated in the usual and customary manner. I realize that my anonymity will be maintained throughout the study. However, the data collected and the study proceedings may be audio or video recorded and used in nursing publication or presentations for the benefit of women.

Any queries regarding my involvement in the study will be clarified by the investigator at any time. The study has been explained to me and I have understood the contents of the consent form. All my questions have been answered and hence I give my full cooperation and consent to participate in the study.

If needed, I may contact the investigator,

Ms. Bhagavathy.S (Mobile No. 9486530324)

PhD Scholar & faculty,

Omayal Achi College of Nursing,

Puzhal, Chennai-66.

Name of the participant: **Signature with date**

Name of the investigator: **Signature with date**

Name of the witness: **Signature with date**

ஒப்புதல் படிவம்.
(அல்லது)
முன் அறிவிப்பு ஒப்பந்த படிவம்.

உமையாள் ஆச்சி செவிலியர் கல்லூரியின் சார்பில் முனைவர் பட்டப்படிப்பு பயிலும் பேராசிரியர் திருமதி. பகவதி, அவர்களால் நடத்தப்படும் இந்த ஆய்வில் என்னை பங்கேற்க கேட்டுக்கொண்டதை நான் ஏற்றுக்கொள்கிறேன். இந்த ஆராய்ச்சியானது தேர்ந்தெடுக்கப்பட்ட மார்பக நோயினை தடுப்பது பற்றிய பெண்களின் அறிவுத்திறன் மற்றும் சுய மார்பக பரிசோதனை செய்யும் திறன் பற்றிய ஆராய்ச்சி படிப்பாகும். மற்றும் என்னுடைய சுய தகவல்கள் குறிப்பாக, தனி நபர் தகவல் படிவம், ஆபத்து காரணிகள், மற்றும் மார்பக நோயினை தடுப்பது பற்றிய என்னுடைய அறிவுத்திறன் சுய மார்பக பரிசோதனை செய்யும் திறன் பற்றியும் தகவல்கள் சேகரிக்கப்படும் என்பதை நான் அறிவேன்.

என்னைப்பற்றி சேகரித்த சுய தகவல்கள் அனைத்தும் வெளியிடப்படாமல் ஆய்வு மேற்கொள்ளப்படும் என்பதை நான் அறிவேன். இந்த ஆய்வின் மூலம் எனக்கு எந்த வித பாதிப்பும் ஏற்படாது என்பதால் நான் இந்த ஆய்விற்கு மனபூர்வமாக சம்மதிக்கிறேன். நான் யாருடைய கட்டாயத்தின் பெயரிலோ, வற்புறுத்தலின் பெயரிலோ ஆய்வில் பங்குக்கொள்ளவில்லை என்பதையும், தேவைப்பட்டால் நான் ஆய்விலிருந்து விலகிக்கொள்ளவும் எனக்கு முழு உரிமை உண்டு என்பதை அறிவேன். அவ்வாறு ஆய்விலிருந்து விலகிக்கொள்ளும்பட்சத்திலும் எப்பொழுதும் பிறரைப் போலவே நடத்தப்படுவேன் என்பதையும் அறிவேன். என்னைப்பற்றிய அனைத்து தகவல்களும் இரகசியமாக பாதுகாக்கப்படும் என்பதை அறிவேன். தேவைப்படும் போது ஆய்வின் முடிவுகள் செவிலியர் சார்ந்த பத்திரிகைகளிலும் கருத்தரங்குகளிலும் வெளியிட முழு சம்மதம் அளிக்கிறேன் மற்றும் ஆய்வின் முடிவுகள் செவிவழி தொடுமுறையின் மூலமாகவோ அல்லது படக்காட்சியாகவோ வெளியிட்டு என் போன்ற பெண்கள் பயனடைய சம்மதிக்கிறேன்.

ஆய்வினைப் பற்றிய சந்தேகங்கள் அனைத்தும் ஆய்வாளரால் தீர்த்து வைக்கப்படும் என்பதை நன்கு அறிவேன். இந்த ஆய்வினைப்பற்றிய முழு விளக்கமும் எனக்கு அளிக்கப்பட்டிருக்கிறது. இந்த ஆய்விற்கு தேவையான கேள்விகளுக்கு தகுந்த பதில்களை அளித்து ஆய்வில் முழு மனதுடன் பங்குக்கொள்ள சம்மதம் அளிக்கிறேன்.

தேவைப்படும்போது, நான் ஆய்வாளரை தொடர்புக் கொள்ள,
திருமதி. பகவதி , (தொ. பே. எண்: 9486530324)
முதுநிலை பட்டதாரி,
உமையாள் ஆச்சி செவிலியர் கல்லூரி,
புழல், சென்னை 600 066.

பங்கேற்பவரின் பெயர்   :   கையொப்பம் மற்றும் தேதி

ஆராய்ச்சியாளரின் பெயர்   :   கையொப்பம் மற்றும் தேதி

சாட்சியின் பெயர்   :   கையொப்பம் மற்றும் தேதி

OMAYAL ACHI COLLEGE OF NURSING, PUZHAL, CHENNAI

BREAST DISEASE RISK ASSESSMENT TOOL

SAMPLE ID: **VILLAGE:**

NAME   :   **CONTACT NUMBER:**

S.NO.	ITEMS	YES	NO
1	Did you attain menarche before 12yrs		
2	Do you have irregular menstrual cycle		
3	Are you a nulliparous women(not having children)		
4	Do you have any history of abortion		
5	Did you had your first childbirth after the age of 30		
6	Have you used oral contraceptives		
7	Have you breast fed your baby<12months		
8	Is there a family history of breast disease		
9	Is there a family history of breast cancer		
10	Is there any history of breast injury		
11	Do you use any hormone replacement therapy		
12	Have you been exposed to radiation(chest) before the age of 15yrs.		
13	Do you have the habit of using tobacco		

OMAYAL ACHI COLLEGE FOF NURSING, PUZHAL, CHENNAI
STRUCTURED KNOWLEDGE QUESTIONNAIRE

SECTION I : DEMOGRAPHIC DATA

SAMPLE ID: **VILLAGE:**

NAME: **CONTACT**

NUMBER:

1. **What is your age?(in years) _____**
2. **What is your educational status?**
    1) Graduate and above
    2) Higher Secondary School
    3) High School Certificate
    4) Middle School Certificate
    5) Primary School or Literate
    6) Non literate
3. **What is your occupation?**
    1) Profession
    2) Semi-Profession
    3) Clerical, Shop-owner, Farmer
    4) Skilled worker
    5) Semi-skilled worker
    6) Unskilled worker
    7) House wife
    8) others
4. **What is your religion?**
    1) Hindu
    2) Christian
    3) Muslim
    4) Others
5. **What is your family income per month?(in rupees)**
    1) >17,000(Upper Class)
    2) 8000-17,000(Upper Middle Class)
    3) 4000-8000(Lower Middle Class)
    4) 2000- 4000(Lower Class)
    5) < 2000
6. **What is your marital status?**
    1) Married- living with partner
    2) Married – separated
    3) Divorced

4) Single- never married

5) Single- living with partner

6) Widow

7) Others

7. **What is your type of family?**

1) Nuclear family

2) Joint family

3) Extended family

8. **Whether you have previous exposure related to knowledge on breast disease?**

1) Yes , If yes the source of information

   i) Newspaper /Magazine

   ii) Family members

   iii) Friends / Relatives

   iv) Radio / TV

   v) Health professionals

2) No

SECTION II: CLINICAL VARIABLES

A. **DIETARY RISK FACTORS**

1. **What is your diet pattern?**

   1) Vegetarian

   2) Non-vegetarian

   3) Ova vegetarian

   Frequency of non vegetarian intake/ week_____

	Non-vegetarian intake	Nil	Frequency of intake/week 1 – 2 days	3 – 4 days	5 – 6 days	All days
		1	2	3	4	5
I						
II						
III						
IV						

2. **Do you have the habit of taking Coffee?**

   1) No

   2) Yes

   If yes specify the frequency_____

	Coffee intake	Nil	If yes 1 – 2 times	3 – 4 times	5 – 6 times	>6times
		1	2	3	4	5
I						
II						
III						
IV						

B. LIFESTYLE RISK FACTORS

1. **Do you use of brassier?**

   1) No

   2) Yes

   If yes duration of hours of use per day _____

	Use of brasier	Nil	If yes 1– 3 hours	4 – 6 hours	7 – 9 hours	>9 hours
		1	2	3	4	5
I						
II						
III						
IV						

2. **Do you use deodorants/ body spray/ antiperspirants?**

   1) No

   2) Yes

   If yes frequency of use _____/week

	Use of deodorants/ body spray/ antiperspirants	Nil	If yes 1– 2days	3 – 4 days	5 – 6 days	All days
		1	2	3	4	5
I						
II						
III						
IV						

3. **Do you have the habit of doing exercise?**

   1) No

   2) Yes

   If yes, how often specify _____

	Habit of doing exercise	Nil	If yes 1– 2days	3 – 4 days	5 – 6 days	All days
		1	2	3	4	5
I						
II						
III						
IV						

4. **Do you use tobacco?**

1) No

2) Yes

	Use of tobacco	If yes, Smoking tobacco/ Smokeless tobacco/ both	No
		2	1
I			
II			
III			
IV			

	Smokable			Non smokable			
	Cigarette	Beedi	Ganjha	Pan	Gutka	Snuff	Chewable tobacco
	1	2	3	1	2	3	4
I							
II							
III							
IV							

5. **Do you have the habit of drinking alcohol?**

1) No

2) Yes

	Nil	If yes No .of times/week				In millilitres			
		1-2	3-4	5-6	>6				
	1	1	2	3	4	1	2	3	4
I									
II									
III									
IV									

6. **Do you have the habit of doing Breast Self Examination?**
   1) No
   2) Yes

   If yes, how often specify _____

	BSE	Nil	If yes Weekly once	Two weeks once	Monthly once	Whenever I feel
		1	2	3	4	5
I						
II						
III						
IV						

7. **Do you have shift pattern in your job?**
   1) No
   2) Yes

	Shift pattern	Nil	If yes	
			Day shift	Night shift
		1	2	3
I				
II				
III				
IV				

C. ENVIRONMENTAL RISK FACTOR

1. **Do you have the history of radiological exposure?**
   1) No
   2) Yes

   If yes specify the age of exposure_____ & number of times exposed_____

	Nil	If yes Age of exposure			No. of times exposed			
		<20 yrs	20-30 years	31-40 years	2-3 times	4-5 times	6-7 times	>7times
	1	1	2	3	1	2	3	4
I								
II								
III								
IV								

D. MEDICAL RISK FACTORS

1. **Do you use hormone replacement therapy?**

   1) No
   2) Yes

   If yes specify drug name and duration _____

	Hormone replacement therapy	**Nil**	**If yes 1-2 years**	**3-4 years**	**5-6years**	**>6years**
		1	2	3	4	5
I						
II						
III						
IV						

2. **Do you use of antihypertensives?**

   1. No
   2. Yes

   If yes specify drug name and duration _____

	Antihypertensives	**Nil**	**If yes 1-2 years**	**3-4 years**	**5-6years**	**>6years**
		1	2	3	4	5
I						
II						
III						
IV						

3. **Do you use antidepressants?**

   1. No
   2. Yes

   If yes specify drug name and duration _____

	Antidepressants	**Nil**	**If yes 1-2 years**	**3-4 years**	**5-6years**	**>6years**
		1	2	3	4	5
I						
II						
III						
IV						

E.ANTHROPOMETRIC MEASUREMENT

1.	Waist Circumference in cms	Height in m^2	Weight in Kgs	BMI
I				
II				
III				
IV				

F.   REPRODUCTIVE RISK FACTORS

1.   **What was your age at menarche? _____**

2.   **What is your regularity of menstrual cycle?**
   1)   Regular
   2)   Irregular
   If irregular specify _____

3.   **What was your age at marriage?**
   1)   15-20 years
   2)   21-25 years
   3)   26-30 years
   4)   31-35 years
   5)   >35 years
   6)   NA

4.   **What is your parity?**
   1)   Primipara
   2)   Multipara
   3)   Nullipara
   4)   NA

5.   **Do you have the history of abortion?**
   1)   No
   2)   Yes
   3)   NA
   If yes specify number and type of abortion _____

		If yes							
	Nil	Type of abortion				No. of abortion			
		Missed	Septic	Recurrent	Complete	1	2	3	>3
	1	1	2	3	4	1	2	3	4
I									
II									
III									
IV									

6. What was your age at first child birth?

1) 15-20 years

2) 21-25 years

3) 26-30 years

4) 31-35 years

5) >35 years

6) NA

7. Have you used any contraception? (current or 2 years prior)

1) No

2) Yes

3) NA

		If yes							
	Nil	Type of contraception				Duration of use			
		Condom	Copper-T	Oral pills	Natural methods	<12 months	1-2yrs	3-4yrs	>4yrs
	1	1	2	3	4	1	2	3	4
I									
II									
III									
IV									

8. Have you breastfed your baby/babies?

1) No

2) Yes

3) NA

	Breast feeding status	Nil	If yes Duration of feeding(in months)			
			<1	1-6	6-12	>12
		1	2	3	4	5
I						
II						
III						
IV						

9. **Do you have any history of infertility?**
   1) No
   2) Yes
   3) NA

   If yes specify

		If yes							
	Nil	Duration(in yrs)				Treatment			
		1-5yrs	6-10yrs	11-15yrs	>15yrs	Ovulation induction	IUI	IVF	OTHERS
	1	1	2	3	4	1	2	3	4
I									
II									
III									
IV									

G. FAMILIAL AND PERSONAL RISK FACTORS

10. **Do you have the family history of breast disease?**
    1) No
    2) Yes

    If yes specify the type of disease_____

11. **Do you have the family history of breast cancer?**
    1) No
    2) Yes

    If yes specify the relationship_____

Relatives	Degree		
	I	II	III
	1	2	3
Paternal			
Maternal			

12. **Do you have the family history of cancer?**
    1. Yes   2. No

    If yes specify the type of cancer _____

13. **Do you have the history of breast surgery?**
    1) Yes 2) No

14. Do you have the history of breast injury?

      1) Yes 2) No

15. Do you have the history of thyroid disorder?

      1) Yes 2) No

I. General information:

1. The texture of breast skin should be

    1) Rough

    2) Smooth

    3) Wrinkled

    4) Scaly

2. Both the breast should appear

    1) Symmetrical

    2) Asymmetrical

    3) Swollen

    4) Shrinked

3. In general breast disease means

    1) Group of disorder causing changes in glandular and connective tissue

    2) Group of disorder causing changes in nerve tissue

    3) Group of disorder causing changes in adipose tissue

    4) Group of disorder causing changes in epithelial tissue

II. Possible causes / Risk factors:

4. Breast disease is most common among

    1) Nullipara

    2) Primipara

    3) Multipara

    4) Grand multipara

5. One of the following risk factor that increases the risk of breast disease is

    1) First child at or above the age of 30

    2) First child at or below the age of 30

    3) Second child at or above the age of 30

    4) Second child at or below the age of 30

III. Selected breast diseases

6) Generally breast pain is classified as

    1) Continuous & sporadic pain

    2) Dull ache & pricking pain

    3) Cyclical & non- cyclical pain

    4) Throbbing & aching pain

7) The ---------- colour discharge from the nipple is more significant for breast disease

    1) White colour

    2) Red colour

    3) Yellow colour

    4) Pink colour

8) Galactorrhoea means

    1) Milky nipple discharge

    2) Bloody nipple discharge

    3) Yellowish nipple discharge

    4) Clear nipple discharge

9) Breast lump(Fibroadenoma) is characterized as

    1) Firm, painful lump without distinct borders

    2) Firm, painless lump with distinct borders

    3) Smooth, painless lump without distinct borders

    4) Smooth, painful lump with distinct borders

10) Breast cysts means

    1) Fluid filled sacs within breast

    2) Pus filled sacs within breast

    3) Fluid filled sacs around the breast

    4) Pus filled sacs around the breast

11) The fibrocystic breast causes

    1) Benign painful lumps

    2) Cancerous painful lumps

    3) Painful lumps

    4) Painless lumps

IV. Investigations

12) The easiest method to identify breast disease is

   1) Breast biopsy
   2) Breast self examination
   3) Mammography
   4) Ultrasonography

13) Mammography means

   1) Examination of the breast by health care professional
   2) Examination of the breast using sound waves
   3) Examination of the breast by x-ray
   4) Examination of the breast using dye

V. Management

14) The medical treatment for breast diseases are

   1) Simple analgesia, vitamin E supplementation
   2) Calcium and vitamin B supplementation
   3) Calcium and vitamin C supplementation
   4) Only analgesia

VI. Home care management

15) ----------type of diet is advisable to prevent breast disease

   1) Low carbohydrate, low fat, fruits and vegetables rich in antioxidants
   2) High fat, low carbohydrate, low calcium diet
   3) High fat, high carbohydrate low calcium and low antioxidants
   4) Low fat, high carbohydrate, high calcium diet

16) The lifestyle factors which could prevent breast disease are

   1) Limiting caffeine intake and use of firm support bra
   2) Use of excessive caffeine and use of firm support bra
   3) Limiting various exercise and walking
   4) Doing regular exercise and walking.

17) The home remedy for mastalgia is

   1) Use of hot compress
   2) Use of cold compress
   3) Use of hot or cold compress
   4) Use of ointment.

VII.   Preventive measures

18) The primary purpose of performing Breast Self Examination is

    1) To become familiar with one's own breast and identifying any changes

    2) To increase milk secretion

    3) To maintain structure of the breast

    4) To find or observe the shape and size of the nipple

19) The correct age for woman to perform Breast Self Examination is

    1) 15 years

    2) 20 years

    3) 25 years

    4) 30 years

20) Breast Self Examination means

    1) Looking at the breast standing in front of the mirror

    2) Feeling with finger pads for any changes in the breast

    3) Standing in front of the mirror and looking at the breast and feeling the breast with finger pads for any changes

    4) Standing in front of the mirror and looking at the breast for any changes

21) The ideal time to do breast self examination is

    1) Postmenstrual period of 3rd day

    2) Postmenstrual period of 4th day

    3) Postmenstrual period of 5th day

    4) Postmenstrual period of 6th day

22) Women with irregular periods should examine the breast

    1) Before menstrual periods

    2) On the same day every month

    3) On the day of menstruation

    4) Any time

23) Correct technique of performing breast self examination includes

    1) Palpation of the breasts

    2) Observation of the breasts

    3) Observation and palpation of the breasts

    4) Palpation and auscultation of the breasts

24) The findings to be noted while performing breast self examination are
   1) Shape, size, nipple discharge
   2) Weight of breast, itching
   3) Warmth of breast
   4) Only the size of the breast

25) While performing breast self examination the room should be
   1) Well ventilated and bright
   2) Closed and dark room
   3) Little ventilated and dark room
   4) Open room

SECTION D : OBSERVATIONAL CHECK LIST TO ASSESS SKILL ON BREAST SELF EXAMINATION

Name: **Sample ID:**

Date: **Time of the procedure:**

S.No.	Steps in BSE	Yes	No
1	Privacy		
2	Does the procedure in good light		
3	Position : Stands in front of the mirror		
4	Inspection:		
4.1	Checks the size of the both breasts		
4.2	Checks the shape of the both breasts		
4.3	Checks the nipple for retraction		
5	Palpation standing		
5.1	Keeps one arm behind the head		
5.2	Palpate the right breast with left hand's palmer surface of the middle three fingers in all areas in a circular manner.		
5.3	Palpates the armpit for any swelling.		
5.4	Repeats the same procedure to the left breast and armpit.		
6	Palpation-lying down		
6.1	Lies down on a flat surface and put a pillow under the shoulder and place the left arm behind the head.		
6.2	With the right hand's palmer surface of the middle three fingers palpate the left breast, begins at the outer edge and move slowly around the left breast in all areas in a circular manner.		
6.3	Palpate the left armpit for any swelling.		
6.4	Repeat the same with the left hand's palmer surface to the right breast and right armpit.		
7	Gently compress the nipple between the thumb and forefingers and looks for discharge.		
8	Records the findings		

Scoring key: Observational checklist for Breast Self Examination

Yes   : 1

No   : 0

Total score   : 16

DOCUMENTATION: (Tick against the options)

- A lump
- Swelling
- Dimpling
- Pain
- Nipple retraction (nipple turns in)
- Redness of nipple or breast skin
- Scaly nipple or breast skin
- Skin irritation
- Nipple discharge
- No specific findings

Signature of the participant   **Signature of the observer**

Date:

Comments:

உமையாள் ஆச்சி செவிலியர் கல்லூரி, புழல், சென்னை

இடர்நிலை காரணிகள் மதிப்பிடு கருவி

மாதிரி எண்:

பெயர்:

வசிக்கும் இடம்:

வ.எண்	இடர்நிலை காரணிகள்	ஆம்	இல்லை
1	12 வயதிற்கு முன் பூப்பெய்தீர்களா?		
2	உங்களின் மாதவிடாய் சுழற்சி முறை ஒழுங்கற்ற முறையா		
3	உங்களுக்கு குழந்தை உள்ளதா?		
4	கருக்கலைப்பு செய்துள்ளீர்களா?		
5	30 வயதிற்கு மேல் முதல் குழந்தையை பெற்றெடுத்தீர்களா		
6	ஏதேனும் கருத்தடை முறை பின்பற்றினீர்களா		
7	12 மாதத்திற்கு குறைவாக உங்கள் குழந்தைக்கு தாய்ப்பால் கொடுத்தீர்களா		
8	குடும்பத்தில் எவருகேனும் மார்பக நோயின் வரலாறு உள்ளதா?		
9	குடும்பத்தில் எவருகேனும் மார்பக புற்று நோயின் வரலாறு உள்ளதா?		
10	மார்பகத்தில் ஏதேனும் காயம் ஏற்பட்டுள்ளதா?		
11	ஹார்மோன்(மருந்து/ஊசி) பயன்படுத்தினீர்களா?		
12	கதிரியக்கத்திற்கு உட்படுத்தப்பட்டீர்களா?		
13	புகையிலை பயன்படுத்துகிறீர்களா?		

தகவல் சேகரிப்பு கருவி
பகுதி –அ: தனிநபர் விவரம்

மாதிரி எண்:

பெயர்:

வசிக்கும் இடம்:

தொலைபேசி எண்:

1) தங்களின் வயது என்ன? (வருடங்களில்)

2) தங்களின் கல்வித்தகுதி என்ன?
   1) பட்டப்படிப்பு மற்றும் அதற்கு மேல்
   2) மேல்நிலை படிப்பு
   3) இடைநிலை சான்றிதழ் படிப்பு
   4) உயர்நிலை படிப்பு
   5) நடுநிலை படிப்பு
   6) ஆரம்ப கல்வி படிப்பு
   7) கல்வி கற்காதவர்

3) தங்களின் வேலைத்தகுதி
   1) உயர்தர தொழில்
   2) மிதமான உயர்தர தொழில்
   3) எழுத்தர், கடை முதலாளி, விவசாயி
   4) பயிற்சி பெற்ற தொழிலாளி
   5) குறைந்த பயிற்சி பெற்ற தொழிலாளி
   6) பயிற்சி பெறாத தொழிலாளி
   7) இல்லத்தரசி
   8) மற்றவை

4) தாங்கள் எந்த மதத்தை சார்ந்தவர்
   1) இந்து
   2) கிறிஸ்த்தவர்
   3) இஸ்லாமியர்
   4) மற்றவை

5) தங்களின் குடும்ப மாத வருமானம் எவ்வளவு (ரூபாயில்)
   1) > 17,000
   2) 8,000 – 17,000
   3) 4,000 – 8,000
   4) 2,,000 – 4000
   5) < 2000

6) தங்களின் திருமணநிலை என்ன?
   1) திருமணமானவர் – துணையுடன் வாழ்பவர்
   2) திருமணமானவர் – பிரிந்து வாழ்பவர்
   3) விவாகரத்தானவர்
   4) தனி மனிதர் – திருமணமாகாதவர்
   5) தனி மனிதர் – இணைந்து வாழ்பவர்
   6) துணையை இழந்தவர்
   7) மற்றவை

7) தங்களின் குடும்ப வகை என்ன?
   1) தனிக்குடும்பம்
   2) கூட்டுக்குடும்பம்
   3) நீட்டிக்கப்பட்ட குடும்பம்
   4) மற்றவை

8) மார்பக நோய் பற்றிய முந்தைய அனுபவ அறிவுத்திறன்
   1) ஆம், ஆம் எனில் தகவல் அறிந்த முறை
      1) செய்தித்தாள்/பத்திரிகை
      2) குடும்ப நபர்கள்
      3) நண்பர்கள்/உறவினர்கள்
      4) வானொலி/தொலைக்காட்சி
      5) சுகாதார நிபுணர்கள்
   2) இல்லை

பகுதி - ஆ

அ) உணவு காரணிகள்
   1) உங்களின் உணவு முறை என்ன?
      1. சைவம்
      2. அசைவம்
      3. முட்டை உண்ணும் சைவர்
      ஒரு வாரத்தில் அசைவம் உண்ணும் கால இடைவெளி _____

அசைவம் உண்ணும் கால இடைவெளி	உண்ணுவதில்லை	1 – 2 நாட்கள்	3 – 4 நாட்கள்	5 – 6 நாட்கள்	எல்லா நாட்களும்
	1	2	3	4	5
I					
II					
III					
IV					

   2) உங்களுக்கு காஃபி அருந்தும் பழக்கம் உள்ளதா?
      1. இல்லை
      2. ஆம்
      ஆம், எனில் ஒரு நாளில் எத்தனை முறை அருந்துவீர்கள் _____

காஃபி அருந்தும் பழக்கம்	பழக்கம் இல்லை	ஆம், எனில் 1 – 2 முறை	3 – 4 முறை	5 – 6 முறை	>6 முறை
	1	2	3	4	5
I					
II					
III					
IV					

ஆ) வாழ்க்கை முறை காரணிகள்
   1) மார்கச்சை அணிவீர்களா?
      1. இல்லை
      2. ஆம்
      ஆம் எனில், ஒரு நாளைக்கு எவ்வளவு மணி நேரம் _____

	மார்கச்சை அணியும் பழக்கம்	இல்லை	ஆம் எனில் 1– 3 மணி நேரம்	4 – 6 மணி நேரம்	7 – 9 மணி நேரம்	>9 மணி நேரம்
		1	2	3	4	5
I						
II						
III						
IV						

2) வாசனை திரவியம் / உடல் தெளிப்பு /சுவாச புத்துணர்ச்சி தெளிப்பி முதலியன பயன்படுத்துகிறீர்களா?
1. இல்லை
2. ஆம்

ஆம் எனில், வாரதிற்கு எத்தனை முறை பயன்படுத்துவீர்கள்

	வாசனை திரவியம்/உடல் தெளிப்பு/சுவாச புத்துணர்ச்சி தெளிப்பி பயன்பாடு	இல்லை	ஆம் எனில் 1– 2நாட்கள்	3 – 4 நாட்கள்	5 – 6 நாட்கள்	எல்லா நாட்களும்
		1	2	3	4	5
I						
II						
III						
IV						

3) உடற்பயிற்சி செய்யும் பழக்கம் உள்ளதா?
1. இல்லை
2.ஆம்

ஆம் எனில், வாரதிற்கு எத்தனை முறை செய்கிறீர்கள்_____

	உடற்பயிற்சி செய்யும் பழக்கம்	இல்லை	ஆம் எனில் 1– 2நாட்கள்	3 – 4 நாட்கள்	5 – 6 நாட்கள்	எல்லா நாட்களும்
		1	2	3	4	5
I						
II						
III						
IV						

4) புகையிலை பயன்படுத்துகிறீர்களா?
1. இல்லை
2.ஆம்

	புகையிலை பயன்பாடு	ஆம் எனில், புகைக்கும் / புகைக்காதது / இரண்டும்	இல்லை
		2	1
I			
II			
III			
IV			

	புகைக்கும்			புகைக்காதது			
	சிகரெட்	சிகரெட்	கஞ்சா	பான்	குட்கா	நுகர்தல்	மெல்லும் புகையிலை
	1	2	3	1	2	3	4
I							
II							
III							
IV							

5) மது அருந்தும் பழக்கம் உள்ளதா?
   1. இல்லை
   2. ஆம்

   ஆம் எனில், எவ்வளவு முறை _____ நாள் மற்றும் அளவு_____ ஒரு நாளைக்கு

	இல்லை	ஆம் எனில் வாரத்திற்கு எத்தனை முறை				மில்லிலிட்டர்			
		1-2	3-4	5-6	>6	60	120	180	220
	1	1	2	3	4	1	2	3	4
I									
II									
III									
IV									

6) சுய மார்பக பரிசோதனை செய்யும் பழக்கம் உள்ளதா?
   1. இல்லை
   2. ஆம்

   ஆம் எனில், எவ்வளவு அடிக்கடி _____

	சுய மார்பக பரிசோதனை	இல்லை	ஆம் எனில் வாரத்திற்கு ஒரு முறை	இரண்டு வாரத்திற்கு ஒரு முறை	மாதம் ஒரு முறை	தோணும் போதெல்லாம்
		1	2	3	4	5
I						
II						
III						
IV						

7) உங்களின் வேலையில் பணி மாற்று முறை உண்டா?
   1. இல்லை
   2. ஆம்

	பணி மாற்று முறை	இல்லை	ஆம் எனில்	
			பகல் பணி முறை	இரவு பணி முறை
		1	2	3
I				
II				
III				
IV				

இ) சுற்றுச்சூழல் காரணிகள்

1) கதிரியக்கத்திற்கு உட்படுத்தப்பட்டீர்களா?
    1. இல்லை
    2. ஆம்

    ஆம் எனில், வெளிப்பாட்டிற்கு உட்படுத்தப்பட்ட போது உங்களின் வயது ___ மற்றும் வாழ்நாளில் எத்தனை முறை ___உட்படுத்தப்பட்டீர்கள்

	இல்லை	ஆம் எனில் வெளிப்பாட்டிற்கு உட்படுத்தப்பட்ட போது உங்களின் வயது			வாழ்நாளில் எத்தனை முறை உட்படுத்தப்பட்டீர்கள்			
		<20	20-30	31-40	2-3 முறை	4-5 முறை	6-7 முறை	>7 முறை
	1	1	2	3	1	2	3	4
I								
II								
III								
IV								

ஈ) மருத்துவ காரணிகள்

1) ஹார்மோன்(மருந்து/ஊசி) பயன்படுத்தினீர்களா?
    1. இல்லை
    2. ஆம்

    ஆம் எனில், மருந்தின் பெயர்_____ மற்றும் எத்தனை காலம் _____ பயன்படுத்தினீர்கள்.

	ஹார்மோன்(மருந்து/ஊசி) பயன்பாடு	இல்லை	ஆம் எனில் 1-2 வருடம்	3-4 வருடம்	5-6 வருடம்	> 6 வருடம்
		1	2	3	4	5
I						
II						
III						
IV						

2) இரத்த கொதிப்பிற்கான மருந்துகளை பயன்படுத்தினீர்களா?
    1. இல்லை
    2. ஆம்

    ஆம் எனில், மருந்தின் பெயர் மற்றும் காலம் _____

	இரத்த கொதிப்பிற்கான மருந்தின் பயன்பாடு	இல்லை	ஆம் எனில் 1-2 வருடம்	3-4 வருடம்	5-6 வருடம்	>6 வருடம்
		1	2	3	4	5
I						
II						
III						
IV						

3) மன அழுத்திற்கான மருந்து பயன்படுத்தினீர்களா?
1. இல்லை
2. ஆம்

    ஆம் எனில், மருந்தின் பெயர் மற்றும் காலம் _____

	மன அழுத்திற்கான மருந்தின் பயன்பாடு	இல்லை	ஆம் எனில் 1-2 வருடம்	3-4 வருடம்	5-6 வருடம்	>6 வருடம்
		1	2	3	4	5
I						
II						
III						
IV						

உ) உடல் பருமன் குறியீட்டு எண்: BMI _____

1.	இடுப்பு சுற்றளவு (செ.மீ)	உயரம் (மீ $^{2)}$	எடை (கிலோ)	BMI
I				
II				
III				
IV				

ஊ) இன பெருக்க ஆபத்து காரணிகள்

1. பூப்பெய்த வயது _____

2. உங்களின் மாதவிடாய் சுழற்சி முறை

    1) ஒழுங்கான முறை

    2) ஒழுங்கற்ற முறை

      ஒழுங்கற்ற முறை எனில் _____

3. திருமணம் ஆன போது உங்களின் வயது என்ன?

    1) 15-20 வயது

    2) 21-25 வயது

    3) 26-30 வயது

    4) 31-35 வயது

    5) >35 வயது

    6) பொருந்தாது

4. உங்களுக்கு எத்தனை குழந்தைகள் உள்ளன?

    1) இல்லை

    2) ஒன்று

    3) இரண்டு

    4) இரண்டிற்கு மேல்

    5) பொருந்தாது

5. முதல் குழந்தை பெற்றெடுத்த போது தங்களின் வயது என்ன?

    1) 16-20 வயது

    2) 21-25 வயது

    3) 26-30 வயது

4) 31-35 வயது

5) >35 வயது

6) பொருந்தாது

6. ஏதேனும் கருத்தடை முறை பின்பற்றினீர்களா?(தற்போது அல்லது 2 வருடங்களுக்கு முன்பு)

    1. இல்லை

    2. ஆம்

	இல்லை	ஆம் எனில்							
		கருத்தடை முறை				காலஇடைவெளி			
		ஆணுறை	காப்பர்டி	மருந்து மாத்திரைகள்	இயற்கையான முறைகள்	<12 மாதங்கள்	1-2 வருடம்	3-4 வருடம்	>4 வருடம்
	1	1	2	3	4	1	2	3	4
I									
II									
III									
IV									

7. கருக்கலைப்பு செய்துள்ளீர்களா?
    1) இல்லை
    2) ஆம்
       ஆம் எனில், எத்தனை முறை மற்றும் கருக்கலைப்பு வகை _____

	இல்லை	ஆம் எனில்							
		கருக்கலைப்பு வகை				எத்தனை முறை			
		மறை கருச்சிதைவு	செப்டிக்	மீண்டும் மீண்டும்	முழுமையான	1	2	3	>3
	1	1	2	3	4	1	2	3	4
I									
II									
III									
IV									

8. உங்கள் குழந்தைக்கு தாய்ப்பால் கொடுத்தீர்களா?
    1) இல்லை
    2) ஆம்
    3) பொருந்தாது

	தாய்ப்பால் கொடுக்கும் நிலை	இல்லை	ஆம் எனில் கொடுத்த காலம் (மாதங்கள்)			
			<1	1-6	6-12	>12
		1	2	3	4	5
I						
II						
III						
IV						

9. குழந்தையின்மைகாக சிகிச்சை மேற்கொண்டீர்களா?
   1) இல்லை
   2) ஆம்
      ஆம் எனில், காலம் _____ சிகிச்சை வகை _____

	இல்லை	ஆம் எனில்							
		காலஇடைவெளி (வருடங்களில்)				சிகிச்சை வகை			
		1-5 வருடம்	6-10 வருடம்	11-15 வருடம்	>15 வருடம்	அண்டவிடுப்பின் தூண்டல்	IUI	IVF	மற்றவை
	1	1	2	3	4	1	2	3	4
I									
II									
III									
IV									

எ) குடும்பம் மற்றும் சுயமான ஆபத்து காரணிகள்

1. குடும்பத்தில் எவருகேனும் மார்பக நோயின் வரலாறு உள்ளதா?
   1) ஆம்
   2) இல்லை
      ஆம் எனில், நோயின் வகை _____

2. குடும்பத்தில் எவருகேனும் மார்பக புற்று நோயின் வரலாறு உள்ளதா?
   1) ஆம்
   2) இல்லை
      ஆம் எனில், உறவு முறை _____

உறவு முறை	இரத்த உறவு		
	I	II	III
	1	2	3
தந்தைவழி			
தாய்வழி			

3. குடும்பத்தில் எவருகேனும் புற்றுநோயின் வரலாறு உள்ளதா?
   1) ஆம்
   2) இல்லை
      ஆம் எனில், புற்றுநோயின் வகை _____

4. மார்பகத்தில் அறுவை சிகிச்சை ஏதேனும் மேற்கொண்டுள்ளீர்களா?
   1) ஆம்
   2) இல்லை

5. மார்பகத்தில் ஏதேனும் காயம் ஏற்பட்டுள்ளதா?
   1) ஆம்
   2) இல்லை

6. தைராய்டு பிரச்சனை உள்ளதா?
   1) ஆம்
   2) இல்லை

பகுதி-இ: கட்டமைக்கப்பட்ட அறிவுத்திறனுக்கான கேள்வித்தாள்

I. **பொதுவான விவரங்கள்:**

1. மார்பக நோய் என்பது
   1) சுரப்பி மற்றும் இணைப்புச் திசுக்களின் கோளாறினால் ஏற்படும் மாற்றங்கள்
   2) நரம்பு திசுக்களின் கோளாறினால் ஏற்படும் மாற்றங்கள்
   3) கொழுப்பு திசுக்களின் கோளாறினால் ஏற்படும் மாற்றங்கள்
   4) எப்பிதிலியம்/மேல்புற திசுக்களின் கோளாறினால் ஏற்படும் மாற்றங்கள்

2. மார்பக தோலின் தன்மையானது
   1) சொரசொரப்பாக காணப்படும்
   2) மென்மையாக காணப்படும்
   3) சுருக்கமாக காணப்படும்
   4) செதில் செதிலாக காணப்படும்

3. மார்பகங்களின் தோற்றமானது
   1) சமச்சிரற்ற நிலையில இருக்கும்
   2) வீங்கிய நிலையில இருக்கும்
   3) நலிவுற்ற நிலையில இருக்கும்
   4) சிரற்ற நிலையில இருக்கும்

II. **சாத்தியமான காரணங்கள்/ ஆபத்து காரணிகள்**

4. மார்பக நோய்க்கான சாத்தியமான காரணிகள்
   1) ஹார்மோன் விகித மாற்றங்கள்
   2) 14 வயதிற்கு பிறகு பூப்படைதல்
   3) மாதவிடாய் 40 வயதிற்கு முன்னரே நிற்றல்
   4) 6 மாதங்களுக்கு மேல் தாய்ப்பாலூட்டுதல்.

5. மார்பக நோய் வருவதற்கான ஆபத்து காரணிகள்
   1) முதல் குழந்தையை 30 வயது அடைந்தவுடன் அல்லது அதற்கு மேல் பெற்றெடுத்தல்.
   2) 14 வயதிற்கு பிறகு பூப்படைதல்
   3) மாதவிடாய் 40 வயதிற்கு முன்னரே நிற்றல்
   4) 6 மாதங்களுக்கு மேல் தாய்ப்பாலூட்டுதல்

III. **தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்கள்:**

6. மார்பக வலியின் வகை
   1) தொடர்ச்சியான மற்றும் ஆங்காங்கே வலி
   2) மந்தமான வலி மற்றும் ஊசி குத்துவது போன்ற வலி
   3) சுழற்சி மற்றும் சுழற்சி அல்லாத வலி
   4) துடிக்கும்படி வலி

7. மார்பக காம்பிலிருந்து _____ நிறமான திரவம் வெளியேறுவதை கவனிக்க வேண்டியவை
   1) வெள்ளை நிறம்
   2) சிகப்பு நிறம்
   3) மஞ்சள் நிறம்
   4) இளஞ்சிவப்பு நிறம்

8. காலக்டோரியா / மிகு பால்சுரப்பு என்பது
   1) மார்பக காம்பிலிருந்து பால் நிற திரவம் வெளியேறுதல்
   2) மார்பக காம்பிலிருந்து இரத்தம் வெளியேறுதல்
   3) மார்பக காம்பிலிருந்து மஞ்சள் நிற திரவம் வெளியேறுதல்
   4) மார்பக காம்பிலிருந்து தெளிந்த திரவம் வெளியேறுதல்

9. நார்கட்டியின் (பைப்புரோயடினோமா) குறிப்பான அறிகுறிகள்
   1) வலியற்ற, எளிதாக அசையக்கூடிய, தெளிவாக தெரியக்கூடிய எல்லைகளைக் கொண்ட தடிமனான கட்டி
   2) வலியற்ற, தெளிவாக தெரியாத எல்லைகளைக் கொண்ட தடிமனான கட்டி
   3) வலியற்ற, தெளிவாக தெரியாத எல்லைகளைக் கொண்ட மென்மையான கட்டி
   4) வலியற்ற, எளிதாக அசையக்கூடிய, தெளிவாக தெரியக்கூடிய எல்லைகளைக் கொண்ட கட்டி

10. மார்பக நீர்க்கட்டிகள் என்றால்
    1) மார்பகத்தினுள் திரவம் நிரப்பப்பட்ட பைகள்
    2) மார்பகத்தினுள் சீழ் நிரப்பப்பட்ட பைகள்
    3) மார்பகத்தினை சுற்றி திரவம் நிரப்பப்பட்ட பைகள்
    4) மார்பகத்தினை சுற்றி சீழ் நிரப்பப்பட்ட பைகள்

11. நார்பைகட்டியினால் (பைப்ரோசிஸ்டிக்) மார்பகத்தில் ஏற்படும் விளைவுகள்
    1) தீங்கில்லாத வலியுடைய முடிச்சு கட்டிகள்
    2) புற்றுநோய் வலியுடைய முடிச்சு கட்டிகள்
    3) வலியுடைய முடிச்சு கட்டிகள்
    4) வலியில்லாத முடிச்சு கட்டிகள்

IV. பரிசோதனை முறைகள்:
12. மார்பக நோயை எளிதாக கண்டறியும் முறை
    1) மார்பக திசு ஆய்வு
    2) மார்பக சுய பரிசோதனை
    3) மேமோகிராபி
    4) அல்ட்ரா சோனோகிராபி

13. மேமோகிராபி என்றால்
    1) உடல்நல பணியாளர்கள் கொண்டு மார்பகத்தை பரிசோதித்தல்
    2) ஒலி அலைகளை கொண்டு மார்பகத்தை பரிசோதித்தல்
    3) எக்ஸ்ரே கொண்டு மார்பகத்தை பரிசோதித்தல்
    4) சாயம் கொண்டு மார்பகத்தை பரிசோதித்தல்

V. மேலாண்மை:
14. மார்பக நோயை குணப்படுத்தும் மருத்துவ ரீதியான சிகிச்சை
    1) எளிய வலிநிவாரணிகள், உயிர்சத்து-E கூடுதலாக சேர்ப்பது
    2) கால்சியம் மற்றும் உயிர்சத்து-B கூடுதலாக சேர்ப்பது
    3) கால்சியம் மற்றும் உயிர்சத்து-C கூடுதலாக சேர்ப்பது
    4) வலிநிவாரணி மருந்துகள் மட்டும்

VI. வீட்டிலிருந்து பராமரிக்கும் முறை:
15. மார்பக நோய் வராமல் தடுக்க_____ வகையான உணவு அறிவுறுத்தப் படுகிறது
    1) குறைந்த கார்போஹைட்ரேட், குறைந்த கொழுப்பு, உயிர்வளியேற்ற எதிர்ப்பிகள் நிறைந்த பழங்கள் மற்றும் காய்கறிகள்.
    2) அதிக கொழுப்பு, குறைந்த கார்போஹைட்ரேட், குறைந்த கால்சியம் உணவுகள்

3) அதிக கொழுப்பு, அதிக கார்போஹைட்ரேட், குறைந்த கால்சியம் மற்றும் குறைந்த உயிர்வளியேற்ற எதிர்ப்பிகள் நிறைந்த உணவுகள்

4) குறைந்த கொழுப்பு, அதிக கார்போஹைட்ரேட், அதிக கால்சியம் நிறைந்த உணவு

16. மார்பக நோயை தடுக்கும் வாழ்க்கை முறை காரணிகள்
1)காப்பி எடுப்பதை குறைத்தல் மற்றும் இறுக்கமான பிடிப்பினை தரும் மார்கச்சை உபயோகித்தல்

2)அதிக காப்பி எடுத்துக்கொள்வது மற்றும் இறுக்கமான பிடிப்பினை தரும் மார்கச்சை உபயோகித்தல்

3) உடற்பயிற்சி மற்றும் நடைப்பயிற்சியை கட்டுக்குள் வைப்பது

4) அன்றாடம் உடற்பயிற்சி மற்றும் நடைப்பயிற்சியை செய்வது

17. மார்பக முலைவலியை வீட்டிலிருந்தே குணப்படுத்தும் முறை
1) சூடான ஒத்தடம் கொடுத்தல்
2) குளிர்ந்த ஒத்தடம் கொடுத்தல்
3) சூடான அல்லது குளிர்ந்த ஒத்தடம் கொடுத்தல்
4) களிம்பை உபயோகித்தல்

VII. தடுப்பு நடவடிக்கைகள்:
18. மார்பக சுய பரிசோதனை செய்யும் நோக்கம்
1) சுயமாக தன்னுடைய மார்பகத்தை பற்றி தெரிந்து கொள்ளுதல் மற்றும் அதில் எதாவது மாற்றம் ஏற்படுவதை அறிந்துகொள்ளுதல்
2) தாய்ப்பால் சுரப்பதை அதிகரித்தல்
3) மார்பகத்தின் அமைப்பை பராமரித்தல்
4) மார்பகக் காம்பின் வடிவம் மற்றும் அளவை கண்டறிதல் அல்லது கண்காணித்தல்

19. மார்ப்க சுய பரிசோதனை பெண்கள் செய்ய ஆரம்பிக்க சரியான வயது
1) 15 வயது
2) 20 வயது
3) 25 வயது
4) 30 வயது

20. மார்பக சுய பரிசோதனை என்பதன் பொருள்
1) கண்ணாடியின் முன் நின்று மார்பகத்தை பார்த்தல்
2) மார்பகத்தில் ஏற்படும் மாற்றத்தை விரல்களை சேர்த்து மிதமாக அழுத்தி உணர்தல்
3) கண்ணாடியின் முன் நின்று கொண்டு மார்பகத்தை பார்த்தல் மற்றும் மார்பகத்தில் ஏற்படும் மாற்றத்தை விரல்களை சேர்த்து மிதமாக அழுத்தி உணர்தல்
4) கண்ணாடியின் முன் நிற்றல் மற்றும் மார்பகத்தில் ஏற்படும் மாற்றத்தை பார்த்தல்

21. மாதவிடாய் முடிந்து _____ நாட்கள் கழித்து மார்பக சுய பரிசோதனை செய்ய வேண்டும்
1) மாதவிடாய் முடிந்த மூன்றாவது நாள்
2) மாதவிடாய் முடிந்த நான்காவது நாள்
3) மாதவிடாய் முடிந்த ஐந்தாவது நாள்
4) மாதவிடாய் முடிந்த ஆறாவது நாள்

22. ஒழுங்கற்ற மாதவிடாய் காலத்தில் ஒருவர் மார்பகத்தை பரிசோதிக்க வேண்டிய நேரம்
1) மாதவிடாய் வருவதற்கு முன்பு
2) மாதவிடாயின் போது
3) மாதவிடாய் நாளின் போது
4) எப்பொழுது வேண்டுமென்றாலும்

23. மார்பகத்தை எவ்வாறு தொட்டு தெரிந்து கொள்ள வேண்டும்
   1)மார்பகத்தை வட்டவடிவில் செங்குத்தான பாதையில் நுனியை நோக்கி தொட்டு தெரிந்துகொள்ளுதல்
   2)மார்பகத்தை கிடைமட்ட நிலையில் வட்டவடிவில் மிதமாக அழுத்தி தெரிந்து கொள்ளுதல்
   3)மார்பகத்தை கிடைமட்ட நிலையில் நுனியை நோக்கி மிதமாக அழுத்தி தெரிந்து கொள்ளுதல்
   4)மார்பகத்தை செங்குத்தான பாதையில் மட்டும் மிதமாக அழுத்தி தெரிந்து கொள்ளுதல்

24. சுய மார்பக பரிசோதனையின் போது குறிப்பெடுக்க வேண்டிய கண்டுபிடிப்புகள்
   1) வடிவம், அளவு, மார்பகக் காம்பிலிருந்து வடியும் திரவம்
   2) மார்பகத்தின் எடையை, அரிப்பு
   3) மார்பகத்தின் உஷ்ண நிலை
   4) மார்பகத்தின் வடிவம் மட்டும்

25. மார்பகத்தில் ஏற்படும் எந்த மாற்றத்தை மருத்துவரின் கவனத்திற்கு கொண்டு செல்ல வேண்டும்
   1) மார்பகத்தின் அளவு மற்றும் வடிவில மாற்றம், மார்பகத்தின் வீக்கம் அல்லது அக்குள்களில் உள்ள வீக்கம், மார்பகக் காம்பிலிருந்து வடியும் திரவம்
   2) மார்பகத்தின் வீக்கம் அல்லது அக்குள்களில் உள்ள வீக்கம், மார்பகக் காம்பிலிருந்து வடியும் திரவம்
   3) மார்பகக் காம்பிலிருந்து வடியும் திரவம், மார்பகத்தின் அளவு
   4) மார்பகத்தின் அளவு

LESSON PLAN

Topic	:	Selected Breast diseases and its prevention
Group	:	Women between 20 – 40 years
Place	:	Selected villages (Balwadi / Home)
Duration	:	45 minutes – 1 hour and 15 minutes
Teaching method	:	Video assisted group teaching on prevention of selected breast diseases
		Demonstration on Breast Self Examination
Seating arrangement	:	Horse Shoe shaped arrangement
Instructor	:	Investigator
Instructional aid	:	Video show on prevention of selected breast diseases and demonstration using breast model

GENERAL OBJECTIVE:
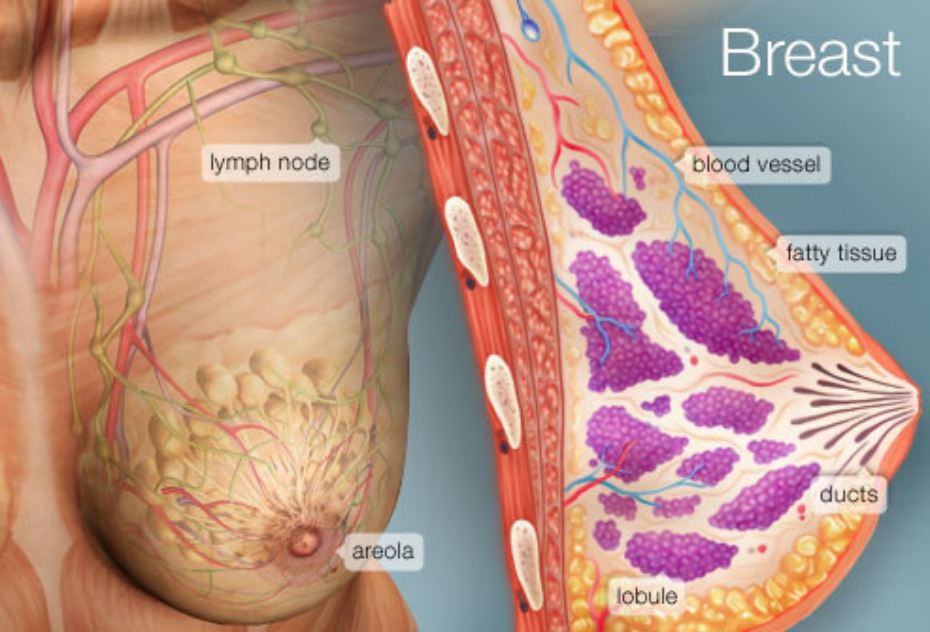
At the end of the class the women gains adequate knowledge on prevention of selected breast diseases and skill in performing Breast Self Examination.

SPECIFIC OBJECTIVES:

At the end of the class the women will be able to

1. discuss the anatomy and physiology of breast and development of breast at various stages
2. define breast diseases
3. classify breast diseases
4. enumerate the risk factor for selected breast diseases
5. list the possible causes of selected breast diseases
6. identify the signs and symptoms of selected breast diseases
7. explain the diagnostic modalities of selected breast diseases
8. explain the management for selected breast diseases
9. explain the health promotion and maintenance for selected breast diseases
10. demonstrate Breast Self Examination

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
1.		**Introduction** Breasts are the most important feature of female anatomy and an integral part of the reproductive system. They are symbols of fertility and woman-hood. They serve very significant roles, especially function of lactation. Women's breasts are constantly going through change, from the time of their development, through pregnancy and the menopause. . Any changes in the breast can cause symptoms. These breast changes can be either benign (non-cancerous) breast conditions or breast cancers.	Lecture	Listening
2.	Discuss the anatomy and physiology of breast	**Anatomy and physiology** The breast is the tissue overlying the chest (pectoral) muscles. Women's breasts are made of specialized tissue that produces milk (glandular tissue) as well as fatty tissue. The amount of fat determines the size of the breast. The milk-producing part of the breast is organized into 15 to 20 sections, called lobes. Within each lobe are smaller structures, called lobules, where milk is produced. The milk travels through a network of tiny tubes called ducts. The ducts connect and come together into larger ducts, which eventually exit the skin in the nipple. The dark area of skin surrounding the nipple is called the areola. Connective tissue and ligaments provide support to the breast and give it its shape.	Lecture cum Discussion	Listening

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		Nerves provide sensation to the breast. The breast also contains blood vessels, lymph vessels, and lymph nodes. **Breast development** Breast development is a vital part of reproduction in the human female. Breast development happens in distinct stages throughout a woman's life, first		

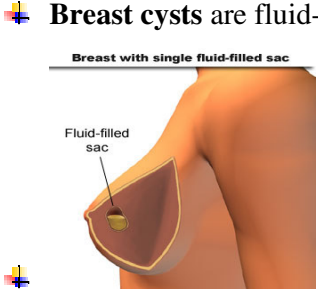| S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity

		before birth, again at puberty, and during the childbearing years. Changes also happen to the breasts during the menstrual cycle and when a woman reaches menopause. By the time a female infant is born, nipples and the beginnings of the milk-duct system have formed.
		
		Changes during Puberty and menstruation
		     During puberty, the female breast enlarges rapidly. When the ovaries start to secrete estrogen, fat in the connective tissue begins to accumulate causing the breasts to enlarge. The duct system also begins to grow. Estrogen, which is produced by the ovaries in the first half of the menstrual cycle, stimulates the growth of milk ducts in the breasts. The hormone progesterone takes over in the second half of the cycle, stimulating the formation of the milk glands. These hormones are believed to be responsible for the cyclical changes, like the swelling, pain, and tenderness that many women experience in their breasts just before menstruation.
		
		Changes during pregnancy and lactation
		     Breast changes are one of the earliest signs of pregnancy. This is a result of the hormone progesterone. In addition, the areolas (the dark areas of skin that surround the nipples of the breasts) begin to swell followed by the rapid swelling		

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		of the breasts themselves. Most pregnant women experience tenderness down the sides of the breasts and tingling or soreness of the nipples. This is because of the growth of the milk duct system and the formation of many more lobules. **Changes during menopause** The levels of estrogen and progesterone begin to fluctuate at the menopausal stage. The levels of estrogen dramatically decrease. Without estrogen, the connective tissue of the breast becomes dehydrated and inelastic. The breast tissue, which was prepared to make milk, shrinks and loses shape. This leads to the "sagging" of the breasts often associated with women of this age.		
3.	Define breast disease	**Definition** Breast disease may be defined as a group of disorder caused by changes in the glandular or connective tissue of the breast.	Lecture cum Discussion	Listening
4.		**Incidence** Upto 30% of women suffer from benign breast diseases and requiring treatment at some time in their lives. Benign breast diseases are 5 to 10 times more common than breast cancer. It is generally observed between 20-50 years of age.	Lecture cum Discussion	Listening
5.	Classify breast diseases	**Classification** • Benign	Lecture cum Discussion	Listening
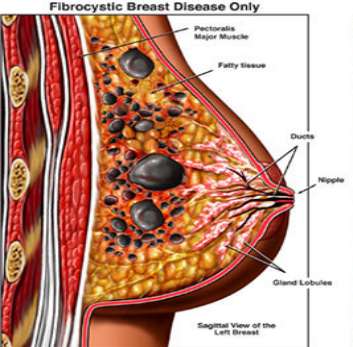
S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		1. Mastalgia		
		2. Nipple discharge		
		3. Galactorrhoea		
		4. Simple cysts		
		5. Fibrocystic breasts		
		6. Fibroadenoma		
		7. Phyllodes tumour		
		8. Duct ectasia		
		9. Intraductal papilloma		
		• Malignant		
		1. Breast cancer		
6.	Enumerate the risk factors for selected breast diseases	**Risk factors** • Early menarche • Late menopause • First child birth at or above the age of 30 • Family history of cancer • Nullipara • Use of oral contraceptives • History of infertility	Lecture cum Discussion	Listening

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		• Use of hormone replacement therapy		
7.	List the possible causes of selected breast diseases	**Possible causes** **Lifestyle factors** • Increased intake of fatty diet • Increased caffeine intake • Smoking • Alcohol consumption • Use of tobacco • Pattern of job(shift duty) • Use of deodorants/ antiperspirants • Physical inactivity • Obesity • Radiation exposure **Infection/injury** • Breast infection • Inflammation and clogging of the breast ducts (mammary duct ectasia) • Excessive breast stimulation • Injury to the breast	Lecture cum Discussion	Listening

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		Medical problems		
		• Severe hypothyroidism (underactive thyroid gland)		
		• Hormone imbalance(oestrogen, prolactin)		
		• Non-cancerous brain tumors		
		• Small growth in the breast that is usually not cancer (intraductal papilloma)		
		• Fibrocystic breast (normal lumpiness in the breast)		
		Use of certain medicines		
		• Hormone replacement therapy		
		• Antihypertensive		
		• Antidepressants		
8.	Define mastalgia Identify the signs and symptoms of mastalgia	**SELECTED BREAST DISEASES**	Lecture cum Discussion	Listening
		✚ **Mastalgia (Breast Pain):** Mastalgia is breast pain and is generally classified as either cyclical (associated with menstrual periods) or noncyclic.		
		Cyclical breast pain		
		• Pain comes cyclically		
		• Breasts may become tender.		
		• Heavy, dull ache.		
		• Breasts may swell.		

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		• Breasts may become generally lumpy (not with a single, hard lump). • Pain becomes more intense a few days before the period comes. In some cases pain may start a couple of weeks before menstruation. • Postmenopausal women may experience similar pains if they are on hormone replacement therapy. **Non -cyclical breast pain** • It generally affects one breast, usually within a quadrant of the breast, but may spread across the chest. • More common among post-menopausal women. • Pain may be continuous or sporadic.		
	Define nipple discharge	✛ **Nipple discharge:** Nipple discharge is the release of fluid from the nipples of the breasts Nipple discharge that is NOT normal is:	Lecture cum Discussion	Listening

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		• Bloody • Comes from only one nipple • Comes out on its own without you squeezing or touching your nipple Nipple discharge is more likely to be normal if: • It comes out of both nipples • Happens when you squeeze your nipples		
	Define galactorrhea Identify the symptoms of galactorrhea	↓ **Galactorrhea** is a milky nipple discharge unrelated to the normal milk production of breast-feeding. Symptoms associated with galactorrhea include: • Persistent or intermittent milky nipple discharge that has no trace of blood • Nipple discharge involving multiple milk ducts • Spontaneously leaked or manually expressed nipple discharge • One or both breasts affected	Lecture cum Discussion	Listening

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		• Absent or irregular menstrual periods • Headaches or vision problems • Acne • Abnormal hair growth in chin		
	Define fibroadenoma Identify the symptoms of fibroadenoma	**Fibro adenoma** is a firm, smooth, rubbery or hard lump with a well-defined shape. Most common lesion found in women under the age of 25 **Symptoms** • Round with distinct borders • Easily moved • Firm or rubbery • Painless	Lecture cum Discussion	Listening

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
	Define breast cysts Identify the signs and symptoms of breast cysts	♣ **Breast cysts** are fluid-filled sacs within your breast Breast with single fluid-filled sac Fluid-filled sac ♣ Affects women between 35-50 years of age. **Signs and symptoms** • A smooth, easily movable round or oval breast lump with distinct edges • Usually found in one breast, but can affect both breasts at the same time • Breast pain or tenderness in the area of the breast lump • Increase in breast lump size and breast tenderness just before menstruation • Decrease in breast lump size and resolution of other signs and symptoms after menstruation	Lecture cum Discussion	Listening
	Define fibrocystic breast	♣ **Fibrocystic breasts** Fibrocystic breast disease also called fibrocystic breasts or fibrocystic change—is a benign (noncancerous) condition in which a woman has painful lumps in her breasts.	Lecture cum Discussion	Listening

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
	Identify the signs and symptoms of fibrocystic breast	Most common benign disorder of the breast affecting women between 20-50years of age. **Signs and symptoms** - Breast lumps or areas of thickening that tend to blend into the surrounding breast tissue - Generalized breast pain or tenderness - Fluctuating size of breast lumps - Green or dark brown non bloody nipple discharge that tends to leak without pressure or squeezing - Changes that occur in both breasts, rather than just one - Monthly increase in breast pain or lumpiness from midcycle (ovulation) to just before menstruation		

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity

9.	Explain the diagnostic modalities of selected breast diseases	**DIAGNOSTIC MODALITIES**
		
		• History collection and physical examination
		
		• Clinical breast examination
		
		• Imaging tests :Some of these include:
		
		   • **Mammograms** – x-rays of the breasts
		
		   • **Breast ultrasound** –Ultrasound uses high-frequency waves to outline a part of the body and is useful to further evaluate possible abnormalities found during mammograms or physical examinations
		
		   • **MRI** (magnetic resonance imaging) **of the breast** – uses radio waves and strong magnets to get detailed images of the inside of the breasts
		
		   • **Ductogram** – a very thin plastic tube is put into the opening of the duct that has discharge coming from it and small amount of contrast dye is injected to outline the shape of the duct on an x-ray
		
		• Fine needle aspiration-Fine-needle aspiration biopsy (FNAB) is used if the physician is almost certain that the lump is a cyst. Aspiration is also used to extract material from a lump for further analysis
		
		• Breast biopsy-Core-needle biopsy uses a needle larger than the type employed with FNAB. The procedure is performed in a physician's office
			Lecture cum Discussion	Listening

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		with local anesthesia of the breast area to be biopsied. Core-needle biopsy removes a small cylinder of tissue for examination. • Stereotactic biopsy is a newer approach that relies on a three-dimensional x-ray to guide the needle biopsy of non-palpable mass. The breast is x-rayed from two different angles and a computer plots the position of the suspicious area. Once the area is precisely identified, the radiologist uses a needle to biopsy the lesion. • Surgical biopsy - to remove all or part of a lump for examination. This procedure is done either in a physician's office or an outpatient hospital facility under intravenous sedation or local anesthesia.		
10.	Discuss the management of selected breast diseases	**MANAGEMENT** **Medical management** • Simple analgesia • Non-steroidal anti inflammatory drugs • Vitamin –E supplementation • Antibiotics when infection is suspected • Evening prime rose oil	Lecture cum Discussion	Listening
		Lifestyle and home remedies • Use hot or cold compresses	Lecture cum Discussion	Listening

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		• Wear a firm support bra		
		• Wear a sports bra during exercise, especially when your breasts may be more sensitive.		
		• Limit or eliminate caffeine		
		• Avoidance of nipple stimulation		
		• Avoid smoking environments		
		• Avoid artificial sweeteners		
		• Don't microwave with plastic cling wrap		
		• Drink more water 1-2 litres		
		• Green tea and black tea are best		
		Relaxation techniques	Lecture cum Discussion	Listening
		• Mind body medicine(stress management, anger management, regular meditation)		
		1. Regular breathing exercises		
		2. Reduce workload		
		3. Watching funny movies/ videos		
		4. Playing with pets and children		
		• Relaxation therapy, which can help control the high levels of anxiety associated with severe breast pain.		

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		Dietary changes 1. Eat more fruits and vegetables 2. Increase fibre intake 3. Fresh garlic and other members of onion family offer protection. (Broccoli, Cabbage, Cauliflower) 4. Consume low fat dairy products 5. Eat more complex carbohydrates		

	Demonstrate BSE	**Health promotion and maintenance**
		
		 • **Breast Self Examination**
		
		 Definition
		
		     Breast Self Examination (BSE) is a technique that women can use to check their breasts and underarms using varying degrees of pressure to monitor for any possible changes.
		
		     Breast Self Examination (BSE) is a method in which a women herself looking and feeling each breast for possible lumps, distortions or swelling.
		
		 Purpose of BSE
		
		 • To gain familiarity with her breasts
		
		 • Any changes in texture, including the presence of a lump, can be detected as early as possible
			Lecture cum Discussion	Listening

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		Criteria for performing BSE • Women after the age of 20yrs should do monthly breast self examination • **Menstruating women**: women with regular menstruation have to do BSE between days 5 and 10 of the menstrual cycle Women with irregular menstruation have to perform BSE regularly on the same date of each month • **Menopausal women:** should do their BSE on the same day every month. Try to pick a day that is easy to remember, such as the first or fifteenth of every month, and make that the day each month for breast self-exam. • **Women using oral contraceptives:** are encouraged to do their BSE each month on the day they begin a new package of pills. **Techniques** 3 main techniques to be followed while performing BSE. Circular method- move '3' middle fingers in a circular fashion starting from outer edge of breast towards the nipple Vertical strip method- move the '3' middle fingers starting from the collar bone area down below the breast and back up again in zig zag way until the entire breast is felt Wedge method- move the '3' middle fingers beginning from the outer edge		

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		towards the nipple and repeat the procedure for every wedge until the entire breast is felt **Steps** Step 1: • Stand before the mirror • Check both breasts for anything unusual • Look for discharge from the nipple, puckering, dimpling or scaling of the skin Step 2: • Watch closely in the mirror as you clasp your hands behind your head and press your hands forward • Note any change in the contour of your breasts. Step 3: • Next press your hands firmly on your hips and bow slightly toward the mirror as you pull your shoulders and elbows forward • Note any change in the contour of your breasts Step 4: • Raise your left arm • Use 3 or 4 fingers of your right hand to feel your left breast firmly,		

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		carefully and thoroughly		
		• Beginning at the outer edge, press the flat part of your fingers in small circles, moving the circles slowly around the breast		
		• Gradually work towards the nipple		
		• Be sure to cover the whole breast		
		• Pay special attention to the area between the breast and the underarm, including the underarm itself		
		• Feel for any unusual lumps or masses under the skin		
		Step 5:		
		• Gently squeeze the nipple and look for discharge		
		• If you have any discharge during the month- see your doctor		
		• Repeat the examination on your right breast		
		Step 6:		
		• Step 4 & 5 should be repeated lying down		
		• Lie flat on your back with your left arm over your head and pillow or a folded towel under your left shoulder		
		• Use the same circular motion described above		
		• Repeat on your right breast		

S.No.	Contributory Objectives	Content	Investigator Activity	Learner's Activity
		The American cancer society establishes evidence based guidelines for breast cancer screening in women • Mammogram for women ages 40years & older • Clinical breast examination by a health professional at least every 3 years for women 20-40 years old **Should report health care personnel if** • One or both breasts change in size or shape • There is a discharge from either nipple • There is a rash around the nipple • There is dimpling on the skin of the breasts • A lump or swelling in one of your armpits • Pain in armpits or breast that is not related to menstrual cycle **CONCLUSION** Thus, for many women, breast cancer is their worst fear. However, potential problems can be detected early when women regularly examine their breasts themselves, are examined regularly by their doctor, and have mammograms as recommended. Early detection of breast cancer is essential to successful treatment.		

பாடத்திட்டம்

தலைப்பு	:	தேர்ந்தெடுக்கப்பட்ட மார்ராபக நோய்கள் மற்றம் அதன் தடுப்பு முறைகள்
குழு	:	பெண்கள் 20 வயது முதல் 40 வயது வரை
இடம்	:	தேர்ந்தெடுக்கப்பட்ட கிராமங்கள் (பால்வாடி / வீடு)
காலம்	:	45 – 1 மணி நேரம் 15 நிமிடங்கள்
கற்பிக்கும் முறை	:	தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களின் தடுப்பு முறைகள் பற்றிய ஒளி ஒலி காட்சிகள் காண்பித்தல், சுய மார்பக பரிசோதனையின் செய்முறை விளக்கம்.
அமர வைக்கும் ஏற்பாடு	:	அரை வட்ட வடிவ இருக்கை முறை
கற்பிப்பவர்	:	ஆய்வாளர்
கற்பிக்க பயன்படுத்தப்படும் கருவி	:	குறிப்பிட்ட மார்பக நோய்கள் பற்றிய வீடியோ மற்றும் மார்பக மாதிரியை பயன்படுத்தி சுயமார்பக பரிசோதனை செய்முறை விளக்கம்.

பொதுவான குறிக்கோள்:
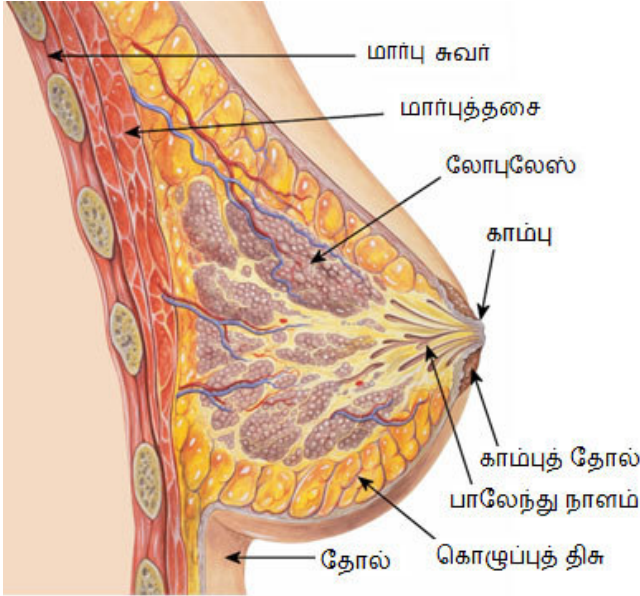
இந்த கற்பித்தலின் முடிவில் தேர்ந்தெடுக்கப்பட்ட டார்பக நோயினை தடுப்பது பற்றிய அறிவுதர்திறனும் மற்றும் சுயமார்பக பரிசோதனை செய்யும் திறனையும் பெறுவார்கள்.

குறிப்பான குறிக்கோள்கள் :

இந்த கற்பித்தலின் முடிவில் பெண்கள் கீழ்கண்ட தலைப்புகளை குறித்த ஆற்றலை பெறுவார்கள்.

1. மார்பகத்தின் உடற்கூறியல் மற்றும் உடலியல் பற்றிய கலந்துரையாடல், மற்றும் வெவ்வேறு வளர்ச்சி பரிமாணத்தில் மார்பக மாற்றங்கள்.

2. மார்பக நோய்களை வரையறுத்தல்.

3. மார்பக நோய்களை வகைப்படுத்தல்

4. தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களின் ஆபத்து காரயிகளை பட்டியலிடுதல்.

5. தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களின் சாத்திய காரணங்களை பட்டியலிடுதல்

6. தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களின் பரிசோதனை முறைகளை விவரித்தல்.

7. தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களுக்கான சிகிச்சையை விவரித்தல்

8. தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களை சுகப்படுத்தி மேம்படுத்தும் முறைகளை விவரித்தல்

9. சுயமார்பக பரிசோதனையின் செய்முறை பயிற்சி

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
1.		**முகவுரை:**	விரிவுரை	கவனித்தல்
		பெண்களின் உடற்கூறியலில் மார்பகம் என்பது ஒரு முக்கியமான மற்றும் இனப்பெருக்க முறையில் ஒருங்கிணைந்த அம்சமாகம். பெண்களின் மார்பகம், தாய்ப்பால் கொடுப்பதில் முக்கிய பங்கு வகிக்கின்றது. பெண்களின் இனப்பெருக்க காலத்தில் மார்பக வளர்ச்சி என்பது முக்கிய பகுதியாகும். பெண்கள் பருவமடைந்த பின் வாழ்க்கை முழுவதும் மார்பக வளர்ச்சி மாறுபட்ட நிலைகளில் நடக்கிறது. மார்பகங்களில் ஏற்படும் அறிகுறிகள் பாதிப்பில்லாத கட்டிகளாகவோ (அ) புற்றுநோய் கட்டிகளாகவோ இருக்கலாம்.		
2.	உடற்கூறியல் மற்றும் உடலியல் பற்றி கலந்துரையாடல். வெவ்வேறு வளர்ச்சி பரிமாணத்தில் மார்பக மாற்றங்கள்	**உடற்கூறியல் மற்றும் உடலியல்:**	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்
		மார்பகம் என்பது மார்பு தசைகளுக்கு மேலிருக்கும் திசுக்களாகம். பெண்களின் மார்பகமானது பால் சுரக்கக்கூடிய ஒரு பிரத்யேகமான திசுக்களால் (சுரக்கும் திசு) ஆனதுமட்டுமல்லாமல் கொழுப்பு நிறைந்திருக்கும்.		
		கொழுப்பின் அளவை பொருத்தே மார்பகத்தின் அளவு இருக்கும். பால் உற்பத்தி செய்யும் மார்பக பகதியானது 15 முதல் 20 பிரிவுகளாக அமைந்திருக்கும். அவை மடல்கள் என்று அழைக்கப்படும். ஒவ்பொரு மடலிலும் சிறிய மடல்கள் (lobules) அமைந்து அவை பால் சுரக்கும் இடமாக காணப்படும். நாளங்கள் என்று அழைக்கப்படும் பின்னப்பட்ட சிறிய குழாயின் வழியே பால் பயனிக்கும். இந்த நாளங்கள் ஒன்றாக இணைந்தும்		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		சேர்ந்தும் ஒரு பெரிய நாளமாக மாறி மார்பக காம்பில் ஒரு வழியை ஏற்படுத்துகின்றது. மார்பக காம்பை சுற்றி உள்ள கருமையான இடத்திற்கு சிற்றிடம் என்று அழைக்கப்படும். மார்பகத்திற்கு இணைப்பு திசுக்கள் மற்றும் தசை நார்கள் ஆதரவு அளித்து மார்பகத்திற்கு ஒரு வடிவத்தை கொடுக்கிறது. நரம்புகள் மார்பகத்திற்கு ஒரு உணர்வை அளிக்கின்றது.மார்பகத்தில் இரத்த நாளங்கள், நிணநீர் நாளங்கள், நிணநீர் கணுக்களும் உள்ளன. 		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		பெண்களின் இனப்பெருக்க காலத்தில் மார்பக வளர்ச்சி என்பது முக்கிய பகுதியாகும். பெண்கள் பருவமடைந்த பின் வாழ்க்கை முழுவதும் மார்பக வளர்ச்சி மாறுபட்ட நிலைகளில் நடக்கிறது, முக்கியமாக பெண்கள் மாதவிடாய் அடையும்போதும், மாதவிடாய் சுழற்சி மற்றும் கர்ப்பமடையும் காலங்களிலும் இந்த மாற்றங்கள் நடக்கிறது. பெண் குழந்தை பிறந்த நேரம் முதல் முலைக்காம்பு மற்றும் பால் குழாய் தொடக்கங்கள் அமைகின்றன. **பூப்படைதல் மற்றும் மாதவிடாயின் போது ஏற்படும் மாற்றங்கள்.** பூப்படைந்த பின் பெண்ணின் மார்பகம் வேகமாக வளர்கிறது. கருப்பைகள் ஈஸ்ட்ரோஜன் சுரக்கத் தொடங்கும் போது இணைப்பு திசு கொழுப்பு அதிகமாகி மார்பகங்களை பெரிதாக்குகிறது, பால்குழாய் அமைப்பும் இதனுடன் வளர்ச்சியடைகிறது. ஈஸ்ட்ரோஜன், மாதவிடாய் சுழற்சியின் முதல் சுழற்சியில் கருப்பைகள் உற்பத்தி செய்கிறது மற்றும் மார்பகத்தின் பால் நாளங்களின் வளர்ச்சியை தூண்டுகிறது. இரண்டாவது சுழற்சியில் புரோஜெஸ்டிரோன் ஹார்மோன் மார்பகத்தில் பால் சுரப்பிகளை உருவாக்க தூண்டுகிறது. மாதவிடாய்க்கு முன், வீக்கம், வலி மற்றும் மென்மைதன்மை போன்ற பல கட்டங்களான மாற்றங்களுக்கு இந்த ஹார்மோன பொறுப்பாகிறது என்று நம்பப்படுகிறது.		
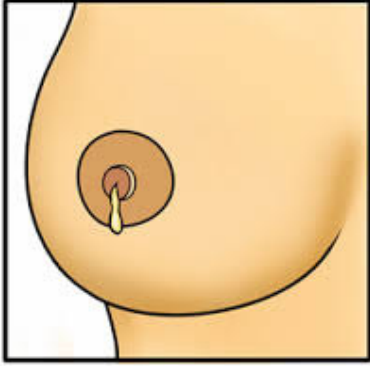
வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		கர்ப்பகாலம் மற்றும் பாலூட்டும்போது ஏற்படும் மாற்றங்கள். மார்பகத்தில் ஏற்படும் மாற்றங்கள் கர்ப்ப ஆரம்ப அடையாளங்களில் ஒன்று. இதற்கு காரணம் புரோஜெஸ்ட்டிரோன் ஹார்மோன். ஏரியோலஸ் (முலைக்காம்புகளை சுற்றியுள்ள கரும்பகுதியில்) வீக்கம் விரைவாக தொடர்ந்து பெருக ஆரம்பிக்கும். பெரும்பாலான கர்ப்பிணி பெண்களின் மார்பகங்களிலும் முலைக்காம்புகளை சுற்றிலும் மென்மையாகவும் மற்றும் கூச்ச உணர்வு அல்லது வேதனையும் ஏற்படுகின்றது. இதற்கு காரணம் பால் குழாய் அமைப்பின் வளர்ச்சி மற்றும் இன்னும் பல லோபுல்ஸ் உருவாக்கம் ஆகும். மாதவிடாய் நின்ற பின்பு ஏற்படும் மாற்றங்கள்: ஈஸ்ட்ரோஜன் மற்றும் புரோஜெஸ்ட்ரானின் அளவுகள் மாதவிடாய் நின்ற கட்டத்தில் ஏற்ற இறக்கம் தொடங்குகிறது. ஈஸ்ட்ரோஜென் அளவு அளவுக்கதிகமாக குறைய, ஈஸ்ட்ரோஜென் இல்லாமல் மார்பக இணைப்பு திசு, நீரிழப்பு மற்றும் நெகிழ்வற்றதாக ஆகிறது. பால் உற்பத்தியாக தயாராக இருந்த மார்பக திசு, சுருங்கி வடிவத்தை இழக்கிறது. பெரும்பாலும் இந்த நிலையில் இது பெண்களின் மார்பகங்களை தொய்வுற வழிவகுக்கிறது.		
3.	மார்பக நோய்களை வரையறுத்தல்	**வரையறை:** மார்பக நோய்கள் என்பது சுரக்கும் திசுக்கள் மற்றும் மார்பகத்தை	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		இணைக்கும் திசுக்களில் ஒரு குழுமமாக ஏற்படும் கோளாறாகும்.		
4.		**நிகழ்வு :** 30% வரை பெண்கள் தீங்கற்ற மார்பக நோயால் பாதிக்கப்படுகிறார்கள் மற்றும் அதற்காக வாழ்நாளில் ஏதாவது ஒரு சமயத்தில் சிகிச்சை தேவைப்படுகிறது. மார்பக புற்றுநோயைக் காட்டிலும் தீங்கற்ற மார்பக நோயானது 5 முதல் 10 மடங்கு அதிகமாக பொதுவாக காணப்படுகிறது. 20 முதல் 50 வயது அடைந்தவர்களிடையே இது காணப்படுகிறது.	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்

5.	மார்பக நோய்களை வகைப்படுத்தல்	**வகைப்படுத்தல்:**
		
		• தீங்கற்ற
		  1. முலை வலி
		  2. முலைக்காம்பிலிருந்து திரவ வெளியேற்றம்.
		  3. மிகுதியான பால் சுரப்பு
		  4. எளிய நீர்கட்டிள்
		  5. முலை நார்ப்பை கட்டி
		  6. முலை நார் கட்டி
		  7. பைலாயிட் கட்டி
		  8. குழாய் நீள்வு
		  9. உட்குழாய் சிறுகட்டி
		• வீரியமிக்க :
			விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		மார்பக புற்றுநோய்		
6.	தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களின் ஆபத்து காரணிகளை பட்டியலிடுதல்.	**ஆபத்து காரணிகள் :** 1. சிறிய வயதில் பருவமடைதல் 2. காலதாமதமாக மாதவிடாய் நிற்றல் 3. 30 வயது அல்லது அதற்கு மேல் முதல் குழந்தையை பெறுதல் 4. புற்றுநோய்க்கான குடும்ப வரலாறு 5. குழந்தை பெறாத பெண் 6. கருத்தடை மாத்திரைகள் உபயோகப்படுத்துதல் 7. குழந்தையின்மைக்கான வரலாறு 8. ஹார்மோன் மாற்று சிகிச்சை பயன்படுத்துதல்.	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்
7.	தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களின் சாத்தியமான காரணங்களை பட்டியலிடுதல்.	**சாத்தியமான காரணங்கள்** **வாழ்க்கைமுறை காரணிகள்:** • கொழுப்பு நிறைந்த உணவுபொருட்களை உட்கொள்ளுதல் • கா∴பி அதிகமாக அருந்துதல். • புகைபிடித்தல் • மது அருந்துதல் • புகையிலை பயன்படுத்துதல் • பணி நேரத்தின் தன்மை (பணி நேர மாற்றம்) • வாசைன திரவியம் / உடல் தெளிப்பு / சுவாச புத்துணர்ச்சி	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		தெளிப்பி பயன்படுத்துதல். • உடல் உழைப்பு இல்லாமை. • உடல் பருமன். • கதிர்வீச்சுக்கு உட்படுதல் **தொற்று / காயம்** • மார்பக தொற்று நோய் • மார்பக நாளங்களில் வீக்கம் மற்றும் அடைப்புகள் (முலையின் நாளங்களில் நீள்வு) • அதிகபடியான மார்பகம் தூண்டப்படுதல் • மார்பகத்தில் காயம் ஏற்படுதல் **மருத்துவ காரணிகள்:** • கடுமையான முன்கழுத்து கழலை நோய் (தைராய்டு சுரப்பு குறைபாடு) • ஹார்மோன் விகித ஏற்றத்தாழ்பு (ஈஸ்ட்ரோஜன், ப்ரோலாக்டின்) • புற்று நோயல்லாத முலைக்கட்டி • புற்றுநோயல்லாத மார்பகத்தில் ஏற்படும் வளர்ச்சி (உட்குழாய் சிறுகட்டி)		

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		• நார் நீர்க்கட்டியுள்ள மார்பகம் மற்ற காரணிகள்: • சில மாத்திரைகளான கருத்தடை மாத்திரைகள், இரத்த மிகை அழுத்தா போக்கிகள், உளச்சோர்வு போக்கிகள் பயன்படுத்துவது.		
8.	தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களின் அறிகுறிகளை கண்டறிதல் ➢ முலைவலியை விவரி	தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்கள். **முலை வலி:** முலைவலி என்பது மார்பக வலி. அது பொதுவாக இரண்டு வகைப்படும். அதாவது சுழற்சி முறை (மாதவிடாயுடன் இணைந்து வருவது) அல்லது சுழற்சியற்ற முறை எனப்படும். **சுழற்சி முறையில் வரும் மார்பக வலி:** • சுழற்சி முறையில் வரும் வலி • மார்பகங்களை தொடும்போது வலி ஏற்படும் • கனமாகவும், மந்தமான, வலியுடன் இருக்கும் • மார்பகத்தில் வீக்கம் ஏற்படலாம். • மார்பகங்கள் பொதுவாக கட்டியான இருக்கும் (ஒன்றாக இல்லாமல் கடுமையாக காணப்படும்) • மாதவிடாய் சுழற்சி வரும் சில நாட்களுக்கு முன்னரே வலி மிகவும் தீவிரமடையும். சில சந்தர்பங்களில், மாதவிடாய் வரும். சில வாரங்களுக்கு முன்னரே வலி ஏற்படும்.		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
	முலைவலிக்கான அறிகுறிகளை பட்டியலிடுக	• மாதவிடாய் நின்ற பெண்களும் இது போன்ற வலியை ஹார்மோன் மாற்று சிகிச்9சையின் போது எதிர்கொள்வர். **சுழற்சியற்ற முறையில் ஏற்படும் மார்பக வலி:** • பொதுவாக ஒரு மார்பகத்தை பாதிக்கும், வழக்கமாக மார்பகத்தில் ஒரு கால்வட்ட பகுதிக்குள் பாதிக்கம்,ஆனால் அது மார்பகத்தின் மற்ற பகுதிக்கும் பரவும். • மாதவிடாய் நின்ற பெண்களிடையே அதிகமாக காணப்படும். • வலி தொடர்ந்து அல்லது அடையிடையேயும் இருக்கம்.		
	முலை காம்பிலிருந்து திரவம் வெளியேற்றத்தை வரையறு	**முலை காம்பிலிருந்து திரவம் வெளியேற்றம்:** முலை காம்பிலிருந்து திரவம் தானாக வடிவதே முலை காம்பின் திரவம் வெளியேற்றமாகும். 		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		அசாதாரணமான முலை காம்பிலிருந்து திரவம் வெளியேற்றம் என்பது : • இரத்தம் வடிதல் • ஒரு மார்பகத்திலிருந்து மட்டும் திரவம் வெளியேறுதல். • மார்பகத்திலிருந்து நீங்கள் பிழியாமலேயே அல்லது முலைக்காம்பை தொடாமலும் தானாக வெளியேறுதல். சாதாரணமான மார்பக காம்பின் திரவ வெளியேற்றம் என்பது • இரண்டு மார்பக காம்பிலிருந்தும் வருவது • முலைக்காம்பை நீங்கள் பிழிவதன் மூலம் வருவது		
	மிகு பால் சுரப்பை வரையறு	மிகு பால் சுரப்பு என்பது பால் நிறத்தில் மார்பக காம்பிலிருந்து சாதாரணமான தாய்ப்பால் அல்லாத வெளியேற்றமாகும். 	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
	மிகு பால் சுரப்பின் அறிகுறிகள் யாவை?	**மிகு பால் சுரப்பின் அறிகுறிகளாவன** • இரத்த கலப்பு இல்லாத தொடர்ந்து அல்லது விட்டு விட்டு மார்பக காம்பிலிருந்து பால் வெளியேறுதல். • பல பால் குழாய்களை உள்ளடக்கிய மார்பக காம்பிலிருந்து பால் வெளியேறுதல். • தன்னிச்சையாக கசிவது அல்லது நீங்கள் பிழிவதன் மூலம் மார்பக காம்பிலிருந்து பால் வெளியேறுதல். • ஒன்று அல்லது இரண்டு மார்பகங்களும் பாதித்தல் • ஒழுங்கற்ற மாதவிடாய் ஏற்படுதல் அல்லது ஏற்படாதிருத்தல் • தலைவலி அல்லது கண்பார்வை கோளாறு • முகப்பரு • கன்னத்தில் அசாதாரணமான முடி வளர்தல்.		

	முலை நார் கட்டியை வரையறு	**முலை நார் கட்டி**
		    முலை நார் கட்டி என்ப துநன்றாக வடிவமைக்கப்பட்ட உறுதியான, வழவழப்பான, ரப்பர் போன்ற அல்லது கடுமையான கட்டியாகும்.
		    25 வயதுக்கு கீழான பெண்களுக்கு பொதுவாக இவ்வகை கட்டிகள் காணப்படும்.
			விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
	முலை நார் கட்டியின் அறிகுறிகளை பட்டியலிடுக	**அறிகுறிகள்:** • வட்டவடிவமான தெளிவான எல்லையைக் கொண்டது. • எளிதாக நகர்த்தக்கூடியது. • உறுதியாக அல்லது ரப்பர் போன்றது. • வலயில்லாத கட்டிகள்		
	மார்பக நீர்கட்டிகள் வரையறு	மார்பக நீர்கட்டிகள் என்பது மார்பகத்தின் உள்ளே இருக்கும் திரவம் நிரப்பப்பட்ட பைகளில் காணப்படும் கட்டியாகும். 35 முதல் 50 வயதுவரையுள்ள பெண்களுக்கு இவ்வகை கட்டிகள் காணப்படும்.	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்
		மார்பக நீர் கட்டிகளுக்கான அறிகுறிகள்'' • மென்மையான எளிதாக நகரக்கூடிய வட்டமான அல்லது நீள்வட்ட வடிவில் தெளிவான முனைகளைக் கொண்ட கட்டியாகும்.		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		• பொதுவாக ஒரு மார்பகத்தில் மட்டுமே காணப்படும். ஆனால் ஒரே நேரத்தில் இரு மார்பகத்தையும் பாதிக்கக்கூடியது. • மார்பக நீர்கட்டி காணப்படும் இடத்தில் வலியோ அல்லது அந்த இடம் மென்மையானதாகவோ இருக்கும். • மாதவிடாயின் முன்பு மார்பக நீர்கட்டியின் அளவு மிகுந்தும் அல்லது மார்பகம் வலியுள்ளதாகவோ காணப்படும். • மாதவிடாய்க்கு பிறகு மார்பக நீர்கட்டியின் அளவில் குறைந்தும் மற்றம் மற்ற அறிகுறிகள் குறைந்தும் காணப்படும்.		

	முலை நார்ப்பை கட்டியை வரையறு	**முலை நார்ப்பை கட்டி :**
		    முலை நார்ப்பை கட்டி நோயானது நிணநீர் கட்டியுடைய மார்பகம் என்றும் அல்லது நிண நீர் மாறுதல் என்றும் அது தீங்கற்ற (புற்று நோய் அல்லாத) நிலையாகும். இந்நிலையில் பெண்களுக்கு வலியுடைய கட்டி மார்பகத்தில் காணப்படும்.
		    20 முதல் 50 வயதுவரையுள்ள பெண்களுக்கு இவ்வகை கட்டிகள் பொதுவாக காணப்படும்.
			விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்

		அறிகுறிகள்: • மார்பக கட்டி அல்லது தடித்த பகுதியானது சுற்றியுள்ள மார்பக திசுக்களுடன் கலக்க முனைகிறது. • பொதுவாக மார்பக வலி அல்லது தொடும்போது வலித்தல். • மார்பக கட்டியின் அளவு ஏற்றம் இறக்கமாக காணப்படும்.		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		• பச்சை அல்லது கருமையான பழுப்பு நிறத்தில் இரத்தமில்லாத திரவம் முலை காம்பிலிருந்து அழுத்தம் கொடுக்காமலும் அல்லது பிழியாமலும் தானாக கசியும். • ஒரு மார்பகத்தில் மட்டுமல்லாது இரு மார்பகங்களிலிருந்தும் இந்த மாறுதல்கள் ஏற்படும். • மாதாமாதம் சினை முட்டை உருவாகும் மத்திய நிலையிலிருந்து மாதவிடாய் நாள் வரும் வரை மார்பில் வலி அல்லது கட்டியின் அளவு அதிகரித்தல்.		
9	தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களின் பரிசோதனை முறைகளை விவரித்தல்	**கணடறியும் முறைகள்** • வரலாறு சேகரித்தல் மற்றும் உடலை பரிசோதித்தல். • மருத்துவ ரீதியாக மார்பக பரிசோதனை செய்தல் • பரிசோதனை முறைகள் : அவை **முலை ஊடுகதிர் பரிசோதனை** : மார்பகத்தில் எக்ஸ்ரே கதிர் பரிசோதனை **மார்பக ஊடொலி:** ஊடொலி உபயோகித்து உயர் அதிர்வெண் அலைகளை கொண்டு பகுதியின் வெளிகோடிட்டு காட்டமுடியும் மேலும் முலை ஊடுகதிர் மற்றும் உடல் பரிசோதனையின் போது காணப்படும் அசாதாரணமான நிலையை மதிப்பிடவும் உதவுகிறது.	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்
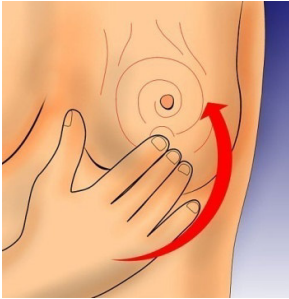
வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		மார்பக மின் காந்த அதிர்வு வரைப்படும் (MRI) : இது ரேடியோ அலைகள் மற்றும் வலுவான காந்தங்களை கொண்டு மார்பகத்தின் உள்புறத்தின் விரிவான படத்தை பெற முடியும். **நாளங்களின் (குழாய்) பரிசோதனை** : சிறிது மெலிதான குழாயை நாளங்களின் நுழைவு பகுதியில் திரவம் வடியும் இடத்தில் வைத்து அதன் பின்னர் எதிர்மறையான சாயத்தை அந்த நாளங்களின் வடிவ வெளிக்கோட்டில் உட்புகுத்தி எக்ஸ்ரே மூலம் ஆராய வேண்டும். **நுண் ஊசி மூலம் திசு சேரிக்கும் முறை:** மருத்துவர் கட்டியானது நீர்கட்டி என்று நிச்சயமாக அறிந்ததும் அந்த கட்டியை நுண் ஊசிமூலம் எடுத்து அதனை ஆய்வுக்கு (FNAB) உட்படுத்தவேண்டும். **மார்பக திசு ஆய்வு** : உள்ளக ஊசி திசு ஆய்வு முறையில் வன்மூச்சு திசு ஆய்வில் உபயோகப்படுத்தப்படும் ஊசியைவிட பெரியதான ஊசியை பயன்படுத்தப்படும். இது மருத்துவர் இருப்பிடத்தில் செய்யப்படும். மார்பக பகுதியில் திசு ஆய்வு செய்யும் இடத்தில் மயக்க மருந்து அளித்த பின்னர் மேற்கொள்ளப்படும். உள்ளக ஊசி திசு ஆய்வானது சிறிய உருளையான திசுக்களை மேலும் ஆராய்வதற்கு உட்படுத்தவேண்டும்.		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		நுண் திசு ஆய்வு என்பது ஒரு புதிய அணுகுமுறையாகும் : ஊடுகதிர் மூலம் சந்தேகப்படும் இடத்தை கண்டறிந்து, அந்த இடத்திலிருந்து திசுவை ஊசி மூலம் எடுத்து ஆய்வு மேற்கொள்ளப்படுகிறது. **அறுவை சிகிச்சை ஆய்வு :** இது மருத்துவரின் இருப்பிடத்திலோ அல்லது வசதியுள்ள வெளிநோயாளியை கவனிக்கும் மருத்துவமனையிலோ நரம்பு வழி தணிப்பு அல்லது வெளிப்புற மயக்க மருந்தளித்த பின்னர் கட்டியில் எல்லா பகுதியும் அல்லது ஒரு பகுதியை மட்டுமே ஆராயிச்சிக்கு உட்படுத்தப்படுகிறது.		
10	தேர்ந்தெடுக்கப்பட்ட மார்பக நோய்களை சுகப்படுத்தி மேம்படுத்தும் முறைகளை விவரித்தல்	**குணப்படுத்தும்/சிகிச்சை முறை:** **மருத்துவ ரீதியாக சிகிச்சையளித்தல் :** ● எளிய வலி உணரா மருந்து ● ஸ்டெராய்டில்லாத அழற்சி மருந்துகள் ● கூடுதலாக உயிசத்து நு சேர்ப்பது ● தொற்று இருக்குமென தோன்றினால் நுண்ணுயிர் கொல்லிகளை பயன்படுத்துதல். ● பிர்மெரோஸ் எண்ணெய் மாலையில் பயன்படுத்துதல்.	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்
		வாழ்க்கை முறைகள் மற்றும் வீட்டு பராமரிப்பு: ● சூடான மற்றும் குளிர்ந்த ஒத்தடம் கொடுத்தல். ● அழுத்தமான ஆதரவு தரும் மார்க்கச்சைகளை பயன்படுத்துதல்.	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		• விளையாடும் போது பயன்படுத்தும் மார்கச்சைகளை உடற்பயிற்சியின் போது பயன்படுத்துதல். • கா∴பியை வரையிடப்பட்ட அளவு எடுத்துக்கொள்ளுதல் அல்லது விட்டொழித்தல்இ • மார்பக காம்பை தூண்டுவதை தவிர்த்தல் • புகை பிடிக்?கம் சூழரைல தவிர்க்க வேண்டும் • செயற்கை இனிப்பான்களை தவிர்க்க வேண்டும் • பிளாஸ்டிக் சுற்றியுள்ள பொருட்களை நுண்கதிர் அலையில் வைக்க கூடாது. • அதிகபடியான நீரை அருந்தவும் 1 − 2 லிட்டர். • பச்சை தேயிலை மற்றம் கருப்பு தேநீர் மிகச்சிறந்தவை. **ஓய்வு பயிற்சி வழிமுறைகள்:** • மனம் உடல் மருத்துவம் (மன அழுத்தம் சிகிச்சை, கோபத்தை கட்டுபடுத்தும் சிகிச்சை, அன்றாடம் தியானம்) 1. அன்றாடம் உடற்பயிற்சி செய்தல் 2. வேலை பழுவை குறைத்தல் 3. கலகலப்பான திரைப்படங்களை ஒலி ஒளி நாடாவில் பார்ப்பது. 4. குழந்தைகளுடனும் மற்றும் வீட்டு செல்ல பிராணிகளுடனும்	விரிவுரை மற்றும் கலந்துரையாடல்	கவனித்தல்

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		விளையாடுவது. • அதிபடியான மார்பக வலியின் போது ஏற்படும் கடுமையான பதட்டம் கட்டுக்குள் வைக்க தசை அழுத்தக் குறைப்பு வழி சிகிச்சை பயன்படும். **உணவுமுறை மாற்றங்கள் :** • அதிக பழங்கள் மற்றும் காய்கறிகளை உண்ணவும். • நார்சத்து உணவுகளை அதிகப்படுத்த வேண்டும். • பூண்டு மற்றும் வெங்காய இனத்தை சார்ந்த காய்கறிகள் பாதுகாப்பை தரும் (காலி.ஃபிளவர், பச்சை பூக்கோசு, முட்டைகோசு) • குறைந்த கொழுப்பு சத்து நிறைந்த பால் பொருட்களை உட்கொள்ளவும். • வைட்டமின் E சத்துநிறைந்த பொருட்கள் உட்கொள்ளவும். • குறைந்த கொழுப்பு நிறைந்த உணவை பின்பற்றுதல் மற்றும் அதிக மாவுச்சத்து மிகுந்த உணவை எடுத்துக்கொள்ளுதல்.		
	சுயமார்பக பரிசோதானையின் செய்முறை பயிற்சி	**உடல் நலம் பேணுதல் மற்றும் பராமரிப்பு :** • **சுய மார்பக பரிசோதனை:** **வரையறை:** சுயமார்பக பரிசோதனை எனும் முறை பெண்கள் தங்கள் மார்பகம் மற்றும் அக்குள்களை பல வகையான கோணங்களில் அழுத்தத்தை கொடுத்து ஏதாவது மாறுதல் ஏற்படுகிறதா என்று பரிசோதனை செய்வதாகம்.		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		சுய மார்பக பரிசோதனை எனும் முறை பெண்கள் தாங்களாகவே ஒவ்வொரு மார்பகத்தையும் ஏதாவது கட்டி, சிதைவுகள் அல்லது வீக்கம் உள்ளதா என்று பார்ப்பதும் உணர்வதுமாகும். **சுயமார்பக பரிசோதனையின் நோக்கம் :** • தங்கள் மார்பகத்தை பற்றி தெரிந்துக்கொள்வது. • அமைப்புகளில் ஏதாவது மாற்றம் அதாவது கட்டி உருவாகி உள்ளதா என்று ஆரம்ப நிலையிலேயே கண்டறியலாம். **சுய மார்பக பரிசோதனை செய்ய அடிப்படையானவை:** • 20 வயதிற்கு மேற்பட்ட பெண்கள் ஒவ்வொரு மாதமும் சுயமார்பக பரிசோதனை செய்ய வேண்டும். • <u>**மாதவிடாய் அடையும் பெண்கள்**</u> : வழக்கமான மாதவிடாயை எதிர்கொள்ளும் பெண்கள் மாதவிடாய் சுழற்சியின் பொது 5 முதல் 10 நாட்களுக்கிடையே சுய மார்பக பரிசோதனை செய்ய வேண்டும். • ஒழுங்கற்ற மாதவிடாயை எதிர்கொள்ளும் பெண்கள் ஒவ்வொரு மாதமும் ஒரு குறிப்பிட்ட தேதியில் சுயமார்பக பரிசோதனை செய்ய வேண்டும். • மாதவிடாய் நின்ற பெண்கள் : இவர்கள் ஒவ்வொரு மாதமும் ஒரு குறிப்பிட்ட தேதியில் சுயமார்பக பரிசோதனை செய்ய வேண்டும். எளிதாக ஞாபகத்தில் வைத்துக் கொள்ள ஏதுவாக ஒரு நாளை		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		தேர்ந்தெடுக்க வேண்டும். அதாவது மாதம் முதல் தேதி அல்லது பதினைந்தாம் தேதியை தேர்ந்தெடுத்து மாதாமாதம் அதே தினத்தன்று சுயமார்பக பரிசோதனை செய்ய வேண்டும். • கருத்தடை மாத்திரை எடுக்கும் பெண்கள் : மாதாமாதம் புதிய மாத்திரைகளின் அட்டையை தொடங்?கும் போது இவர்கள் சுயமார்பக பரிசோதனை செய்ய ஊக்குவிக்க வேண்டும். **நுட்பம்/ செய்யும்முறை:** சுயமார்பக பரிசோதனை செய்யும் போது 3 முக்கியமான நுட்பங்களை பின்பற்ற வேண்டும். **வட்டவடிவமான முறை :** 3 நடுவிரல்களை வட்டவடிவ பாதையில் மார்பகத்தின் வெளிபுறத்திலிருந்து முலைக் காம்பை நோக்கி நகர்த்த வேண்டும். 		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		செங்குத்தாக நகரும் முறை:		
		3 நடுவிரல்களை கழுத்து பட்டை எலும்பிலிருந்து ஆரம்பித்து மார்பகத்தின் கீழ் பகுதி வரையிலும் பின்னர் அதே பாதையில் குறுக்கும் நெடுக்குமாக மார்பகத்தின் முழுபகுதியம் உணரும் வரை நகர்த்த வேண்டும்.		
		ஆப்பு வடிவ முறை :		
		3 நடுவிரல்களை மார்பகத்தின் வெளிபுறத்திலிருந்து ஆரம்பித்து முலை காம்பை நோக்கி நகர்த்த வேண்டும். இந்த உடைமுறையை திரும்ப திரும்ப ஒவ்வொரு முனையிலிருந்தும் மார்பகத்தின் முழுபகுதியும் உணரும் வரை நகர்த்த வேண்டும்.		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		வழிமுறைகள்: வழிமுறை 1 : • கண்ணாடியின் முன் நிற்க வேண்டும். • இரண்டு மார்பகங்களிலும் ஏதாவது அசாதாரணமாக உள்ளதா என்று சரிபார்க்க வேண்டும். • மார்பக காம்பிலிருந்து ஏதாவது வடிகிறதா என்றும் சுருக்கங்கள், குழி விழுந்த நிலை, செதில்கள் உள்ளதா என்று சரி பார்க்க வேண்டும். வழிமுறை 2 : • கண்ணாடியின் முன் நின்றுக்கொண்டு இரண்டு கைகளையும் தலைக்கு பின்னால் பிடித்த பின்னர் கைகளை முன்புறமாக அழுத்திய பின்னர் மார்பகத்தை கூர்ந்து கவனிக்க வேண்டும். • மார்பகத்தின் வடிவமைப்பில் ஏதாவது மாற்றம் ஏற்படுகிறதா என்று கவனிக்க வேண்டும்.		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		வழிமுறை 3 :		
		• அடுத்து கைகளை கெட்டியாக இடுப்பின் மேல் வைக்க வேண்டும். பின்னர் தோள்பட்டையையும் மற்றும் முழங்கையை முன்புறமாக இழுக்கும் போது கண்ணாடியை நோக்கி மெதுவாக குனியவேண்டும்.		
		• மார்பகத்தின் வடிவமைப்பில் ஏதாவது மாற்றம் ஏற்படுகிறதா என்று கவனிக்க வேண்டும்.		
		வழிமுறை 4 :		
		• இடது கையை உயர்த்த வேண்டும்.		
		• உங்களுடைய 3 அல்லது 4 வலது கை விரல்களை கொண்டு இடது மார்பை அழுத்தமாகவும், பாதுகாப்பாகவும் மற்றும் முழுமையாகவும் உணர வேண்டும்.		
		• வெளிபுற விளிம்பிலிருந்து தொடங்கி உங்களது மார்பகத்தை விரல்களின் தட்டையான பகுதியை கொண்டு சிறிய வட்டபாதையில் அழுத்தி மார்பகத்தை சுற்றி வட்டவடிவில் நகர்த்த வேண்டும்.		
		• உங்களது விரல்களை பயன்படுத்தி மார்பக காம்பு பகுதியை உணர வேண்டும்.		
		• உங்களது மார்பகத்தை முழுமையாக உள்ளடக்க வேண்டும்.		
		• உங்களது கவனத்தை மார்பக மற்றும் அக்குள் பகுதிகளுக்கிடையே செலுத்த வேண்டும். அக்குள் பகுதியும் இணைக்க வேண்டும்.		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		• தோலின் அடியில் ஏதாவது அசாதாரணமான கட்டி அல்லது சதை உள்ளதா என்று உணர வேண்டும். வழிமுறை 5 : • மெதுவாக மார்பக காம்பை பிழிந்து அதிலிருந்து ஏதாவது திரவம் வெளியேற்றம் உள்ளதா என்று பார்க்க வேண்டும். • ஏதாவது திரவ வெளியேற்றமிருந்தால் உங்களது மருத்துவமைர சென்று பார்க்கவும். • உங்களது வலது மார்பகத்திரும் இந்த பரிசோதனையை திரும்ப செய்ய வேண்டும். வழிமுறை 6 : • நடைமுறை 4 மற்றம் 5 ஐ, படுத்துக் கொண்டு திரும்ப திரும்ப செய்ய வேண்டும். • தரையில் தட்டையாக படுத்துக்கொண்டு உங்களது இடது கையை தலையின் மேல் வைத்து பின்னர் தலையணை அல்லது மடித்த துவட்டியை உங்களது இடது தோள்பட்டையின் அடியில் வைக்க வேண்டும். • மேலே குறிப்பிட்டுள்ள வட்டவடிவ இயக்கத்தை பயன்படுத்த வேண்டும். • உங்களது வலது மார்பகத்திரும் இதனை திரும்ப செய்ய வேண்டும்.		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		அமெரிக்க புற்றுநோய்க்கான சமூகம் பெண்களிடையே மார்பக புற்றுநோயை கண்டறிய ஆதாரம் சார்ந்த வழிகாட்டுதல்களை வகுத்துள்ளன. • 40 மற்றும் அதற்கு அதிக வயதுடைய பெண்கள மார்பக ஊடுகதிர்ப்படம் பரிசோதனை செய்ய வேண்டும் • 20 − 4- வயதான பெண்களை 3 வருடங்களுக்கு ஒரு முறை உடல்நல பணியாளர்களைக் கொண்டு மருத்துவ ரீதியான மார்பக பரிசோதனை செய்ய வேண்டும்.		

வ. எண்.	பங்களிப்பு நோக்கங்கள்	பொருளடக்கம்	ஆய்வாளரின் செயல்பாடு	கற்பிப்பவரின் செயல்பாடு
		சுகாதார பணியாளர்களிடம் தெரிவிக்க வேண்டியவை : • ஒன்று அல்லது இரண்டு மார்பகத்தின் அளவு அல்லது வடிவத்தில் ஏதேனும் மாற்றம் தென்பட்டால். • மார்பக காம்பிலிருந்து ஏதேனும் திரவ வெளியேற்றம் இருந்தால். • மார்பக காம்பை சுற்றி ஏதேனும் தடிமனாக இருந்தால். • மார்பகத்தில் தோலில் ஏதேனும் குழி இருக்குமாயின். • ஏதேனும் ஒரு அக்குளில் கட்டி அல்லது வீக்கம் இருந்தால். • மாதவிடாய் சுழற்சிக்கு சம்பந்தமில்லாத அக்குள் அல்லது மார்பகத்தில் வலி.		
		முடிவுரை : மார்பக புற்றுநோய் என்பது பெண்களின் ஒரு மோசமான பயமாகும். பெண்கள் சுயமாக தங்களின் மார்பகத்தை ஆராய்வதாலும், வழக்கமாக மருத்துவரின் ஆலோசனையுடன் ஆராய்வதாலும், பரிந்துரைக்கப்பட்ட முலை ஊடுகதிர்பட பரிசோதனை செய்வதாலும் சாத்தியமான பிரச்சனைகளை ஆரம்ப நிலையிலேயே கண்டறியலாம். ஆரம்ப நிலையிலேயே மார்பக சுய பரிசோதனை செய்வதன்மூலம் மார்பகநோயினை கண்டறிந்தால், மார்பக புற்றுநோயை தடுக்கலாம்.		

BSE DEMONSTRATION PROTOCOL

Pre-requisites

- Provide privacy
- Provide adequate lighting and ventilation
- Position in front of the mirror

Techniques

3 main techniques to be followed while performing BSE.

Circular method- move '3' middle fingers in a circular fashion starting from outer edge of breast towards the nipple

Vertical strip method- move the '3' middle fingers starting from the collar bone area down below the breast and back up again in zig zag way until the entire breast is felt

Wedge method- move the '3' middle fingers beginning from the outer edge towards the nipple and repeat the procedure for every wedge until the entire breast is felt

Steps

Step 1:

- Stand before the mirror
- Check both breasts for anything unusual
- Look for discharge from the nipple, puckering, dimpling or scaling of the skin

Step 2:

- Watch closely in the mirror as you clasp your hands behind your head and press your hands forward
- Note any change in the contour of your breasts.

Step 3:

- Next press your hands firmly on your hips and bow slightly toward the mirror as you pull your shoulders and elbows forward
- Note any change in the contour of your breasts

Step 4:

- Raise your left arm

- Use 3 or 4 fingers of your right hand to feel your left breast firmly, carefully and thoroughly
- Beginning at the outer edge, press the flat part of your fingers in small circles, moving the circles slowly around the breast
- Gradually work towards the nipple
- Be sure to cover the whole breast
- Pay special attention to the area between the breast and the underarm, including the underarm itself
- Feel for any unusual lumps or masses under the skin

Step 5:
- Gently squeeze the nipple and look for discharge
- If you have any discharge during the month- see your doctor
- Repeat the examination on your right breast

Step 6:
- Step 4 & 5 should be repeated lying down
- Lie flat on your back with your left arm over your head and pillow or a folded towel under your left shoulder
- Use the same circular motion described above
- Repeat on your right breast

Post procedure

Documents the findings
- A lump
- Swelling
- Dimpling
- Pain
- Nipple retraction (nipple turns in)
- Redness of nipple or breast skin
- Scaly nipple or breast skin
- Skin irritation
- Nipple discharge
- No specific findings

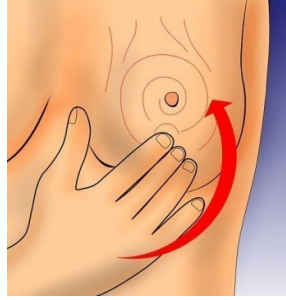# சுயமார்பக பரிசோதனையின் செய்முறை விளக்கம்

முன் நிபந்தனைகள்

- தனிமை சூழல்
- இந்த நடைமுறையை நல்ல வெளிச்சமான இடத்தில் செய்ய வேண்டும்
- நிலைமை: கண்ணாடியின் முன் நிற்றல்

நுட்பம்/ செய்யும்முறை:

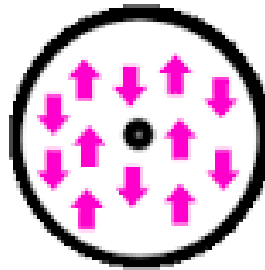சுயமார்பக பரிசோதனை செய்யும் போது 3 முக்கியமான நுட்பங்களை பின்பற்ற வேண்டும்.

வட்டவடிவமான முறை :

3 நடுவிரல்களை வட்டவடிவ பாதையில் மார்பகத்தின் வெளிபுறத்திலிருந்து முலைக் காம்பை நோக்கி நகர்த்த வேண்டும்.

செங்குத்தாக நகரும் முறை:

3 நடுவிரல்களை கழுத்து பட்டை எலும்பிலிருந்து ஆரம்பித்து மார்பகத்தின் கீழ் பகுதி வரையிலும் பின்னர் அதே பாதையில் குறுக்கும் நெடுக்குமாக மார்பகத்தின் முழுபகுதியம் உணரும் வரை நகர்த்த வேண்டும்.

ஆப்பு வடிவ முறை :

     3 நடுவிரல்களை மார்பகத்தின் வெளிபுறத்திலிருந்து ஆரம்பித்து முலை காம்பை நோக்கி நகர்த்த வேண்டும். இந்த நடைமுறையை திரும்ப திரும்ப ஒவ்வொரு முனையிலிருந்தும் மார்பகத்தின் முழுபகுதியும் உணரும் வரை நகர்த்த வேண்டும்.

வழிமுறைகள்:

வழிமுறை 1:

- கண்ணாடியின் முன் நிற்க வேண்டும்.
- இரண்டு மார்பகங்களிலும் ஏதாவது அசாதாரணமாக உள்ளதா என்று சரிபார்க்க வேண்டும்.
- மார்பக காம்பிலிருந்து ஏதாவது வடிகிறதா என்றும் சுருக்கங்கள், குழி விழுந்த நிலை, செதில்கள் உள்ளதா என்று சரி பார்க்க வேண்டும்.

வழிமுறை 2:

- கண்ணாடியின் முன் நின்றுக்கொண்டு இரண்டு கைகளையும் தலைக்கு பின்னால் பிடித்த பின்னர் கைகளை முன்புறமாக அழுத்திய பின்னர் மார்பகத்தை கூர்ந்து கவனிக்க வேண்டும்.
- மார்பகத்தின் வடிவமைப்பில் ஏதாவது மாற்றம் ஏற்படுகிறதா என்று கவனிக்க வேண்டும்.

வழிமுறை 3:

- அடுத்து கைகளை கெட்டியாக இடுப்பின் மேல் வைக்க வேண்டும். பின்னர் தோள்பட்டையையும் மற்றும் முழங்கையை முன்புறமாக இழுக்கும் போது கண்ணாடியை நோக்கி மெதுவாக குனியவேண்டும்.

- மார்பகத்தின் வடிவமைப்பில் ஏதாவது மாற்றம் ஏற்படுகிறதா என்று கவனிக்க வேண்டும்.

வழிமுறை 4:

- இடது கையை உயர்த்த வேண்டும்.

- உங்களுடைய 3 அல்லது 4 வலது கை விரல்களை கொண்டு இடது மார்பை அழுத்தமாகவும், பாதுகாப்பாகவும் மற்றும் முழுமையாகவும் உணர வேண்டும்.

- வெளிபுற விளிம்பிலிருந்து தொடங்கி உங்களது மார்பகத்தை விரல்களின் தட்டையான பகுதியை கொண்டு சிறிய வட்டபாதையில் அழுத்தி மார்பகத்தை சுற்றி வட்டவடிவில் நகர்த்த வேண்டும்.

- உங்களது விரல்களை பயன்படுத்தி மார்பக காம்பு பகுதியை உணர வேண்டும்.

- உங்களது மார்பகத்தை முழுமையாக உள்ளடக்க வேண்டும்.

- உங்களது கவனத்தை மார்பக மற்றும் அக்குள் பகுதிகளுக்கிடையே செலுத்த வேண்டும். அக்குள் பகுதியும் இணைக்க வேண்டும்.

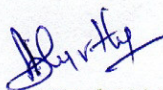- தோலின் அடியில் ஏதாவது அசாதாரணமான கட்டி அல்லது சதை உள்ளதா என்று உணர வேண்டும்.
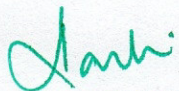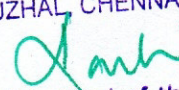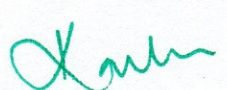
வழிமுறை 5:

- மெதுவாக மார்பக காம்பை பிழிந்து அதிலிருந்து ஏதாவது திரவம் வெளியேற்றம் உள்ளதா என்று பார்க்க வேண்டும்.

- ஏதாவது திரவ வெளியேற்றமிருந்தால் உங்களது மருத்துவரை சென்று பார்க்கவும்.

- உங்களது வலது மார்பகத்திரும் இந்த பரிசோதனையை திரும்ப செய்ய வேண்டும்.

வழிமுறை 6:

- நடைமுறை 4 மற்றும் 5 ஐ, படுத்துக் கொண்டு திரும்ப திரும்ப செய்ய வேண்டும்.

- தரையில் தட்டையாக படுத்துக்கொண்டு உங்களது இடது கையை தலையின் மேல் வைத்து பின்னர் தலையணை அல்லது மடித்த துவட்டியை உங்களது இடது தோள்பட்டையின் அடியில் வைக்க வேண்டும்.

- மேலே குறிப்பிட்டுள்ள வட்டவடிவ இயக்கத்தை பயன்படுத்த வேண்டும்.

- உங்களது வலது மார்பகத்திரும் இதனை திரும்ப செய்ய வேண்டும்.

ஆவணச்சான்று

- கட்டி
- வீக்கம்
- குழி விழுதல்
- முலைக்காம்பு உள்ளிழுப்பு
- முலைக்காம்பு அல்லது மார்பகத் தோல் சிவத்தல்
- முலைக்காம்பு அல்லது மார்பகத் தோல் செதிலாக இருத்தல்
- தோல் அரிப்பு
- முலைக்காம்பிலிருந்து திரவம் வடிதல்
- குறிப்பாக எதுவும் இல்லை

15)	Name of the Guide	:	DR.S.KANCHANA M.Sc (N).,Ph.D
16)	Name of the Department / Institution where the Research Work was done mention may be made about the additional places of the Research Work if any.	:	COMMUNITY HEALTH NURSING DEPARTMENT OMAYAL ACHI COLLEGE OF NURSING
17)	Title of the Thesis in Block Letters	:	EFFECTIVENESS OF TECHNOLOGY ENABLED LEARNING PROGRAMME ON KNOWLEDGE ON PREVENTION OF SELECTED BREAST DISEASES AND PRACTICE ON BREAST SELF-EXAMINATION (BSE) AMONG WOMEN IN SELCETED VILLAGES, THIRUVALLUR DISTRICT.

18) Signature of the Candidate :

S.BHAGAVATHY

19 Signature of the Guide with Designation :

Ph.D., RESEARCH GUIDE
Omayal Achi College of Nursing
No.45, Ambattur Road,
PUZHAL, CHENNAI - 600 066.

20) Signature of the Head of the Department where the candidate conducted the Research Work :

Prof. & Head of the Department,
COMMUNITY HEALTH NURSING

21) Signature of the Head of the Institution where the candidate is working :

PRINCIPAL
OMAYAL ACHI COLLEGE OF NURSING
No.45, Ambattur Road,
PUZHAL, CHENNAI - 600 066.

22) Station with Date : PUZHAL,CHENNAI
27.9.2016

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The Tamil Nadu Dr. M.G.R. Medical University, Chennai.
FORM – IV
Ph.D., Synopsis Submission Application Form

Note : Candidates should submit the duly filled Synopsis Application Form and Six copies of the Synopsis on or before the last working day of the Registration Sessions as given in No.31 of the Ph.D., Regulations.

1)		Details of Remittance	
a)		Name of the Bank / Branch	: Indian Bank, Puzhal Branch
b)		Amount Remitted	: RS.15,500(Rupees Fifteen thousand five hundred only)
c)		Demand Draft / Chelan No	: NEFT: IDIBH16270452287 for Rs.500/-& IDIBH16270452569 for Rs.15000/
d)		Date of issue / remittance	: 26.9.2016
2)		Name of the Candidate	: Mrs. S.BHAGAVATHY
3)		Date of Birth & Age	: 05.07.1978
4)		Place of Birth	: NAZARETH
5)		Name and Occupation of guardian	: S.ANAND, HR MANAGER
6)		Nationality	: INDIAN
7)		Religion	: HINDU
8)		Designation of the Candidate	: ASSOCIATE PROFESSOR OMAYAL ACHI COLLEGE OF NURSING
9)		Office Address with Tel. No. /Fax No./E-mail I.D.	: OMAYAL ACHI COLLEGE OF NURSING 45, AMBATTUR ROAD, PUZHAL, CHENNAI 66. 044-26591616, 26591617, 26591618 oacn1992@gmail.com
10)		Address for Communication with Telephone No. / Fax No. / E-mail I.D	: SAME AS ABOVE 9486530324; 044-26591616. bagu1978@yahoo.co.in
11)		Name of the University, Register Number, Month and Year of Passing of the qualifying examination as mentioned in No.3 of Ph.D., Regulations.	: THE TN DR MGR MEDICAL UNIVERSITY 30053023 , MARCH 2007
12)		Date, Month & Year of the Convocation at which the qualifying Degree was taken	: 11TH OCTOBER 2007
13)		The Examination passed is from any other University, state the number and date of the communication recognizing the Degree	: NA
14)		The month and year in which the candidate was provisionally registered (Enclose certified Xerox Copies of confirmation of Provisional Registration).	: 01.01.2013

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI.
FORM - V
Ph.D., Thesis Submission Application Form :-

1) Details of Remittance :
    a) Name of the Bank / Branch-   INDIAN BANK, PUZHAL BRANCH
    b) Amount Remitted.   Rs.30,500/-
    c) Demand Draft / Challan No.   IDIBH16363346281 / Rs.500/-
    d) Date of issue / remittance.   IDIBH16363347362 / Rs.30,000/-
                                   28/12/2016

2) Name of the Candidate   : Mrs. S.BHAGAVATHY

3) Date of Birth & Age   : 05-07-1978   38 years

4) Place of Birth   : NAZARETH

5) Name and Occupation of father / guardian : Mr. M.SHUNMUGASUNDARAM, Retired

6) Nationality   : Indian

7) Religion   : HINDU (MBC)

8) Designation of the Candidate   : Associate Professor

9) Office Address with Tel. No./Fax No./E-mail I.D. :
                            Omayal Achi College of Nursing,
                            No. 45, Ambattur Road, Puzhal, Chennai-600 066
                            Ph: 044-26591616/17/18   (or)
                            Mobile no. 9486530324
                            E mail: oacn1992@gmail.com (or)
                            bagu1978@yahoo.co.in

10) Address for Communication with :
   Telephone No. / Fax No. / E-mail I.D.
                            Omayal Achi College of Nursing,
                            No. 45, Ambattur Road, Puzhal, Chennai-600 066
                            Ph: 044-26591616/17/18   (or)
                            Mobile no. 9486530324
                            E mail: oacn1992@gmail.com (or)
                            bagu1978@yahoo.co.in

11) Name of the University, Register Number, : The Tamil Nadu Dr.MGR Medical University,
    Month and Year of Passing the qualifying   30053023
     examination as mentioned in No.3 of   March 2007
       Ph.D., Regulations.

12) Date, Month & Year of the Convocation at
   which the qualifying Degree was taken :   11.10.2007

13) The Examination passed is from any other   NA
University, state the number and date of the
communication recognising the Degree :
(Enclose certified Xerox Copies).

14) The month and year in which the candidate was :   01.01.2013
provisionally registered (Enclose certified
Xerox Copies of confirmation of
Provisional Registration).

15) Name of the Guide: Dr. (Mrs.) Sambavadas Kanchana

16) Name of the Department / Institution where :   Community Health Nursing Department,
the Research Work was done Mention may be   Omayal Achi College of Nursing, Puzhal
made about the additional places of the Research
Work if any.

17) Title of the Thesis in Block Letters: EFFECTIVENESS OF TECHNOLOGY
ENABLED LEARNING PROGRAMME ON
KNOWLEDGE ON PREVENTION OF
SELECTED BREAST DISEASES AND
PRACTICE ON BREAST SELF -
EXAMINATION (BSE) AMONG WOMEN AT
SELECTED VILLAGES, THIRUVALLUR
DISTRICT.

18) Whether the applicant submitted the Thesis :
previously for the Degree; if so, the month/s and   NA
year/s in which the Thesis was submitted

19) If the Thesis is re-submitted, please mention :   NA
the reasons for re-submission –
a) Corrections carried out and re-submitted.
b) Rejected in the first instance and re-submitted
with additional work.

20) Signature of the Candidate :

21) Signature of the Guide with Designation:

22) Signature of the Head of the Department
where the candidate conducted the Research Work:

23) Signature of the Head of the Institution
where the candidate is working :

24) Station with Date :

PHOTOGRAPHS