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Breast cancer knowledge, attitude and self-examination practices of physiotherapy students in India: a cross-sectional study

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ABSTRACT

Background: Breast cancer is a major cause of cancer in Indian females. Breast self-examination (BSE) being a low-cost, effortless, and efficient procedure can help early detection in developing countries. Physiotherapists play an active role in community rehabilitation and this study aims to assess their knowledge about breast cancer, BSE as well as explore attitude and self-examination practice among physiotherapy students.

Methods: This cross-sectional study was conducted among 380 students in various physiotherapy colleges of Navi Mumbai, using a pre-validated questionnaire. The data collected were analyzed using Statistical Package for the Social Sciences (SPSS) version 24. A chi-square test was applied to find an association between variables. Correlation analysis was used to test the strength of the relationship between numeric variables.

Results: The study reported students had moderate knowledge about breast cancer (59.5%) and breast self-examination (BSE) (62.6%). Attitude towards self-examination practice was excellent (94.2%), but only (25.8%) of the respondents reported to perform BSE monthly. There was a significant association between the overall knowledge and practice of BSE (p=0.000). Also, a significant association was found between overall knowledge and attitude towards BSE (p=0.000).

Conclusions: Health education strategies and awareness programs are necessary to keep in view the current status of breast cancer, BSE knowledge among health care professionals.

Keywords: Physiotherapy students, Breast cancer, Self-examination practices, Knowledge, Attitude

INTRODUCTION

There is an increased prevalence of breast carcinoma all over the world. Adoption of western lifestyles, urbanization, increase in life expectancy, interaction patterns of individuals with the environment, and chemical causes, can be attributed to the increased incidence of these non-communicable diseases in developing countries. As per Globocan 2018 report of India, the amount of latest breast cancer cases accounted for 15.62% of the total number of cancer cases whereas, the number of deaths due to breast cancer contributed to 12.19% of the total deaths due to cancer. A notable reason for such a high mortality rate in India is a late-stage presentation. In India merely 30% of the breast cancer cases are arrested at early stages,

whereas within the developed world 60-70% of cases seek medical intervention at early stages. This variation might not be solely due to socioeconomic differences, but also attributable to the shortage of breast cancer awareness and poor attitude towards breast self-examination (BSE). The 5-year survival rate could be boosted to 85% with early detection or could decline to 56% with late detection. American cancer society guidelines suggest some measure for early detection of breast cancer like BSE for girls starting their twenties, clinical breast examination every three years for the women in their twenties and thirties, early mammography every year for women age 40 and above. BSE is a simple, low-cost, effortless, and efficient procedure that can be disbursed by the women with no complex technical training or any particular equipment

required.⁷ BSE comprises of examination of the breasts for lumps, bumps, skin changes over nipples and breasts visually and manually.⁸ Therefore in developing countries, breast self-examination plays a prominent role in the early detection of breast cancer where sophisticated diagnostic screening techniques which don't seem to be easily accessible and affordable. It makes women tuned in to a way to judge their risk and take suitable measures. The assorted resources of dissemination of data about breast cancer are health-care professionals, educational institutions, and media.⁹

Healthcare professionals are a principal source of knowledge for both their patients as well as for the general population.¹⁰ They're in an exceedingly significant position to boost the awareness of breast cancer knowledge and breast screening in the community.11 As they hold such a vital role the information they transfer ought to be accurate. 10 But if health professionals themselves aren't aware and/or don't practice BSE accurately, a satisfactory level of patient education about BSE won't be achieved. 12,13 Among these health professionals, physiotherapists have an essential role to play in community rehabilitation, so by conducting this study, we aim to evaluate breast cancer knowledge and attitude and breast self-examination practices in female physiotherapy students of Navi Mumbai. The study will help identify and target opportunities to boost BSE knowledge and practice among health professionals and transferring them to the overall population.

METHODS

This cross-sectional study was conducted among 380 physiotherapy students in different physiotherapy colleges of Navi Mumbai in 2019. A convenient random sampling technique was used for sample collection. The study was conducted after obtaining approval from the institutional ethical committee, permission also obtained from the principal of Physiotherapy College. Female students studying in the final year, intern batch, and perusing master's degree were included in the study. Informed and written consent was taken before starting the procedure. The method and purpose of this study were explained. Participation was entirely voluntary and confidentiality was ensured. The questionnaire was adapted from the original article.¹⁴ Permission for reusing the questionnaire was obtained from the author. The questionnaire was modified to suit the population and then validated and piloted. The questionnaire was divided into three partspart A: consent form, part B: socio-demographic variables of the participants, part C: information on the participant's knowledge, attitudes on breast cancer, and BSE. The responses to the questions and sub-questions in part C had options of 'yes or agree', 'not sure or unsure', and 'no or disagree'. Positive questions, attracted scores of 3, 2 or 1 respectively, and were reversed accordingly for all negative items Percentages were interpreted as: '≥70%' indicating excellent, while '50-69%' and '<50%' signify moderate and poor respectively. The data were analyzed

using the Statistical Package of social sciences (SPSS), version 20. Chi-square test was used for testing the relationship between categorical variables. Spearman's correlation analysis was used to test the strength of the relation between all the three variables. 0.05 was considered to be statistically significant.

RESULTS

The study was conducted among 380 physiotherapy students who were in the final year, interns, or postgraduate students from different colleges in Navi Mumbai. The age ranges from 21-26 (mean of 22.17±1.36). About 58 (15.3%) of the respondents had witnessed the incidence of breast cancer in their family. Most of the participants had heard about breast self-examination 334 (87.9%) and the main source of information was the internet (20.1%), followed by college professors (15.9%) and textbooks/newspapers (15.4%) and friends/peers (15.3%) (Table 1).

Knowledge of breast cancer

Most respondents (80.9%) had excellent 'general knowledge of breast cancer'. About 296 (77.9%) were aware that BSE can help in early detection. Moderate knowledge was seen about the presenting symptoms of breast cancer (54.2%). The most known sign of breast cancer among the respondents in the current study was breast lump or swelling 358 (94.2%) followed by lump or swelling in the armpit 295 (77.6%) and nipple discharge from one breast only 241 (63.4%). There was a widespread lack of awareness (43.5%) among female physiotherapy students about the risk factors associated with breast cancer. The most commonly known risk factor was a family history of breast cancer 313 (82.4%) (Table 2).

Knowledge on BSE

Only one single question each correctly represented the 'knowledge on who should do BSE', its 'frequency', and its 'timing' in Table 3. The respondents in the study had excellent knowledge as to who should perform a BSE (85.6%), moderate knowledge (61.0%) about the frequency of the BSE, and poor knowledge (32.2%) about the timing of BSE. Only 123 (32.4%) respondents were aware that BSE has to be practiced 7-10 days after the menstrual cycle stops. The respondents had excellent knowledge about BSE techniques (71.5%). Majority 319 (83.9%) of the respondents knew BSE must be done standing in front of a mirror, 278 (73.2%) were aware that the right hand has to be used to examine the left breast and vice-versa using finger pads 273 (71.8%). However, less than half of the respondents knew BSE has to be performed using 3 middle fingers only 160 (42.1%) (Table 3).

Overall knowledge about BSE and breast cancer

The present work revealed that 189 (49.74%) of the study sample had moderate overall knowledge of breast cancer

and BSE whereas 175 (46.05%) had poor knowledge. Only 16 (4.21%) of respondents in the current study have an excellent overall knowledge of BSE and breast cancer (Table 4).

Level of attitude towards BSE

Attitude to BSE is excellent in the respondents of this study (94.2%). About 105 (27.6%) respondents agreed that they were not well-informed about how to carry out the BSE examination (Table 5).

The practice of BSE

The present study showed about 54 (14.2%) of the respondents practiced BSE just once, whereas 97 (25.5%) of them had never tried BSE. Of these who practice BSE,

majority 98 (25.8%) practice BSE correctly (once in a month) (Table 6).

Relationship between overall knowledge, attitude, and practice concerning BSE

There was a statistically significant difference between the overall knowledge (breast cancer, BSE) and BSE practice (χ^2 =119.06, p=0.000). The difference between overall knowledge and attitude was statistically significant at (χ^2 =570.08, p=0.000) (Table 7). There was a fair positive correlation between overall knowledge and the knowledge about risk factors of breast cancer (r=0.331 and p=0.000). The same was for the overall knowledge and frequency of BSE practice (r=0.35 and p=0.000). A smaller positive correlation between total knowledge score and attitude towards BSE (r=0.176 and p=0.000) (Table 8).

Table 1: Demographics and characteristics of female physiotherapy students studying in physiotherapy colleges of Navi Mumbai (N=380).

S. no.	Respondent variable	Various components	N	%
1	Ago	Mean	22.22	
	Age	Standard deviation	1.36	
2	Batch	Final year	168	44.2
<u> </u>		Intern	117	30.8
		Master student	95	25.0
2	Knowledge of someone with breast cancer	Yes: Family member affected	58	15.3
	Yes: friend/ relative	140	36.8	
	Yes	No: I know no affected person	182	47.9
	Ever heard about breast self-examination (BSE)	Yes	334	87.9
4		No	12	3.2
		Not sure	34	8.9
		Internet	246	20.1
		College professors	194	15.9
		Textbooks/newspapers	188	15.4
5	Source of information of breast cancer and	Friends/ peers	187	15.3
3	BSE*	Home/ family	168	13.7
		Health workers	133	10.9
		Television/ radio	104	8.5
		Not sure	3	0.2

Table 2: Knowledge of breast cancer, its early symptoms, and its risk factors among female physiotherapy students studying in physiotherapy colleges of Navi Mumbai.

S. no.	Description	Agree (%)	Unsure (%)	Disagree (%)	Total scores**	Correct scores* (% of average)
A.	General knowledge on breast cancer (Q10, part	C of ques	tionnaire)		•	
1	Breast cancer is a common cause of cancer deaths among females in India.	255* (67.1)	98 (25.8)	27 (7.1)	988 (2.6)	765 (77.4)
2	Any woman aged ≥20 can develop breast cancer	253* (66.6)	109 (28.7)	18 (4.7)	995 (2.6)	759 (76.3)
3	Breast cancer is transmissible	22 (5.8)	69 (18.2)	289* (76)	1027 (2.7)	867 (84.4)
4	BSE can help detect and prevent breast cancers	296* (77.9)	66 (17.4)	18 (4.7)	1038 (2.7)	888 (85.5)
Tota	1				4048 (2.7)	3279 (80.9)

Continued.

S. no.	Description	Agree (%)	Unsure (%)	Disagree (%)	Total scores**	Correct scores* (% of average)
В.	Knowledge of early symptoms of breast cancer					
5	Pain in the breasts	302 (79.5)	50 (13.1)	28* (7.4)	486 (1.3)	84 (17.3)
6	Chest pain	117 (30.8)	182 (47.9)	81* (21.3)	724 (1.9)	243 (33.6)
7	Headache	49 (12.9)	164 (43.2)	167* (43.9)	878 (2.3)	501 (57.0)
8	Breast lump or swelling	358* (94.2)	16 (4.2)	6 (1.6)	1112 (3.0)	1074 (96.6)
9	Lump or swelling in the armpit	295* (77.6)	66 (17.4)	19 (5.0)	1036 (2.7)	885 (85.4)
10	Nipple discharge from one breast only	241* (63.4)	111 (29.2)	28 (7.4)	973 (2.6)	723 (74.3)
11	Nipple discharge in a pregnant person	61 (16.0)	196 (51.6)	123* (32.4)	822 (2.2)	369 (44.9)
12	Nipple discharge when it is squeezed	134 (35.3)	190 (50.0)	56* (14.7)	682 (1.8)	168 (24.6)
Tota	l				6713 (2.2)	4047 (54.2%)
C.	Knowledge of risk factors for breast cancers (28, part 3	of question	naire)		
13	Early menarche (before 11years)	77* (20.3)	221 (58.2)	82 (21.6)	755 (2.0)	231 (30.6)
14	Late menarche (over 16 years)	100 (26.3)	219 (57.6)	61* (16.1)	721 (1.9)	183 (25.4)
15	Having no babies at all	121* (31.8)	179 (47.1)	80 (21.1)	801 (2.1)	363 (45.3)
16	Having many babies (more than 4)	97 (25.5)	194 (51.1)	89* (23.4)	752 (2.0)	267 (35.5)
17	Eating a high fatty diet	182 (47.9)	156 (41.1)	42* (11.1)	620 (1.6)	126 (20.3)
18	Having a family history of breast cancer	313* (82.4)	48 (12.6)	19 (5.0)	1054 (2.8)	939 (89.0)
19	Early onset of sexual intercourse	29 (7.6)	205 (53.9)	146* (38.4)	877 (2.3)	438 (49.9)
20	Having a urinary tract infection	23 (6.1)	204 (53.7)	153* (40.3)	890 (2.3)	459 (51.6)
	Total				6470 (2.1)	3006 (43.5%)
Gran	nd total for breast cancer knowledge	·			17231 (2.3)	10332 (59.5%)

^{**}Total scores are derived by the sum of the following: correct responses (marked with *; multiply by 3) + unsure (multiply by 2) + incorrect (multiply by 1), Result interpretation: ≥70%=excellent knowledge; ≥50 to <70%=moderate knowledge; <50%=poor knowledge

Table 3: Knowledge of breast self-examination (BSE) among female physiotherapy students studying in physiotherapy colleges of Navi Mumbai.

S. no.	Description	Agree (%)	Unsure (%)	Disagree (%)	Total scores**	Correct scores* (% of average)
	A. Knowledge of who should practice BS	SE (Q2, part 3 o	of questionna	aire)	•	
1	All women above the age of 20 years	335* (88.2)	33 (8.7)	12 (3.2)	1143 (3.0)	1065 (93.2)
2	Only married women	26 (6.8)	48 (12.6)	306* (80.5)	1039 (2.7)	918 (88.3)
3	Only women who have started having sexual intercourse	25 (6.6)	59 (15.5)	296* (77.9)	1031 (2.7)	888 (86.1)

Continued.

S. no.	Description	Agree (%)	Unsure (%)	Disagree (%)	Total scores**	Correct scores* (% of average)
4	Only women that have ever been pregnant	23 (6.1)	59 (15.5)	298* (78.4)	1035 (2.7)	894 (86.4)
5	Only women whose menstruation (periods) have stopped	55 (14.5)	64 (16.8)	261* (68.7)	966 (2.5)	783 (81.1)
6	Only women that have had history of breast cancer in their families	129 (33.9)	27 (7.2)	224* (58.9)	855 (2.3)	672 (78.6)
Tota	l				6069 (2.7)	5220 (85.6%)
]	B. Knowledge of BSE frequency (Q3, pa	rt 3 of question	nnaire)			
7	Once a day	51 (13.4)	119 (34.2)	217* (52.4)	940 (2.5)	651 (69.3)
8	Once a week	119 (31.3)	106 (27.9)	155* (40.8)	796 (2.1)	465 (58.4)
9	Once a month	217* (57.1)	97 (25.5)	66 (17.4)	911 (2.4)	651 (71.5)
10	Once every 6 months	174 (45.8)	101 (26.6)	105* (27.6)	691 (1.8)	315 (45.6)
11	Once every year	121 (31.8)	100 (26.3)	159* (41.8)	798 (2.1)	477 (59.8)
Tota	l	(31.0)	(20.3)	(11.0)	4136 (2.2)	2559 (61.0%)
	C. Which stage to preform BSE (Q5, par	rt C of the ques	tionnaire):		(2.2)	(01.070)
12	Anytime throughout	165 (43.4)	163 (42.9)	52* (13.7)	647 (1.7)	156 (24.1)
13	7-10 days before the menstrual cycle starts	98 (25.8)	210 (55.3)	72* (18.9)	734 (1.9)	216 (29.4)
14	During the cycle	108 (28.4)	198 (52.1)	74* (19.5)	726 (1.9)	222 (30.6)
15	7-10 days after your menstrual cycle stops	123* (32.4)	199 (52.4)	58 (15.3)	825 (2.2)	369 (44.7)
Tota	<u> </u>	(32.4)	(32.4)	(13.3)	2932	963
]	D. Knowledge of BSE techniques (Q12, p	part 3 of questi	onnaire)	_	(1.9)	(32.2%)
16	Standing in front of a mirror	319* (83.9)	58 (15.3)	3 (0.8)	1076 (2.8)	957 (88.9)
17	Lying down	106* (27.9)	164	110	756	318
18	Using right hand to examine left breast	278*	(43.2)	(28.9)	(2.0)	(42.1) 834
19	and vice versa Using finger pads to examine	(73.2) 273*	(21.8) 79	(5.0)	(2.7) 1005	(81.8) 819
20	Using finger nails to examine	(71.8) 26	(20.8) 67	(7.4) 287*	(2.6) 1021	(81.5) 861
21	Using palms to examine	(6.8) 141	(17.6) 139	(75.5) 100*	(2.7) 719	(84.3)
		(37.1)	(36.6) 129	(26.3) 198*	(1.9) 905	(41.7) 594
22	Using one finger to examine	(13.9) 160*	(33.9)	(52.2) 73	(2.4)	(65.6) 480
23	Use the 3 middle fingers only	(42.1)	(38.7)	(19.2)	(2.2)	(56.7)
24	Examine the breasts by moving fingers in circles around the breast till all parts are covered	289* (76.1)	72 (18.9)	19 (5.0)	1030 (2.7)	867 (84.2)
25	Examine the breasts by checking small sections of it	271* (71.3)	97 (25.5)	12 (3.2)	1019 (2.7)	813 (79.8)

		0.574	107	1.0	1001	771
26	Press the nipple to check for discharge	257*	107	16	1001	771
	ress the hippic to check for discharge	(67.6)	(28.2)	(4.2)	(2.6)	(77.0)
27	Evamina ammit for lumps	286*	85	9	1037	858
21	Examine armpit for lumps	(75.3)	(22.3)	(2.4)	(2.7)	(82.7)
20	Look for changes in the breast size or	286*	87	7	1039	858
28	shape	(75.3)	(22.9)	(1.8)	(2.7)	(82.6)
20	Look at the nipple to see if it is drawn	245*	127	8	997	735
29	inwards	(64.5)	(33.4)	(2.1)	(2.6)	(73.7)
20	Raise one hand above the head	211*	146	23	948	633
30	examining breast of that side	(55.5)	(38.4)	(6.1)	(2.5)	(66.8)
21	II. In the state of the state o	146*	142	92	814	438
31	Undress to the waist	(38.4)	(37.4)	(24.2)	(2.1)	(53.8)
Taka					15233	11136
1 ota	Total				(2.2)	(71.5%)
Cwar	nd total for DCE knowledge	28370	19878			
Grai	nd total for BSE knowledge				(2.3)	(62.6%)

^{**}Total scores are derived by the sum of the following: correct responses (marked with *; multiply by 3) + unsure (multiply by 2) + incorrect (multiply by 1), Result interpretation: \geq 70%=excellent knowledge; \geq 50 to <70%=moderate knowledge; <50%=poor knowledge

Table 4: Overall knowledge among female physiotherapy students studying in physiotherapy colleges of Navi Mumbai.

Overall knowledge (Breast cancer and BSE)	Frequency	Percentage
Excellent knowledge	16	4.21%
Moderate knowledge	189	49.74%
Poor knowledge	175	46.05%
Total	380	100.0

Table 5: Attitudes to breast self- examination (BSE) among female physiotherapy students studying in physiotherapy colleges of Navi Mumbai.

S no.	Description	Agree (%)	Unsure (%)	Disagree (%)	Total scores**	Correct scores* (% of average)
1	I am healthy and do not need to examine my breasts.	17 (4.5)	36 (9.5)	327* (86.0)	1070 (2.8)	981 (91.7)
2	Examining my breast is important and necessary	360 (94.7)	15 (4.0)	5 (1.3)	1115 (2.9)	1080 (96.9)
3	I am not well-informed on how to examine my breasts.	105 (27.6)	84 (22.1)	191 (50.3)		item was not not a part of s
4	I feel shy and embarrassed about examining my breasts myself.	18 (4.7)	28 (7.4)	334* (87.9)	1076 (2.8)	1002 (93.1)
5	Examining my breast, myself will be painful	22 (5.8)	40 (10.5)	318* (83.7)	1056 (2.8)	954 (90.3)
6	I am afraid that examining my breasts may reveal breast cancer	43 (11.3)	40 (10.5)	297* (78.2)	1014 (2.7)	891 (87.9)
7	Examining my breast by myself will waste a lot of time	5 (1.3)	18 (4.7)	356* (94.0)	1109 (2.9)	1068 (96.3)
8	Examining my breasts by myself is a dirty practice and against my value of beliefs	3 (0.8)	7 (1.8)	370* (97.4)	1127 (3.0)	1110 (98.5)
9	I will not like to touch my breasts in the way required for me to examine it	6 (1.6)	21 (5.5)	353* (92.9)	1107 (2.9)	1059 (95.7)
10	If I find a suspicious lump while examining my breasts, I will see a medical doctor immediately.	361* (95.0)	7 (1.8)	12 (3.2)	1109 (2.9)	1083 (97.7)
Total					9783 (2.9)	9228 (94.2%)

^{**}Total scores are derived by the sum of the following: correct responses (marked with *; multiply by 3) + unsure (multiply by 2) + incorrect (multiply by 1), Result interpretation: \geq 70%=excellent knowledge; \geq 50 to <70%=moderate knowledge; <50%=poor knowledge

Table 6: Practice of breast self- examination (BSE) among female physiotherapy students studying in physiotherapy colleges of Navi Mumbai.

S no.	Have you ever practised BSE	Number (n=380)	Percentage (%)
1.	Never	97	25.5
2.	Once ever	54	14.2
3.	Once daily	23	6.1
4.	Once weekly	38	10
5.	Once monthly	98	25.8*
6.	Once every 6months	53	14.0
7.	Once a year	17	4.5

^{*}Correct practice

Table 7: Association between overall knowledge and selected variables.

Variables	Mean±SD	Statistical indices
Overall knowledge	2.66±0.521	$\chi^2 = 570.084$
Attitude	1.12±0.412	*p value= 0.000
Overall knowledge	2.24±0.649	$\chi^2 = 119.063$
BSE Practise	0.25±0.649	*p value=0.000

^{*}Significant p at ≤0.05 levels

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

	Correlation coefficient	Overall knowledge	Attitude towards BSE	BSE practice
Organoli lun arula da a	R	1	0.176	0.35
Overall knowledge	*P	-	0.000	0.000
Knowledge about risk	R	0.331	0.15	0.22
factors of breast cancer	*P	0.000	0.000	0.00

^{*}Significant p at ≤0.05 levels

DISCUSSION

The present study involved female physiotherapy students of Navi Mumbai, the majority between the age group of 22-24 years (mean: 22.17±1.70). Respondents were from the final years, interns, and students perusing a master's degree. These health care providers can 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.⁹

In this study, out of 380 respondents, 15.3% reported a positive family history of breast cancer, 36.8% knew somebody (relative or friend) who has had breast cancer whereas 47.9% did not know anybody with breast cancer.

Knowledge about breast cancer and BSE

The need to gauge carcinoma awareness/attitudes and practice of BSE among female students who are visiting be the long-run health personnel is important and recommended.¹³ The result of the current study revealed that our participants had moderate knowledge about breast cancer (59.5%) and BSE (62.6%). All respondents had heard about breast cancer. 8.9% of respondents weren't sure of hearing about BSE whereas 3.2% had not heard

about it. Awareness about the presenting symptoms was moderate (54.2%). The most typical symptoms of breast cancer were breast lump or swelling, followed by lump or swelling in the armpit and nipple discharge from one breast only. 302 (79.5%) of the respondents were unaware that breast cancer mostly presents as a painless lump rather than breast pain which indicates a non-malignant underlying pathology.¹⁰

Similar findings were observed in health professionals at Central India and medical students at Taif University, Saudi Arabia where participants identified the identical common symptoms. 14,15 This concluded lump in the breast, pain in breast, and discharge from nipple are three common symptoms health professionals knew about. Overall risk factor knowledge was poor (43.5%). The most widely known risk factor was family history 313 (82.4%) whereas complex risk factors like early menarche 77 (20.3%) and nulliparity 121 (31.8%) were known by fewer respondents. These results were in contrast to a study carried out on nurses in India who were well acquainted with the risk factors.9 Knowledge about risk factors must be improved, during the education of health personnel, specifically the ones that are the least known. The high level of general knowledge (80.92%) on breast cancer issues suggests that positive behavior of the disease should be focused on, instead of general and negative.

Similarly, BSE knowledge is also essential. Most participants in this study were aware that all women above 20 years must undergo regular BSE (85.6). The majority had excellent knowledge about the positions and techniques of BSE 71.5%. However, the correct frequency and timing of BSE known were poor (61.0% and 32.2% respectively). The main sources of data regarding breast cancer and BSE reported were; internet, followed by educators at health institutes and textbooks. A similar finding was seen in a study conducted in health professionals in India where, main sources of knowledge were lectures (64.80%), health worker friend (35.47%), internet (30.13%). This shows mass media plays a crucial role in giving knowledge even to health professionals, therefore an important effort should be made to accentuate the source of media to form carcinoma awareness within the community.4 Despite being from the medical background only 16 (4.21%) of the respondents from this study had excellent overall knowledge about breast cancer as well as the self-examination technique. The lacunae in the knowledge were maybe because they did not receive in-depth information about breast cancer in their curriculum or the health awareness camps weren't intensive for the physiotherapists. There was a strong positive correlation between knowledge about risk factors of breast cancer and the overall knowledge (r=0.331; p=0.000). The understanding of risk factors influenced the general knowledge if awareness and health education schemes are conducted during a meticulous form it'll lead to increased knowledge of the health professionals. Therefore, they must be updated about the danger factors of the disease and the BSE procedure accurately.

Attitude towards BSE

This study revealed an excellent positive attitude towards BSE (94.2%) among the respondents as compared to the (67%) seen in medical students at Taif University. ¹⁵ The positive attitude can be attributed to the very fact that they delve within the same field of study, which makes them more inquisitive and empathic towards the health problems within their community.

Most of the participants agreed that the practice of BSE should be encouraged. Studies conducted by Eman et al, similarly showed a majority of the pharmacists involved within the study had a positive attitude towards breast cancer health promotion and thought of it to be their responsibility in addition to as an opportunity to boost the status of their profession. 16 Such results imply that despite the low levels of information and practice respondents are hunt information and inquisitive to recommendations about BSE. This finding is unlike the studies where barriers like unpleasantness and fear caused hindrance in practicing BSE.¹⁷ There was a statistically significant difference (χ^2 =570.084, p=0.000) between the overall knowledge of breast cancer, BSE with the attitude towards BSE. There was a little correlation statistic between overall knowledge score and attitude towards BSE (r=0.176; p=0.001) was seen. This highlights that physiotherapy students, are keen to learn and follow recommendations, and any well-designed health intervention on BSE's, would be well received.

BSE practice

The practicing of BSE during this group of physiotherapy students was quite alarmingly low.

About one fourth (25.5%) of the population had never tried BSE. Of these who practiced BSE, about 25.8% of them practiced regularly. Either the respondents didn't practice BSE in the slightest degree, or practiced it correctly. This could result due to either lack of time, forgetfulness, no breast complaints, or incomplete information about the procedure. About 105(27.6%) agreed that they are not well informed about how to perform the examination.

The self-examination practice score during this study was much lower as compared with other studies on health professionals in Indian- dental students (53%), nurses (54%), and health care professionals (33.3%) who performed BSE regularly (once a month).4,5,9 This reflects the poor practice of BSE among health professionals all over India. There was a big statistical difference (χ^2 =119.063, p=0.000) between knowledge of BSE and regular practice. In this present study, the self-examination practice score is higher among respondents who had better overall knowledge compared to those that failed to. Lectures, seminars, workshops, and on hands training sessions should be developed by the universities to increase awareness about breast cancer. ¹⁸

CONCLUSION

Current health care providers in this study possess moderate knowledge of breast cancer, BSE but have positive attitudes on the involvement of BSE, breast cancer education, but unfortunately have poor practice. The Indian population would be greatly benefitted if health care providers would be well versed in promoting breast cancer education. Intensive training programs for the healthcare personnel organized by private or government sectors making them highly aware of BSE, to improve knowledge and making BSE a universal practice among health professionals first.

The concept of the national month of breast cancer awareness should also be embraced in India.

As mass media plays a crucial role in spreading information to health professionals as well, various interventions can be planned on the digital platform to educate them and keep them updated.

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