



AWARENESS OF CANCER CERVIX AND ITS PREVENTIVE ASPECTS IN THE GENERAL POPULATION

Obstetrics & Gynaecology

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ABSTRACT

Introduction: Cervical cancer, the fourth most common cancer in women globally, demands attention due to its significant morbidity and mortality, particularly in low- and middle-income countries. Human papillomavirus (HPV) types 16 and 18 contribute to nearly half of high-grade cervical pre-cancers, with transmission occurring primarily through sexual contact. Prevention strategies involve HPV vaccination, screening, and early treatment. **Aim and Objectives:** The study aims to assess women's understanding of cervical cancer, including knowledge of screening, the role of healthcare providers, information sources, and reasons for not seeking screening. **Materials and Methods:** A cross-sectional design involved 228 participants from Group 1 (hospital population) and Group 2 (general urban population). A structured questionnaire covered demographic information, cervical cancer knowledge, screening awareness, information sources, healthcare-provider interactions, and reasons for not undergoing screening. Sampling employed systematic random sampling for hospitals and stratified random sampling for the general urban population. Statistical analysis utilized descriptive and inferential statistics. **Results:** Demographic differences were observed, with Group 1 being older and more educated. Group 1 exhibited higher awareness, knowledge, and screening frequencies. Education level significantly influenced awareness in both groups. Satisfaction with healthcare provider information correlated with screening history in both populations. Group 1 demonstrated higher satisfaction and screening rates, indicating the potential impact of healthcare settings. **Conclusion:** The study sheds light on cervical cancer awareness and screening disparities between a hospital and general urban population. The findings underscore the dynamic interplay of demographic factors, education, and healthcare settings in shaping cervical cancer awareness and screening behaviours. When urban population itself faces so much deficiency in spite of access and awareness then rural communities must also be targeted to fulfil the gaps. Tailored interventions, including public health campaigns and provider training, are recommended to address gaps, particularly in urban as well as rural communities.

KEYWORDS

HPV , cervical cancer , awareness

INTRODUCTION:

Cervical cancer ranks as the fourth most common cancer in women globally, with approximately 604,000 new cases and 342,000 fatalities reported in 2020. Alarming, around 90% of these cases and deaths occurred in low- and middle-income countries. Nearly half of high-grade cervical pre-cancers are attributed to two human papillomavirus (HPV) types, 16 and 18. The primary mode of HPV transmission is through sexual contact, typically initiated with the onset of sexual activity, and more than 90% of infections are naturally cleared by the individual.

Women with HIV face a sixfold higher risk of developing cervical cancer compared to those without HIV. Prevention strategies for cervical cancer include HPV vaccination, coupled with screening and the treatment of pre-cancerous lesions.¹ Timely detection and treatment at an early stage can result in a cure. Comprehensive cervical cancer control involves primary prevention (HPV vaccination), secondary prevention (screening and treating pre-cancerous lesions), tertiary prevention (diagnosing and treating invasive cervical cancer), and palliative care.

In the context of India, implementing cervical cancer screening programs for women can significantly reduce both mortality and morbidity. Several factors influence screening success, including women's knowledge about cervical cancer and its screening, the role of healthcare providers in hospitals, and the availability and awareness of screening facilities.

Unfortunately, a majority of cervical cancer cases in India are diagnosed at advanced stages, leading to unfavourable outcomes. Limited research has investigated the impact of healthcare professionals and information sources on women's awareness of cervical cancer in the country. Moreover, cervical cancer disproportionately affects low- and middle-income countries, including India, where a higher prevalence of late-stage diagnoses contributes to poorer outcomes. Elevating awareness becomes a critical strategy to encourage early detection through regular screenings and timely medical intervention.²

Promoting awareness of cervical cancer and its preventive measures within the general population is crucial for various reasons. Firstly, cervical cancer is the fourth most common cancer among women globally, posing a significant health burden. Raising awareness empowers individuals with crucial knowledge about the disease, its risk factors, and available preventive measures, enabling informed decision-making about their health.³

The pivotal role of human papillomavirus (HPV) in cervical cancer underscores the need for awareness campaigns. Educating the general population about HPV transmission through sexual contact and the association of specific HPV types with cervical pre-cancers can promote responsible sexual behaviour and facilitate informed decision-making regarding HPV vaccination.

Additionally, women living with HIV face an elevated risk of cervical cancer, emphasizing the necessity of tailored awareness efforts for this vulnerable group. Disseminating information about the heightened risk and stressing the importance of regular screenings allows healthcare professionals to contribute to early detection and intervention.⁴

The cost-effectiveness of preventive measures, such as HPV vaccination and screening for pre-cancerous lesions, adds another layer of significance to awareness campaigns. Individuals armed with knowledge about these interventions are more likely to engage in preventive healthcare practices, thereby contributing to an overall reduction in cervical cancer incidence and associated mortality.⁴

Aim:

To evaluate women's understanding of cervical cancer, including their knowledge of screening, the role of healthcare providers, information sources, and the reasons behind not seeking screening if they have not undergone testing for cervical cancer.

Objectives:

- To assess the awareness of cervical cancer among women attending outpatient departments (OPDs) of a tertiary care

- hospital, as well as in the general urban population.
- To examine the level of awareness regarding cervical cancer screening among these women, along with an investigation into the available screening facilities.
 - To explore the sources of information on cervical cancer and understand the role of healthcare providers who interact with women in hospital settings.

MATERIALS AND METHODS:

Study Design: A cross-sectional design was employed to collect data at a specific point in time, providing a snapshot of women's awareness and knowledge.

Participants were recruited from two groups: women attending outpatient departments (OPDs) of ACS Medical College and the general urban population.

Sample size: 228 participants were included based on statistical considerations to ensure the study's validity. All Participants were provided with detailed information about the study, and informed consent was obtained before administering the questionnaire.

Questionnaire Development:

A structured questionnaire was developed based on the study objectives. Sections of the questionnaire included: Demographic information, knowledge of cervical cancer and its risk factors, awareness of cervical cancer screening, sources of information, role of healthcare providers, and reasons for not undergoing screening (if applicable). The questionnaire was pre-tested on a small sample of women to ensure clarity, relevance, and appropriateness of questions. Necessary adjustments were made based on pre-test feedback and questionnaire was validated and used for final data collection.

Sampling: For the hospital group, systematic random sampling was employed to select participants from OPDs. For the general urban population, a stratified random sampling approach was used, considering different age groups and socioeconomic backgrounds.

Data Collection: Trained interviewers administered the questionnaire through face-to-face interviews or self-administration, depending on participant preference. Privacy and confidentiality were maintained during data collection. Variables include demographic characteristics, knowledge scores, awareness levels, information sources, and healthcare-provider interactions. Measures were taken to quantify knowledge and awareness levels based on responses.

Statistical Analysis: Descriptive statistics was used to summarize demographic characteristics and key variables. Inferential statistics, such as chi-square tests, were employed to explore associations between variables using SPSS 22.0.

RESULTS:

The study investigates cervical cancer awareness and screening practices in a hospital population (Group 1) compared to a general urban population (Group 2).

Table 1: Baseline demographic Characteristics of the study participants

Parameter	Group 1 - Hospital Population n=114 (%)	Group 2 - General Urban Population n=114 (%)	p-value
Age in years (mean ± SD)	38.3 ± 5.7	33.9 ± 4.8	0.000*
Educational status			
High school or less	34 (30)	51 (45)	0.01*
College-educated	46 (40)	34 (30)	0.11
Postgraduate	34 (30)	29 (25)	0.39

In Table 1, demographic differences are observed, with Group 1 being older and more educated. Table 1 shows significant difference in age and educational status between the two groups with p-value < 0.05.

Table 2: Awareness and Knowledge of Cervical cancer in study participants

Parameter	Group 1 - Hospital Population n=114 (%)	Group 2 - General Urban Population n=114 (%)	p-value
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Awareness and Knowledge			
Awareness of Cervical Cancer	103 (90)	91 (80)	0.03*
Knowledge of Cervical Cancer Causes:			
Yes	74 (65)	63 (55)	0.12
No	17 (15)	23 (20)	0.32
Not sure	23 (20)	28 (25)	0.36
Awareness of Screening Methods	91 (80)	80 (70)	0.08
Cervical Cancer Screening			
Knowledge of Screening Methods:			
PAP Smear	86 (75)	74 (65)	0.09
HPV Test	57 (50)	40 (35)	0.02*
VIA/VILI	40 (35)	23 (20)	0.01*
Cervix Biopsy	23 (20)	11 (10)	0.03*
Not sure of any	11 (10)	17 (15)	0.25
None	11 (10)	11 (10)	1.00
Frequency of Screening			
Annually:	46 (40)	34 (30)	0.11
Every 3 years	40 (35)	46 (40)	0.43
Every 5 years	17 (15)	23 (20)	0.32
Not sure	11 (10)	11 (10)	1.00
Discussions with Healthcare Providers	68 (60)	51 (45)	0.02*
Satisfaction with Healthcare Provider Information:			
Very satisfied	34 (30)	23 (20)	0.08
Satisfied	46 (40)	40 (35)	0.43
Neutral	23 (20)	34 (30)	0.08
Dissatisfied	11 (10)	17 (15)	0.25
Cervical Cancer History and Vaccination			
Undergone Screening	80 (70)	57 (50)	0.002*
Vaccinated for Ca Cervix (HPV Vaccine)	51 (45)	40 (35)	0.12
Knowing Someone Diagnosed with Ca Cervix	28 (25)	17 (15)	0.06
Barriers and Risk Reduction			
Barriers to Screening or Treatment	17 (15)	23 (20)	0.32
Measures to Reduce Risk	80 (70)	63 (55)	0.01*

* - p-value < 0.05 and there is a statistically significant difference between the two groups

Table 2 explores awareness and knowledge, revealing significant disparities in awareness and knowledge of screening methods in both groups. Comparing Screening Frequencies Between Group 1 and Group 2, the proportion of individuals undergoing annual screening in Group 1 is 0.70, and in Group 2, it is 0.50. Confidence Interval: (0.02, 0.18) at a 95% confidence level and p-value = 0.003. There is a statistically significant difference in screening frequencies between the hospital population (Group 1) and the general urban population (Group 2). Notably, Group 1 exhibits higher screening frequencies than Group 2, a statistically significant finding.

Table 3: Association Between Awareness and Education Level in Study Participants

Variable	Group 1			Group 2		
	Odds ratio	95% CI	p-value	Odds ratio	95% CI	p-value
Education level	2.0	1.2, 3.5	0.001*	1.8	1.1, 3.2	0.002*

* - p-value < 0.05 and there is a statistically significant difference between the two groups

Table 3 establishes a strong association between education level and cervical cancer awareness in both groups.

There is a statistically significant association between education level and awareness of cervical cancer in the hospital population and the general urban population.

Table 4: Association Between Satisfaction with Healthcare Provider Information and Screening History

Group 1			Group 2		
Odds ratio	95% CI	p-value	Odds ratio	95% CI	p-value

2.5	1.3, 4.8	0.002*	2.2	1.2, 4.0	0.001*
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* - *p-value* < 0.05 and there is a statistically significant difference between the two groups

Table 4 establishes a link between satisfaction with healthcare provider information and screening history in both populations.

There is a statistically significant association between satisfaction with healthcare provider information and screening history in the hospital population and the general urban population.

Strengths include a robust sample size and comprehensive analyses. However, potential weaknesses include the lack of qualitative data and the absence of a temporal dimension in the cross-sectional study. Despite this, the results contribute valuable insights into cervical cancer awareness and screening behaviours, emphasizing the need for targeted interventions, particularly in the general urban population.

DISCUSSION:

This study compares cervical cancer awareness and screening practices between a hospital population (Group 1) and a general urban population (Group 2). Notable findings include demographic differences, with Group 1 being older and more educated. Group 1 also exhibited higher awareness, knowledge, and screening frequencies. The association between education level and awareness was significant in both populations, emphasizing education's role.

Several studies have explored cervical cancer awareness and screening behaviours across different populations. While our study focuses on a hospital population (Group 1) and a general urban population (Group 2), it's essential to contextualize our results within the broader landscape.

A meta-analysis by Salehiniya et al. (2021) examined data from various countries and found that awareness of cervical cancer was generally higher among urban populations compared to rural areas. However, disparities still exist within urban settings. Our study aligns with this trend, as Group 2 (the general urban population) demonstrated reasonably good awareness (80%) but room for improvement.⁵

The demographic differences observed in our study (Group 1 being older and more educated) echo findings from Devarapalli et al. (2018). They reported that older age groups tended to have better awareness due to increased exposure to health information over time.⁶ Educational status significantly influences awareness. Amado et al. (2022) highlighted that higher education levels correlated with better knowledge of cervical cancer risk factors and screening methods. Our study's educational disparities reinforce this pattern.⁷

Our findings regarding knowledge of screening methods resonate with Abugu et al. (2021).⁸ They emphasized the importance of educating women about specific screening techniques (such as PAP smears and HPV tests) to enhance early detection. Interestingly, Group 1 showed better knowledge of HPV testing (50%) compared to Group 2 (35%). This finding warrants further investigation and may indicate the influence of hospital-based education.

Annual screening remains the gold standard, as recommended by organizations like the American Cancer Society. However, our study reveals that both groups exhibit a preference for less frequent screening (every 3 or 5 years). Baral et al. (2020) emphasized the need to address misconceptions about screening intervals.⁹ Public health campaigns should stress the importance of regular screenings.

The higher rate of discussions with healthcare providers in Group 1 aligns with Omoyeni et al. (2022). They found that women who engaged in such discussions were more likely to undergo screenings.¹⁰ However, Group 2 (the general urban population) could benefit from increased interactions with healthcare providers to improve awareness and adherence. The higher screening frequency in Group 1 suggests the hospital setting's influence, urging tailored interventions for the general urban population. The association between satisfaction with healthcare information and screening history underscores the importance of effective communication.

The association between education level and cervical cancer awareness in both groups aligns with existing literature, emphasizing

the pivotal role of education in shaping health knowledge. Notably, the study demonstrates a significant gap in awareness and screening practices within the general urban population, signaling the need for targeted interventions to address these disparities.⁶

Salehiniya et al. (2021) and colleagues conducted a comprehensive meta-analysis across various countries. Their findings revealed that awareness of cervical cancer was generally higher among urban populations compared to rural areas. However, even within urban settings, disparities persisted. Our study aligns with this trend, as Group 2 (the general urban population) demonstrated reasonably good awareness (80%), but there is room for improvement.⁵

Devarapalli et al. (2018) study explored the impact of age on cervical cancer awareness. They reported that older age groups tended to have better awareness due to increased exposure to health information over time. Our study's demographic differences (Group 1 being older) echo this finding.⁶ Amado et al. (2022) emphasized the role of education in cervical cancer knowledge. Higher education levels correlated with a better understanding of risk factors and screening methods.⁷ Our study's educational disparities reinforce this pattern.

Abugu et al. (2021) study highlighted the importance of educating women about specific screening techniques. Our findings regarding knowledge of screening methods resonate with their work. Notably, Group 1 showed better knowledge of HPV testing (50%) compared to Group 2 (35%).⁸ Baral et al. (2020) and the team emphasized the need to address misconceptions about screening intervals. Our study reveals that both groups exhibit a preference for less frequent screening (every 3 or 5 years).⁹ Public health campaigns should stress the importance of regular screenings.

Omoyeni et al. (2022) study found that women who engaged in discussions with healthcare providers were more likely to undergo screenings. The higher rate of discussions with healthcare providers in Group 1 aligns with this finding.¹⁰ The findings indicate that satisfaction with healthcare provider information is linked to screening history in both populations, emphasizing the importance of effective communication between healthcare providers and patients. The higher satisfaction and screening rates in the hospital population underscore the potential impact of healthcare settings on patient engagement and health outcomes.¹¹

While the study provides valuable insights, limitations such as the lack of qualitative data and the cross-sectional design necessitate caution in drawing causal relationships. Future research could benefit from incorporating qualitative methods to explore nuanced factors influencing awareness and screening practices over time.

Our study is cross-sectional, limiting causal inferences. Longitudinal studies could explore changes in awareness and behaviour over time. Future research should delve into cultural factors, socioeconomic disparities, and access to healthcare facilities. Tailored interventions, including community-based awareness campaigns and provider training, can bridge gaps identified in our study.

CONCLUSION:

Cervical cancer poses a significant global health challenge, ranking as the fourth most prevalent cancer in women. This study aimed to evaluate cervical cancer awareness and screening practices in a hospital population compared to a general urban population, shedding light on crucial factors influencing knowledge and behaviours. The study's strengths include a robust sample size and comprehensive analyses, providing valuable insights into cervical cancer awareness and screening behaviours.

However, limitations, such as the absence of qualitative data and the cross-sectional design, highlight the need for cautious interpretation and suggest avenues for future research.

The study's findings contribute to the existing literature, emphasizing the importance of tailored interventions to address disparities in cervical cancer awareness and screening practices.

Targeted public health campaigns, community-based awareness initiatives, and healthcare provider training are recommended to bridge identified gaps, in urban and particularly in rural communities as they lack knowledge and even access.

The results underscore the dynamic interplay of demographic factors, education, and healthcare settings in shaping cervical cancer awareness and screening behaviours.

While this study enriches our understanding of cervical cancer awareness, the need for further research with a longitudinal perspective and qualitative exploration is evident. Collaboration among researchers and the continuous building upon these findings will contribute to more effective public health strategies, ultimately improving outcomes related to cervical cancer prevention and control.

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Ethical Approval :

This study is approved by the institutional ethical committee.

Author Contributions:

Dr. Jannu Shree Sudhish designed the concept of this article , collected data , conducted the literature search and wrote the initial draft of the article.

Dr. Vijayalakshmi Gnanasekaran and Dr. P.S. Jikki Kalaiselvi conducted revisions to the manuscript.

Conflict Of Interest :

The authors declare there is no conflict of interest in publication of this article.

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