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## Original Research Article

## Study on barriers of early detection of cervical cancer &amp; breast cancer in a tertiary care centre

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## ABSTRACT

**Introduction:** One of the leading cause of death in the entire world is cancer. More than 10 millions of people die from cancer every year but with early identification and leading to prompt treatment could relieve people from suffering and death. There are several types of cancer among which 30% are preventable. Mostly women suffer from breast cancer and cervical cancer which are preventable with early diagnosis. This research was conducted to identify the opportunities and barriers in using current screening services for the early detection of cervical and breast cancer among rural women in tertiary care centre in Sitapur, U.P.

**Materials and Methods:** The systemic study was planned to perform at the Hind institute of medical sciences Sitapur. At the centre the research was performed through systemic sampling procedure and with the help of academic research and industry professionals. A statistical analysis was conducted to determine the comparison of factors associated with awareness of breast and cervical cancer among study population.

**Observation and Discussion:** We observed and concluded that breast cancer is more common than cervical cancer in India. The knowledge about cervical cancer is relatively low among women which is revealed in this research.

**Conclusion:** This study is concluded by stating that the women in this study population have less knowledge about cervical cancer than breast cancer due to lack of education.

Therefore, promoting awareness among people about cervical and breast cancer would lead to early identification and diagnosis which would help women with less suffering and cost effective treatment.

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## 1. Introduction

In the entire globe, cancer is the leading cause of death. If early detection and prompt access to therapy were available to cancer patients, millions of people each year could be spared from suffering and early death.<sup>1</sup> Particularly in low- and middle-income nations, cancer is a serious public health issue that causes high rates of morbidity and death.<sup>2</sup> With 12.5% of all fatalities caused by it, it is the most prevalent

non-communicable illness worldwide.<sup>3</sup>

The two cancers that kill the most women from cancer globally are breast and cervical cancer, but these illnesses are largely preventable. Breast, ovarian, and cervix cancers—which together made up 59% of all cancers in women—were all found to have high incidence rates in India. According to projections, breast cancer will account for 30% of all new cases of cancer in women in 2022. According to the World Health Organization, breast cancer rose to the top spot among all cancers as of 2021, making up 12% of all new cancer cases reported annually

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internationally.<sup>4</sup>

According to projections, more than 2 lakh women in India were expected to receive a breast cancer diagnosis in 2020, and more than 76,000 fatalities were anticipated. It is anticipated that by 2025, there will be more than 2.3 million instances, as stated in the 2020 National Cancer Registry Program report.<sup>5</sup> When cancer is first diagnosed, more than two-thirds of patients are already in an advanced, terminal state.<sup>6</sup>

Similar to this, low- and middle-income nations bear a disproportionately large share of the impact of cervical cancer globally, accounting for 85% of cervical cancer deaths and 83% of all new cases.<sup>7</sup> With 60,078 fatalities and 96,922 new instances of cervical cancer in 2018, India is responsible for almost a quarter of cervical cancer deaths globally.<sup>8</sup>

The second most frequent cause of cancer mortality among Indian women is this disease, which is mainly preventable.<sup>9</sup> Higher income nations have successfully decreased their burden of cervical cancer by up to 65% over the course of four decades by implementing Human Papilloma Virus (HPV) vaccination and screening campaigns.<sup>10</sup> The bulk of cervical cancer cases can be avoided by immunising adolescents against HPV 16 and HPV 18, which are responsible for about 70% of cervical cancers. Most instances of cervical cancer are preventable. Furthermore, routine screening permits early discovery and removal of precancerous lesions.

Only opportunistic screening, which is typically provided in private medical facilities in urban areas, is accessible in many developing nations.<sup>11</sup>

A rural woman's health is also harmed by sociocultural, economic, and environmental factors, which limit her access to medical facilities and her ability to receive health care. Rural areas are home to nearly 72% of India's people.<sup>9</sup> According to the findings from Sweden and Barshi, India, the presently available evidence indicates that a shift towards early stages (Figure 1) may be achieved at a great deal lower cost by health education and improved awareness.<sup>12</sup> Furthermore, the state of health care systems in many regions of India today indicates that merely improving cancer treatment may not be enough to address the rising cancer burden.<sup>12</sup> By using current understanding of the main risk factors and the natural history of the disease, much could be accomplished in the prevention of cancer.<sup>13</sup> Decreased incidence and prevalence of breast and cervical cancer can be achieved in part by implementing health promotion initiatives on diet, physical exercise, sexual health, quitting smoking, and alcohol consumption.<sup>14</sup> However, in order for such initiatives to be effective, it is critical to comprehend health behaviours and the variables affecting attitudes and perceptions towards cancer. That's what the goal of the current study was.

It may be possible to create locally relevant and targeted awareness campaigns with the assistance of an understanding of the factors that promote the use of cancer screening activities. This research was conducted to identify the opportunities and barriers in the use of current screening services for the early detection of cervical and breast cancer among rural women in a tertiary care centre in Sitapur, U.P.

## 2. Materials and Methods

This prospective study was performed from 1 February 2021 to 28 July 2022 at the Hind Institute of Medical Sciences Department of Obstetrics and Gynecology, Athariya, Sitapur. This study was approved by the Institutional Human Ethics Committee. Informed consent was obtained before participants freely agreed to participate in the study after the investigators thoroughly explained the purpose and objectives of the study to them in their native tongue. An individual who visited the Hind Institute of Medical Sciences in Mau, Attaria, and Sitapur during the research period served as the initial source of our study's data. At HIMS Sitapur, a systematic sampling process selects every tenth woman between the ages of 20 and 65 who goes. Breast and cervical cancer survivors were excluded, as were women with these prior diagnoses. Patients who didn't give their consent and didn't fit the inclusion requirements were not included in the study. To achieve this, we used academic research and industry professionals to create a semi-structured questionnaire.

After that, it was edited and translated into Hindi. The translation has been checked once more. The questionnaire asked closed-ended questions about various topics, including what cancer is, its risk factors, how often it can be cured, its causes, how to screen for it, and various justifications for not getting tested. It is investigated how sociodemographic factors relate to perceptions, attitudes, barriers, and practises. 36 inquiries were created. The analysis also took into account per capita income, family type, age, education, and occupation. Data were gathered using a pre-designed structured questionnaire after receiving written informed consent from each participant.

Help was given even to illiterate women. A Microsoft Excel spreadsheet was filled out with all the data entered into the predefined performa. For different categorical variables, data were computed as frequencies and percentages. Answers with clear categories—yes, no, and don't know—were used for the knowledge factor. After the last set of data was collected, descriptive cross-tabulation statistics were run and percentages of correct and incorrect answers for all questionnaires were calculated.

### 2.1. Statistical analysis

Statistical software SPSS version 20 (Standard Protocol for the Social Sciences) and Medcalc 19.5 were

used for each statistical analysis to test for statistical differences between proportions and considered statistically significant ( $p < 0.05$ ).

### 3. Results

#### 3.1. Assessment of cervical cancer knowledge level

As per questionnaires 18 questions were asked and answers from participants noted. 142 (23.7%) know about any common cancers, 484 (80.7%) were unaware about of source of information about cervical cancer. About 552 (92.0%) and 566 (94.3%) participants had no tobacco chewing/alcohol intake and any contraceptive-OCP/IUCD/INJ DMPA uses history. Only 148 (24.7%) heard about symptoms of cervical cancer and among them majority known about dyspareunia symptom (30.5%) while 561 (93.5%) in majority were unaware about of symptom. About age of risk of developing cervical cancer, does marriage at early age increase chances of this cancer, does long term OCP use causes this cancer, does lack of hygiene causes this cancer?, does multiple childbirths increase chances of having this cancer?, is smoking a cause of cancer cervix?, majority were of don't know category and who answered yes were 22(3.7%), 22 (3.7%), 19 (3.2%), 39(6.5%), 5 (0.8%) and 60 (10%) respectively. About 122 (20.3%) woman heard about PAP test/VIA, while only 56 (9.3%) screened for cancer cervix by PAP test/VIA?. Among the reason why they not screened majority were had no unawareness (372, 68.4%) while heard about HPV vaccine and ready to get yourself/your daughter vaccinated if provide, only 126 (21%) and 447 (74.5%) woman answered —yes|| and further among them reasons for not having HPV vaccines, 101 (65.6%) in majority were answered with —No risk as not exposed to sexual contact.

#### 3.2. Assessment of breast cancer knowledge level

Similarly, breast cancer knowledge level was assessed. 573 (95.5%) heard about symptoms of breast cancer and 358 (59.7%) were known from Friends and relatives while 148 (24.8%) heard about breast feeding can decrease risk of breast cancer? and only 178 (29.7%) breast feed your child. Heard about symptoms of breast cancer?, only 191 (31.8%) answered —yes|| while about symptoms, nipple discharge, enlargement of one breast, lump in one breast and pain in breast, 33 (5.5%), 294 (49.0%), 307 (51.2%), and 333 (55.5%) answered —yes||. Questions about screening of breast cancer, only 169 (28.2%) heard about screening while 152 (25.3%) known about method of screening and 248 (41.3%) heard of breast self-examination. About source of BSE information more than 50% (352, 58.7%) woman had no awareness while 158 (28%) and 80 (13.3%) woman got BSE information from health worker and electronic or print media respectively. About BSE done, only 32 (12.9%) said yes while appropriate age to perform BSE, 95 (15.9%)

replied for 20-25 year and 191 (31.9%) for 26-30 year and 313 (52.3) for don't know. Appropriate time to perform BSE, majority replied for few days before menstruation start (403, 67.2%). Only 37 (6.2%) woman replied for checked your breast for any abnormality and for breast examination ever done by doctor, only 18(3%) said yes. Awareness score calculated as good and poor level, it is observed that knowledge score for cervical cancer of study population were good in 21 (3.5%) and poor in 579 (96.5%) while in breast cancer, good observed in 267 (44.5%) and poor in 333 (55.5%) participants.

### 4. Discussion

Breast cancer is more common than cervical cancer in India, where the incidence is 25.8 per 100,000 women, compared to 23.07 per 100,000 for cervical cancer. Both cancers account for roughly 2.5 lakh cases and nearly 1 lakh death per year in India.<sup>15</sup> The morbidities and mortality that are linked to breast and cervical cancers can be greatly reduced by early detection. However, Breast self-examination (BSE) and uptake of screening for cervical cancer in India is not promising. The purpose of this study, then, was to evaluate the knowledge, awareness, and barriers of early detection of cervical and breast cancer in a tertiary care rural hospital.

In this research, adult women undergoing treatment at a tertiary care rural hospital in north India were asked about their knowledge, attitudes, and screening practises regarding breast and cervical cancer. Although several research studies were conducted with similar objectives in India but concerning to our area no such extensive study is reported. For two reasons, this study is distinctive. To identify risk factor associations, research on women of all ages with diverse demographic characteristics and knowledge-based concepts was conducted. Similar to this, the majority of prior studies carried out in the study population have only identified, without examining, the relationship between participants' demographic and sociocultural backgrounds and their awareness of and knowledge of breast and cervical cancer. Therefore, the goal of this study was to close and fill in these knowledge gaps.

Contrary to our research, other studies have indicated that a greater percentage of women are aware of cervical cancer.<sup>16,17</sup> Women who attend these health centres may have better conditions. Younger, better educated women knew more about cervical cancer than older, less well-educated women, according to a study from north-central India.

This research revealed that there was a shockingly low level of knowledge about cervical cancer among women who visited our tertiary care hospitals. According to studies by Chandrika et al.[Reichheld et al.,<sup>8</sup> Ahlawat et al.,<sup>18</sup> and Narayana et al.<sup>19</sup> only 148 participants (24.7%) had heard of cervical cancer. For cervical cancer, the range is 34-74%.

**Table 1:** Comparison of factors associated with awareness of cervical cancer among study population

Variables	Sub Groups	Cervical Cancer Score - Good			Cervical Cancer Score - Poor			p <sup>a</sup>
		N	Mean	SD	N	Mean	SD	
<b>Age Group</b>	<20 years	0			5	4.6	1.8166	
	20-30 years	8	9.625	1.0607	92	5.13	1.5564	< 0.0001
	30-40 years	0			139	4.094	1.3826	
	40-50 years	11	10.091	1.446	213	4.038	1.7289	< 0.0001
	>50 years	2	9	0	130	4.608	1.8822	
<b>Religion</b>	Hindu	21	9.81	1.2498	466	4.38	1.7437	< 0.0001
	Muslim	0			113	4.265	1.547	
	<15	0			28	3.321	1.467	
	15-20	4	9.25	0.5	165	4.303	1.4585	< 0.0001
	20-25	7	9.429	1.1339	256	4.145	1.5888	< 0.0001
<b>Education Level</b>	>25	10	10.3	1.4181	130	5.069	2.0162	< 0.0001
	Illiterate	2	9	0	205	3.859	1.3484	
	Primary School	2	9	0	81	4.148	1.6591	< 0.0001
	Middle School	0			59	3.864	1.1956	
	High School	0			34	3.441	1.2356	
<b>Occupation</b>	High Secondary	2	9	0	60	4.45	2.3609	< 0.0001
	Graduate	8	9.625	1.0607	120	5.342	1.4638	< 0.0001
	Professional Degree	7	10.714	1.496	20	7.15	0.4894	< 0.0001
	Nursing staff	14	10.214	1.3688	74	6.473	0.91	<0.0001
	Nursing incharge	2	9	0	13	6.692	0.6304	<0.05
<b>Husband's Occupation</b>	Nursing Student	0			16	6.562	0.9639	
	House keeping	0			55	3.691	1.6763	
	Housewife	5	9	0	421	3.917	1.436	<0.05
	No Job	1	9		62	4.597	1.5413	
	Private	17	10	1.3229	259	4.506	1.8993	-0.0001
<b>Marital Status</b>	Government	0			30	5.933	0.8683	
	Farmer	2	9	0	52	4.942	1.3491	< 0.0001
	Business	1	9		176	3.614	1.2955	<0.05
	Unmarried	8	9.625	1.0607	93	5.172	1.5578	<0.05
	Married	13	9.923	1.3821	486	4.202	1.6906	< 0.0001
<b>Age at Marriage</b>	<15 years	2	9	0	226	3.615	1.481	<0.05
	15-20 years	8	9.625	1.1877	185	4.589	1.708	< 0.0001
	20-25 years	3	11.333	1.5275	75	5.013	1.648	< 0.0001

As in other studies published in India, our study participants had little awareness of risk factors and signs and symptoms. In our study, 93.5% of knowledge, don't know answers related to cervical cancer symptoms showed an extremely low rate cervical cancer.<sup>9,16,17,20,21</sup> Between symptoms (0.5%), awareness, and other factors, there was an extremely low response.

High-risk groups (2.7%), young marriages (3.7%), long-term COC use (3.2%), poor hygiene (6.5%), and big families (0.7%). Patra et al.<sup>17</sup> found that women's knowledge of cervical cancer screening procedures was lower than that of the majority of women in our study. (2011), Bansal et al.<sup>16</sup> (35%) and Nigar and colleagues (8%).<sup>21</sup> Only 20.3% of participants were aware of the Pap

smear test, while 21% were aware of the HPV vaccine, 9.3% were aware of cervical cancer screening, and 74.5% said they would get the vaccine if the government provided it. As we studied, I was prepared. Previous reports of improved outcomes exist.<sup>96,98,100,103</sup> Our study's findings imply that participants had little knowledge of various parts of cervical cancer and its detection procedures.

Additionally, we used a scoring method to determine its relationship to demographic data, with an overall good knowledge score (3.5%) and poor knowledge observed in 96.5% of the population. For the 20–30 year old, 40–50 year old, Hindu, over 25 BMI, nursing staff, private job of husband occupation, and married of marital status subgroups, all associated factors have more than 9 mean

**Table 2:** Comparison of factors associated with awareness of breast cancer among study population

Variables	Sub Groups	Breast Cancer Score - Good			Breast Cancer Score - Poor			P <sup>a</sup>
		N	Mean	SD	N	Mean	SD	
Age Group	<20 years	1	10		4	7.5	0.5774	
	20-30 years	69	13.188	1.565	31	6.903	1.1649	< 0.0001
	30-40 years	58	9.879	1.1251	81	6.901	0.9435	< 0.0001
	40-50 years	77	10.779	1.8469	147	6.789	1.1718	< 0.0001
	>50 years	62	11.274	1.8745	70	6.8	1.0578	< 0.0001
Religion	Hindu	216	11.454	2.0838	271	6.845	1.0775	< 0.0001
	Muslim	51	10.745	1.6952	62	6.806	1.1429	< 0.0001
BMI	<15	4	9	0	24	6.25	1.4818	
	15-20	65	10.954	2.0949	104	6.875	1.0305	< 0.0001
	20-25	114	10.939	1.9565	149	6.94	1.0083	< 0.0001
	>25	84	12.226	1.7993	56	6.75	1.1481	< 0.0001
Education Level	Illiterate	56	9.768	1.0616	151	6.775	1.0594	< 0.0001
	Primary School	30	9.467	0.6814	53	6.906	1.024	< 0.0001
	Middle School	27	10.185	1.2101	32	7	1.0473	< 0.0001
	High School	13	9.769	0.9268	21	7.143	1.1526	< 0.0001
	High Secondary	35	12.429	1.481	27	6.37	1.3344	< 0.0001
	Graduate	79	12.684	1.9842	49	6.98	1.0506	< 0.0001
	Professional Degree	27	13.037	0.854	0			
	Occupation	Nursing staff	88	13.42	1.0798	0		
	Nursing incharge	15	12.867	1.1872	0			
	Nursing Student	16	12.75	0.9309	0			
	House keeping	19	9.474	0.7723	36	6.944	1.1198	< 0.0001
	Housewife	129	9.798	1.0184	297	6.825	1.0857	< 0.0001
Husband's Occupation	No Job	22	9.864	1.2069	41	7.098	0.8308	< 0.0001
	Private	157	12.261	1.8985	119	6.832	1.0995	< 0.0001
	Government	15	10	1.4639	15	7.067	0.8837	< 0.0001
	Farmer	23	9.391	0.583	31	6.935	0.9639	< 0.0001
	Business	50	10.28	1.5391	127	6.709	1.1893	< 0.0001
Marital Status	Unmarried	67	13.269	1.5134	34	6.941	1.1266	< 0.0001
	Married	200	10.665	1.7459	299	6.826	1.0852	< 0.0001
Age at Marriage	<15 years	58	9.569	0.9198	170	6.712	1.1484	< 0.0001
	15-20 years	103	11.194	1.8314	90	7.067	1.0034	< 0.0001
	20-25 years	39	10.897	1.7441	39	6.769	0.9021	< 0.0001

knowledge score (Good). The large disparity between the means of the two groups is also demonstrated by additional statistically significant differences. In contrast to our research (max. 13.6), lower levels of score were reported in earlier studies by Saini et al. (6.33)<sup>22</sup> and Lee-Lin et al. (5.46%)<sup>23</sup> and higher by Kumar et al. (18.8).<sup>24</sup>

95.5% of the participants in the current study reported having heard of breast cancer, which is higher than the percentages reported by Shreshta et al. (30%)<sup>25</sup> and Tripathi et al. (34.88%).<sup>9</sup> More than 20% of women have held nursing positions in the healthcare industry, and many more have heard or read about it, so there may be a high level of awareness.

In another study done in a hospital setting, 95% of people who went to an outpatient surgery department had heard of breast cancer. However, only 45.5% of the women in this study had average knowledge, and only 4.5% had good knowledge, despite the fact that the percentage of women who had heard of breast cancer was high. In community-based research 8.

1% reported having excellent understanding and 45.3% average knowledge.<sup>26</sup> In a survey of Delhin teachers, 92.7% reported knowing at least one sign and symptom.<sup>27</sup>

A higher percentage was found in this study (59.7%), compared to another study where 15% of women reported a family member, friend, or relative with a history of cancer as their source of information. Breast tumours (51.2%) were significantly more common in urban women (33.45%) than rural women (33.45%) as a sign of breast cancer, according to Padmavathi et al. (66.1%).<sup>28</sup> According to a research conducted in a Mumbai surgery outpatient department, 40% of the patients recognised at least five breast cancer symptoms, and all patients could list at least one symptom.<sup>25</sup> Studies have found that knowledge levels were associated with age, marital status, education and social class/income.<sup>9,29</sup> This presumably explains why in the current study the knowledge levels are higher than general population but less than the teachers.

Such higher knowledge level may be ascribed due to more than 20% of nursing staff and students also these difference observed could be due to the fact that women were all workers of a tertiary care hospital and interact with physicians much more than other groups of population. As opposed to the 24.8% of women in our research, not breastfeeding was reported as a risk factor for breast cancer by 7.69% of university professors, 12.81% of rural women, and 88.8% of patients.<sup>9,25,30</sup>

The knowledge of additional risk factors was minimal or nonexistent in this study, in contrast to other studies that noted age, oral contraceptive use, and infertility.<sup>25,30,31</sup> By Padmavathi et al. (38.6%) and other<sup>28,32</sup> it was stated that 41.3% of women were aware of breast self-examination.<sup>33</sup> According to the research by Khokhar et al., the ideal age, timing, and frequency for mammography were known until ages 31.9%, 10.5%, and 21.6% for women.<sup>27</sup> In this study,

SBE was tested at a rate of 6.2% whereas other studies reported a range of 11–19%.<sup>30,34</sup>

44.5% of the patients in this study had a good level of breast cancer knowledge according to the knowledge rating system. The research revealed significant variations in age, risk factor levels, education, and awareness. This study and a study by Gupta et al.<sup>35</sup> show that Indian women, regardless of socioeconomic status and educational level, have low awareness of the risk factors for breast cancer.

Meanwhile, Grosomanidis et al.<sup>36</sup> demonstrated that lower breast cancer awareness was associated with lower levels of education. These findings of the above study (Dinegde et al.)<sup>37</sup> are consistent with our study.

## 5. Conclusion

In conclusion, the study revealed poor awareness of cervical and fear of breast cancer to be significantly associated with the poor education level. The study found out that higher percentage of the respondents answered the questions about breast cancer and lower to cervical cancer. Developing of public screening and educational program through health care system more emphasis on rural areas and less educated women. Promoting cervical/breast cancer awareness would lead to early detection and reduce the stage at diagnosis, potentially improving the odds of survival and cure with simpler and more cost-effective treatment. Overall this inadequate level of knowledge/awareness could be due to poor mass media campaign on specific aspects of prevention and control for cervical/breast cancer, cultural barriers preventing open discussion with peers. Therefore, governments, non-governmental organizations and other societies are encouraged to regularly provide educational campaigns and screening programs to women as well as their families to raise awareness and reduce the problem. Further development of public screening through the health care system, with a greater focus on rural areas and uneducated women. Studies with larger sample sizes are needed to evaluate cognitive programs to get a better idea of the results.

## 6. Source of Funding

None.

## 7. Conflict of Interest

None.

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