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Original Research Article

Awareness about cervical cancer screening and prevention among women attending tertiary care centre

Shubhi Joshi, Ruchi Kalra*

Department of Obstetrics and Gynaecology, People's College of Medical Sciences and Research Centre, Bhopal, MP, India

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***Correspondence:**
Dr. Ruchi Kalra,
E-mail: drruchi.kalra15@gmail.com

ABSTRACT

Background: Cervical cancer is the fourth leading cause of cancer-related deaths worldwide, with India accounting for the highest number of deaths. Cervical cancer screening is crucial for detecting abnormal cervical cells at the pre-invasive stage, also known as cervical pre-cancer. Early detection enables timely treatment, preventing the progression to cervical cancer. Two primary screening methods are employed: high-risk human papillomavirus (HR HPV) DNA testing and the Papanicolaou (Pap) smear. To assess awareness about cervical cancer screening and prevention among women attending outpatient departments at the tertiary care centre, Bhopal.
Methods: This present study employed a cross-sectional design to investigate cervical cancer awareness among 100 female patients aged 20 years and above attending G-OPD at People Medical College Hospitals and Research Centre from January 2024 to June 2024. Participants were selected using a multistage sampling technique to ensure representation and a pre-tested, self-administered questionnaire was employed.
Results: The majority of participants (61%) were aged 20-40 years. Awareness about PAP smear testing was low, with 53% unaware in the 20-40 age group. Knowledge about cervical cancer risk factors was alarmingly low, with 57% unaware in the 20-40 age group. HPV vaccine awareness was also limited, with 57% unaware in the 20-40 age group.
Conclusions: The study reveals a concerning lack of awareness about cervical cancer screening, risk factors and HPV vaccination. Targeted education and awareness campaigns are necessary to promote cervical cancer prevention and early detection.

Keywords: Awareness, Cervical cancer, HPV vaccine, Prevention, Screening

INTRODUCTION

Cervical cancer ranks as the fourth most prevalent cancer affecting women globally. In India, the five most common cancers among women are breast, cervical, oral cavity, lung and colorectal cancer. Alarmingly, India accounts for the highest number of cervical cancer-related deaths worldwide. Cervical cancer is the leading cancer and leading cause of cancer mortality in India, accounting for 23.3% of all cancer deaths in women.[1] However, there is hope for improved outcomes. The prevalence and burden of cervical cancer are much higher among women of low socioeconomic status (SES), as well as among rural women in India.[2,3] Unlike developed countries, cervical cancer prevention programs have failed to meet their objectives in developing countries due to financial, social and logistical problems.[4,5]

Cancers with significant public health implications, including breast, oral, cervical, gastric, lung and colorectal cancer, can be effectively cured if detected early and treated adequately, emphasising the importance of timely diagnosis and quality healthcare.[6] Cervical cancer is primarily caused by persistent infections with the sexually transmitted human papillomavirus (HPV).[7] In fact, HPV is responsible for 90-100% of cervical cancer cases in

women, particularly those under 35 years old. HPV is the most common viral infection affecting the female reproductive system and its prevalence is alarming. The majority of sexually active women and men will contract HPV at some point in their lives, with some experiencing multiple infections.[8]

Cervical cancer screening is crucial for detecting abnormal cervical cells at the pre-invasive stage, also known as cervical pre-cancer. Early detection enables timely treatment, preventing the progression to cervical cancer. Two primary screening methods are employed: high-risk human papillomavirus (HR HPV) DNA testing and the Papanicolaou (Pap) smear. Both tests involve collecting exfoliated cervical cells from the cervix's surface using a brush inserted into the vagina.[9]

The American Cancer Society recommends cervical cancer screening starting at age 25, with primary HPV testing every 5 years until age 65. Alternatively, women can opt for co-testing (HPV and cytology) every 5 years or cytology alone every 3 years.[10] Despite these guidelines, knowledge and awareness of cervical cancer, screening and vaccination remain disconcertingly low in India. This significant gap necessitated the present study to assess the current awareness and understanding among Indian women. There is a pressing need to understand the level of awareness and attitudes toward cervical cancer screening and prevention among women attending outpatient departments at the tertiary care centre. Hence, the present study assessed the knowledge and attitudes toward cervical cancer screening and prevention among women attending outpatient departments at the tertiary care centre.

METHODS

This present study employed a cross-sectional design to investigate cervical cancer awareness among 100 female patients aged 20 years and above attending G-OPD at People Medical College Hospitals and Research Centre from January 2024 to January 2025. Participants were selected using a multistage sampling technique to ensure representation.

To ensure the reliability and validity of the questionnaire, a pre-test was conducted prior to the actual data collection. Thirty participants, sharing similar characteristics with the study population but excluded from the final sample, took part in the pre-test. The internal consistency of the questionnaire was evaluated using Cronbach's Alpha coefficient. The reliability coefficient yielded a value of 0.72, indicating that the instrument is reliable and suitable for the study.

Informed consent was obtained from the participants at the time of completing a questionnaire, Study participants completed a self-administered, anonymous questionnaire (Figure 1). Research assistants collected the completed surveys, ensuring confidentiality.

Ethical consideration

Research ethics approval was obtained from the Institutional Ethics Committee. A written informed consent was obtained from all selected participants after a thorough explanation of the research information. Confidentiality of each participant was ensured by the exclusion of their names and other confidential details when participating in the study.

Statistical analysis

Data management involved entering and analysing the collected data using SPSS software (version 20, IBM, Chicago, IL). To ensure accuracy, the entered data were checked for completeness. Any incomplete data were excluded from the computation.

RESULTS

The age-wise distribution of the 100 participants revealed that most (61%) were between 20-40 years old, followed by 34% in the 41-50 years age group. A smaller percentage (5%) of participants were aged 51-65 years (Table 1).

Table 1: Cervical cancer awareness questionnaire.

Section
Section 1: General knowledge
1. Have you ever heard of cervical cancer? Yes / No
2. At what age should women generally start getting regular cervical cancer screenings (Pap tests)?
3. How often should women typically have a Pap test, assuming normal results?
4. True or False: Cervical cancer is mainly caused by the human papillomavirus (HPV).
Section 2: Risk factors and symptoms
1. What are some risk factors for developing cervical cancer?
2. What is the purpose of a Pap test?
3. True or False: A Pap test can diagnose cervical cancer.
4. What are some common symptoms of cervical cancer?
Section 3: HPV vaccine awareness
1. Have you heard about the HPV (human papillomavirus) vaccine? Yes / No
2. What is the HPV vaccine used for?
3. At what age is the HPV vaccine recommended for girls/women?
4. How many doses of the HPV vaccine are typically recommended?
5. True or False: The HPV vaccine can prevent cervical cancer.
6. True or False: The HPV vaccine provides protection against all types of HPV.

Awareness about the need for PAP Smear Testing

The awareness level of the need for PAP smear testing varied across different age groups. Among women aged 20-40 years, 53% were unaware of PAP smear testing, while only 8% were aware. In the 41-50 years of age group, 29% were unaware and 5% were aware. The oldest age group, 51-65 years, showed a similar trend, with 4% unaware and 1% aware (Table 2). The results were found to be statistically significant. (Chi square test, p value <0.05).

Knowledge about risk factors of cervical cancer

Knowledge about cervical cancer risk factors was alarmingly low. In the 20-40 years age group, 57% of women were unaware of the risk factors, while only 4% were aware. The 41-50 year age group showed a complete lack of awareness, with 34% of women unaware and none aware. The 51-65 years age group had 4% unaware and 1% aware (Table 3). The results were found to be statistically significant. (Chi square test, p value<0.05)

HPV vaccine awareness

HPV vaccine awareness was also found to be limited. Among women aged 20-40 years, 57% were unaware of the HPV vaccine, while 4% were aware. In the 41-50 years age group, all 34% of women were unaware of the vaccine. The 51-65 years age group showed a similar pattern, with 4% unaware and 1% aware (Table 4).

The results were found to be statistically significant. (Chi square test, p value<0.05).

Table 2: Age-wise distribution.

Age (in years)	No. of participants (100)	%
20-40	61	61.00
41-50	34	34.00
51-65	5	5.00

Table 3: Awareness about need for PAP smear testing.

Age (in years)	Not aware of need for PAP smear testing	Aware of need for PAP smear testing	Chi square	P value
20-40	53	8	33.19	<0.0001*
41-50	29	5	16.94	0.000*
51-65	4	1	1.8	0.179

P value considered significant if p<0.05*.

Table 4: Knowledge about risk factors of cervical cancer.

Age (in years)	Not aware of the risk factors of cervical cancer	Aware of the risk factors of cervical cancer	Chi square	P value
20-40	57	4	46.04	<0.0001*
41-50	34	0	43.00	<0.0001*
51-65	4	1	1.8	0.179

P value considered significant if p<0.05*.

Table 5: HPV vaccine awareness.

Age (in years)	Not aware of HPV Vaccine	HPV Vaccine Awareness	Chi square	P value
20-40	57	4	46.04	<0.0001*
41-50	34	0	43.00	<0.0001*
51-65	4	1	1.8	0.179

P value considered significant if p<0.05*.

DISCUSSION

The findings of this study highlight significant gaps in awareness about cervical cancer screening and prevention. The low level of awareness about the need for PAP smear testing, knowledge of cervical cancer risk factors and HPV vaccine among Indian women is particularly concerning, given the critical role these play in preventing cervical cancer. Factors contributing to this lack of awareness may include limited access to healthcare, inadequate health education and socioeconomic barriers. The present study found that the awareness level of PAP smear testing varied across different age groups. Among women aged 20-40 years, 53% were unaware of PAP

smear testing, while only 8% were aware. In the 41-50 years age group, 29% were unaware and 5% were aware. The oldest age group, 51-65 years, showed a similar trend, with 4% unaware and 1% aware. Our results are in concordance with the study conducted by Manikandan et al, that revealed a significant knowledge gap regarding PAP smear testing. Specifically, 97.96% (96) of respondents were unaware, while merely 2.04% (2) reported some awareness (p=0.073). This striking disparity underscores the need for targeted education and awareness initiatives.[6]

The present study found that knowledge about cervical cancer risk factors was alarmingly low. In the 20-40 years age group, 57% of women were unaware of the risk factors, while only 4% were aware. The 41-50 years age group showed a complete lack of awareness, with 34% women unaware and none aware. The 51-65 years age group had 4% unaware and 1% aware. Similarly, in the study by Aswathy S et al, majority of respondents (89.2%) did not know any risk factor for cervical cancer.[11] Likewise, a study by Siddharthar et al, demonstrated limited awareness of critical risk factors and preventive measures.[12] Only 6.5% were aware of HPV infection as a risk factor and a mere 2.8% knew about HPV vaccination. However, a study in China by Hong et al, reported higher awareness levels, with 22.1% familiar with HPV and 13.3% aware of HPV vaccination.[13] Further, in contrast to our study, study conducted by Ogundipe et al, among Nigerian women reported better knowledge about causes of cervical cancer in which about two-thirds (60.5%) of the participants knew the causes of cervical cancer, while less than half of the participants (47.5%) admitted that Human Papilloma Virus (HPV) is a sexually transmitted virus that can cause cervical cancer.[14] More than 54% (109) of the workers admitted knowing that cervical cancer is preventable through the use of HPV vaccines, while less than one-third of the participants (29.5%) admitted that cervical cancer is only common among older women above the age of 35.

This significant knowledge gap highlights the urgency for comprehensive education and awareness campaigns. Healthcare providers should prioritize counselling patients on cervical cancer risk factors and community-based programs should focus on empowering women with accurate information.

The present study found that HPV vaccine awareness was also found to be limited. Among women aged 20-40 years, 57% were unaware of the HPV vaccine, while 4% were aware. In the 41-50 years age group, all 34% women were unaware of the vaccine. The 51-65 years age group showed a similar pattern, with 4% unaware and 1% aware. Similar to our study, Manikandan et al, revealed a significant lack of awareness regarding the HPV vaccine with specifically, 97.96% (96) of respondents were unaware, while merely 2.04% (2) reported some awareness (p=0.012).[1] The low HPV vaccine awareness levels emphasize the need for targeted interventions, particularly among younger women. Public health campaigns and healthcare provider education should prioritize promoting HPV vaccine awareness, addressing misconceptions and increasing vaccine uptake.

Studies have identified key factors influencing cervical cancer screening uptake. A study by Lyimo et al, women's knowledge about cervical cancer, accessibility to screening facilities and husband's approval significantly impacted their screening status.[15] Similarly, another study by Siddhartha et al, revealed that lack of awareness about screening services, absence of symptoms and fear of the procedure deterred women from undergoing screening.[12]

The study's results are consistent with previous research highlighting the need for improved cervical cancer awareness and education. To address this, healthcare providers, policymakers and community leaders must collaborate to develop and implement effective education and awareness programs. Strategies may include community outreach, healthcare provider training and school-based education.

Further research is necessary to explore the underlying causes of this knowledge gap and to develop evidence-based interventions to improve cervical cancer awareness and prevention. By prioritising education and awareness among women about Pap's smear screening, knowledge of risk factors and prevention by vaccination, we can reduce the burden of this preventable disease and promote women's health.

CONCLUSION

The study reveals a concerning lack of awareness about cervical cancer screening, risk factors and HPV vaccination among the participants. The majority of women aged 20-65 years were unaware of PAP smear testing, cervical cancer risk factors and the HPV vaccine. This alarming gap in knowledge underscores the need for targeted education and awareness campaigns to promote cervical cancer prevention and early detection. By addressing this knowledge deficit, we can empower women to take charge of their health and reduce the incidence of cervical cancer.

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