

Breast Self-Examination: practices, Attitudes, and Barriers among Rural Women in northwest Madhya Pradesh

Running title : Breast Self-Examination among Rural Women in Madhya Pradesh

Contributors: Dr Shaily Sengar¹, Dr Hemlata Bamoriya², Dr. Prajapati Kshatrapal³, Dr. Vijay Prasad, Sangishetti

Department(s) and institution(s) :

¹Assistant Professor, Department of OBGY, SRVS Govt Medical College, Shivpuri, Madhya Pradesh, India. Email: shailysengar@gmail.com

²Assistant Professor, Department of Pathology, SRVS Govt Medical College, Shivpuri, Madhya Pradesh, India. Email: hema.8dec@gmail.com

³Assistant Professor, Dept of Community Medicine, SRVS Govt Medical College, Shivpuri, Madhya Pradesh, India. Email: drkprprajapati@gmail.com

⁴Associate Professor, SRVS Govt Medical College, Shivpuri, Madhya Pradesh, India. Email: vijayfarmac@gmail.com

Corresponding Author: Dr Kshatrapal Prajapati, Assistant Professor, Dept of Community Medicine, SRVS Govt Medical College, Shivpuri, Madhya Pradesh, India. E-mail address : drkprprajapati@gmail.com

Abstract:

Context: Breast cancer is a significant public health issue, especially among women, and early detection through breast self-examination (BSE) is crucial. However, inadequate infrastructure and facilities in rural areas make it challenging for women to access healthcare.

Aims: This study aims to evaluate the practices of BSE, attitudes towards breast health, willingness to perform BSE, the influence of cultural and religious beliefs, and associated factors that may influence the practice of BSE among women. **Settings and Design:** The study design is a cross-sectional study. **Materials and Methods:** In the current study a sample size of 330 women aged 18-49 who are at risk of developing breast cancer. The methodology involves data collection through a structured questionnaire that explores the practice of BSE, associated factors, and barriers or misconceptions that may prevent women from regularly performing self-examinations.

Statistical analysis used: Data was expressed in the form of percentage

Results: The majority of the participants were aged 26-35 years, followed by the 36-49 age group. Most were married, identified as Hindus, and had attained secondary and higher secondary education. They belonged to the rural population. Of the total sample size, only 29.7% had heard of BSE, and out of these, only 25.5% had performed BSE. Among those who did not perform BSE, the majority expressed that they did not have any breast problems, and 23.9% expressed that they did not know how to perform it. Family and friends were the primary source of their awareness. Of the participants who performed BSE, the majority expressed that they did not know the exact positions to perform it and performed it randomly once a year. The most common symptoms of breast cancer that the participants knew were blood nipple discharge, skin changes, and the presence of lumps. The majority of participants spoke out after noticing a breast abnormality, discussed with their spouse, and consulted a doctor/nurse. Both groups expressed ignorance and fear as potential obstacles to BSE implementation.

Conclusions: Overall, the findings indicate a lack of awareness and low practice of breast self-screening and highlight the need to increase awareness and provide the right information to the public for early detection of breast cancer.

Key-words: Breast self-examination; Knowledge; Associated factors; Barriers

Introduction

Breast cancer is a malignant neoplasm characterized by the unregulated growth of abnormal cells in the mammary glands or ducts of the breast ^[1]. It is the most prevalent cancer among women worldwide and the leading cause of cancer-related deaths, accounting for 23% of all female cancer cases globally ^[2]. As of the end of 2020, breast cancer is the most prevalent cancer among women, with 7.8 million women worldwide having been diagnosed with the disease in the past five years ^[3].

Despite significant investments in the health sector by the government, communicable and infectious diseases remain the primary health concerns in the country ^[4]. Cancer, particularly breast cancer, is a lower priority issue, resulting in a lack of infrastructure and facilities to effectively combat the disease ^[5].

The American Cancer Society (ACS) recommends three primary screening methods for early detection of breast cancer: breast self-examination (BSE), Clinical Breast Examination (CBE), and Mammography of healthcare facilities ^[6]. Early detection is crucial for the treatment and survival of breast cancer. Mammography as a screening method for breast cancer is often limited due to constraints in health service resources, the need for trained professionals and specialized technology, and financial considerations. Similarly, the implementation of Clinical Breast Examination (CBE) is also contingent on the availability of skilled and qualified professionals and the accessibility ^[7].

Breast self-examination (BSE), is a key strategy for early detection. It can help her detect any changes more easily. It can also empower women to take an active role in their own breast health and can be a cost-effective method of breast cancer screening ^[8]. BSE helps women become more comfortable with the look and feel of their breasts, and enabling them to alert their healthcare professionals of any changes ^[9].

In breast self-examination (BSE), the breasts are regularly examined by the woman herself to identify any changes or abnormalities. Women regularly examine their breasts to look for abnormal swelling or lumps and seek immediate medical attention.

Studies have shown that low levels of knowledge about breast cancer and BSE, as well as lack of knowledge about the importance and proper technique of BSE, are the main barriers to its regular practice ^[10].

Shivpuri is one of the districts of Madhya Pradesh in India. There are 8 Tehsils, 1417 villages and seven towns in Shivpuri district. According to the 2011 census, the district of Shivpuri in Madhya Pradesh has a total population of 17,26,050, of which 8,06,255 are women ^[11]. A division of the population by place of residence showed that 17.1% of individuals reside in urban areas while the majority, 82.9%, reside in rural areas.

The average sex ratio in Shivpuri district is 877 compared to 931 which is the average of Madhya Pradesh state. The overall literacy rate of Shivpuri district is 62.55%. The male literacy rate is 62.32% and the female literacy rate is 40.63% in Shivpuri district. There are Schedule Caste (SC) constitutes 18.6% while Schedule Tribe (ST) were 13.2% of the total population in Shivpuri district of Madhya Pradesh These communities are often marginalized and face multiple challenges in accessing quality healthcare options. To ensure inclusive and equitable growth, programs and initiatives that address the unique health needs and challenges of these communities must be prioritized ^[11].

This discrepancy underscores the need for increased efforts to improve health facilities and health education conditions in rural areas, particularly for women, in order to improve the overall health and well-being of the population.

Aim of the study: In light of this, the current study aims to assess the prevalence of BSE practices, attitude towards breast health, her willingness, the impact of cultural and religious beliefs, associated factors, on the practice of BSE.

Objectives of the study:

- To examine the practicing BSE among a sample of women, as well as factors such as age, education level, and socio-economic status that may impact the likelihood of a woman practicing BSE
- To explore associated factors that may influence a woman's decision to perform regular self-examinations.
- To examine any barriers or misconceptions that may prevent women from regularly performing self-examinations.

Materials and Methods

Stud design: Cross sectional study

Inclusion criteria: women who are above the age of 18 and within the reproductive age group ^[12, 13], as self-breast examination (SBE) is primarily aimed at women who are at risk of developing breast cancer and have no previous history of breast cancer or surgery

Exclusion criteria: Pregnant women, having any physical or mental illness, current use of hormone therapy, Women with breast implant or prosthesis, underwent SBE previously and unwilling to participate were excluded ^[14].

Sample size: The sample size for a study on breast self-examination (BSE) was calculated by utilizing the prevalence of BSE reported in previous studies, which varied from 15% to 30%. The mean prevalence of 25% was assumed, along with an acceptable error of 20% at a level

of significance of 95%. The sample size (N) was determined using the formula: $N = 4pq/L^2$ [15], where p represents the prevalence of BSE, q represents 1-p, and L represents the acceptable error. This formula yielded a sample size of 300. Taking into account a non-response rate of 10%, the final sample size selected for the study was 330.

Methodology [16, 17, 18]:

A descriptive cross-sectional study was conducted whereby 330 reproductive aged women ages 18-49 was conveniently recruited and data were collected through a structured questionnaire. The questionnaire consisted of questions related to the participants' sociodemographic characteristics, knowledge, attitude towards participation of BSE and breast cancer, Actions to be taken on identifying the abnormality in the breast. The questioner was translated in to local language and pre tested distributed among the participants. Data was recorded.

Result:

Table 1: Sociodemographic characteristics

Variables		n=330	%
Age group (years)	18-25	70	21.2%
	26-35	170	51.5%
	36-49	90	27.3%
Marital status	Unmarried	65	19.7
	Married	265	80.3%
Religion	Hindu	262	79.4
	Muslim	43	13.0%
	OTHERS	25	0.75
Educational levels	Primary	31	9.4
	Secondary and Higher secondary	165	50
	Graduate	108	32.7
	Postgraduate and above	26	7.9
Residence	Urban	128	38.8
	Rural	192	58.2
Have ever had children	Yes	207	78.1
	No	58	21.9

The current study included a total sample size of 330 participants, the majority of whom were aged 26-35 years, followed by the 36-49 age group. Most of the participants were married, and the majority identified themselves as Hindus. The highest educational attainment achieved by the participants was secondary and higher secondary. They belonged to the rural population, as shown in Table 1.

Table 2: Knowledge, attitude and practice towards BSE

Variable		Yes	%
Ever heard of BSE (n=330)		98	29.7
Have you ever done breast self-examination (n=330)		84	25.5
If No, then why have not you	Fear	24	9.8
	Do not have breast	138	56.1

performed it (n=246)	problem		
	Lack of privacy	8	3.3
	Not necessary	17	6.9
	Do not know how to perform	59	23.9
If yes (n=84)			
Age of start breast examination	<20 years	14	16.7
	>20 years	70	83.3
Reasons for performing BSE	Advice from friends / family	49	58.3
	Medical reason	5	5.95
	You noticed breast lump	11	13.1
	Family history	6	7.14
	Routine medical examination	13	15.47
Source of awareness	Television	11	13.1
	Books	5	5.95
	Internet	8	9.52
	Friends/ family	49	58.3
	Other	11	
How to perform breast self-examination	Palpate with one finger	6	7.14
	Palpate with palm and three fingers	9	10.7
	Do not know exact positions to perform	69	82.1
The appropriate place to perform	While lying on the bed	11	13.1
	In front of mirror	45	53.6
	While having bath	25	29.8
	All of the above	3	3.6
The appropriate time to perform	A week before menstruation	3	3.6
	A week after menstruation	8	9.5
	Once in 3 months	10	11.9
	Half yearly	15	17.9
	Randomly in a year	48	57.1

Of the total sample size, only 98 women (29.7%) had heard of breast self-examination (BSE), and of these only 84 (25.5%) had actually performed BSE. Among the women who did not perform BSE, most expressed that they had no breast problems, and 59 (23.9%) expressed that they did not know how to perform it. The main source of their awareness was family and friends.

Of the 84 participants who performed BSE, the majority expressed that they did not know the exact positions to perform it and randomly performed BSE once a year as shown in Table 2.

Table 3: Knowledge about breast cancer

Variables		Performed n= (84)	Not Performed (n=246)
Presence of family history of breast cancer		03 (3.57)	7 (2.84)
IS BSE important in early detection of breast cancer		81 (96.4)	94 (38.2)
Factors associated with breast cancer	Positive family history	26 (29.76)	68 (27.64)
	Contraceptive pills use	21 (25)	52 (21.13)
	Alcohol consumption	05 (5.95)	35 (14.23)
	Obesity	21 (25)	56 (22.76)
	Pan masalas	11 (13.09)	35 (14.23)
Symptoms of breast cancer	Lumps	20 (23.8)	53 (21.5)
	Blood nipple discharge	25 (29.8)	59 (24)
	Breast skin changes	15 (17.9)	38 (15.4)
	Breast discomfort	13 (15.5)	46 (18.7)
	Nipple retraction	7 (8.3)	32 (13)
	Loss of weight	4 (4.7)	18 (7.4)

Related to knowledge on the symptoms of breast cancer expressed as blood nipple discharge, skin changes and presence of lumps (Table 3).

Table 4: Actions to be taken on identifying the abnormality in the breast

On identifying an abnormality in your breast, what would you do?	Variables	Performed n= (84)	Not Performed (n=246)
	Tell mother-in-law	15	29
	Tell spouse	40	131
	Consult doctor / Nurse	27	61
	Not do anything	0	12
	Option for traditional healing	2	13

Table 5: Possible barriers to performing BSE

Possible barriers	Variables	Know BSE but not performed n= (14)	Not Performed (n=246)
	Ignorance (due to not having problem)	9 (42.9)	138
	Religion	0	10
	Trible/culture	1 (21.42)	15
	Fears of discovering lumps	4 (28.57)	24
	Do not know procedure	0	59

The majority of participants spoke up after noticing a breast abnormality, discussed it with their spouse and consulted a doctor/nurse (Table 4). The potential obstacle to the introduction of BSE is expressed as ignorance and fear by both groups (Table 5).

Discussion

Breast cancer poses a significant challenge in terms of prevention. Early detection, however, has been demonstrated to increase survival rates among patients. One effective and non-invasive method for identifying breast abnormalities is breast self-examination (BSE). It is crucial that non-medically trained females are educated on the importance of BSE and adopt a positive attitude towards regular practice.

The discussion highlights the main findings of this study and how those findings compare with findings from similar studies conducted on the subject of breast cancer and breast self-examination. In this current study breast cancer awareness was high for the rural population in that 58.2% of the respondents were aware of breast cancer but only 25.5% of the respondents demonstrated adequate knowledge of symptoms and preventive measures for breast cancer. In terms of awareness of BSE, only 29.6 % reported being aware of BSE in the current study. This finding of low awareness and knowledge of BSE is similar but lower compared to the findings in Nigeria ^[9] in which 97% reported ever hearing of BSE and only about 50% reported adequate knowledge of BSE.

Moreover, our finding suggests that there is poor practice regarding breast cancer screening among women, thus mainly in the general population than in health professionals. Results which are actually surprising as our participants were young, had attained at least secondary level of education (50%), which is a proper educational level to access and pursue more information, and, heard about breast cancer (29.6%) mainly in medias through they know is family and. This could be explained by difficult access to good information and poor population awareness about the importance of early detection in the management of the disease as about 20% of participants had the information from their entourage were information provided are often wrong or incomplete ^[19-22]. As expected, most of the graduate were aware of breast cancer prevention and mentioned early diagnosis as being the key to reduce breast cancer mortality and even named clinical breast examination as screening methods and recommended breast self-examination (BSE) as individual screening tool. However, low levels of practice of screening were recorded here. BSE practices it regularly which represented only 25.4% of overall participants.

Conclusion

The results show a lack of awareness and practice of breast self-examination and underscore the need to raise awareness and provide the public with the right information on early breast cancer detection. The findings of this study will provide valuable information for healthcare providers and policymakers to develop targeted interventions and awareness programs to promote the practice of BSE among women. This will ultimately lead to earlier detection and better outcomes for breast cancer patients.

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