

KAP survey of breast cancer among Indian women using BCAM toolkit: A cross sectional study

Nazish Fathima^{1*}, Ashna Siby¹, Benita Grace Babu¹, Chinnu Merin Roy², Thejaswini B²

Department of Pharmacy Practice

Bapuji Pharmacy College, Davangere, Karnataka.

ABSTRACT: Breast cancer is recognized as a multifactorial disease and is a foremost public health concern, threatening lives globally. Diagnosis tends to occur at later stages, which may be due to inadequate knowledge, poor practice and a negative attitude. Early detection and consequently, initial management lead to a better prognosis, thus reducing death and illness. The main aim of this study was to evaluate breast cancer knowledge, attitude and practice, to assess the relationship between educational status with knowledge and attitude toward breast cancer and to identify the barriers to screening. An online survey-based cross-sectional study was conducted among Indian women using a self-generated questionnaire for a period of six months. Breast cancer awareness measure (BCAM) was used to assess knowledge of breast cancer. A total of 660 women participated in this study. Majority of the women had poor knowledge, neutral attitude and poor practice. "Bleeding from the nipple" was believed to be a sign of breast cancer by most of the women (58.3%). 71.8% women 'rarely or never' practiced breast self-examination. A statistically significant association was found between the level of knowledge regarding breast cancer and demographic characteristics. Women with higher knowledge score reported lower barriers (negative beta coefficient) compared to others. Our study concluded that educational status had a significant association with knowledge, attitude and practice of breast cancer. These outcomes suggest a need for more effective awareness programs. Promotion of free regular health check-ups among general population will decrease the disease burden.

KEYWORDS: cancer, breast cancer, women.

INTRODUCTION: Cancer is the second-leading reason of mortality globally.¹⁰ The World Health Organization (WHO) projects that the number of global cancer deaths will increase by 45% between 2008 and 2030.²⁹ It is anticipated that 1/3rd of all cancers can be prevented, and an additional third of all cancers may be cured if identified at an early stage.⁶

Breast cancer is recognized as a multifactorial disease⁸ and is a foremost public health concern, threatening lives globally. It is malignant by nature, jeopardizes breast tissue, and may include tubules or ducts.⁷ Of the

different types of cancers, breast cancer is the second most common cancer in the world, affecting over 1.67 million people annually.¹⁵ According to the report of GLOBOCAN 2018, the global incidence of breast cancer is 2.08 million and deaths due to breast cancer are 6.3 lakh.²⁶ In developing countries, above 70% of breast cancers are detected at stages III and IV and the average survival following diagnosis is not more than five years.¹⁸

Breast cancer is stigmatized because it involves a multi-symbolic female organ, may be fatal, and treatment (mastectomy) typically

involves a body-mutilating procedure. Therefore, breast cancer is encircled by strong myths, fears, and associations that go beyond the clinical understanding of the disease.¹⁴ Breast cancer is progressive in nature, as it slowly evolves into its risky as well as deadly form from a very minor injury, hence early detection and, consequently, initial management leads to a better prognosis, thus reducing death and illness.²²

In 2018, the World Health Organization (WHO) reported that approximately 6,27,000 women died from breast cancer, representing 15% of total cancer death among women.¹⁰ According to the site, breast cancer is divided into invasive and non-invasive breast cancer.¹¹

A painless lump is the initial indication of breast cancer.³⁰ Signs and symptoms of breast cancer include breast lump, change in the size of breast, pain in the breast or armpit, bloody or fluid nipple discharge, redness in breast skin, changes in nipple, lump in armpit, rash or ulcer on nipple.⁶

Awareness movements are vital in cancer prevention programs. Knowledge of cancer risk factors is a determinant element in the process of behavioural change.²¹

The main risk factors for breast cancer include gender, endocrine factors (null parity, early menarche, late age at first birth);³⁰ occupational exposure, smoking, alcohol use and physical activity,⁸ family history, use of contraceptives, chest radiation, hormones replacement therapy, aging, high-fat foodstuffs and being obese.⁶ The carriers of germ line mutations in BRCA1 or BRCA2 are predisposed to breast cancer.¹³

Around 50% of all breast cancer cases may be possibly prevented by regulation of modifiable risk factors such as lifestyle and

weight control, regular physical activity and minimization of alcohol consumption.⁸

India being a multilingual and multi-ethnic nation, has reported breast cancer as the most frequent cancer in urban Indian females, and it is subsequently frequent among rural Indian women.²¹ The mortality rate of breast cancer in Indian women is 12.7 / 1,00,000 women. In India, the breast cancer incidence rates are higher in most of the metropolitan cities like Delhi, Chennai, Mumbai, Bengaluru etc.¹⁹

Breast self-examination (BSE), clinical breast examination, and mammography are the most commonly recommended screening methods which are used to detect early breast cancer. BSE is a screening technique for detecting early breast cancer that can be performed by women at home. The American Cancer Society (ACS) endorses BSE for early detection of breast cancer as it assists women to become more familiar with the appearance and sense of their breasts, and helps them to notice any abnormalities in their breasts as soon as possible. If discovered early, breast cancer can be treated in the early stages of the disease, meaning BSE is something all women should prioritize.⁶

Beliefs play an important part in determining exactly how women understand and explain breast cancer, and this understanding may have a solid impact on activities related to breast cancer screening methods.¹⁴ Barriers like embarrassment, family relationships, fatalism, and undergoing consultation of traditional healers, fear of breast cancer and lack of knowledge regarding screening programmes prevent screening of breast cancer. When people fear breast cancer detection, they may come to the decision to not

go for screening. Psychosocial fear damages one's intellectual behaviour and leads to denial and confusion, causing a reduction in the logical decision-making capacity.¹⁶ Incomplete knowledge and lack of awareness of the significance of cancer screening measures are the most regularly reported causes of ignoring screening measures.⁹

METHODOLOGY: An online survey-based cross-sectional study was conducted among Indian women using a self-generated questionnaire for a period of six months. Breast cancer awareness measure (BCAM) was used to assess knowledge of breast cancer. The Breast-CAM was developed by Cancer Research UK, King's College London and University College London in 2009 and validated with the support of Breast Cancer Care and Breakthrough Breast Cancer. (Linsell et.al, 2010). We included 5 domains in our study from BCAM. It included: knowledge of symptoms (12 questions), risk factors (1 question), age-related and lifetime risk (1 question), confidence, skills and behaviour in relation to detecting a breast change (2 questions) and barriers to seeking medical help (10 questions). A self-generated questionnaire was created regarding attitude (6 questions) and practice (2 questions) related to breast cancer. Women aged 18 and above were included in the study. Women unable to understand the survey, unwilling to participate and males were excluded. A single proportion formula was used to calculate the appropriate sample size. ($d=0.05$, $p=0.5$, $z=2.58$)

$$n = z^2 p (1-p) / d^2$$

$$\text{Sample size} = 665.64$$

STATISTICAL ANALYSIS: The collected data was entered into MS Excel and analysed using SPSS software. The chi-square test was used to compare the demographics with the knowledge and practice level of breast cancer and to compare women's education status with the KAP of breast cancer. Correlation between the participant's KAP was calculated using Pearson correlation. The influence of barriers on the knowledge of breast cancer was found using regression analysis. p value of $<0.005/0.001$ was considered significant. Each correct response was granted the score of 1 while an incorrect response or "don't know" response was given 0.

The scoring for breast cancer was given as follows:

<i>Knowledge (14 Q)</i>		
Poor <7	Fair 7-12	Good >12
<i>Attitude (6 Q)</i>		
Strong negative - 6 to -4	Mild negative -3 to -1	Neutral 0
Mild positive 1 to 3	Strong positive 4 to 6	
<i>Practice (2 Q)</i>		
Nil 0	Average 1	Good 2

RESULT:

Characteristics	No. Of Subjects	Percentage (%)
AGE OF WOMEN		
Less than 20	47	7.1%
21 – 30	268	40.6%
31 – 40	156	23.6%
41 – 50	111	16.8%
51 – 60	63	9.5%
Above 60	15	2.3%
MARITAL STATUS		
Divorced	67	10.2%
Married	265	40.2%
Single	288	43.6%
Widow	40	6.1%
LOCATION		
Rural	263	39.8%
Urban	397	60.2%
LEVEL OF EDUCATION		
Diploma/master	386	58.5%
High school	170	25.8%
No formal education	28	4.2%
Primary school	76	11.5%
OCCUPATION		
Retired	9	1.4%
Student	197	29.8%
Unemployed	153	23.2%
Working	301	45.6%

Table 1: Demographic characteristics of the subjects

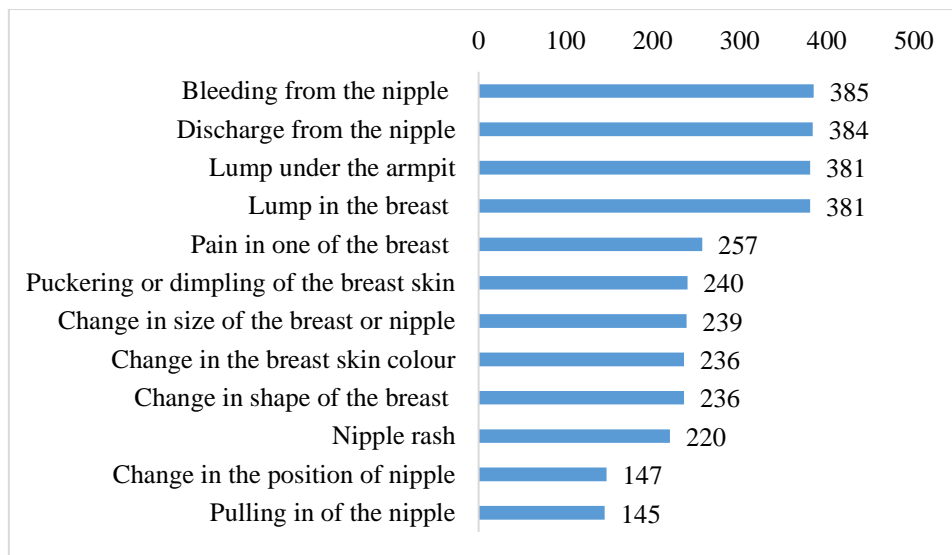


Figure 1: Knowledge of Breast Cancer Symptoms

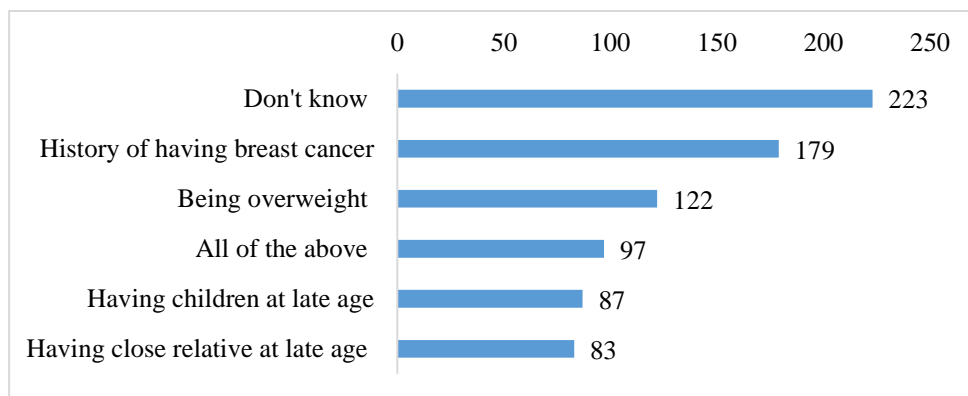


Figure 2: Knowledge on Risk Factors of Breast Cancer

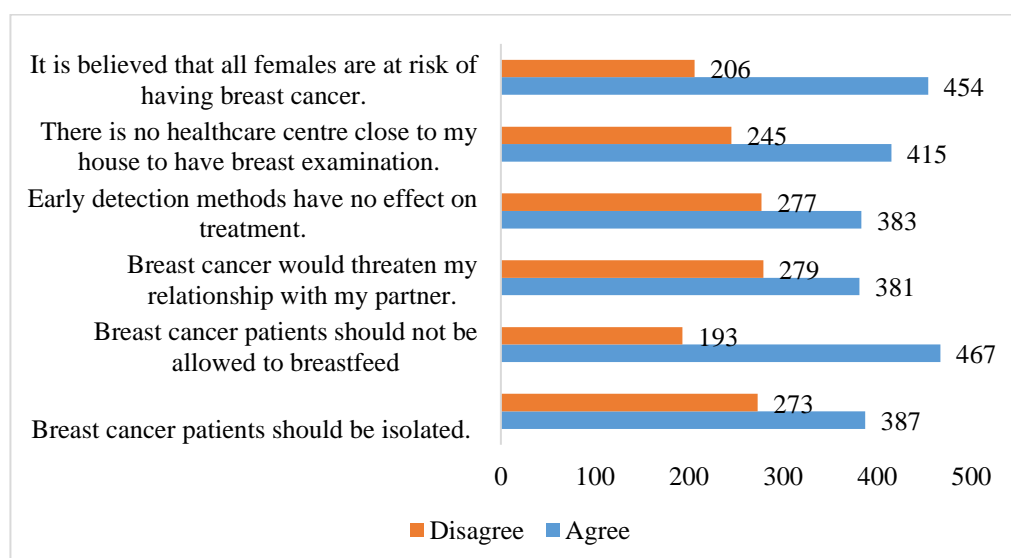


Figure 3: Attitude Regarding Breast Cancer

Do you practice Breast self-examination?	f	%
Rarely or never	474	71.80%
At least once every six months	77	11.70%
At least once a week	66	10.00%
At least once a month	41	6.20%
At least once a week, at least once a month	1	0.20%
Rarely or never, at least once a month	1	0.20%

Table 2: BSE Practice Frequency

Descriptive Statistics					
Variables	N	Min	Max	Mean	SD
Knowledge (Breast Cancer)	660	0	16	6.3045	4.87
Practice (Breast Cancer)	660	0	2	0.5727	0.71
Attitude (Breast Cancer)	660	- 6	6	0.7742	1.41

Table 3: Descriptive Statistics for Breast Cancer

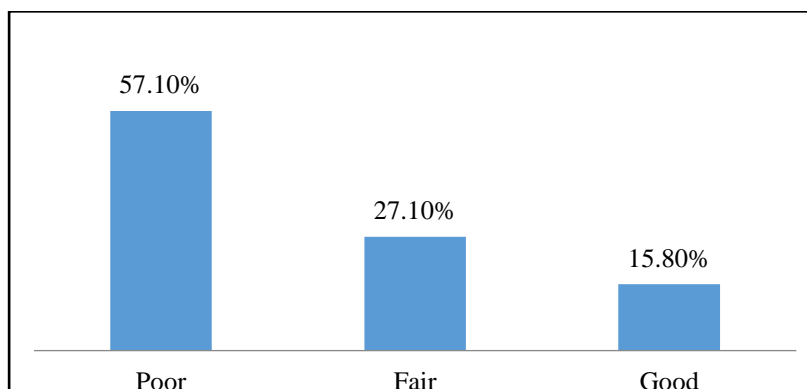


Figure 4: Participant's Overall Knowledge Score for Breast Cancer

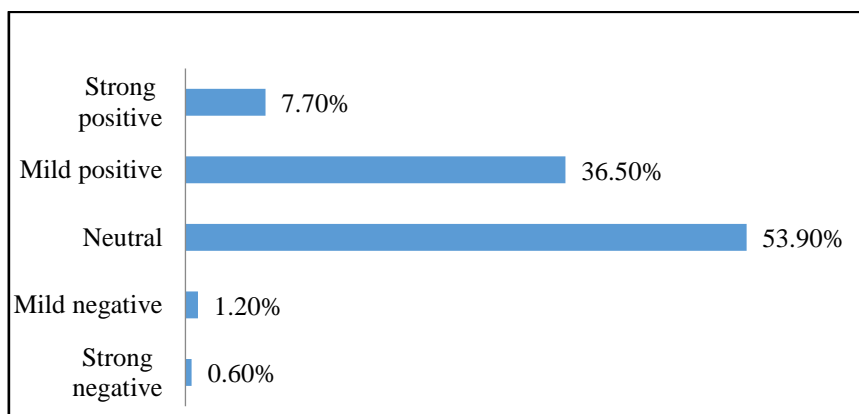


Figure 5: Level of Attitude for Breast Cancer

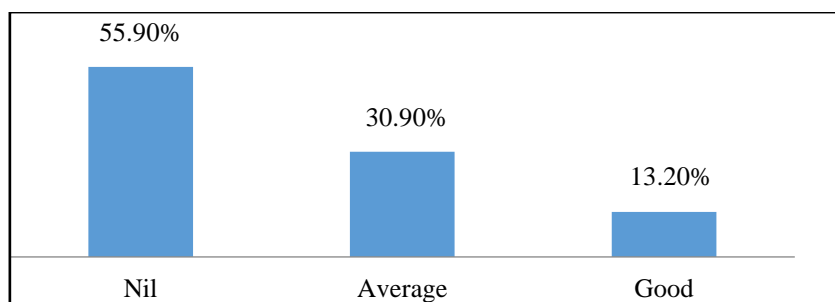


Figure 6: Level of Practice for Breast Cancer

		Level of Knowledge (Breast Cancer)			χ^2	df	<i>p-value</i>
		Poor	Fair	Good			
Age of women	Less than 20	31	13	3	69.37	10	< 0.001*
	20 - 30	107	102	59			
	31 - 40	120	24	12			
	41 - 50	77	20	14			
	51 - 60	33	17	13			
	Above 60	9	3	3			
Marital status	Divorced	52	13	2	36.86	6	< 0.001*
	Married	166	59	40			
	Single	132	102	54			
	Widow	27	5	8			
Location	Rural	184	57	22	32.57	2	< 0.001*
	Urban	193	122	82			
Occupation	Retired	6	2	1	26.91	6	< 0.001*
	Student	84	76	37			
	Unemployed	102	32	19			
	Working	185	69	47			

Table 4: Comparison of Demographics with Level of Knowledge (Breast Cancer)

❖ Association between education status and KAP of Breast Cancer

Education status	Level of Knowledge (Breast Cancer)					
	Poor		Fair		Good	
	f	%	f	%	f	%
Diploma/Master	164	43.5%	138	77.1%	84	80.8%
High School	135	35.8%	25	14.0%	10	9.6%
Primary School	55	14.6%	13	7.3%	8	7.7%
No formal education	23	6.1%	3	1.7%	2	1.9%
Pearson Chi-square = 83.26 ; df = 6 ; p < 0.001*						

Table 5: Association between Education Status and Level of Knowledge (Breast Cancer)

Education status	Level of Attitude (Breast Cancer)									
	Strong negative		Mild negative		Neutral		Mild positive		Strong positive	
	f	%	f	%	f	%	f	%	f	%
Diploma/Master	4	100%	7	87.5%	144	40.4%	183	75.9%	48	94.1%
High School	0	0%	1	12.5%	128	36.0%	38	15.8%	3	5.9%
Primary School	0	0%	0	0%	66	18.5%	10	4.1%	0	0%
No formal education	0	0%	0	0%	18	5.1%	10	4.1%	0	0%
Pearson Chi-square = 115.95 ; df = 12 ; p < 0.001*										

Table 6: Association between Education Status and Level of Attitude (Breast Cancer)

Education status	Level of Practice (Breast Cancer)					
	Nil		Average		Good	
	f	%	f	%	f	%
Diploma/Master	156	42.3%	155	76.0%	75	86.2%
High School	129	35.0%	34	16.7%	7	8.0%
Primary School	66	17.9%	8	3.9%	2	2.3%
No formal education	18	4.9%	7	3.4%	3	3.4%
Pearson Chi-square = 98.39 ; df = 6 ; p < 0.001*						

Table 7: Association between Education Status and Level of Practice (Breast Cancer)

Variables	Pearson Correlation	Significance (p-value)
Knowledge & Attitude	+0.4	<0.001*
Knowledge & Practice	+ 0.403	< 0.001*
Attitude & Practice	+ 0.628	< 0.001*
Attitude& Practice	+ 0.628	< 0.001*

Table 8: Correlation between knowledge, attitude and practice of breast cancer

BARRIERS	β – coefficient	C.I. for β		p-value
		Lower	Upper	
Would you be too embarrassed to go and see the doctor?	0.334	-0.892	1.560	0.593
Would you be too scared to go and see the doctor?	-1.623	-2.836	-0.410	0.009*
Would you be worried about wasting the doctor's time?	0.401	-0.372	1.173	0.309
Would you find your doctor difficult to talk to?	-0.964	-1.970	0.041	0.060

Would it be too difficult to make an appointment with the doctor?	0.461	-2.187	3.109	0.732
Would you be too busy to make time to go to the doctor?	-1.876	-3.010	-.742	0.001*
Would seeing the doctor be too expensive?	1.010	-1.615	3.635	0.450
Would it be too difficult to arrange transport to the doctor's clinic?	-0.338	-1.421	.745	0.540
Would worrying about what the doctor might find stop you from going to the doctor?	-0.477	-1.354	.400	0.286
Would you not feel confident talking about your symptom with the doctor?	-0.084	-1.217	1.049	0.884
Would significant people in your life (e.g. husband/wife, partner, sibling, relative or friend) not approve of you seeing a doctor or nurse?	-0.112	-1.199	.975	0.839
Would your doctor not understand your language?	-1.528	-2.672	-.384	0.009*
Would your doctor not understand your culture?	-0.589	-1.679	.501	0.289

Table 9: Regression Analysis to Find the Influence of Barriers on Knowledge (Breast Cancer)

A total of 660 women participated in this study. Majority were in the age group of 21-30 years (40.6%). 58.5% of the women in our study were Diploma/Master qualified. "Bleeding from the nipple" was believed to be a sign of breast cancer by 58.3% women. "Having a history of breast cancer" is the most commonly identified risk factor in our study (179). 57.1% of the women have scored poor, while only 15.1% (104) have got a good score. Most of the women (53.9%) had a neutral attitude, which sheds light on the women's unawareness regarding this deadly cancer. Only 13.2% of women had a good practice score. Statistically significant association between level of knowledge regarding breast cancer and demographics (age, marital status, location and occupation) [p value<0.001]. Given that the *p-value < 0.001, we can conclude that there is statistically significant association between level of knowledge, attitude and practice regarding breast cancer and education status. Majority of the samples having good (80.8%) knowledge and good (86.2%) practice belong to Diploma/Master qualified. Thus, educated women were having good knowledge and practice regarding breast cancer. All of the samples with a strong negative attitude (100%) and majority of them having strong positive attitude (94.1%) were Diploma/Master qualified. Most of the educated people had either strong positive or strong negative attitude. A positive correlation was found between the knowledge, attitude and practice sections of breast cancer. "Embarrassment to go and see the doctor" and "Too scared to see the doctor" were the commonest barriers reported (61.1%).

DISCUSSION: The present study was aimed at determining the knowledge, attitude and practice of breast cancer and the barriers to screening among women in India. During the study period, a total of 660 cases were monitored prospectively.

In our study, it was identified that women from rural area were found to have poor knowledge and practice regarding breast cancer. This finding was consistent with other studies conducted by Nitin Gangane, et al.² and Negalign GD, et al.²³ Single women residing in urban areas and working women aged 21-30 had better knowledge regarding breast cancer (p value <0.001) compared to other women. Our results were found to be inconsistent with a previously conducted study in Bangladesh by Mohammad NA, et al.¹⁰ where single women had comparatively lower breast cancer awareness.

Majority of the samples with good knowledge (80.8%), strong positive attitude (94.1%) and good practice (86.2%) were Diploma/Master qualified (p value <0.001). Hence, highly educated women were having good knowledge, attitude and practice regarding breast cancer. This finding was consistent with many studies.^{2, 3, 5} Contradictory results were found in a study conducted by Aissami A et al,²⁷ where they concluded that there was no relation between educational status and breast cancer awareness.

The most commonly identified warning signs and symptoms were “bleeding from nipple” (58.33%) and “discharge from nipple” (58.18%). This result was consistent with the study conducted in Malaysia,¹ where the majority of participants identified lump (90%) and discharge (80.5%).

In our study, only 51 women identified “a 70 year old woman was more likely to get breast cancer.” 247 women answered that “a woman at any age” is most likely to get breast cancer. In another study, none of the participants correctly answered the age-related risk of breast cancer (0%). Almost

half identified, “a woman at any age” as most likely to get breast cancer (49.4%).²⁵

In our study population, most of the participants (33.8%) weren't aware of the risk factors for breast cancer. This is in contrast with a recent study conducted by Aira PM et al,²⁵ in which 51.7% were aware that “having a close relative with breast cancer” increased the risk for breast cancer.

Our study showed that 57.7% believed that “Breast cancer would threaten relationship with my partner”. In a prior study,¹⁷ over a third (37.8%) agreed with this statement. Previous research showed 78.2% disagreed that “breast cancer patients should be isolated or stigmatized.”²⁰ This was consistent with our results, as 58.6% disagreed with this statement.

In our survey, 71.80% of women rarely performed BSE and only 107 (16.21%) women practiced it regularly. This finding coincided with a study conducted at the University of Sharjah,⁶ where most participants indicated they performed BSE rarely, (41.3%), and only 19.6% performed BSE once a month as recommended. Also, a study of female students at the University of Jordan³⁵ showed that the practice of BSE was low.

Our results indicate that a higher level of education significantly associated with women's uptake of BSE. This finding is in line with a recent research finding in which higher-educated women were significantly associated with higher utilization of BCS services.²⁸

The major barriers reported were “Embarrassment to go and see the doctor” and “Too scared to see the doctor” (61.1%). Almost similar results were observed in a study conducted by Mila Nu Nu Htay et al¹; where ‘Worrying about what the doctor might find may stop me from going to the doctor’ was the most common barrier reported (37.4%).

Regression analysis was done in our study to find the influence of knowledge of breast cancer on the barriers towards screening, and it was found that women with higher knowledge had reported lower barriers (negative beta coefficient). Three barriers that were found to be statistically significant in our study included being “scared to go and visit the doctor” (p value-0.009), being “too busy to make time to see the doctor” (p value- 0.001) and “the doctor not understanding my language” (p value-0.009). Women with greater knowledge meant that they had better knowledge regarding the symptoms, were aware of the risk factors, and had better confidence in detecting an abnormality in the breast. In another study conducted in Kenya,²⁴ associations between patient characteristics and knowledge of breast cancer symptoms and barriers to breast cancer screening were found (negative regression coefficient).

CONCLUSION: The current study highlights the data on knowledge, attitude and practice on breast cancer. Majority of the participants were aware about the signs and symptoms of breast cancer but their knowledge about risk factors were found to be poor.

Educational status had a significant association with knowledge, attitude and practice of breast cancer. Participants who had completed their Diploma/Masters had more knowledge, a positive attitude and good practice towards breast cancer. As the study was conducted online, there was a major limitation on the participant’s true understanding of the questions as well as the genuineness of the answer.

Hence, these results suggest that there is a need for more effective awareness programmes about breast cancer screening. It is essential to develop customised educational interventions using various approaches such as social media, circulation

of leaflets, television/radio broadcasts, and proper counselling as tools for improving knowledge and insight of breast cancer. Organising free BSE training courses may also be an effective way to raise awareness and address the gaps in knowledge and practice. Promotion of free regular health check-ups among the general population will increase awareness and furthermore, decrease the disease burden.

ACKNOWLEDGMENT: We express our gratitude to our Principal, HOD of Pharmacy Practice Department, Bapuji Pharmacy College as well as to Mr. Vipin Xavier.

REFERENCES:

1. Htay M, Donnelly M, Schliemann D et al. Translation and Validation of the Breast Cancer Awareness Measurement Tool in Malaysia (B-CAM-M). *Asian Pacific Journal of Cancer Prevention*. 2020;21(1):217-223.
2. Gangane N, Ng N, Sebastian M. Women's Knowledge, Attitudes, and Practices about Breast Cancer in a Rural District of Central India. *Asian Pacific Journal of Cancer Prevention*. 2015;16(16):6863-6870.
3. Masood I, Saleem A et al. A quantitative study to assess breast cancer awareness among females in Bahawalpur Pakistan. *Cogent Medicine*. 2016;3(1):1236479.
4. Linsell L, Forbes L et al. Validation of a measurement tool to assess awareness of breast cancer. *European Journal of Cancer*. 2010; 46(8):1374-1381.
5. Motamedi M, Nafissi N et al. A survey of breast cancer knowledge and attitude in Iranian women. *Journal of Cancer Research and Therapeutics*. 2012;8(1):46-49.
6. Rahman S, Al-Marzouki A et al. Awareness about Breast Cancer and Breast Self-

- Examination among Female Students at the University of Sharjah: A Cross-Sectional Study. *Asian Pacific Journal of Cancer Prevention*. 2019;20(6):1901-1908.
7. Gebresillassie B, Gebreyohannes E et al. Evaluation of Knowledge, Perception, and Risk Awareness About Breast Cancer and Its Treatment Outcome Among University of Gondar Students, Northwest Ethiopia. *Frontiers in Oncology*. 2018;8:501.
 8. Golubnitschaja O, Debal M et al. Breast cancer epidemic in the early twenty-first century: evaluation of risk factors, cumulative questionnaires and recommendations for preventive measures. *Tumor Biology*. 2016;37(10):12941-12957.
 9. Gonzales, A, Alzaatreh, M, et al. Beliefs and Behavior of Saudi Women in the University of Tabuk Toward Breast Self Examination Practice. *Asian Pacific Journal of Cancer Prevention*. 2018;19(1):121-126.
 10. Amin M, Uddin G et al. A hospital based survey to evaluate knowledge, awareness and perceived barriers regarding breast cancer screening among females in Bangladesh. *Heliyon*. 2020;6(4):03753.
 11. Akram M, Iqbal M et al. Awareness and current knowledge of breast cancer. *Biological Research*. 2017;50(1):33.
 12. Nemenqani D, Abdelmaqsoud S et al. Knowledge, attitude and practice of breast self examination and breast cancer among female medical students in Taif, Saudi Arabia. *Open Journal of Preventive Medicine*. 2014;04(02):69-77.
 13. Lee H, Han W. Unique Features of Young Age Breast Cancer and Its Management. *Journal of Breast Cancer*. 2014;17(4):301-307.
 14. Schilling M, Silva I et al. Beliefs about Breast Cancer among Women in the Western Amazon: A Population-Based Study. *Asian Pacific Journal of Cancer Prevention*. 2019;20(2):469-478.
 15. Salehiniya H, Haghghat S et al. Iranian breast cancer risk assessment study (irbcra): a case control study protocol. *WCRJ*. 2018;5(1):1016.
 16. Ghahramanian A, Rahmani A et al. Relationships of Fear of Breast Cancer and Fatalism with Screening Behavior in Women Referred to Health Centers of Tabriz in Iran. *Asian Pac J Cancer Prev*. 2016;17(9):4427-4432
 17. Chaka B, Sayed A et al. A survey of knowledge and attitudes relating to cervical and breast cancer among women in Ethiopia. *BMC Public Health*. 2018;18(1):1072.
 18. Naima Abda, Adil Najdi et al. Knowledge, Attitudes, and Preventive Practice Towards Breast Cancer among General Practitioner Health Professionals in Morocco. *Asian Pac J Cancer Prev*. 2017; 18(4): 963–968.
 19. Sharma D, Debnath M et al. A Survey Study on Breast Cancer Awareness Among Secondary, Higher Secondary Female Students and Teachers of Different Schools in Anand District. *International Journal of Pharmaceutical and Clinical Research*. 2019;11(4):101-105.
 20. Suleiman A. Awareness and attitudes regarding breast cancer and breast self-examination among female Jordanian students. *Journal of Basic and Clinical Pharmacy*. 2014;5(3):74.
 21. Shankar A, Roy S et al. Impact of Cancer Awareness Drive on Generating Understanding and Improving Screening Practices for Breast Cancer: a Study on College Teachers in India. *Asian Pac J Cancer Prev*. 2017;18(7):1985-1990.
 22. Khalid A, Hassnain S et al. Breast cancer among young girls: a KAP study conducted in Lahore.

- International Journal of Scientific Reports. 2018;4(6):166-171.
23. Dinegd N G, Xuying L. Awareness of Breast Cancer among Female Care Givers in Tertiary Cancer Hospital, China. *Asian Pac J Cancer Prev.* 2017;18(7):1977-1983.
 24. Wachira J, Busakhala A et al. Refining a questionnaire to assess breast cancer knowledge and barriers to screening in Kenya: Psychometric assessment of the BCAM. *BMC Health Services Research.* 2017;17(1):110.
 25. Mardela A P, Maneewat K et al. Breast cancer awareness among Indonesian women at moderate-to-high risk. *Nursing Health Science.* 2017;19(3):301-306.
 26. Sindi R A, Alzahrani A A et al. Awareness Level, Knowledge and Attitude towards Breast Cancer between Medical and Non-Medical University Students in Makkah Region: A Cross Sectional Study. *Int J Cancer Clin Res.* 2019;6(1):106.
 27. Abdou A, Van Hal G, Dille I. Awareness, attitudes and practices of women in relation to breast cancer in Niger. *Heliyon.* 2020;6(7):04316.
 28. Mahumud R A, Gow J et al. Distribution and predictors associated with the use of breast cancer screening services among women in 14 low-resource countries. *BMC Public Health.* 2020;20(1):1467.
 29. Monica, Mishra R. An epidemiological study of cervical and breast screening in India: district-level analysis. *BMC Women's Health.* 2020;20(1):225.
 30. Barbara G, DiPiro J T et al. *Pharmacotherapy Handbook, Ninth Edition.* 2009;43(2):395

AUTHORS:

First Author – Dr. Nazish Fathima, Assistant Professor, Department of Pharmacy Practice, Bapuji Pharmacy College, Davangere. (naazfathima93@gmail.com)

First Author – Miss. Ashna Siby, Pharm D, Department of Pharmacy Practice, Bapuji Pharmacy College, Davangere. (ashnasibi99@gmail.com)

First Author – Miss. Benita Grace Babu, Pharm D, Department of Pharmacy Practice Bapuji Pharmacy College, Davangere. (benitagrace1998@gmail.com)

Second Author- Miss. Chinnu Merin Roy, Pharm D, Department of Pharmacy Practice, Bapuji Pharmacy College, Davangere. (chinnuroythekekara@gmail.com)

Second Author- Miss. Thejaswini B., Pharm D, Department of Pharmacy Practice, Bapuji Pharmacy College, Davangere. (theju1298@gmail.com)

Correspondence Author – Dr. Nazish Fathima, Assistant Professor, Department of Pharmacy Practice, Bapuji Pharmacy College, Davangere. (naazfathima93@gmail.com)

+91 8660068499