



A study on awareness, knowledge and attitude towards cervical cancer and its prevention among women having cervical abnormalities in Lucknow, India

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Abstract

Cervical cancer ranks as the fourth most common cancer among women worldwide. Due to the scarcity of literature on the knowledge, attitudes, and practices (KAP) regarding cervical cancer and screening among Indian women, a study was carried out to address this gap in information. A cross-sectional study involved 110 women aged 18 to 45 years with cervical abnormalities in the Lucknow region. Conducted at the Integral Institute of Medical Sciences and Research, Lucknow, the study spanned from March 2021 to October 2023. Information was gathered using a pretested semi-structured interview schedule after verbal-informed consent from the participants. A total of 110 women participated in the study. All the patients were married and had come to the OPD with certain complaints involving vaginal discharge, post-coital bleeding, pain in lower abdomen, etc. The mean age group of the study population was 57.2. In this study, Only 63 (57.2%) participants were aware of cervical cancer. The remaining 47 (42.8%) had never heard of cervical cancer. This study's findings indicate that an individual's perception of their vulnerability to cervical cancer can influence their screening behavior. Introducing HPV-based screening worldwide is a crucial step toward achieving the global goal of eliminating cervical cancer, potentially saving thousands of women's lives globally.

Keywords: Cervical cancer, Vaginal discharge, Post-coital bleeding.

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1. Introduction

Cervical cancer is a significant global health issue, ranking as the fourth most common cancer among women worldwide. The estimated number of new cases and deaths in 2020 were 604 000 and 342 000 respectively, which reflects the substantial impact of this disease on women's health. The disparity in cervical cancer rates between low- and middle-income countries compared to high-income countries largely stems from inequities in access to vital healthcare services and resources such as Limited Access to Vaccination, Lack of Screening Programs, Limited Treatment Facilities and Social and Economic Factors [1]. In India, cervical cancer made up 9.4% of all cancer cases and constituted 18.3% (123,907) of new cancer cases in 2020. It remains one of the more prevalent cancers in the country and continues to be a primary cause of cancer-related deaths. In settings with limited resources, a poor prognosis often occurs because of late diagnoses. This happens globally, where women present with advanced stages of cervical cancer caused by the Human Papilloma Virus (HPV) and lack access to treatment facilities [2].

1.1. HPV and cervical cancer

Human papillomavirus (HPV) is the most prevalent viral infection affecting the reproductive tract and ranks among the most widespread causes of sexually transmitted infections worldwide. More than 70% of sexually active individuals, both women and men, will encounter HPV at some stage in their lives, and some might even experience multiple infections (GLOBOCAN 2012). The highest likelihood of acquiring HPV infection occurs shortly after becoming sexually active. HPV infects the epithelial cells of mucous membranes and skin, leading to various clinical conditions. These can range from harmless lesions to cancer. The majority of these infections are non-cancerous, resulting in benign growths like warts on the hands, feet, and anogenital areas [3]. HPV is a DNA virus with a genome spanning 6800-8000 base pairs, encompassing eight genes that play roles in both early (E) and late (L) stages of its life cycle. Among these genes, E6 and E7 encode proteins with oncogenic properties crucial for the malignant transformation of cervical squamous epithelial cells [4].

1.2. Screening of cervical cancer by HPV testing

Traditionally, cervical cancer screening relied on identifying abnormal cervical cell samples through cytology-based methods. In certain low-resource settings, visual inspection using acetic acid is utilized for screening. However, this method shows significant variability among observers and has limited sensitivity. HPV DNA testing has emerged as a highly effective alternative for cervical cancer screening. It can be conducted on self-collected specimens, eliminating the necessity for an initial gynecological exam [5]. Human papillomavirus testing is recommended for its superior sensitivity in initial screenings compared to cytology. It detects more than 60% to 70% of invasive cervical carcinoma cases, surpassing the detection rates of cytology-based screening. However, if primary HPV testing is not accessible, cytology alone remains an acceptable alternative. Immunocompromised women should initiate screening within one year of their first sexual intercourse. Screening should occur every 6 to 12 months. For women under 25, cytology is recommended, while those over 25 should undergo HPV testing. Management strategies should account for the elevated risk of developing HSIL+ (high-grade squamous intraepithelial lesion or higher) [6].

1.3. Vaccination of women against cervical cancer

Cervical cancer can be prevented and cured when detected early and managed effectively. In August 2020, the World Health Assembly endorsed the Global Strategy for the elimination of cervical cancer. To achieve this objective, three main pillars and their respective targets are outlined:

1. Vaccination: Ensure 90% of girls receive full HPV vaccination by age 15.
2. Screening: Aim to screen 70% of women using high-performance tests by age 35 and again by age 45.
3. Treatment: Treat 90% of women diagnosed with pre-cancer and effectively manage 90% of women diagnosed with invasive cancer [7].

There are three main commercially available vaccines: the bivalent, quadrivalent, and nonavalent vaccines. The quadrivalent vaccine guards against four HPV types (6, 11, 16, and 18), while the bivalent vaccine protects against two types, 16 and 18. A nonavalent (nine-valent) vaccine shields against five additional HPV types—31, 33, 45, 52, and 58—beyond the types covered in the quadrivalent vaccine [8]. In India, two HPV vaccines were licensed in 2008: the quadrivalent vaccine (Gardasil™) and the bivalent vaccine (Cervarix™). Both vaccines utilize virus-like particles (VLPs) derived from HPV surface components. These VLPs prompt the production of antibodies that coat the virus, preventing it from releasing its genetic material in case of infection. Both vaccines offer substantial protection against HPV-related cancers, providing approximately 90% protection against cervical cancer. The antibodies generated by these vaccines remain stable for at least 10 years. In July 2022, the Drugs Controller General of India (DCGI) approved an indigenous quadrivalent vaccine created by the Serum Institute of India. This new quadrivalent vaccine will be accessible for both females and males. It's estimated to cost between INR 200 to 400 per dose, indicating potential for widespread coverage among the younger population due to its affordability [9].

1.4. Awareness, knowledge and willingness towards cervical cancer and its vaccination

Cervical cancer can be effectively treated when detected in Stages I and II, yet it often exhibits no symptoms during these stages. In India, cultural taboos surrounding the topic prevent open discussion about cervical cancer. There's an urgent necessity to educate Indian women about cervical cancer and its early detection measures to address this issue [10]. In developed countries, 68%-84% of women undergo Pap smear screening, while in India, this figure is only 2.6%-5%. This stark contrast contributes significantly to the diagnosis of patients at advanced stages in India. Awareness and early screening play pivotal roles in preventing cervical cancer. However, in India, lack of awareness, negative attitudes, and poor practices regarding cervical cancer, screening, and preventive methods are primary factors leading to increased disease incidence. Despite dedicated cancer control programs, screening effectiveness hasn't reduced the disease burden. Studies reveal that while women exhibit favorable attitudes towards cervical cancer, their actual uptake of screening practices remains low due to social stigma. Cervical cancer ranks as the fourth most common cancer among women worldwide. Due to the scarcity of literature on the knowledge, attitudes, and practices (KAP) regarding cervical cancer and screening among Indian women, a study was carried out to address this gap in information. Its findings offer insights into current awareness, attitudes, and practices surrounding cervical cancer and screening. This information can guide the development of population-based educational programs aimed at enhancing knowledge about cervical cancer and its screening methods [11].

2. Methodology

A cross-sectional study involved 110 women aged 18 to 45 years with cervical abnormalities in the Lucknow region. Conducted at the Integral Institute of Medical Sciences and Research, Lucknow, the study spanned from March 2021 to October 2023. Information was gathered using a pretested semi-structured interview schedule after verbal-informed consent from the participants. The interview schedule encompassed details regarding socio-demographic variables (such as age, education, Literacy, background, occupation), gynecological history (including age of marriage, number of living children, and number of unsuccessful pregnancies), as well as an assessment of the participant's awareness regarding risk factors, signs and symptoms of cervical cancer, its detection methods, screening, vaccination, and preventive measures.

2.1. Inclusion criteria

All female patients of reproductive age group 18-45 years who were married and willing to participate were included in the study.

2.2. Exclusion criteria

The patients who were pregnant or unmarried and refused to give consent to participate in this study.

3. Results

A total of 110 women participated in the study. All the patients were married and had come to the OPD with certain complaints involving vaginal discharge, post coital bleeding,

pain in lower abdomen, etc. The mean age group of the study population was 57.2. Among the participants, 84 (76%) fell within the 20-30 age group, 24 (22%) were in the 30-40 age range, while only 2 (2%) individuals belonged to the 40-50 age bracket as shown in figure 1. Table 1 shows that majority of the patients were of rural localities having literacy of 39% among total literacy rate of 74.5%. The socio-economic status of majority of the patients were middle class. The average number of children borne by the study participants was 1.3 where majority of the patients were having single child. 20 (18%) patients had a history of abortion or miscarriage. 27 (24.5%) of the women in the study were working as housemaids or laborers.

3.1. Awareness on knowledge about cervical cancer, it's risk factors, screening methods and vaccination

In this study, Only 63 (57.2%) participants were aware of cervical cancer. The remaining 47 (42.8%) had never heard of cervical cancer. Among 63 women, 56 (88.8%) women considered cervical cancer as fatal disease, whereas only 7 (11.1%) women reported cervical cancer as curable. Out of 110 women, only 43 (39%) were aware of the risk factors associated with cervical cancer. Among these women, the most commonly known risk factor was bleeding, recognized by 17 out of 43 (39.5%). Other mentioned risk factors included the use of oral contraceptives by 11 out of 43 (25.5%), poor hygiene by 9 (21%), and having multiple sexual partners by 6 (14%). The majority of women in this study were unaware of cervical cancer screening methods, However 23 (20.9%) women had knowledge about cervical screening methods. Only 11 (10%) had heard about the PAP smear before, and among them, only 4 (3.6%) had undergone the test prior to their hospital visit. Additionally, 4% of women mentioned colposcopy, while 6% cited ultrasound, Magnetic Resonance Imaging (MRI), and Biopsy as screening methods for diagnosing cervical cancer. Among total 110 women, only 5.45% women have ever study heard about cervical cancer vaccination.

4. Discussion

Insufficient screening programs and therapeutic interventions are key factors contributing to a significant increase in cervical cancer incidences in developing countries compared to developed ones. In the Indian epidemiological context, cervical cancer is considered the second most common cancer among females aged 15-44 years [12]. This prospective cross-sectional study was conducted among women aged between 20-50 years to assess the levels of knowledge, awareness, and attitudes regarding cervical cancer. This data aims to facilitate the implementation of effective awareness campaigns and educational interventions for prevention of cervical cancer. Our study findings indicated a low level of knowledge among women primarily residing in rural areas. This study discovered that only an average of 33.7% (as per figure 2) had knowledge about cervical cancer, its risk factors, and diagnosis. This signifies an alarming need to enhance awareness among women. The majority of women were young and sexually active, aged between 20 and 30 years. They belonged to rural communities characterized by low literacy rates and socio-

economic status. In this study, 88% women were monoparous or multiparous, and 18% of total study participants had history of abortion or miscarriage in their lives. Among the 63% of women who had heard of cervical cancer in our study, only 7 (11.1%) knew that cervical cancer is curable. A concerning point was that merely 5.45%—equivalent to 6 women—were aware of cervical cancer vaccination, indicating a low level of education regarding cervical cancer vaccination. The current necessity is to educate women about cervical cancer, its signs and symptoms, the importance of regular screening, and vaccination. Similar studies found that in a study conducted by Reichheld et al in 2020, it was discovered that only 7.1% of the participants had undergone cervical cancer screening at least once in their lifetime. Nearly 85% of the 175 surveyed women exhibited poor knowledge about cervical cancer, and less than 25% were aware of its symptoms, risk factors, or preventive measures [13]. In a study conducted by Nigar A in 2017, the majority of women belonged to the 26-35 age group (47%). A significant proportion of these women were illiterate (77%), and 81.5% hailed from rural areas [14]. A separate study conducted by Roy B et al reported poor knowledge (84%) about cervical cancer and its screening among women who attended hospitals [15]. The global cancer burden is projected to rise to nearly 27 million new cases by 2040 from an estimated 18.1 million cases in 2018. This increase is primarily driven by factors like population growth, aging, and changes in risk factor prevalence, especially in countries with lower and medium Human Development Index (HDI). To address this challenge, the World Health Assembly (WHA) urges governments and the World Health Organization (WHO) to accelerate efforts toward ensuring healthy lives and promoting overall well-being. By 2030, these collective prevention strategies aim to reduce premature deaths from non-communicable diseases, including cancer, by one-third [16]. Introducing HPV-based screening worldwide is a crucial step toward achieving the global goal of eliminating cervical cancer, potentially saving thousands of women's lives globally. Performing HPV testing on self-collected specimens eliminates the necessity for an initial gynecological exam [5]. Numerous studies have compared awareness levels about cervical cancer and HPV between urban and rural settings. Despite the introduction of the National Cancer Control Programme in India, participants' comprehension of cervical cancer remained limited [17]. In a study by Kadian et al, it was observed that compared to urban areas, most women in rural settings had less knowledge about cervical cancer. Their limited understanding stemmed from sources like college education, acquaintances, neighbors, family, and medical professionals such as doctors [18]. Despite the existence of several preventive methods like vaccines and screening programs, cervical cancer is still considered the most fatal malignancy among females. Recurrent and metastatic clinical presentations of the disease are the primary causes of fatalities related to cervical cancer [19]. Currently, there exist several cost-effective and scientifically supported prevention and control measures tailored to address the requirements of regions with diverse economic statuses.

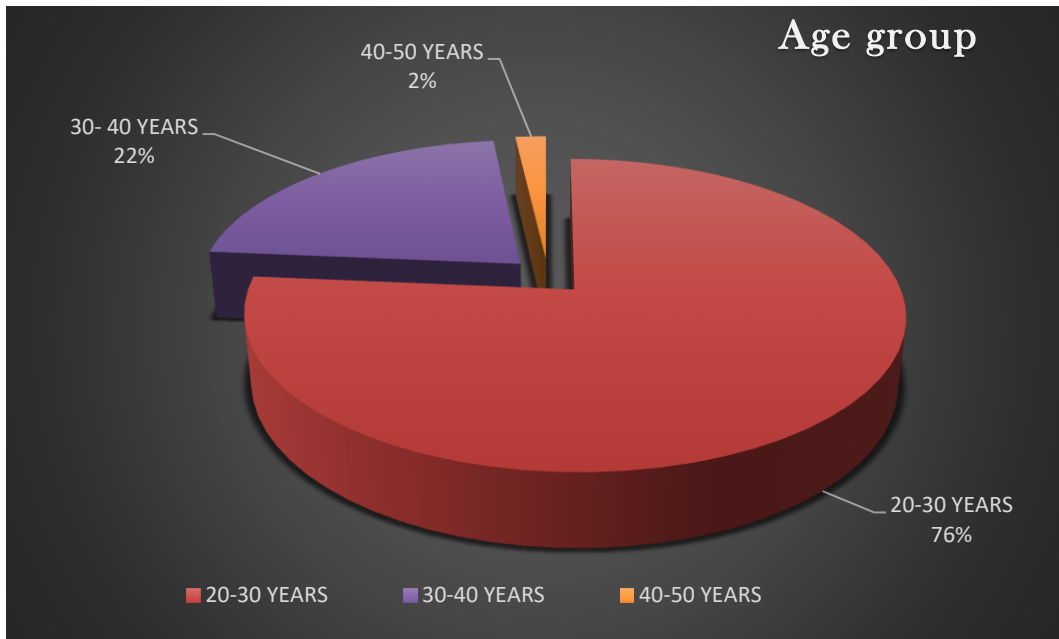


Figure 1: Age-wise distribution of Patients

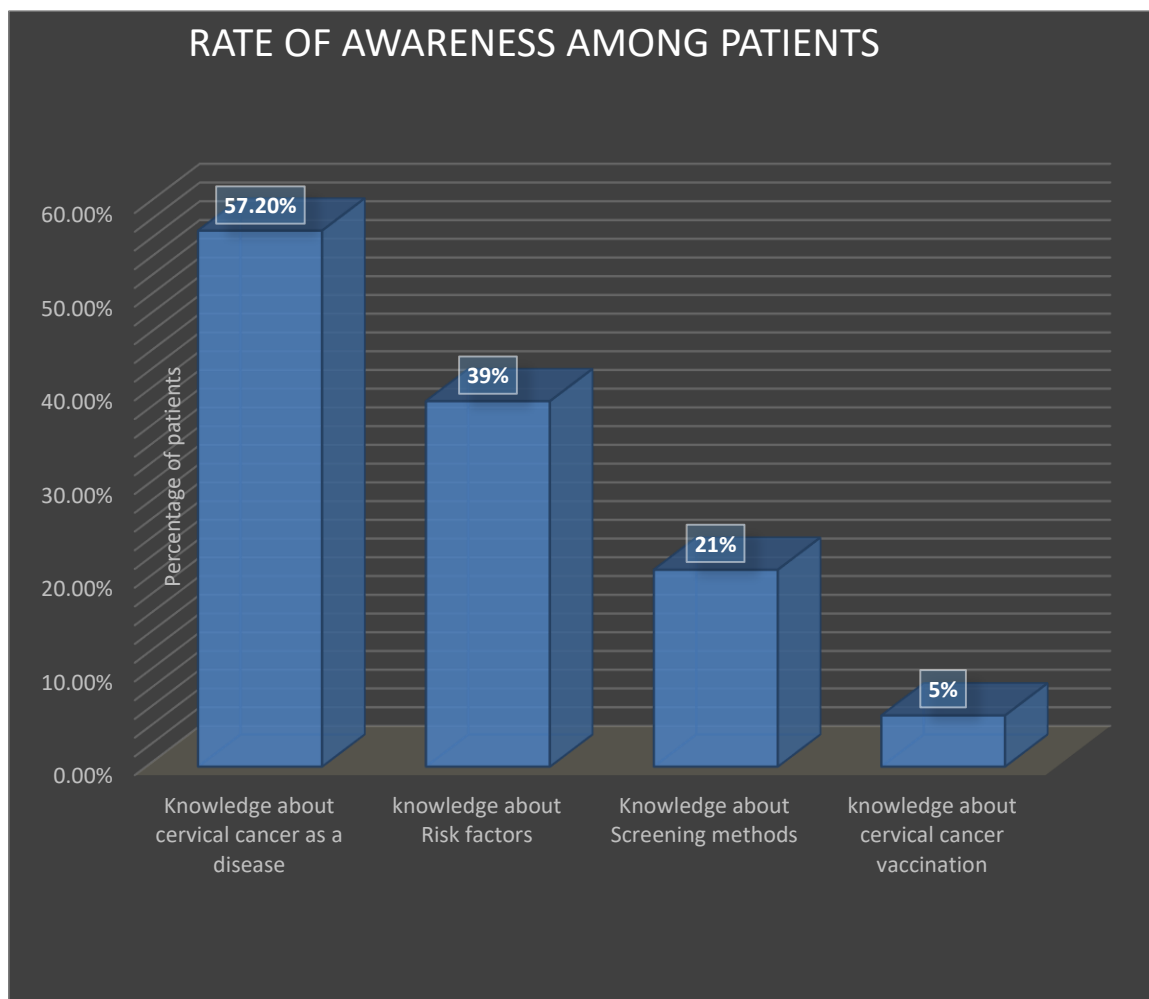


Figure 2: Figure showing rate of awareness on cervical cancer, It's risk factors, screening methods and vaccination among women in the study

Table 1: The socio-demographic characteristics of the women involved in the study.

S.No	Group	Class	No. of Patients	Percentage
1.	Literacy	Literate	82	74.5%
		Illiterate	28	25.5%
2.	No. of Children	Nil	13	11.8%
		1	52	47.2%
		2	38	34.5%
		>2	07	6.3%
3.	H/o Abortion	Nil	90	81.8%
		1	15	13.6%
		2 or >2	5	4.5%
4.	Socio-economic status	Lower	30	27.2%
		Middle	67	60.9%
		Upper	13	11.8%
5.	Locality	Rural	81	73.6%
		Urban	29	26.4%
6.	Occupation	Others	27	24.5%
		House-wife	83	75.4%

It's promising to acknowledge that there's a global consensus on the goal of eliminating cervical cancer. Furthermore, a global strategy has been formulated and released to expedite the elimination of cervical cancer. The widespread and continuous promotion along with the extensive utilization of existing effective prevention and control measures are believed to make cervical cancer the first cancer eliminated by humans [20].

5. Conclusions

This study's findings indicate that an individual's perception of their vulnerability to cervical cancer can influence their screening behavior. Early detection through regular screenings is crucial for preventing cervical cancer or catching it early when it's more treatable. Seeking guidance and recommendations from healthcare professionals is highly advisable. Educating people about cervical cancer and its prevention can play a significant role in eliminating it worldwide. When individuals are informed about the importance of vaccinations, regular screenings, safe sex practices, and healthy lifestyle choices, they're empowered to take proactive steps in reducing their risk of cervical cancer. By spreading awareness, promoting preventive measures, and ensuring access to healthcare services globally, we can work towards a future where cervical cancer becomes a rare and preventable disease.

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Conflict of Interest

None

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