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Knowledge, Attitude and Behaviour of urban and rural Indian women towards Cancer Preventive Practice

Prof. Edna Sweenie J, Deputy Director & Professor, Department of Child Health Nursing, Sri Venkateswara College of Nursing, Chittoor – 517127, AP, Email: ednasweenie16@gmail.com
Lakshmi Devi, Nursing Tutor Department of Medical Surgical Nursing Sri Venkateswara College of Nursing, Chittoor – 517127, AP, **lakshmibhagvanreddy@gmail.com**
B. Hema, Assistant Professor Department of Medical Surgical Nursing, Sri Venkateswara College of Nursing, Chittoor – 517127, AP, Email: hemab@gmail.com
Prof. S. Sujatha, Associate Professor Department of Child Health Nursing, Sri Venkateswara College of Nursing, Chittoor – 517127, AP, Email: sujipeter@gmail.com
T. Gayathri, Professor Department of Medical Surgical Nursing, Sri Venkateswara College of Nursing, Chittoor – 517127, AP, Email**:** Gayathrit@gmail.com

Abstract –

Breast cancer is the most frequent cancer among Indian women, with a higher fatality rate. Breast cancer is often detected in advanced stages due to a lack of awareness, making treatment challenging. A comprehensive evaluation was carried out to assess women's knowledge, attitudes, and practices about breast cancer and screening in India. Electronic databases such as PubMed and Google Scholar were used to conduct the literature search. Breast cancer awareness on knowledge, attitude and practice among women in India were among the specific keywords chosen. Articles published in English in the recent ten years were excluded from the search. A total of 5445 women aged 15 to 45 years old were included in fifteen investigations. Health-care professionals, rural and urban women, and the general public were among the participants in the study. The majority of the women were married, and illiteracy rates ranged from 5.6 to 42.8 percent. Breast cancer was known by 62.99 percent of the population. Breast cancer screening knowledge and attitude were both at 78.67 percent and 71.10 percent. The majority of the research evaluated found a link between breast cancer awareness and study participants' educational level, marital status, and age. The vast majority of people were aware of breast cancer, but only a small number used screening measures. It is necessary to have programmers on breast cancer education. Women of all ages and backgrounds must be inspired to achieve their goals. The majority of the public was aware of breast cancer, but only a small minority used screening measures. Informational programmers on breast cancer are essential. Women from all walks of life must be inspired to make positive changes in their attitudes regarding breast cancer screening, early detection, and treatment.

Introduction

There has been a rise in the prevalence of cancer-causing habits, such as smoking, in economically developing nations as the world population ages and grows. Breast cancer accounts for 23% of all cancer cases and 14% of all cancer-related deaths in women, making it both the most often diagnosed and the deadliest form of the disease. [1] The incidence of breast cancer is presently growing fast in many low- and middle-income nations due to changes in reproductive

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factors, lifestyles, and greater life expectancies. [2] Indian women living in metropolitan regions are more likely to be diagnosed with breast cancer than those living in rural ones. Indian women are more likely to be diagnosed with breast cancer at a later stage, which decreases their chances of surviving the disease. Patients who are diagnosed early are more likely to survive and have a better prognosis. A breast cancer screening programmer does not exist, and women who are aware of the program's existence do not take advantage of it. This sets the stage for the entire advanced stage presentation scenario. [5] If present detection rates continue, breast cancer will undoubtedly become a pandemic in India in the next 10 years. Detection and treatment of breast cancer early on are critical to lowering the disease's mortality and morbidity rates because the cause is unknown. [6] Breast cancer can be prevented with early diagnosis. Early discovery has increased the 5-year survival rate to almost 85%, but later detection has reduced the survival rate to 56%. [7]

Literature survey

As health awareness and health-seeking habits in underdeveloped nations have been found to be poor, there is an urgent need for adequate awareness initiatives. Breast cancer screening and early diagnosis are hindered by a lack of public knowledge. Instead of randomly selecting women for breast cancer screening, there is a pressing need for community-based, well-organized programmers. 5Some of the approaches advised for the early identification and screening of breast cancer include breast self-examination, clinical breast examination, and mammography [11]

There is currently no countrywide programmer devoted only to the treatment of breast cancer, in spite of widespread attempts to raise awareness of the disease. Although women have an enthusiastic attitude about breast cancer and a low degree of awareness about the disease, they nevertheless have a low level of practice when it comes to screening measures. As a result, women in the Indian community need to be better informed about breast cancer. The purpose of this study was to examine Indian women's knowledge, attitudes, and practices related to breast cancer and screening.

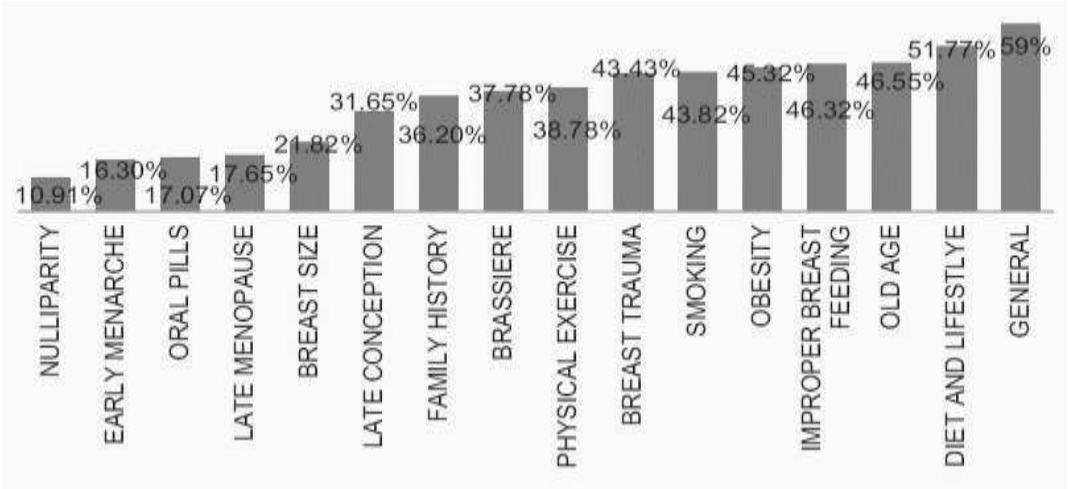

Figure: 1 analysis

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Studying knowledge, attitudes, and behaviors about screening for breast cancer and its treatment among women of Indian origin was a goal of this systematic review. According to the assessment, just 62.99 percent of study participants had enough information regarding breast cancer. Siddharth et al.[25] found our results contradictory with their findings that 81.11 percent of females in Central India were unaware about breast cancer. Breast cancer knowledge was found to be 55.2 percent among private school instructors in a comparable study[26].

Nulliparity had a low knowledge score of 10.91 percent in our study, which was consistent with Santhanakrishnan et al.'s[27] study of nursing staff, which revealed a knowledge score of 11.6 percent. An increase in age was shown to be a risk factor in the same research for 10.6 percent of individuals, whereas it was 46.55 percent in our analysis as well. As a result, despite the fact that more than half of the participants in our review had heard about breast cancer, they had a very low level of knowledge about the strongest risk factors associated with it, including early menarche (16.30 percent), late menopause (17.65 percent), and nulliparity (16.30 percent) (10.91 percent). Breast cancer awareness campaigns have been highly successful at the national level, but they haven't made it to the local level. Indian women are increasingly marrying later, having their first child later in life, and not nursing for longer periods of time, which raises their risk of breast cancer as a result of globalization and the adoption of western lifestyles. [28]

Methodology

Breast cancer strikes Indian women a decade sooner than it does in women in industrialized nations, and it is a primary cause of death in developing countries like India. As a result, educating the public about screening measures can help reduce the number of deaths. Breast Self-Examination (BSE) helps women become comfortable with their breasts, and it also helps detect breast cancer at an early stage. Only 12% of women in our research frequently performed yoga, and only 80% of women had even heard of BSE.

Table:1 statistical analysis

Variables	**Mean ±SD**
Age	
15-25	42.94±3.57
26-35	54.60±3.01
36-45	64.00±6.42
Age of first pregnancy	21.61±13.11
Number of living children	2.51±1.14
Marital Status	Number (%)
Married	161 (85.4)
Single	4 (1.6)
Widow	25 (12)
Women Occupation	
Working	110 (55)
House Wife	88 (42)
Education Level	
Illiterate	119 (58)
Primary	60 (25)
Secondary and above	45 (17)

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According to research, BSE is very helpful in raising women's self-esteem, encouraging them to seek medical attention, and educating them about the dangers of breast cancer. 12 As a result, the practise of BSE remains low in many nations, such as India (0%-52%), England (54%) and Nigeria (19-43.2%). 15,16 Only 15% of women were aware of CBE (Clinical Breast Examination) and only 8% had practised in the last two years, according to our survey. In a research by Ho et al, the yearly CBE rate for educated women was 45 percent. In a remote part of Turky, 3.3 percent of the population has CBE every year, and 18 percent if they have a complaint, according to a survey. 18 There is only 32% CBE practise even among nurses, according to a study by Vikas et al. The main hurdles to CBE practise include fear of the treatment, shame, and the perception that it is uncomfortable. Breast cancer screening is recommended by worldwide standards that include regular CBE and mammography. Only 5% of women in our survey had heard of mammography, but 4.5% had actually had it done. In underdeveloped countries, poor mammography practises have been relegated to the history books, but in rich ones, the rate is far greater. 15 The American Cancer Society recommended that women over the age of 40 get yearly CBE and mammogram screenings. 15,18

Table:2 BSE examination

Breast cancer in family		
Yes	11	1.00
No	189	1.55 (1.14 – 2.34)
Self-breast examination		
Yes	24	1.00
No	176	1.76 (1.27 – 2.18)
Clinical breast examination		
Yes	22	1.00
No	178	1.42 (1.15)

Those with a family history of breast cancer had a 1.55-fold greater likelihood of not knowing enough about the disease, while those who never practised BSE had a 1.76-fold higher likelihood. Some researchers believe that BSE behaviours might be linked to a variety of factors, including demographic and experiential characteristics. 20 Mammography use was shown to be substantially correlated with a person's educational level in this investigation. Both mammography and breast self-examination (BSE) are strongly linked to insufficient awareness about breast cancer, age, and family history of the disease. Many women, according to research, don't know what they should be doing to prevent breast cancer. 20,21 According to certain reports, elderly women were more prone than younger women to engage in BSE.

Table:3 **BSE practice and Mammography practice analysis**

Practice (n=24) mean rank	Non-Practice (n=176) mean rank		P	Practice (n=9) mean rank	Non-Practice (n=191) mean rank	P
Susceptibility	8.17	6.96	0.257	12.78	6.84	0.001
Seriousness	11.96	10.47	0.380	20.44	10.18	0.001
BSE Benefit	13.29	12.55			0.671	
BSE Barrier	13.79	13.63			0.932	

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Confidence	24.25	20.56	0.194	33.44	20.42	0.003
Motivation	19.13	21.99	0.127	26.78	21.40	0.068
Mammography Benefit	5.78	6.17			0.512	
Mammography Barrier	5.00	5.15			0.729	

Only published articles were considered in this review, which may result in publication bias. All relevant publications were searched for and included, although some could not be included because of our exclusion criteria. The study includes studies from a variety of communities, but results cannot be extrapolated to the entire country because of India's diverse people, which come from a variety of socioeconomic backgrounds, cultures, and geographies. Data collected from rural residents may be skewed by the presence of language and literacy hurdles. Moreover, the data collected is based on secondary data, and some women may have been reluctant to publicly discuss breast cancer to an unknown individual or may have supplied incorrect data.

It is from population-based breast cancer registries that incidence data (the number of newly diagnosed cases each year) is derived. These registries may cover the entire national population, but they are more commonly restricted to smaller subnational areas, and this is especially true in developing countries. However, despite the fact that the quality of information from many poor nations may be deemed to be of low quality, it is still a significant source of information since it is sometimes the only one accessible. The World Health Organization compiles and publishes annual statistics on breast cancer-related fatalities by nation (WHO). 3 Because of its wide geographic scope and lengthy shelf life, this data source has a lot to offer, even though not all datasets are created equal. In parts of the globe where official mortality statistics are either unavailable or judged untrustworthy, provisional estimates of the age- and sex-specific deaths from breast cancer (of all kinds) for 2008 have been used1 to adjust for probable incompleteness.

GLOBOCAN2 used the most recent data from the IARC or routine reports from the registries themselves to estimate country-specific incidence and mortality rates (number of cases or deaths per 100,000 people per year). According on the quality and availability of data, the following methodologies were used to estimate national incidence rates:

1. Incidence rates in the United States. Data from previous years and a sufficient number of documented cases were used to forecast rates of incidence in 2008.

2 Data from the national and municipal mortality registries. Regression models for sex, place, and age, obtained from subnational or regional breast cancer registry data, are used to estimate incidence.

3. Three regional breast cancer registries, but no mortality statistics for any of the three regions of the country. Only one set or an average of local rates is used to calculate the national incidence.

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4 The frequency data. Data only provided on the relative frequency of certain malignancies (by gender, place, and age). Using data from breast cancer registries in the same region, these proportions are applied to estimates of the country's overall breast cancer incidence rate.

5 There is no further information. The rates in each country were the same as those of nations in the same region that were next door neighbours.

Mortality rates for each nation were estimated using the same methods, in the following order of importance:

1 National death rates. If at all feasible, we've aimed our predictions at the year 2008.

2 Mortality statistics from a sample population. The WHO's 2008 national all-breast breast cancer mortality envelopes were partitioned by site based on the sample mortality statistics given by the WHO.

3 There is no data on mortality. As a result of breast cancer incidence and survival probabilities (based on gross domestic product), the WHO all-breast breast cancer mortality envelope for 2008 was used to calculate national mortality.

Author	Study Design	Year of study	Sample size	Population characteristics	Result
Yadav and Priyanka[14]	Cross-sectional study	2010	392	State - Jaipur, Rajasthan Study population - women of urban educational center (college-going women) Age - 17-23 years	Knowledge of age as a risk factor - 28% Knowledge of changes in breast size - 70% Knowledge of screening methods of breast cancer - 73.97% Practice of BSE - 74.48%
Sharma *et al*.[15]	Cross-sectional study	2013	300	State - Andhra Pradesh Study population - community-dwelling women from rural and peri-urban neighborhoods Age - 15-45 years Education - 28.67% illiterate population Marital status - 88.3% married women	Knowledge of breast cancer - 43.67% Knowledge of lumps as sign and symptom - 21.37% Knowledge of family history as a risk factor - 14% Knowledge of BSE - 43.2% Attitude toward screening - 37% Practice of BSE - 34.9%
Fotedar *et al*.[16]	Cross-sectional study	2013	428	State - Shimla, Himachal Pradesh Study population - nurses Age - 18-60 years Education - general nursing diploma 65.8% BSC nursing 34.2% Marital status - 45.1% married women	Knowledge of breast cancer - 86.5% Knowledge of family history as a risk factor - 93.9% Knowledge of diet as a risk factor - 79.20% Knowledge of BSE -90.99% Practice of BSE - 54%, Practice of CBE - 32%
Shankar *et al*.[28]	Cross-sectional study	2015	156	State - Rajasthan and Maharashtra Study population - teachers from women colleges and 88.4% were from urban background Age - 28-59 years	Knowledge of family history as a risk factor - 65.3% Knowledge of obesity as a risk factor - 52.5% Knowledge of lump as sign and symptoms - 83.3% Knowledge of BSE - 70% Practice of BSE - 11%
Gadgil *et al*.[18]	Cross-sectional study	2015	389	State - Mumbai, Maharashtra Study population - female employees for the Department of Atomic Energy (Government of India) Age - 30-59 years Socioeconomic status - 40% HIG, 38% MIG, and 22% LIG	Knowledge of breast cancer - 57% Knowledge of family history as risk factor - 48% Knowledge of lump as a sign and symptom - 70% Knowledge of treatment of breast cancer - 83% Attitude toward screening - 57.06% Practice of CBE - 26.2%
Gangane *et al*.[19]	Cross-sectional study	2015	1000	State - Wardha, Maharashtra Study population - community-based population in rural and urban areas of district Age - 19-29 years Education - 62.9% rural respondents had finished high school and 44.7% urban respondents had received a college Education Marital status - 73% married women	Knowledge of breast cancer - 65.75% Knowledge of BSE - 7% Attitude toward screening - 95.9% Practice of BSE - 4.5%
Dey *et al*.[17]	Cross-sectional study	2015	2017	State - Delhi Study population - women attending breast cancer awareness workshops Age - 14-75 years Education - 42.8% high school or less Marital status - 62.6% married women Occupation: 51.6% employed	Knowledge of family history as a risk factor - 26.1% Knowledge of improper breastfeeding as a risk factor - 75.3% Knowledge of lump as a sign and symptom - 84.5% Knowledge of screening methods - 90.1% Knowledge of treatment of breast cancer - 89.1% Practice of BSE - 34.9%, practice of CBE/mammography - 6.9%
Kavitha *et al*.[20]	Cross-sectional study	2016	123	State - Bangalore, Karnataka Study population - health-care workers Age :31-40 years	Knowledge of breast cancer - 91.05% Knowledge of family history as a risk factor - 17.07% Knowledge of screening methods of breast cancer - 79.67% Practice of BSE - 36.5%
Paunikar *et al*.[21]	Cross-sectional study	2017	140	State - Aurangabad, Maharashtra Study population - women residing in field practice area Age - 15-70 years Education - 35% of illiterate population Marital status - 82.14% married women	Knowledge of risk factors of breast cancer - 48.43% Knowledge of signs and symptoms of breast cancer - 78.57% Knowledge of screening methods of Breast cancer - 44.29% Attitude toward screening - 60.71% Practice of BSE - 12.14%
Ramakant *et al*.[3]	Cross-sectional study	2017	220	State - Lucknow, Uttar Pradesh Study population - medical, paramedical, and general population Age - 18-74 years Education - 17.3% uneducated population Marital status - 65% married women	Knowledge of breast cancer - 49.66% knowledge of screening methods of breast cancer - 34.99% Knowledge about treatment of breast cancer - 66% Attitude toward screening - 41.6% Practice of BSE - 28.3%
Madhukumar *et al*.[24]	Cross-sectional study	2017	1030	State- Bengaluru, Karnataka Study population - female college students Age - 16-23 years	Knowledge of age as a risk factor - 60% Knowledge of breast lump as a sign and symptom - 58% Knowledge of BSE - 18% Practice of BSE - 10.38%
Dahiya *et al*.[22]	Cross-sectional study	2018	222	State - New Delhi Study population - women attending health fair and urban health center Mean age - 30.1±23.9 years Education - 40.6% had completed 12 years of education Marital status - 41.4% married women	Knowledge of family history as a risk factor - 60% Knowledge of pain as a sign and symptom - 66.2% Knowledge of screening methods - 76.6% Knowledge of BSE - 50% Knowledge of CBE - 31.1% Practice of BSE - 49.1%
Kalliguddi *et al*.[5]	Cross-sectional study	2018	356	State - Bangalore, Karnataka Study population - IT professionals Age - 18-55 years	Knowledge of breast cancer - 100% Knowledge of risk factors - 92.69% Attitude toward screening - 32% Practice of BSE - 37.64%
Singh *et al*.[16]	Cross-sectional study	2018	500	State - Chhattisgarh Study population - women registered outdoor clinics of surgery department of a medical college and hospital Age - 16-65 years Education - 7.9% illiterate women Family income - 71.31% were of upper class (>Rs. 6346)	Knowledge of breast cancer - 19% Knowledge of risk factors - 59.60% Knowledge of age as a risk factor - 30.3% Knowledge of breast changes as sign and symptom - 40.20% Knowledge of BSE - 18.98% Practice of BSE - 10.1%
Yambem and Rahman *et al*.[25]	Cross-sectional study	2019	302	State - Gangtok, Sikkim Study population - women attending outpatient department in a hospital Age - 21-35 years Education - 5.6% were illiterate Marital status - 62.6% married	Knowledge of breast cancer - 75.1% Knowledge of risk factors - 39.40% Knowledge of lump as a sign and symptom - 28.6% Knowledge of BSE - 45.69% Practice of BSE - 41.3%

BSE--Breast self examination, CBE--Clinical breast examination

Figure:2 study of BSE

According [16], women in Chhattisgarh reported 32.52 percent knowledge of pain and 25.45 percent of the most prevalent signs and symptoms, which is comparable with our study whereby 38.54 percent and 28.66 percent participants expressed knowledge of pain and discharge. Research by [28] among North Indian women found that 47.2 percent of participants were aware of breast lumps as a sign and symptom; our study found that 62.29 percent reported the same. There was a discrepancy in the findings of the two studies, with only 13.5 percent reporting changes in breast size as a sign or symptom of breast cancer, compared to 50.30 percent in our research. Our study found that 78.67 percent of women were aware of or had heard of early detection and screening procedures. Only 5% of rural women in Veena et alstudy[29] .'s had heard about mammography, while 80% had heard of BSE, which contrasts with our findings that 40%.46 percent of women knew about BSE and 46.19 percent knew about mammography. A favourable attitude toward breast cancer screening was found in 71% of the participants in our research. Women with a favourable attitude toward breast cancer were found in a similar

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research by Sharma et al.[30]. There was a favourable attitude and willingness to engage in the screening programmes among women who were aware of breast cancer. Women who aren't convinced about breast cancer screening can still participate in community screenings since the majority of women are doing it or because the test is free or low-cost. However, only 27.37 percent of the research participants were found to practice early detection and screening procedures for BSE, and only 7.12 percent of the participants were found to perform mammography. CBE was applied by just 16.71 percent of study participants in our study, which is a very low percentage, and a similar low percentage of screening techniques was found in a study on Kashmiri females. Only 36 percent of Indian instructors had heard of BSE, and this abysmal knowledge level was replicated in practise, as no one had ever performed BSE, CBE, or mammograms. There are many benefits to mammograms but they are prohibitively costly, making them difficult to implement in India as a routine public health policy.

Table:4 world wide BC analysis

	INCIDENCE			MORTALITY		
	MALE	FEMALE	OVERALL	MALE	FEMALE	OVERALL
Eastern Africa	121.2	125.3	122.8	105.4	95.9	99.9
Middle Africa	88.1	96.7	91.8	78.5	75.6	76.4
Northern Africa	109.2	98.9	103.2	89.5	68.2	78.0
Southern Africa	235.9	161.0	189.6	172.1	108.1	133.2
Western Africa	92.0	123.5	107.6	80.1	91.2	85.4
Eastern Asia	222.1	158.1	188.4	155.5	87.3	120.1
South-Central Asia	99.7	110.8	104.6	78.0	71.7	74.5
South-Eastern Asia	143.9	141.7	141.5	112.3	89.4	99.5

Despite the fact that women have the correct information and attitude about breast cancer, they nevertheless fail to use early detection/screening measures. Weakness in practise can be caused by many things such as a complete disregard for screening tests, a lack of interest in learning about them and the benefits they can provide, a lack of motivation, a fear of pain, or a belief that one has no risk of developing cancer because of procedures involving genital exposure. [34],[35]

Furthermore, when we compared the knowledge, attitude, and practice of health-care workers [3],[22],[23] with that of rural and peri-urban communities [13],[14], we found that 83.05 percent had good knowledge regarding breast cancer, compared to 60.61 percent in the rural and peri-urban populations. Among female college students [18],[24], just 18% knew anything about

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BSE; as a result, 28.19 percent of the people in rural and peri-urban areas (where BSE practice was 11.53 percent) knew more about it than health-care personnel (48.2 percent).

Early identification and screening of breast cancer can greatly lower the death rate, which is frequent in India since women typically present the disease at an advanced stage. Women in India appear to be ill-informed about breast cancer, according to one study. Breast cancer identification and prevention is hindered by a lack of awareness about the disease. As part of the effort to reduce breast cancer incidence, the social stigma linked to the disease must be eliminated, and women should be encouraged to perform self-examinations of their breasts.

Kaposi sarcoma [KS] is one of the most common breast cancers in sub-Saharan Africa, with an estimated incidence and mortality rate of 5.7 deaths per 100,000 people per year in sub-Saharan Africa. GLOBOCAN 2008 (accessible at http://www.globocan.iarc.fr) provides a detailed discussion of the data and methodology utilised for each country, as well as the associated findings. Using the population-weighted average of the country-specific incidence and death rates, the UN5 calculated estimates for the 20 global regions (Fig. 1) and the more and less developed areas within those regions (Fig. 1). These ASRs (per 100,000 person-years) were age-standardized using Segi and Doll et AL World.'s Standard Population. 7, 8 Similarly, the proportion of those who would acquire or die from breast cancer before the age of 75 was determined and given as a percentage.

Conclusion

Over half of those studied had acceptable knowledge and favorable attitudes concerning breast cancer, however there is still a big gap in terms of the practice of early diagnosis and screening procedures. Breast cancer can be prevented if Indian women are aware of their risk factors. As a result, we urgently need to work with community-based groups and the health care system to develop effective national and statewide cancer literacy initiatives. [36] Early detection programmers for breast cancer in health centers and health posts in India and other low-income countries should be implemented as soon as possible. This will help reduce the death toll from breast cancer. It is possible to diagnose breast cancer in its earliest stages by increasing the use of screening tools like BSE, CBE, and mammography. This will allow for better and earlier treatment. As a general rule, women should inspect their breasts at least once a month and be alerted to any changes that may be occurring. It's time for women throughout the world to band together and aid one another. BSE is a powerful tool that may be used to educate people about its relevance and demonstrate how to use it effectively as a healthcare professional, an Indian, or a woman.

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References

[1] Bandyopadhyay, P. R. (2018). Experiments on the effects of Reynolds number and advance ratio on the unfolding of disorganization in low-speed underwater propulsors with vibrating blades. Journal of Fluids Engineering, 140(4).

[2] Bandyopadhyay, P. R. (2016). Highly maneuverable biorobotic underwater vehicles. In Springer Handbook of Ocean Engineering (pp. 281-300). Springer, Cham.

[3] Bandyopadhyay, P. R. (2016, July). Flying fish sculls to taxi and perturbs wing lift with travelling waves to land. In Fluids Engineering Division Summer Meeting (Vol. 50282, p. V01AT04A001). American Society of Mechanical Engineers.

[4] Agaian, S., Ainslie, M. A., Althoff, A., Amador, A., Aranda, J., Arkhipov, M., ... & Candy, J. V. (2016). 2016 Index IEEE Journal of Oceanic Engineering Vol. 41. IEEE Journal of Oceanic Engineering, 41(4), 1.

[5] Timmins, F., Corroon, A. M., Byrne, G., & Mooney, B. (2011). The challenge of contemporary nurse education programmes. Perceived stressors of nursing students: mental health and related lifestyle issues. Journal of Psychiatric and Mental Health Nursing, 18(9), 758-766.

[6] Hussein, R., Everett, B., Hu, W., Smith, A., Thornton, A., Chang, S., & Salamonson, Y. (2016). Predictors of new graduate nurses' satisfaction with their transitional support programme. Journal of nursing management, 24(3), 319-326.

[7] Bekhet, A. K., ElGuenidi, M., & Zauszniewski, J. A. (2011). The effects of positive cognitions on the relationship between alienation and resourcefulness in nursing students in Egypt. Issues in Mental Health Nursing, 32(1), 35-41.

[8] Wells, M. I., & Dellinger, A. B. (2011). THE EFFECTofTypeofLearning EnvironmentonPERCEIVED LEARNING Among Graduate Nursing Students. Nursing education perspectives, 32(6), 406-410.

[9] Iacobucci, T. A., Daly, B. J., Lindell, D., & Griffin, M. Q. (2013). Professional values, self-esteem, and ethical confidence of baccalaureate nursing students. Nursing ethics, 20(4), 479-490.

[10] Austoker J, Manasciewicz R. Breast self-examination. Editorial misses central point, BMJ. 2003;326:1-2.

[11] Gupta SK. Impact of Health Education Intervention Program Regarding Breast Self-Examination by Women in Semi urban Area of Madhya Pradesh India. Asian Pac J Cancer. 2009;10(6):1113-117.

[12] Philip J, Harris WG. Flaherty C, Joslin CA. Clinical measures to assess the practice and efficiency of breast self-examination, Cancer. 1986;58(4):973-77.

[13] Okobia MN, Bunker CH, Okonofua FE. Osime U. Knowledge, attitude and practice of nigerian women towards breast cancer: a cross-sectional study. world J surg oncol. 2006:4:11.

[14] Gwarzo UM, Sabitu K, Idris,SH. Knowledge and practice of breast self-examination among female undergraduate students of Ahmadu Bello university Zaria,North western Nigeria. Ann afr med. 2009;8(1)55-8.

[15] Ho V, Yamal JM, Atkinson EN, Basen-Engquist K, Luna GT, Follen M. Predictors of breast and cervical cancer screening in vietnamese women in Harris Country, Houston, Texas. Cancer nursing. 2005;28:119-29.

[16] Dundar PE, Ozmen D, Ozturk B, Haspolat G, Akyildiz F, Coban S. The knowledge and attitude of breast self-examination and mammography in a group of women in rural area in western turkey. BMC cancer. 2006:6;43.

ISSN: 0975-3583, 0976-2833 VOL 13, ISSUE 05, 2022

[17] Fotedar V, Seam RK, Gupta MK, Gupta M, Vats S, Verma S. Knowledge Of Risk Factors &Early Detection Methods and Practice Towards Breast Cancer Among Nurses In Indira Gandhi Medical College, Shimla, Himachal Pradesh, India Asian Pacific J Cancer Prevention. 2013;14(1):117-20.
[18] Champion Vl, Miller Tk. Variables related To Breast Self-Examination. Psychology of Women Quarterly. 1992;16:81-86.
[19] Kosgeroglu A, Ayranci U, Ozerdogan N. Knowledge of women on early diagnosis methods and risk factors for breast cancer in a province of Western Turkey: A descriptive study Pak J med science. 2011;27(3):646-50.
[20] Ravichandran K. Al-Hamdan NA, Mohamed G. Knowledge, Attitude and Behavior Among Saudis Towards Cancer Preventive Practice, J Family Community Med. 2011;18(3):135-42.
[21] Rasu RS, Rianon NJ, Shahidullah SM, Faisel AJ, Selwyn BJ. Effect of educational level on knowledge and use of breast cancer screening practices in bangladeshi women health care. Women int. 2011;32(3):177-89.
[22] Ceber E, Turk M, Ciceklioglu M. The effect of an educational program on knowledge of breast cancer, early detection practices and health beliefs of nurses and midwives. J clinical nursing. 2010;19(15-16):2363-71.
[23] Eun-hyun. Breast examination performance among korean nurses. Journal of nurses in staff development. 2003;19:81-7.
[24] Holm C, Frack Di, Curtin J. Health beliefs, health locus of control and women's mammography behaviour. Cancer nursing. 1999;22:149-56.
[25] Lee YY, Lee EH. Predicting factors of breast self-examination among middle aged women. Journal of academy of adult nursing. 2001;13:509-16.
[26] Fung SY. Factors associated with breast self-examination behavior among chinese women in hongkong. Patient education and counseling. 1998;33:233-43.
[27] Secginli S, Nahcivan N. Breast cancer screening behaviour among women. Proceeding of the 2nd international and 9th national congress, september 2003. 30. Holm C, Frank Di, Curtin J. health beliefs, health locus of control and women's mammography behaviour. Cancer nursing. 1999;22:149-56.
[28] Friedman LC, Nelson DV, Webb JA, Hoffman LP, Baer PE. Dispositional optimism, self-efficacy and health beliefs as predictors of breast self-examination, American journal of preventive medicine. 1994;10:130-5
[29] Foxal MJ, Barron CR, Houfek J. Ethnic difference in breast self-examination practice and health beliefs. Journal of advanced nursing. 1998;27:419-28
[30] Ashton L, Karnilowicz W, Fooks D. The incidence and belief structures associated with breast self-examination. Social behavior and personality. 2001;29:223-30.