Original Research Article

To assess the effectiveness of video-assisted teaching on knowledge regarding male breast cancer among adult males

Abstract

Introduction: As the healthcare programs focus on the relatively higher incidence, women have a fair level of awareness of breast cancer. Breast of male hence ignored in the community. Studies from India have shown that medical care is often taken in an advanced stage because of lack of awareness, and the aggressive nature of breast cancer in Indian men and seen at quite an early age. Video-assisted knowledge teachings about awareness of male breast cancer among adult males would improve their understanding and exploration of the perceptions and opinions of Indian male cancers.

Aim: To determine the effectiveness of video-assisted education on male breast cancer knowledge among adult males in the city of Wardha.

Methods and Material: One group pretest and posttest design with a quantitative research approach has been used in this interventional study design. This study has been carried out in AVBR Hospital of Wardha city. Sample size was100. Validated Pretested predesigned structured questionnaires were used. In Microsoft excel sheet, data collected was entered. SPSS-software was used to perform the statistical analysis. Frequencies and percentages for categorical variables have been presented. **Result:** The pre-test findings show that 15(15%) of the adult males had a poor level of knowledge score, 50(50%) had average knowledge and 31(31%) of them had good

knowledge and 4(4%) of them had found a very good level of knowledge. After video-assisted teaching in the post-test 3(3%) had a good knowledge score and 97(97%) had very good knowledge, thus it shows that after the post-test the knowledge score was increased. The Mean value of the pre-test is 9.32 and the post-test is 23.14 (p-value is 0.001), the calculated t-value is 35.47. Hence it indicates that Teaching aided with video was effective. The post-test score was significantly associated with population variables such as occupation and bad habits. The post-testing knowledge score with demographic variables such as age, religion, family type, education, marital status, dietary pattern, and area of residence was not significantly linked.

Conclusion: The study shows that the expected teaching on male breast cancer has helped adult males to gain a better understanding of the nature of the disease and to take measures to prevent male breast cancer.

Keywords: Awareness, Efficacy, Educational Intervention, Adult male, male breast cancer

Introduction:

Male breast cancer is a rare disease that represents 1% of all breast cancer cases. While extensive literature on female breast cancer is epidemiologically available, relatively little knowledge exists about male breast cancer.

In the United States, it is estimated that 1450 men will be diagnosed and 470 will die from breast cancer in 2004. [1]

The incidence of MBC has increased between 0.86 and 1.06 per 100,000 people over the past 26 years. [2]

Because of the comparatively higher prevalence of female breast cancer and the focus of health programs, there is a high level of awareness.

On the other hand, male breast cancer is less prevalent in the community and is often ignored. [3]Indian studies show that medical attention is most often sought in the advanced stage As a consequence of ignorance and that breast cancer is aggressive in Indian men and is seen at a relatively young age. [4]

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The etiology of breast cancer is unclear in men, but the levels of hormones can play a significant part in disease development. An increased risk for breast cancer has been constantly associated with testicular abnormalities like undescended inguinal hernias, orchiectomy, orchitis, and infertility.

Male breast cancer has increased by 26 percent over the past 25 years, as in breast cancer. [5]

No studies to assess Indian perceptions of this disease have been conducted previously. [6], [7]

In this regard, a study was performed to investigate the efficiency of the education of male breast cancer in Indian men with video support.

Materials and methods: A pre-experimental pre-test, the post-test research design were used in this study. The study was conducted from 23rd March 2021 to 10th April 2021 and the setting was selected in the Acharya Vinoba Bhave rural hospitals at Wardha city, after getting ethical permission (Ref. no: DMIMS(DU)/IEC/17-

18/7020). By using the purposive sampling technique, 100 adult males were selected based on the calculation.

Cochran formula for sample size

$$n = Z\alpha/22 * p*(1-p)/E^2$$

$$n=1.96^2 x 0.40x\ 0.60/\ (0.10)^2$$

$$=92.19$$

Where, n= sample size Zα is the level of significance at 5% i.e, 95 % confidence interval =1.96,p= incidence=E= error of margin=10%=0.10

Standard normal variate, which is 1.96 at 5% type 1 error, SD=standard deviation of knowledge score, E= error of margin. P= incidence p-values are considered significant below 5%, hence, 1.96 is used in the formula. Considering 95% Confidence Interval (CI) and 10% allowable error, the sample size was calculated to include 92.19 respondents. However, the researcher decided to include 100 male adults.

The study participants were informed and the purpose of the study was explained. The written informed consent dully signed individually by them was obtained. The inclusion criteria were: adult males in the selected area who are willing to participate in the study and who can understand and write English and Marathi. Study participants those were attended a similar type of study and were health professionals excluded from the study. Demographic variables were collected in terms of age, religion, type of family, education, marital status, and dietary pattern, area of residence, occupation, and bad habits.

A semi-structured questionnaire, which is attached in Annexure 1**,** has 26 multiple choice questions and these were classified in different areas, such as Meaning,

incidence, causes, and risk factors, male breast self-examination, Medical management, lifestyle management, and preventive measures. The questionnaire was prepared based on the existing literature and clinical experiences of handling male patients having breast cancer. Each correct answer carries one mark and the total score is 26. The prepared tool was validated by twelve experts, out of the ten were from the nursing department, one was from the Department of surgery and one was from the physiology department. Reliability analysis was done by the Spearman-Brown prophecy formula and was 0.90, hence the tool was found reliable, valid, and feasible. The interview technique was processed for 100 samples was planned to gather demographic information and the knowledge structured questionnaire on male breast cancer including medical management, lifestyle management, Complications, and prevention of male breast cancer. On the first day of the data collection, a pretest was conducted on a knowledge questionnaire regarding male breast cancer. The questionnaire was administered, each sample requires meantime 30 minutes to complete the structured questionnaire. Following the pretest, intended video-assisted teaching was carried out on knowledge and breast examination with sufficient audiovisual aids in a quick and clear understandable way for the study participant utilizing PowerPoint presentation with live video of self-breast examination. The post-test was conducted with the same questionnaire on the 7th day. Based on the 26 questions each study participant was asked individually for his answers with the same questionnaire. As collected, the responses were arranged in tabular form to conduct statistical analyzes which are mentioned in the following sections.

The steps of methodology including statistical analysis are described in [Table/Fig-1] as follows:

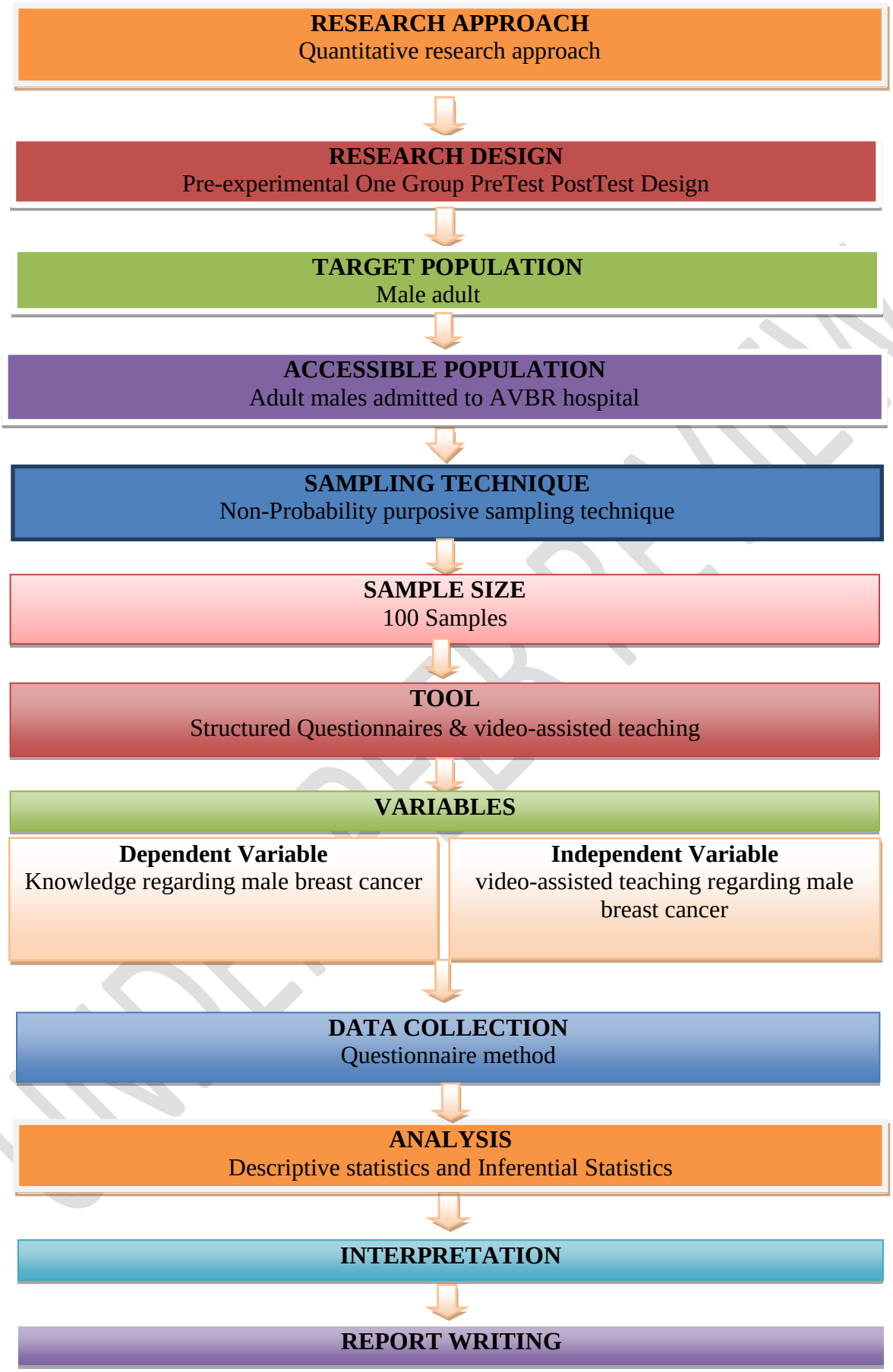

FIGURE No.1`: Schematic presentation of one group pre-test and post-test design for the present study

Statistical analysis:

The collected data were coded, tabulated, and analyzed by using descriptive statistics (mean percentage, standard deviation) and inferential statistics. The significant difference between pre and post-test readings was tested by using students paired and unpaired t-test, the association of knowledge with demographic variables was done by one way ANOVA test and Pearson's correlation coefficient.

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Results:

Table no.1: Showing frequency distribution of socio-demographic Variables among male adults.

n=100

Demographic variable	Frequency	Percentage (%)
Age in year		
a.18-28 years	26	26
b. 29-38 years	34	34
c. 39-48 years	27	27
d.≥49 years	13	13
Religion		
a.Hindu	64	64
b.Muslim	7	7
c.Buddhist	25	25
d.Christian	3	3
e.Others	1	1

Type of family		
Nuclear	35	35
Joint	59	59
Extended	6	6
Education		
a. Primary	14	14
b.Secondary	28	28
c.Higher Secondary	47	47
d.Graduate	10	10
e.Post Graduate	1	1
Occupation		
Student	17	17
Laborer	35	35
Farmer	27	27
Private Service	15	15
Government Service	4	4
Other	2	2
Marital status		
Married	71	71
Unmarried	29	29
Divorced	0	0
Types of diet		
Vegetarian	21	21
Mixed Diet	79	79
Bad habits		
Drinking Alcohol	15	15

Smoking	13	13
Tobacco Chewing	27	27
Drug Addiction	2	2
No bad habits	43	43
Source of knowledge		
Radio	9	9
TV	16	16
Internet/Social Media	36	36
Newspaper	14	14
Other	25	25

The above table no.1.shows that the Majority of the 34 % samples were from the age group of above29-38years, 27 % samples were from the age group of 39-48 years, 13 % samples were from the age group of above or equal to 49 years,25 % samples were Buddhist,7% were Muslims,3%were Christian. The majority of the 59 % samples were living in a joint family,35 % were from a nuclear family, and 6%were living in the extended family. Majority 47%were completed higher secondary education,28% secondary,14% were primary and 10% posted graduation. As per occupation majority, 35% were laborers,27%were farmers,15%were in the private sector,4%government servants and2% doing other work. The majority 71% were married, 29% were unmarried. The majority 79%were mixed dietary patterns and 21% were vegetarian. As per bad habits 27% of tobacco chewers,15%Alcoholic,13%smokers,2%drug adductors, and 43% were not having any bad habits. As per source of knowledge36% an internet/social media,16%through television,(% through radio and 14%through newspapers and 25% through other resources

Table No. 2: Assessment of existing knowledge regarding male breast cancer.

n=100

Level of pre-test knowledge	Score Range	Level of Pre-test Knowledge Score	
		No of adult males	Percentage
Poor	0-20%	15	15
Average	21-40%	50	50
Good	41-60%	31	31
Very Good	61-80%	4	4
Excellent	81-100%	0	0
Minimum score		2	
Maximum score		17	
Mean knowledge score		9.32 ± 3.32	
Mean % Knowledge Score		35.84 ± 12.77	

The above table no.2 shows that (15%) had a poor level of knowledge score, (50%) had an average level of knowledge score,(31%) had a good level of knowledge score, and (4%) had a very good level of knowledge score and none of them have excellent knowledge. The minimum score was 2 and the maximum score was 17, the mean score was 9.32 ± 3.32 with a mean percentage score of 35.84 %

Table No.3: Assessment of post-test knowledge regarding male breast cancer.

n = 100

Level of post-test knowledge	Score Range	Level of Post-test Knowledge Score	
		No of students	Percentage
Poor	0-20%	0	0
Average	21-40%	0	0
Good	41-60%	0	0

Very Good	61-80%	3	3
Excellent	81-100%	97	97
Minimum score		19	
Maximum score		26	
Mean knowledge score		23.14±1.40	
Mean % Knowledge Score		89±5.38	

The above table no. This 3shows that none of them had a poor, average, and a good level of knowledge score, (3%) had a very good level of knowledge score, and (97%) had an excellent knowledge score. The minimum score was 19 and the maximum score was 26, the mean score was 23.14±1.40with a mean percentage score of 89%.

Table No. 4: Percentage-wise distribution of Effectiveness of video-assisted teaching on knowledge regarding male breast cancer among adult males.

n = 100

Overall	Mean	SD	Mean Difference	t-value	p-value
Pre Test	9.32	3.32	13.82±3.89	35.47	0.0001 S,p<0.05
Post Test	23.14	1.40			

The effectiveness of structured teaching program was analyzed as follows:

Hypothesis:

H_0: There will be no significant difference between knowledge score regarding male breast cancer among adult male

H_1: There will be no significant difference between knowledge score regarding male breast cancer among adult male

The above table no.4 shows that there is a significant difference between pre-test and post-test knowledge scores interpreting effective video-assisted teaching on knowledge regarding male breast cancer among male adults. The mean value of the pre-test is 9.32and the post-test is 23.14 and standard deviation values of pre test are 9.32 ± 3.32 and post test is 23.14±1.40. The calculated t-value is 35.47 and the p-value is 0.001. Hence it is statistically interpreted that the planned teaching on knowledge regarding male breast cancer among adult males was effective. Thus the H_1 is accepted and H_0 is rejected in this study.

Table No. 5: Significance of association of knowledge about demographic variable

Age (years)	No. of adult males	Mean post-test knowledge score	F-value	p-value
18-28 years	26	23.30±1.31	1.12	0.34 NS,p>0.05
29-38 years	34	23.08±1.37		
39-48 years	27	22.81±1.46		
≥49 years	13	23.61±1.44		
Religion				
Hindu	64	23.17±1.32	2.18	0.076 NS,p>0.05
Muslim	7	21.85±1.95		
Buddhist	25	23.28±1.27		
Christian	3	24.33±1.52		

Others	1	23±0		
Type of family				
Nuclear	35	23.22±1.43	0.12	0.88 NS,p>0.05
Joint	59	23.10±1.43		
Extended	6	23±0.89		
Education				
Primary	14	22.71±1.32	1.52	0.20 NS,p>0.05
Secondary	28	23.28±1.41		
Higher Secondary	47	23.08±1.31		
Graduate	10	23.30±1.70		
Occupation				
Student	17	23.64±1.41	2.61	0.029 S,p<0.05
Laborer	35	23.37±1.21		
Farmer	27	22.44±1.31		
Private Service	15	23.20±1.14		
Government Service	4	22.75±2.87		
Other	2	24.50±0.70		
Marital Status				
Married	71	23.08±1.43	0.61	0.53 NS,p>0.06
Unmarried	29	23.27±1.33		
Divorced	0	0±0		
Type of diet				
Vegetarian	21	23.42±1.20	1.06	0.29 NS,p>0.06
Non-Vegetarian	79	23.06±1.44		

Bad Habits				
Drinking	15	23.86±1.30	2.60	0.041 S,p<0.05
Smoking	13	22.92±1.65		
Tobacco Chewing	27	22.55±1.15		
Drug Addiction	2	23.50±0.70		
Other	43	23.30±1.40		
Source of knowledge				
Radio	9	23.22±1.56	0.24	0.91 NS,p>0.05
TV	16	23.37±1.92		
Internet/Social Media	36	23.02±1.29		
Newspaper	14	23.28±1.13		
Other	25	23.04±1.30		

The association between some selected demographic variables and post-test knowledge score was calculated and shown in [Table/Fig-5].illustrate that association between occupation and bad habits shows that calculated 'p-value was less than the acceptable level of significance i.e. 'p'=0.05. Thus, there was a significant association between demographic variables occupation and bad habits and post-test knowledge score. However, other demographic variables such as age, religion, education, type of family, education, marital status, type of diet, and source of knowledge Illustrate that calculated 'p-value was more than the acceptable level of significance i.e. 'p'=0.05. Thus, there was no significant association between demographic variables such as age, religion, education, type of family, education, marital status, type of diet, source of knowledge, and post-test knowledge score.

Discussion:

The study was conducted to assess the effectiveness of video-assisted teaching on knowledge regarding male breast cancer among adult males

It was aimed to improve the knowledge of adult males regarding male breast cancer.

The mean post-test score of 23.14 (SD=1.40) was higher than the mean pre-test score of 9.32 (SD=3.32) these scores indicate that the video-assisted teaching was effective. The significant difference between the 2 tests was tested by using paired 't' test the level of significance was set at the computed value ($p<0.001$) indicated that there was a significant difference in the knowledge of adult males about male breast cancer.

A study of the male's cancer of the breast awareness in Indian expatriates in the Middle East by Salati SA. has been carried out. A cross-sectional survey with a random sample of Indian males expatriates in the Al-Qassim region of Saudi Arabia, Male breast cancer awareness has been examined with a self-designed questionnaire. Results indicate that 81% of study participants were poorly aware of breast cancer in the male. This community should be given special attention in raising the issue of men's breast cancer. [8] Deepak Sundriyal et al. conducted a retrospective study. A total of 1752 patients with breast cancer were present during the 10-year study period (January 2005 to December 2014). It identified 18 cases of MBC. Data were evaluated on clinical history, tests, performance status (PS) at presentation, disease stage, pathological and hormonal status. Results show that 1.03% of the total cases of breast cancer accounted for MBC.

The median age of presentation ranged from 42 to 70 years.

In this study, only 44% (44 out of 100) were aware that men, too, had breasts such as women (even though small), and 66% were uncertain or believed otherwise. Of the 100 subjects, 81 were unfamiliar with the common characteristics of male breast cancer. Those subjects virtually don't know about the concept for breast self-examination, as it was heard of only 4 out of 100 (4%). These are worrying figures, as lack of awareness shows that the presentation of cancer patients is delayed. But many recent studies have also shown that other population groups have a similar unsatisfactory picture.

In a study conducted by male graduate students at the Management and Science University, Malaysia, a significantly high percentage found misunderstandings regarding male breast cancer.

Al-Haddad emphasizes the role of nurses in awareness of possible male breast cancer, risk factors, and associated prevention methods. Haddad also believes the society does not seem to know that men can develop breast cancer, which eventually helps in part to diagnose men late. [9]

A qualitative study that explores Cancer of the male breast awareness and knowledge among men who speak English. The main goal was to generate information guiding clinical practice and the development of gender-based education interventions. Interviews were conducted and analyzed using qualitative methods which had at least one maternal blood relative to breast cancers, all without having any history of breast cancer, to describe the consciences of male cancer participants, their knowledge, and what they thought could be enhanced in health professionals.

Almost 80 percent of participants had not realized that men could develop breast cancer, but, while everyone was at greater risk due to their positive family history, all reported never discussing the disease with their providers. This study offers much-needed insights into male breast cancer consciousness and knowledge. [10]

Our study focused on finding the efficacy of video-assisted knowledge education in male breast cancer among adult males in which knowledge scores were taken as the main indicator. The other limitation was though our tool assessed knowledge regarding male breast cancer the scores were self-reported, so an increase in the score had definitely shown knowledge increase but how far it was transformed into a change in practices could not be evaluated. Another limitation of our study was due to resource constraints the individual-level data could not be compared pre-intervention and post-intervention; we had to use aggregate data to compare scores.

Conclusion:

Women are prevalent with breast cancer and can develop in men, though it is rare. Society seems unaware of the possibility for men to develop breast cancer that partly contributes to late diagnosis in men. Nurses must raise awareness about potential breast cancer in men, associated risk factors, and prevention methods. The detection of breast cancer can be assisted by a simple screening method, such as breast self-examination. This test can be carried out quickly and easily independently, which can lead to early detection. The present study concludes that In pre-test and after video-assisted training, male adult knowledge about breast cancer is not adequate; the awareness of male adults is improved after teaching. Video support is, therefore, effective in enhancing male breast cancer knowledge of adults, helps them to consider the complications of cancer of the male breast, and to take the appropriate measures to recognize at earlier and prevent male breast cancer.

Future recommendation:

The level of awareness is poor and strategies must be developed to improve this. In this respect, careful use of social media and television can be helpful. These findings provide a starting point for developing evidence-based, gender-based, health promotion and disease prevention interventions for men. There are still misconceptions concerning male breast cancer and male breast self-examination, so special attention should be given to educating men on the subjects of male breast cancer and male breast self-examination (MBSE).

References:

1. Tarver T. Cancer Facts & Figures 2012. American Cancer Society (ACS). J Consum Health Internet. 2012 Jul 1;16(3):366–7.

2. Giordano SH, Cohen DS, Buzdar AU, Perkins G, Hortobagyi GN. Breast carcinoma in men. Cancer. 2004;101(1):51–7.

3. S S, S B, A G, A G, S B. Male breast cancer: a clinicopathologic study of 42 patients in eastern India. Indian J Surg Oncol. 2012 Jun 21;3(3):245–9.

4. Sundriyal D, Kotwal S, Dawar R, Parthasarathy KM. Male Breast Cancer in India: Series from a Cancer Research Centre. Indian J Surg Oncol. 2015 Dec;6(4):384–6.

5. View of Clinicopathological Characteristics and Survival Status of Male Breast Cancer, a Single Center Experience [Internet]. [cited 2021 Jun 10]. Available from: http://waocp.com/journal/index.php/apjcb/article/view/225/1035

6. Sasco AJ, Lowenfels AB, Jong PP-D. Review article: Epidemiology of male breast cancer. A meta-analysis of published case-control studies and discussion of selected aetiological factors. Int J Cancer. 1993;53(4):538–49.

7. Thomas DB, Margarita Jimenez L, McTieman A, Rosenblatt K, Stalsberg H, Stemhagen A, et al. Breast Cancer In Men: Risk Factors with Hormonal Implications. Am J Epidemiol. 1992 Apr 1;135(7):734–48.

8. article_26131_d37c06739e890bf5bfda2cb79134aefc.pdf [Internet]. [cited 2021 Jun 10]. Available from: http://journal.waocp.org/article_26131_d37c06739e890bf5bfda2cb79134aefc.pdf

9. Bootsma TI, Duijveman P, Pijpe A, Scheelings PC, Witkamp AJ, Bleiker EMA. Unmet information needs of men with breast cancer and health professionals. Psychooncology. 2020 May;29(5):851–60.

10. Original Research: Men's Awareness and Knowledge of Male Bre... : AJN The American Journal of Nursing [Internet]. [cited 2021 Jun 10]. Available from: https://journals.lww.com/ajnonline/Abstract/2010/10000/Original_Research__Men_s_Awareness_and_Knowledge.27.aspx

11.American Cancer Society. Cancer facts and figures 2004. Atlanta: American Cancer Society, Inc.; 2004.

12.Giordano SH, Cohen DS, Buzdar AU, Perkins G, Hortobagyi GN. Breast carcinoma in men. Cancer 2004 (online);2004 May 24 (early view online).

13. Shah S, Bhattacharyya S, Gupta A, Ghosh A, Basak S. Male breast cancer: a clinicopathologic study of 42 patients in eastern India. *Indian J Surg Oncol.* 2012; 3(3):245-9.

14.Sundriyal D, Kotwal S, Dawar R, Parthasarathy KM. Male Breast Cancer in India: Series from a Cancer Research Centre. *Indian J Surg Oncol.* 2015; 6(4):384-6

15. Giordano SH, Cohen DS, Buzdar AU et al. Breast carcinoma in men: a population-based study. Cancer 2004;101:51–57.

16. Sasco AJ, Lowenfels AB, Pasker-de Jong P. Review article: epidemiology of male breast cancer. A meta-analysis of published case-control studies and discussion of selected aetiological factors. Int J Cancer 1993;53:538–549.

17 Thomas DB, Jimenez LM, McTiernan A et al. Breast cancer in men: risk factors with hormonal implications. Am J Epidemiol 1992;135:734–748.

18 Al-Naggar RA, Al-Naggar DH. Perceptions and opinions about male breast cancer and male breast self-examination: a qualitative study. *Asian Pac J Cancer Prev.* 2012; 13(1):243-6.

19. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4809860

20. Al-Haddad M. Breast cancer in men: the importance of teaching and raising awareness. *Clin J Oncol Nurs.* 2010; 14(1):31-2.

21 Thomas E. Men's awareness and knowledge of male breast cancer. AJN The American Journal of Nursing. 2010 Oct 1;110(10):32-7.