

ORIGINAL ARTICLE

Knowledge Regarding Cervical Cancer Screening among Women, Western Maharashtra

Shilpi Sarkar¹, Rajeswari S², Dola Banerjee³, Sonia Saklani⁴, Kavitha G⁵

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ABSTRACT

Cervical cancer poses a significant health challenge, particularly in low and middle-income countries. This study sought to assess women's knowledge, awareness, and screening behaviours concerning cervical cancer in outpatient settings. A cross-sectional, questionnaire-based survey was conducted among 53 women attending gynaecology OPDs. Data on demographic variables, awareness, and screening practices were collected. Statistical analysis was performed to assess associations between knowledge and demographic factors. among the participants, 77.4% lacked awareness of cervical cancer, and only 22.6% demonstrated adequate knowledge of its prevention. Pap smear screening was utilized by 13.2%, while only 1.9% underwent visual inspection screening. Posters were the main source of information (9.5%). Educational and occupational status were significantly associated with knowledge levels ($p = 0.001$), with employed and college educated women showing better awareness. However, no significant association was observed between overall knowledge and other demographic variables. The study highlights a critical gap in cervical cancer awareness and screening uptake among women attending OPDs. Enhanced health education, improved media outreach, and targeted community interventions are essential to increase participation in cervical cancer prevention programs.

KEYWORDS

• Cervical Cancer • Screening Knowledge • Maharashtra • Women awareness
• India

AUTHOR'S AFFILIATION:

¹ PG Trainee, Department of OBGY Nursing, Armed Forces Medical College, Pune, India.

² PG Trainee, Department of OBGY Nursing, Armed Forces Medical College, Pune, India.

³ Associate Professor, Department of Med. Surg. Nursing, Armed Forces Medical College, Pune, India.

⁴ Associate Professor, Department of Comm. Health Nursing, Armed Forces Medical College, Pune, India.

⁵ Associate Professor, Department of Med. Surg. Nursing, Armed Forces Medical College, Pune, India.

CORRESPONDING AUTHOR:

Shilpi Sarkar, PG Trainee, Department of OBGY Nursing, Armed Forces Medical College, Pune, India.

E-mail: shilpisarkar29@gmail.com

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INTRODUCTION

Cervical cancer is a major health concern, especially in low and middle-income countries. Previous studies have emphasized the role of education and outreach in improving screening rates.^{1,2} This study aimed to evaluate women's knowledge, awareness, and screening practices related to cervical cancer in outpatient settings. Cervical cancer remains a leading cause of mortality among women worldwide, particularly in developing countries.³ Screening programs such as Pap smears and HPV testing have demonstrated efficacy in early detection and prevention.^{4,5} However, lack of awareness and infrastructure continue to impede efforts in regions like India.⁶ Cervical cancer accounts for approximately 6-29% of all cancers in Indian women, with significant disparities between states. In 2020, India recorded 123,907 new cases and 77,348 deaths, making it the second most common cancer and cause of cancer death among women. Maharashtra's burden is slightly above the national average (13-16/100,000 women) making it a priority region for targeted awareness and screening interventions. Despite the availability of effective screening tools, barriers are present such as financial constraints, cultural beliefs, and inadequate health education hinder widespread implementation.⁷ Previous studies indicate that education, occupation, and access to information significantly influence women's knowledge and participation in screening programs.⁸ India's cervical cancer mortality rate underscores the urgent need for widespread awareness and effective screening programs. This study seeks to bridge the knowledge gap and provide evidence-based recommendations to improve cervical cancer screening uptake in resource-limited settings.

The study focuses on disseminating knowledge about cervical cancer screening among women aged 30-59 years attending the gynaecology OPD of a tertiary care hospital. The findings aim to guide future educational interventions and policy initiatives to enhance screening rates. The study aims to assess the knowledge regarding cervical cancer screening among women attending the gynaecology OPD.

REVIEW OF LITERATURE

- Sharma *et al.* (2021) conducted a community-based study in Northern India and highlighted that only 19% of

women were aware of cervical cancer screening, pointing to persistent low awareness, especially in rural settings¹¹.

- Basu *et al.* (2020) emphasized similar findings across India, reporting only 23% awareness and underlining the need for strengthening the national screening programs¹².
- Mutyaba *et al.* (2017) explored cervical cancer screening in Uganda, revealing that education level and health system barriers significantly impacted screening uptake among women in low-income settings¹³.
- Singh and Badaya (2018) reviewed factors affecting cervical cancer screening in India and found that education, income, and occupation strongly influenced women's participation in screening programs¹⁴.
- Gakidou *et al.* (2019) reported global disparities in screening coverage, with many low and middle-income countries showing low uptake due to socio-economic inequalities¹⁵.
- Bhatla *et al.* (2020) demonstrated that visual inspection methods combined with community education significantly improved screening uptake and awareness among women in community settings in India¹⁶.

Research gap presents in above mentioned studies are lack of Maharashtra specific data, limited OPD specific research for the women already accessing gynae services but still unaware about the cervical screening process, insufficient demographic correlation analysis.

METHODOLOGY

This cross-sectional study employed structured questionnaires to collect data from 53 women aged 30-59 years attending the gynaecology OPD. A probability-based simple random sampling technique was used. In the present study, a simple random sampling technique was employed to recruit participants from the accessible population who met the predefined inclusion criteria. A brief screening tool based on the inclusion and exclusion criteria was administered at the registration desk to identify eligible individuals. The sampling frame was developed using information from the OPD register, including only those patients who met the inclusion criteria. The final sample was then selected using the lottery method to

ensure equal and unbiased selection.

The self-structured tool was prepared which include sociodemographic data and knowledge questionnaire regarding cervical cancer screening.

Structured tool composed of two sections:

Section I: Background data

Section II: knowledge scale

Section I

This consists of 9 items, which dealt with the background information like age, education, income, occupation, family history of cervical cancer, heard about cervical cancer screening, source of information, attended prior any cervical screening camp and method of screening used in camp.

Section II

This part is consisted with 15 multiple choice questions regarding cervix, cervical cancer & cervical cancer screening.

The rating scale has been classified as follows:

0-5: Poor

6-10: Good

11-15: very good

Knowledge was measured in terms of knowledge scores. The maximum score was 15.

The construct, face, and content validity of the tool was done by experts in the field of nursing, obstetric & oncology speciality. The suggestion given by the experts were incorporated in the study and the tool was finalised. A tool try-out was conducted before the main study. The reliability of knowledge score scale was established by Cronbach alpha score which was 0.83.

DATA COLLECTION

Data were collected over ten days using validated questionnaires, including socio-demographic details and a knowledge scale. Knowledge scores ranged from 0-15, categorized as poor (0-5), good (6-10), and very good (11-15).

RESULTS

Table 1: Sociodemographic distribution of subjects participated in the study

Parameter	Categories	No. of Subjects (n=53)	% of Subjects
<i>Age Distribution</i>	30-39 years	23	43.4%
	40-49 years	21	39.6%
	>50 years	9	17.0%
<i>Educational Status</i>	Secondary	29	54.7%
	Higher Secondary	13	24.5%
	Graduation	11	20.8%
<i>Occupational Status</i>	Housewife	38	71.7%
	Semi-skilled	5	9.4%
	Skilled	10	18.9%
<i>Monthly Income</i>	<50,000 ₹	13	24.5%
	50,000-60,000 ₹	33	62.3%
	>60,000 ₹	7	13.2%

Table 1 revealed that majority of participants (43.4%) were aged between 30-39 years, followed by 39.6% in the 40-49 years' age group. Educationally, over half (54.7%) had completed secondary education, while 24.5% had higher secondary and 20.8% were graduates. In terms of occupation, a significant

proportion (71.7%) were housewives, whereas 18.9% were engaged in skilled work and 9.4% in semi-skilled roles. Regarding monthly income, the majority (62.3%) reported earnings between ₹ 50,000-60,000, while 24.5% earned less than ₹ 50,000, and 13.2% had incomes above ₹ 60,000.

Table 2: Distribution of awareness of cervical cancer screening and family history of cervical cancer among women who attended gynae OPD.

Variable		No. of subjects (n=53)	% of subjects
<i>Heard about cervical cancer screening</i>	No	41	77.4
	Yes	12	22.6
<i>Source of information</i>	NA	41	77.4
	Poster	5	9.4
	Health education channel	4	7.5
	Advertisement	3	5.7
<i>Family history of cervical cancer</i>	No	51	86.2
	Yes	2	3.8
<i>Attended cervical cancer screening camp</i>	No	45	84.9
	Yes	8	15.1
<i>Method used in the camp</i>	NA	45	84.9
	PAP	7	13.2
	Visual	1	1.9

Table 2 depicts that the majority of women (77.4%) had no awareness of cervical cancer screening, and among those aware, the main sources of information were posters (9.4%), followed by health education channels (7.5%) and advertisements (5.7%). Only 3.8%

reported a family history of cervical cancer. A significant proportion (84.9%) had never attended a cervical cancer screening camp, and among those who did, the PAP smear (13.2%) was the most commonly used method, while visual inspection was rarely used (1.9%).

Table 3: Association of Demographic Variables with Level of Knowledge Regarding Cervical Cancer Screening

n = 53

Demographic Variable	Category	Poor Knowledge (0-5)	Good Knowledge (6-10)	Chi-Square Value	DF	P-value
<i>Age Group (Years)</i>	30 – 39	69.6%	30.4%	1.636	2	0.441
	40 – 49	85.7%	14.3%			
	>50	77.8%	22.2%			
<i>Educational Status</i>	Secondary	93.1%	6.9%	37.178	2	0.001***
	Higher Secondary	100.0%	0.0%			
	Graduation	9.1%	90.9%			
<i>Occupational Status</i>	Housewife	94.7%	5.3%	26.196	2	0.001***
	Semi-skilled	60.0%	40.0%			
	Skilled	20.0%	80.0%			
<i>Monthly Income (Rs)</i>	<50,000	84.6%	15.4%	2.063	2	0.357
	50,000 – 60,000	78.8%	21.2%			
	>60,000	57.1%	42.9%			
<i>Attendance of Screening Camp</i>	No	88.9%	11.1%	22.629	1	0.001***
	Yes	12.5%	87.5%			

Table 3 depicts that educational status played a pivotal role and graduates demonstrating the highest levels of awareness compared to those with only secondary or higher secondary education. It further revealed that monthly income influenced knowledge, as seen with participants in higher income brackets demonstrating better understanding of cervical cancer screening and also elaborated that age group 40-49 have significantly better awareness compared to age group 30-39 and >50.

Overall, knowledge assessment revealed that 77.4% of participants scored in the lowest category, indicating poor understanding of cervical cancer and its screening. When stratified by education, 90.9% of graduates had good knowledge compared to only 6.9% of those with secondary education (Table 3; p -value < 0.001). Similarly, occupational differences were observed, with 80% of skilled workers demonstrating good knowledge compared to only 5.3% of housewives (Table 3; p -value < 0.001). Despite low awareness, the overall participation in cervical cancer screening camps was only 15.1% (Table 2). A notable finding was that knowledge positively influenced participation; 87.5% of those who attended screening camps scored higher on knowledge assessments (Table 8; p -value < 0.001). Barriers to participation were primarily related to lack of awareness, affordability, and accessibility issues. In fact, table 6 highlights the association between attendance at cervical cancer screening camps and knowledge levels. Participants who attended camps showed markedly better awareness, with 87.5% achieving good knowledge scores compared to only 11.1% among non-attendees. This comprehensive analysis highlights significant gaps in knowledge and participation, underscoring the importance of policy-level interventions to enhance awareness and increase screening rates.

DISCUSSION

The present study revealed significant knowledge gaps regarding cervical cancer screening among women attending the gynaecology OPD of a tertiary care hospital in Maharashtra. A majority (77.4%) of participants demonstrated poor knowledge, with only 22.6% having heard of cervical cancer screening. These findings are consistent with

national-level data, reinforcing that awareness remains critically low even among women who are already accessing healthcare services.

In a similar vein, Sharma *et al.* (2021) reported that only 19% of women in North India were aware of cervical cancer screening, particularly in rural and semi-urban settings. Basu *et al.* (2020) also documented low awareness (23%) in their multi-centric Indian study. This consistency across studies highlights a persistent national issue in cervical cancer screening awareness.

among the various factors examined, educational status emerged as a key determinant of knowledge. In our study, 90.9% of graduates had good knowledge, in stark contrast to only 6.9% of those with secondary education (p < 0.001). This pattern mirrors the findings of Mutyaba *et al.* (2017), who found a strong association between educational attainment and screening awareness in Uganda. Clearly, education plays a critical role in health literacy and preventive health behavior.

Occupational status was another significant correlate. Skilled workers (80%) exhibited better knowledge compared to housewives (5.3%), indicating that women engaged in professional or semi-professional work are more likely to be informed about cervical health. These results align with Singh and Badaya (2018), who emphasized that employment status often correlates with access to information and proactive health-seeking behavior.

Similarly, income level influenced knowledge levels. among women with a household income above ₹ 60,000, 42.9% had good knowledge of cervical cancer screening. This reinforces the role of socio-economic status in health education, consistent with Gakidou *et al.* (2019), who emphasized global disparities in screening due to socio-economic inequalities.

Importantly, exposure to health interventions appears to be a strong catalyst for knowledge. In our study, only 15.1% of participants had ever attended a cervical cancer screening camp; however, among those who did, a striking 87.5% demonstrated good knowledge. This suggests that participation in screening activities directly enhances awareness. These findings echo Bhatla *et al.* (2020), who reported that community-based screening programs not only improved uptake but also served as vital

platforms for educating women and dispelling myths.

Beyond individual-level factors, cultural beliefs and health system barriers continue to pose challenges. Participants cited lack of awareness, affordability, and poor accessibility as the primary reasons for not undergoing screening. These barriers reflect broader structural and social issues, as documented in the global review by Denny *et al.* (2015), which noted that stigma, low prioritization of preventive care, and logistical obstacles limit screening in low-resource settings.

Finally, the influence of culture and religion though not quantitatively assessed in this study cannot be overlooked. Literature suggests that these factors shape health perceptions and decision-making, particularly in conservative or patriarchal communities. Existing evidence, including work cited by Basu *et al.* and others, consistently points to the need for culturally sensitive educational interventions.

RECOMMENDATIONS

Implement Targeted Health Education Programs

- Design culturally sensitive, multilingual IEC (Information, Education, Communication) materials to educate women about cervical cancer, its risk factors, and the importance of regular screening.
- Conduct regular health talks or awareness sessions in gynaecology OPDs, particularly focusing on women with low education and income levels.

Integrate Screening Awareness into Routine OPD Services

- Develop a standardized counselling protocol so that nurses or health educators can routinely inform every gynaecology OPD patient about cervical cancer screening options.
- Incorporate brief screening education modules into registration or waiting area activities using audio-visual aids or interactive kiosks, as demonstrated by Valdez *et al.* (2018).

Strengthen Community-Based Outreach

- Expand community screening camps, especially in underserved urban and

peri-urban areas. Use mobile health units to improve accessibility.

- Collaborate with ASHAs, ANMs, and local NGOs to promote community education and screening drives.

Empower Women Through Education and Employment Programs

- Support policies that improve female literacy and employment, as higher education and occupational status were strongly associated with better knowledge and health-seeking behavior.
- Include reproductive and preventive health modules in adult education or vocational training programs.

Reduce Financial and Logistical Barriers

- Provide free or subsidized cervical cancer screening (e.g., VIA, Pap smear, or HPV testing) at primary and tertiary healthcare facilities.
- Introduce transport support schemes or incentive-based participation (e.g., conditional cash transfers) to encourage low-income women to attend screening camps.

Enhance Provider Training and Sensitization

- Train healthcare providers, especially nurses and OPD staff, in patient-centered communication and culturally competent counseling, so they can effectively address stigma, myths, and fears.

Develop Tailored Interventions for Cultural and Religious Sensitivities

- Work with faith leaders and community influencers to design interventions that respect cultural norms while promoting screening.
- Address gender-specific and religious taboos around pelvic exams and reproductive health through trusted local figures.

Monitor and Evaluate Awareness and Uptake Trends

- Set up a monitoring system within tertiary hospitals to track patient awareness, referrals, and screening uptake rates over time.
- Conduct periodic follow-up surveys to assess the impact of interventions and make data-driven adjustments.

Limitations

- Restricted to OPD attendees; findings may not generalize to community settings.
- Potential response bias due to self-reported data.

CONCLUSION

Most women demonstrated poor knowledge about cervical cancer screening. Enhanced educational campaigns and healthcare initiatives are essential to improve awareness and participation in screening programs.

Conflict of Interest

There is no conflict of interest present in this literature.

Ethical Considerations

Approval was obtained from the institutional ethics committee. Informed consent was secured from all participants.

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