

A PROSPECTIVE OBSERVATIONAL STUDY OF EASTERN INDIAN CERVICAL CANCER SCREENING PRACTICES AND RELATED FACTORS

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Abstract

Background

An estimated 120,000 Indian women are affected by uterine cervical cancer each year, which is a serious health issue for them. Although cervical cancer is less common in urban settings, it is still very common in rural areas.

Objectives

This study intends to evaluate the cervical cancer screening behaviors of women in Eastern India and pinpoint the sociodemographic characteristics linked to these practices.

Materials and methods

The design of the study was prospective which took place at the Jawahar Lal Nehru Medical College & Hospital, Bhagalpur, Bihar, India. The study has been conducted for 11 months, i.e., from 24th January 2019 to 31st December 2019. Overall, 125 patients were enrolled in the study.

Results

The average age of all the participants was 38.2 ± 7.4 . Most of the patients included in the study are from rural areas with 75 (60%), and the rest 50 (40%) are from urban areas. Most of the included patients were from middle-class families and the least were from high-class families. Age among participants who were screened and who were never screened was found to be significant. There was a significant difference observed between socioeconomic status and educational level between the groups of screened and not screened patients respectively.

Conclusion

The study concluded that Eastern India had below-optimal screening rates of cancer of the cervix, especially for women from rural areas, those with lower educational attainment, and those from lower socioeconomic backgrounds.

Recommendations

Campaigns to increase awareness, enhance access to screening facilities, and remove financial barriers, especially for underprivileged populations—should be the main focus of public health initiatives. Reducing the rate of cancer of the cervix in Eastern India, requires extending the reach of public health programs and incorporating cervical cancer screening into standard medical care.

Keywords: Eastern India, cervical cancer, screening procedures, Sociodemographic variables, public health initiatives.

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Introduction

One of the biggest health issues Indian women confront is uterine cervical cancer, which affects almost 120,000 of them annually [1]. 15.2 percent of all cervical cancer fatalities worldwide occur in India [2]. Despite a decrease in

the prevalence of cervical cancer in metropolitan regions, it remains quite common in rural areas [3].

In low- and middle-income countries (LMICs) like India, cancer of the cervix is a major public health issue in this country, and it is one of the leading causes of cancer-related mortality among women.

Human papillomavirus (HPV) can be mainly avoided with routine screening and vaccination, although in many areas, the uptake of these preventive methods is still below ideal. Recent statistics show that cervical cancer makes up 18.3% of all cancer cases in Indian women, leading to almost 96,922 new cases and 60,078 deaths every year [4].

It's especially troubling in Eastern India, where socio-cultural barriers are common and healthcare infrastructure is frequently inadequate. High rates of poverty, low literacy, and notable inequalities in healthcare access are all characteristics of the area that lead to low screening rates. The World Health Organization highlights that screening programs can lower the incidence of cancer of the cervix with an increase of 80% when they are implemented successfully (WHO, 2021). However, the understanding, attitudes, and behaviors of the target population as well as the accessibility and availability of screening services are critical to the effectiveness of such programs [5].

Cervical cancer and its prevention are frequently not well understood, especially by rural women, according to studies done throughout India. Just 10% of women have undergone screening for cervical cancer, according to a study conducted in Northern India, and only 23% of women were aware of the screening procedures [6]. In Eastern India, similar patterns have been noted, where the issue is made worse by cultural taboos, illiteracy, and restricted access to medical care [7]. Improvement in diagnostic methods and further treatment of diseases like cervical cancer are the main goals of public health efforts like the National Programme for Control and Prevention of Cancer, Diabetes, Cardiovascular Illnesses, and Stroke (NPCDCS). But despite these initiatives, there are still disparities in the programs' real reach and implementation, especially in rural and underdeveloped areas [8].

The purpose of this study is to evaluate the cervical cancer screening habits of women in Eastern India and to determine the sociodemographic characteristics linked to these habits to guide focused public health initiatives.

Methodology

Study Design

The study was designed as a cross-sectional, observational study that took place at the Jawahar Lal Nehru Medical College & Hospital, Bhagalpur, Bihar, India. The study has been conducted for 11 months, i.e., from 24th January 2019 to 31st December 2019.

Sample Collection

Overall, a total of 125 participants were included to take part in the study. The inclusion criteria for patient enrolment are women between 21 to 65 years, sexually active women, participants who provided consent for participation in the study, and those who reside in eastern parts of India the criteria to exclude participants were women with a history of hysterectomy, women currently undergoing treatment for cervical cancer, pregnant women, and those who did not provide consent to participate in the study.

Study Procedure

Participants were informed about the study and written consent was obtained. The questionnaire was administered through face-to-face interviews, ensuring clarity and understanding of each question. To preserve anonymity and promote truthful answers, the interviews were held in a quiet location within the department. The data was recorded electronically and securely stored for further analysis. A systematic questionnaire was used to gather data such as knowledge and practices relevant to cancer of the cervix screening, and associated factors such as socioeconomic status, educational level, and access to healthcare services. Interviews were conducted in person by trained healthcare professionals.

Statistical Analysis

The data was collected in Microsoft Excel, and statistical software SPSS version 20 was used for the analysis. In the study, categorical parameters were presented as the number of patients along with the percentages, while continuous characteristics were shown as mean and standard deviation. The relationship between cervical cancer screening behaviors and several sociodemographic characteristics was examined using chi-square testing and independent t-test. A P-value that was less than 0.05 was considered significant.

Ethical Considerations

Informed consent was obtained from all participants.

Results

Table 1 depicts patients' demographics. The average age of all the participants was 38.2 ± 7.4 . Most of the patients included in the study are from rural areas with 75 (60%), and the rest 50 (40%) are from urban areas. Most of the included patients were from middle-class families and the least were from high-class families.

Table 1. Patient's Demographics

Characteristic	Values
Age (in years)	38.2±7.4
Locality	
Rural	75 (60%)
Urban	50 (40%)
Education Level	
Illiterate	25 (20%)
Primary	40 (32%)
Secondary	35 (28%)
Higher	25 (20%)
Socio-economic Status	
Low	65 (52%)
Middle	40 (32%)
High	20 (16%)

Data was presented as either mean±SD or n (%)

Table 2 shows various screening practices that are followed for cancer of the cervix. It has been shown that most of the

patients were screened before. 40% of patients were not ever screened for cervical cancer. Last screening time was further classified into within last three year [35 (28%)], before 3-5 years [25 (20%)] and more than 5 years [15 (12%)].

Table 2. Screening Practices Followed in Cervical Cancer

Screening Practice	Values
Ever Screened	75 (60%)
Never Screened	50 (40%)
Last Screening Time	
Within last three years	35 (28%)
Before 3-5 years	25 (20%)
More than 5 years before	15 (12%)

Data was presented as n (%)

Table 3 depicts the association of various socio-demographic factors with screening for cancer of the cervix. Age among participants who were screened and who were

never screened was found to be significant. Socio-economic status and educational level were also found to be statistically significant between both the groups of screened and not screened patients respectively.

Table 3. Association of socio-demographic factors with screening of cervical cancer

Parameters	Screened (n=75)	Not Screened (n=50)	P-value
Age (in years)	34.1±6.2	39.7±9.3	<0.0001
Locality			
Rural	45 (36%)	30 (24%)	0.85
Urban	30 (24%)	20 (16%)	
Socioeconomic status			
Low	25 (20%)	40 (32%)	<0.0001
Middle	35 (28%)	05 (4%)	
High	15 (12%)	05 (4%)	
Educational Level			
Illiterate	10 (8%)	15 (12%)	0.03
Primary	25 (20%)	15 (12%)	
Secondary	20 (16%)	15 (12%)	
Higher	20 (16%)	05 (4%)	

*Data was presented as either mean±SD or n (%)
Independent t-test and chi-square test were used to obtain a p-value
p-value was considered significant at <0.05*

Discussion

Of the 125 women in Eastern India who participated in the study, 60% had at least one cervical cancer screening, and 40% had never had one. More than half of the examined individuals had done so in the previous five years, suggesting some adherence to the suggested screening intervals. However, the fact that the other half had not been screened recently suggests that there may be gaps in continuing preventative care.

Significant correlations between cervical cancer screening procedures and several sociodemographic characteristics were found by the investigation. Higher education levels were associated with a higher likelihood of screening, indicating that educational attainment is a significant factor in health-seeking behavior. Higher screening rates were also linked to living in an urban region, most likely as a result of easier access to medical services and increased understanding of the significance of screening in urban settings. Furthermore, women with greater socioeconomic status were more likely to have undergone screening, suggesting that financial circumstances and resource availability have a big impact on health-related behaviors. Overall, the findings highlight the necessity of focused initiatives to raise cervical cancer screening rates, especially for women from lower socioeconomic origins, those living in rural areas, and those with less education. The incidence and death of cervical cancer in Eastern India may be significantly decreased by increasing knowledge, accessibility, and cost of cervical cancer screening, particularly among underprivileged people. These initiatives should concentrate on removing financial barriers to healthcare, expanding access to screening services, and launching educational programs. Recent research on cervical cancer screening in India, particularly in rural and semi-urban regions, has shown significant geographic disparities and screening barriers.

In India, a district-level analysis of cancer of the cervix and breast was conducted. This study discovered notable regional variations in screening methods, with rural areas showing lower uptake than urban areas. The study identified key factors that influenced screening practices, such as socioeconomic status, marital status, and access to medical services. The authors emphasized the need for region-specific interventions to address these disparities and increase screening rates in India's numerous districts [9].

Women who reside in rural parts of Eastern India have low awareness and screening practices for cervical cancer, according to a study done there. The study found that socioeconomic position and educational achievement had a substantial impact on screening program awareness and participation. To raise knowledge about cervical cancer and the importance of early screening, the researchers concluded

that educational initiatives and community-based interventions are desperately needed in these impoverished communities [10].

Puranik A et al carried out an important study that looked at the prevalence, trends, and predictors of screening for cancer of the cervix in India with the use of data from the National Family Health Survey (NFHS-4). Low screening rates were found to be disproportionately concentrated in several regions, particularly in central and eastern India. Not using contemporary types of contraception, living in a remote area, having a low wealth index, and not knowing about sexually transmitted diseases were all strongly associated with lower screening uptake. The authors suggested that targeted interventions in these high-risk areas could increase screening rates and ultimately reduce India's cervical cancer fatality rate [11].

Conclusion

The study concluded that Eastern India had below-optimal screening rates of cancer of the cervix, especially in the females of rural areas, those with lower educational attainment, and those from lower socioeconomic backgrounds. Raising accessibility and knowledge should be the main goals of initiatives to increase cervical cancer screening coverage, especially among these susceptible populations.

Limitations

Because of its cross-sectional design, this study was limited in its ability to prove causality. Moreover, the research was carried out at a single hospital, which would restrict the findings' applicability to the larger Eastern Indian community.

Recommendations

Campaigns to increase awareness, enhance access to screening facilities, and remove financial barriers—especially for underprivileged populations—should be the main focus of public health initiatives. Reducing the rate of cancer of the cervix in Eastern India requires extending the reach of public health programs and incorporating cervical cancer screening into standard medical care.

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Data Availability

Data is available upon request.

Author contributions

All authors contributed to the design of the research. PK collected and analyzed the data. UK wrote the manuscript. All authors read, edited and approved the paper.

List of abbreviations

LMIC- low- and middle-income countries
HPV- Human papillomavirus
WHO- World Health Organization
NPCDCS- National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke
NFHS- National Family Health Survey

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Conflict of interest

The authors have no conflicting interests to declare.

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