



Awareness of Breast Cancer among Female Medical students at NRI Medical College, Mangalagiri

¹Venkata Mahalakshmi Sunkara, 3rd year Medical Student, Dept of Community Medicine, NRI Medical College, Mangalagiri, Guntur District, AP State

²Samson Sanjeeva Rao Nallapu, Professor, Dept of Community Medicine, NRI Medical College, Mangalagiri, Guntur District, AP State

Corresponding Author: Venkata Mahalakshmi Sunkara, 3rd year Medical Student, Dept of Community Medicine, NRI Medical College, Mangalagiri, Guntur District, AP State

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Abstract

Introduction: Breast cancer is the most common cancer in women worldwide accounting for 15% of all cancer deaths among them. Several factors contribute to women neglecting to see a doctor even after noticing a lump in their breast. Medical professionals need to have sufficient knowledge about the signs and risk factors of breast cancer in order to educate their patients and the community.

Objectives: To estimate the awareness of breast cancer warning signs and risk factors among female medical students in a medical college.

Materials and Methods: This study done during July and August 2020 under the department of Community Medicine of the NRI Medical College, involved female medical students from all years who were invited to take the online questionnaire developed with inputs from the Breast Cancer Awareness Measure (Breast CAM) through Google forms. The questionnaire included breast health practices, signs and risk factors of breast cancer and suggestions to bring about

awareness. Important findings were subjected to tests of significance like Chi square and z test at 5% Level of Significance.

Results: 265 female students from different years of MBBS course responded. While age, religion and other demographic factors had no bearing on knowledge of breast cancer, year of study of MBBS was found to be significant. Knowledge was better in the 4th year students and interns than the first to third year students. Overall knowledge of the signs of breast cancer was only 47% and that of risk factors 63%.

Discussion: Interns and 4th year MBBS students have more knowledge about signs of breast cancer and risk factors. Only half the students are regularly checking their own breasts, are confident in noticing changes and are agreeable to immediately seeking medical help. This reflects on the awareness levels in the general population.

Conclusion: Spreading awareness about preventing breast cancer and helping women with early signs to

avoid delay in seeking help is of great value in improving breast cancer survival rates.

Keywords: Signs of breast cancer, risk factors for breast cancer, Breast self-examination, female medical students

Introduction

One in every four cancers in women is breast cancer making it the most common cancer in women worldwide.¹ Approximately 15% of all cancer deaths among women are due to breast cancer.² Breast cancer accounts for about 27% of female cancers in India and most of them present in advanced stages.³

Secondary prevention or diagnostic approaches for breast cancer are early diagnosis and screening which are both vital for better outcomes and survival.⁴ For a large number of people, knowledge about breast cancer is very poor and becomes a reality only when a close one is affected.⁵ Most of the time, a woman discovers a breast symptom by herself. Therefore it is important that all women should be aware of breast cancer and should also have sufficient knowledge, skills and confidence to notice any breast changes and visit their doctor promptly.⁶

In India the 5 years survival rate for breast Cancer in women is less than 60% as most women come for treatment in advanced stages making survival chances poor. There are several factors which contribute to women neglecting to see a doctor even after noticing a lump in her breast. Usually pain is considered a danger sign and a painless lump in the breast is not taken seriously. Garg P et al suggest that up to 98% of women in low-income countries are unaware that a painless lump could be a warning sign of early breast cancer.⁷ Other reasons for patient delay include shyness to show themselves, social stigma, trust in alternate medicine, financial issues, poor access to cancer care

centres etc. It could be even due to the ignorance of general doctors who may not be aware of symptoms of breast cancer and hence miss it.⁸

Awareness of symptoms of breast cancer and early screening are important for reducing the risk and mortality due to breast cancers. Breast self examination (BSE) is one of the most important screening measure to detect early breast cancer and other benign conditions of the breast. It is an important screening technique that can be performed by women at home. Screening programs using ultrasound or mammography are not sensitive enough to detect small lesions in women less than 40years of age as breast tissue is denser in younger women.⁹

It is therefore very essential to bring awareness about breast self examination, risk factors, signs and symptoms, early detection and prevention of breast cancer to all women in the community. In most Indian cities, breast cancer amounted to almost 25 to 32 percent of all cancers in women, whereas cervical cancer was around 8 to 9 percent.¹⁰ Breast cancer also continues to be diagnosed late owing to inadequately structured screening programs. Though breast diseases in women both benign and malignant, are commonly encountered, the concept of self-breast examination is still inadequately perceived or followed.¹¹

Educational programs to create awareness regarding breast cancer and its occurrence, risk factors, screening including BSE, symptoms, need for early help-seeking practices, diagnosis, and treatment modalities are the need of the hour.¹² There is a need for more information regarding awareness of breast cancer symptoms with early detection and breast self examination through social media, campaigns and involvement of social workers. Ramakant P et al suggest that to improve breast cancer awareness there should be more

advertisements on television and social media, roadside campaigns and in colleges along with group discussions and debates. Also at grassroots level, Anganwadi workers and nurses should be involved to create more awareness in villages.⁹ Effective health education programmes are needed to enlighten healthcare professionals as well as the general public regarding the risk factors, early detection and management of breast cancer.¹³

As lady medical professionals will come across many women in their practice, it is important that they have sufficient knowledge about the signs and risk factors of breast cancer in order to educate their patients and the community. This study is set to identify the awareness of warning signs, risk factors, breast cancer signs and symptoms, prevention and early detection in female medical students.

Materials and Methods

This study was done under the auspices of the department of Community Medicine of the NRI Medical College & General Hospital at Mangalagiri in Guntur district of Andhra Pradesh during the months of July and August 2020. All the female medical students of the NRI medical college from all the years were invited to take the online questionnaire on awareness of breast cancer through Google forms. The questionnaire was developed using the Breast Cancer Awareness Measure (Breast CAM) 'This survey instrument (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.¹⁴

The questionnaire adapted has the following components; warning signs, confidence in recognizing breast cancer, skills and behaviour, previous help-seeking behaviour, delay in seeking medical help and

risk factors. The questionnaire also included demographic data like age, religion, region, education, marital status, breast health practices, signs and symptoms of breast cancer, risk factors of breast cancer and suggestions to bring awareness about breast cancer. The data collected was entered in MS Excel and analysed and presented as tables and percentages. Important findings were subjected to tests of significance like Chi square test at 5% Level of Significance.

Results

A total of 265 female medical students from different years of the MBBS course participated in this study. There were 72 first year students, 66 second year students, 75 third years, 39 fourth years and 13 interns with ages ranging from 18 to 23. Of the students, 17.4% are from a rural back ground. Looking at religion it is seen that there were 89.4% Hindus, 5.7% Christians and 3.4% Muslims. None of them are married. There were no significant differences in the knowledge about breast cancer between girls from urban or rural backgrounds. There were also no differences in knowledge between students from different religious backgrounds. Differences were however seen between the MBBS class the girls belonged to.

The breast health practices among the female medical students interviewed are listed in Table 1. It includes checking of one's own breasts regularly, confidence of noticing changes and also readiness to immediately go to a doctor for help. Perceptions about willingness to participate in a breast cancer awareness campaign and agreeing to the need of including breast cancer education in school curriculum are also seen. The percentage of knowledge present in the students regarding the various signs of breast cancer is given in

Table 2. The percentage of awareness among the students concerning the various risk factors of breast cancer is shown in Table 3. Knowledge and awareness differences between students of 1st, 2nd and 3rd years and the final year students and Interns are shown in Tables 4 & 5. Cronbach's alpha of the question set for signs and symptoms of breast cancer was 0.81 and that of question set for risk factors for breast cancer was 0.83 thereby suggesting a relatively high internal consistency of both sets of questions.

The 12 questions on signs and symptoms of breast cancer were assigned scores ranging from -1 to 2 (highest possible score 24, lowest possible score -12). The median score obtained here was 11 (mean score 11.2 standard deviation 6.83). 53.05% of the 1st to 3rd years of MBBS had scores above median while 76.92% of 4th MBBS and Interns were above the median. The difference is statistically significant (Chi square 9.76, p value 0.002). 21.4% of the 1st to 3rd years and 38.5% of the Interns and 4th years scored in the top 4th quartile. This finding is also statistically significant (Chi square 9.9, p value 0.02).

Similarly the 14 questions on risk factors were also assigned scores ranging from -2 to 2 (highest possible score 28, lowest possible score -28). The median score obtained here was 8. (Mean score 7.23, standard deviation 7.49). Scores above the median were 1st MBBS 26.4%, 2nd MBBS 45.5%, 3rd MBBS 61.3%, 4th MBBS 79.5% and interns 84.6%. (Chi square 39.99, degrees of freedom 4, p value 0.00004). 19.6% of the 1st to 3rd years and 50.0% of the Interns and 4th years scored in the top 4th quartile. This finding is also statistically significant (Chi square 22.89, p value <0.00001). The scores obtained by all the students concerning signs and symptoms of breast cancer are lower than those obtained for risk factor. This

difference is statistically significant (z 6.4, p value <0.000001).

Other symptoms suggested were weight loss, decreased mobility of breast, fixed, skin changes, peau d'orange, pitting edema, bone pains. Other causes suggested were hereditary, addictions, Oral contraceptive pills, carcinogenic drugs, fatty foods, improper breast feeding, steroids, late first child, metastasis, nulliparity, using a tight brassiere for long periods of time.

Discussion

Breast cancer is currently one of the leading causes of cancer related deaths in India and its early detection can improve the survival rates. Medical students' knowledge, attitudes and skills will surely translate into benefits for many individuals in need and their communities in the future. In the current study it is seen that knowledge about signs of breast cancer though better in the 4th year students and interns than the first to third year students, the overall performance is only around 47%. Knowledge about risk factors for breast cancer is better in all the students but still around 63% showing scope for improvement. Specific questions about whether the girls regularly check their own breasts, if they are confident about noticing changes and if they are willing to immediately seek medical help showed only 50% compliance.

Joy N et al in a similar study done in Mangalore found that a good number of the female medical students had overall awareness about Breast self-examination, its technique and its importance. All the participants stated that Breast self-examination, Clinical breast examination and Mammogram can detect breast cancer.¹³ Kumaraswamy H et al found in a study on women from a general population in Trichy that though 89% were aware of breast cancer, only 26% of them were aware of BSE and only 5% of them practiced it

regularly. Awareness of breast cancer was found to be significantly associated with age and educational level.⁵ Panhale SP et al suggest that breast cancer is more common in illiterate women and those associated with history of addictions. A majority of the women in the general population were not aware about the disease and its severity.¹⁵ Garg P mentions that in most studies there is a lack of awareness in a majority of women in low economic countries that a painless lump could be a warning sign of early breast cancer.¹⁶ Fotedar V et al found that among primary health-care workers in Himachal Pradesh, mean knowledge score was good and higher among males than in females.¹⁷

Sindi RA et al say that according to their study participants which included both medical and non-medical students, the risk factors of breast cancer were refraining from breast feeding, smoking, eating meat and saturated fats, lack of exercise and obesity, consuming drinks that contain high level of caffeine and late menopause. Medical participants had more knowledge regarding other risk factors of breast cancer such as combined hormone treatment.¹⁸ Ansari AB et al found that the majority of participants in their study believed that use of tobacco, hormone replacement therapy, oral contraceptive, and not practicing breastfeeding is a risk factor for breast cancer. The majority of participants knew about breast self-examination and about 60% knew how to perform it. However only a small percentage (16%) performed it regularly.¹⁹

Radhika s et al in their study on medical students found that clinical students were found be more aware about the cancer compared to the preclinical and paraclinical students. They suggest that creating awareness to the medical students who are future doctors is the need of the hour. A short talk on cancer awareness can create a

great impact on the awareness.²⁰ A general lack of public awareness regarding the disease often results in late diagnosis and poor treatment outcomes. In regions with low literacy levels, university students and especially medical students must develop a sound knowledge about breast cancer disease so that they can spread awareness to others.

Noreen M et al found in their study in Pakistan that less than 35% students were aware of the early warning signs of the breast cancer development. Knowledge of medical students about risk factors was significantly better than the non medical ones, but on the whole was insufficient. Their study highlights the need to formulate awareness campaigns and to organize conferences to promote breast cancer awareness among students.²¹ Prolla CM et al in their study done among nurses in a general hospital found that knowledge about risk factors was 65.8% and about diagnosis and screening was 70.5%. 99.3% of the participants reported that though preventive education for breast cancer should be part of their professional activity, very few of them effectively perform this type of preventive action in their daily professional practice.²²

Conclusion

Medical students must be prepared in their formative years to gain sufficient knowledge and skills in order to pass on the same to their future patients and communities. Breast health campaigns and introduction of breast cancer knowledge into academics from secondary school itself is essential to bring more awareness about risk factors and bring down the incidence of breast cancer. The role of the student in spreading awareness and helping women with early signs of breast cancer to avail help without delay is of great value in improving breast cancer survival rates.

Ethical Clearance: Institutional Ethical Committee (IEC) clearance taken.

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Legends Figure

Table 1: Distribution of female medical students who are in agreement with the right breast health practices.

Sn.	Breast health practices	No (n=265)	%
1	Checks own breasts once (or more times) in 6 months	125	47.17
2	Confident about noticing change in own breasts	143	53.96
3	Will contact doctor immediately	148	55.85
4	Has been to doctor for changes noticed in breasts	28	10.57
5	Will participate in breast cancer awareness campaign	192	72.45
6	Will suggest inclusion in school education	246	92.83
7	Have seen a case of breast cancer before	161	60.75

Table 2: Distribution according to knowledge of female medical students regarding signs of breast cancer

Sn.	The following could be signs of breast cancer	Total (n=265)	%
1	A lump or thickening in the breast	150	56.6
2	A lump or thickening under the armpit	143	53.96
3	Bleeding or discharge from the nipple	153	57.74
4	Pulling in of the nipple	150	56.6
5	Change in position of the nipple	111	41.89
6	A rash on or around the nipple	45	16.98
7	Redness of the breast skin	67	25.28
8	Change in size of the breast or nipple	104	39.25
9	Change in shape of the breast or nipple	104	39.25
10	Pain in one of the armpit or breasts	85	32.08
11	Dimpling of the breast skin	130	49.06

Table 3: Distribution according to knowledge of female medical students regarding signs of breast cancer

Sn.	The following are risk factors for breast cancer	No (n=265)	%
1	Having a past history of breast cancer	226	85.28
2	Using HRT(Hormonal replacement therapy)	175	66.04
3	Being overweight(BMI over 25)	108	40.75
4	Having a close relative with breast cancer	192	72.45
5	Having children later on in life	28	10.57
6	Attainment of Early menarche	116	43.77
7	Having a late menopause	114	43.02
8	Less than 30 minutes of moderate physical activity 5 times a week	75	28.3
9	Ageing (above 40)	150	56.6
10	Addictions(smoking and alcohol)	180	67.92
11	Dietary factors	184	69.43
12	Breast feeding	85	32.08
13	Stress	152	57.36
14	Radiation exposure	237	89.43

Table 4: Distribution according to level of knowledge about Breast cancer signs and MBBS year of study

Sn.	Knowledge about the signs of breast cancer	Yes				Chi Sq	p value
		MBBS 1,2,&3 (n=213)	%	MBBS 4 & Interns (n=52)	%		
1	A lump or thickening in the breast	117	54.93	33	63.5	1.24	0.2
2	A lump or thickening under the armpit	109	51.17	34	65.4	3.4	0.06
3	Bleeding or discharge from the nipple	118	55.4	35	67.3	2.43	0.1
4	Pulling in of the nipple	112	52.58	38	73.1	7.15	0.007
5	Change in position of the nipple	72	33.8	39	75	29.14	<0.00001***
6	A rash on or around the nipple	31	14.55	14	26.9	4.54	0.03*
7	Redness of the breast skin	53	24.88	14	26.9	0.09	0.8
8	Change in size of the breast or nipple	80	37.56	24	46.2	1.3	0.3
9	Change in shape of the breast or nipple	78	36.62	26	50	3.14	0.07
10	Pain in the armpit or breasts	64	30.05	21	40.4	2.05	0.15
11	Dimpling of the breast skin	92	43.19	38	73.1	14.94	0.0001***

* mildly significant ** moderately significant *** highly significant

Table 5: Distribution according to level of knowledge about breast cancer Risks and MBBS year of study

Sn.	Knowledge about breast cancer	Yes (Agree & Strongly Agree)				Chi Sq	p value
		MBBS 1,2,&3 (n=213)	%	MBBS 4 & Interns (n=52)	%		
1	Having a past history of breast cancer	177	83.1	49	94.2	3.29	0.06
2	Using HRT(Hormonal replacement therapy)	127	59.6	48	92.3	18.48	0.00002***
3	Being overweight(BMI over 25)	71	33.3	37	71.2	24.76	0.0000006***
4	Having a close relative with breast cancer	148	69.5	44	84.6	4.79	0.03*
5	Having children later on in life	87	40.8	33	63.5	8.63	0.003**
6	Attainment of Early menarche	74	34.7	42	80.8	35.9	<0.0000001***
7	Having a late menopause	70	32.9	44	84.6	45.7	<0.0000001***
8	<30 mins of moderate physical activity 5 times a week	49	23	26	50	15.01	0.00001***
9	Old age(above 40)	118	55.4	32	61.5	0.64	0.4

10	Addictions(smoking and alcohol)	142	66.7	38	73.1	0.79	0.4
11	Dietary factors	144	67.6	40	76.9	1.71	0.2
12	Breast feeding	67	31.5	18	34.6	0.19	0.7
13	Stress	120	56.3	32	61.5	0.46	0.5
14	Radiation exposure	190	89.2	47	90.4	0.06	0.8

* mildly significant ** moderately significant *** highly significant