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CERVICAL CANCER PREVENTION KNOWLEDGE AND ATTITUDES AMONG FEMALE UNIVERSITY STUDENTS AND HOSPITAL STAFF IN IRAN: AN IN-DEPTH ANALYSIS

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Article Info

Keywords:

Cervical cancer prevention, knowledge, attitudes, female university students, hospital staff, Iran.

Abstract

Cervical cancer remains a global health challenge, with prevention through knowledge and positive attitudes playing a crucial role. This study presents an in-depth analysis of cervical cancer prevention knowledge and attitudes among female university students and hospital staff in Iran.

Cervical cancer is a preventable disease, primarily through vaccination against high-risk Human papillomaviruses (HPV) and regular screening, such as the Papanicolaou (PAP) test. However, the success of prevention strategies relies heavily on individuals' knowledge and attitudes towards these interventions.

In this study, a comprehensive survey was conducted among female university students and hospital staff in Iran, aiming to assess their knowledge of cervical cancer, its risk factors, screening methods, and vaccination. Additionally, attitudes towards preventive measures, including HPV vaccination and PAP testing, were explored.

The findings revealed a spectrum of knowledge levels among participants, with variations in awareness of risk factors and prevention methods. While some respondents demonstrated a solid understanding of cervical cancer prevention, others exhibited knowledge gaps, particularly concerning HPV vaccination. Attitudes towards preventive measures were generally positive, but barriers such as misconceptions, cultural factors, and access to healthcare services were identified as influencing factors.

This in-depth analysis sheds light on the strengths and weaknesses of cervical cancer prevention knowledge and attitudes among female university students and hospital staff in Iran. It underscores the importance of tailored educational interventions to bridge knowledge

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gaps, dispel misconceptions, and promote positive attitudes towards HPV vaccination and PAP testing.

Efforts to enhance awareness and foster a proactive approach to cervical cancer prevention are essential to reduce the burden of this disease in Iran. Public health initiatives should target both students and healthcare professionals, fostering a collective commitment to early detection and vaccination as cornerstones of cervical cancer prevention.

Introduction:

High-risk Human papillomaviruses (HPV) (spread through sexual contact), are implicated in almost all occurrences of cervical dysplasia and carcinogenesis (99%). Although the bulk of HPV infections are asymptomatic and heal on their own, persistent infections (lasting more than two years) can lead to Cervical cancer in females. Subtypes 16 and 18 of the 15 High-risk HPV subtypes are thought to be responsible for over 70% of all instances of Cervical cancer (Shah et al., 2012 & Khanna et al., 2019). The interaction of viral E6 and E7 proteins with tumor suppressor genes P53 & Rb is the mechanism by which HPV causes cervical dysplasia or carcinogenesis. Cervical epithelial cells undergo a malignant transformation when these genes are inhibited at various stages. After breast, colorectal, and lung cancer, Cervical cancer is the fourth most frequent malignancy among women. Worldwide, an estimated 311,000 women died from the condition in 2018, while an estimated 570,000 women were diagnosed with it (WHO, 2018). The age-standardized incidence of cervical cancer per 100,000 women (2020) in India is 18 and 13.1 globally. In 2018, China and India had more than a third of the world's cervical cancer burden. In 2018, there were 45,300 fatalities from cervical cancer in just India (WHO). According to a study by (Arbyn et al., 2018), the average age for cervical cancer diagnosis was 53 years, with a range of 44 to 68 years. Throughout the world, 59 years was the average age of death from cervical cancer.

A cohort's medical knowledge also plays an important factor in determining their attitude toward disease prevention and self-care. This knowledge helps in avoiding high-risk behaviors pertaining to the said disease. Cervical cancer disease load can be reduced by using primary (HPV vaccine) and secondary preventative strategies (screening and treatment of precancerous lesions). Vaccinated women must maintain screening procedures in accordance with published recommendations because vaccines do not offer protection against all subtypes of HPV. In India, less than 1 in 10 women have received a cervical cancer screening in the previous five years (WHO). As long as it is identified early and carefully handled, cervical cancer is one of the most successfully treatable types of cancer. Health promotion and disease prevention are very important in preventable cancers like Cervical cancer (Shah et al., 2012 & Obol et al., 2021). Seminars, handouts, social media outreach, dissemination of info by health professionals, and a national vaccination protocol for the HPV vaccine shall play a giant role in disease control. Therefore the aim of the study was to see if women healthcare professionals have knowledge and self-screening practices. It may help in disseminating awareness about cervical cancer and scaling up preventive health services. Women health professionals in India play crucial role in cervical cancer prevention as they can reach a wider community. Khanna et al., (2019) in Varanasi, India, and Obol et al., (2021) in Uganda did similar studies with similar results.

Methods:

Study area, design, and period

A descriptive, cross-sectional study was carried out in Kolkata, a metropolitan city of India from Sep 2022 to Feb 2023.

Study participants

The study was conducted amongst women health care professionals including doctors, dentists, nurses, lab workers, physiotherapists, psychologists, and geneticists of the age group 21-65 years.

Inclusion criteria

Informed e-consent from the women participating in the study

Exclusion criteria

Women who did not consent to be part of the study

Sample size

The sample size (n) was computed by single population proportion formula:

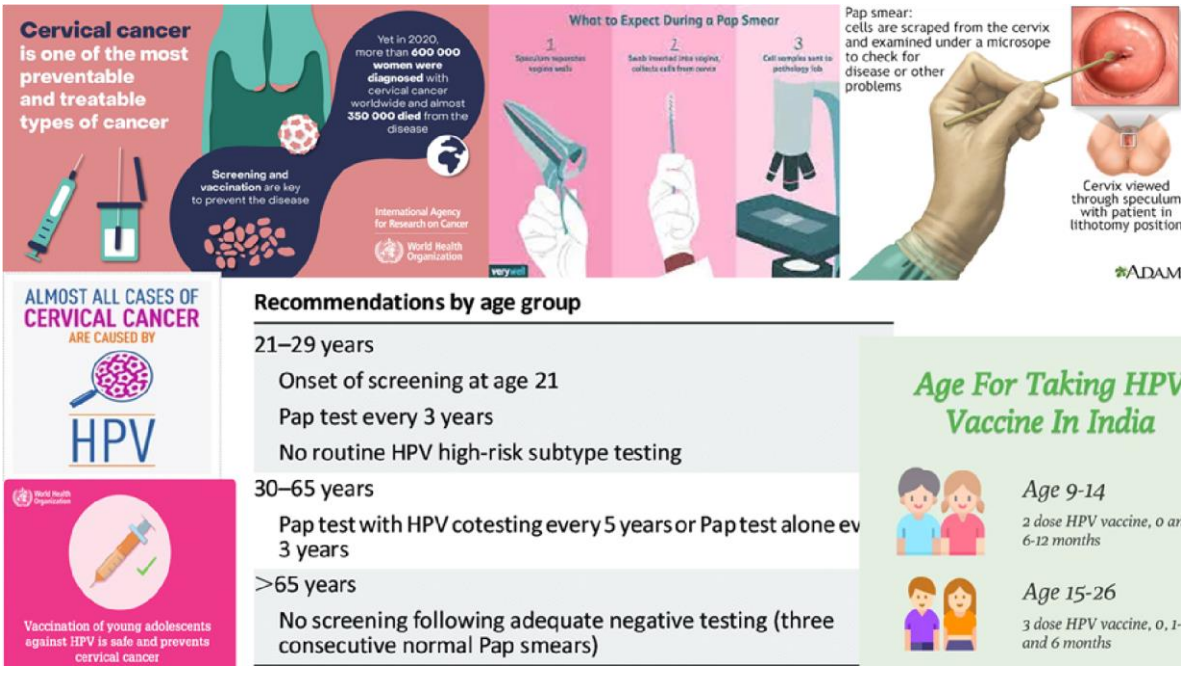
[n = [(zα/2) 2 × P (1-P)]/d2] by assuming 95% confidence level of zα/2 = 1.96, margin of error 10% and P = 50% proportion. It comes to 346. By adding a non-response rate of 10%, the final sample size was 381. Sampling technique

Administrative authorities of six purposively selected hospitals/institutes in and around Kolkata city (Command Hospital, College of Nursing, Base Hospital Barrackpore, Military Hospital Panagarh, Command Military Dental Centre, and IPGMER and SSKM Hospital) were contacted with study proposals for permission to conduct the said study. It was requested to share the nominal roll with mobile numbers and e-mail addresses of women health care professionals of respective institutes. After receiving the lists from all hospitals, a complete enumeration with mobile numbers and e-mail addresses of 381 study participants was prepared and it came out to be 352.

Study tool, data collection procedure, and study variables

A self-administered, semi-structured, predesigned, pretested validated questionnaire was used. The questionnaire was prepared in the English language after reviewing different literature(All participants were affluent in the English language). It was pretested on 10% (38) of the total sampled population who were not included in the study and necessary modification was done in the questionnaire. Cronbach's alpha was calculated to be 0.7. The questionnaire was sent to 352 enlisted participants, however only 282 completed responses were received.

Before sharing the questionnaire prior e-consent from the participants and a promise of anonymity was made for participating in the study. Each participant was sent an IEC pamphlet on Cancer Cervix screening and prevention after completing the questionnaire (Figure 1).



Operational definition

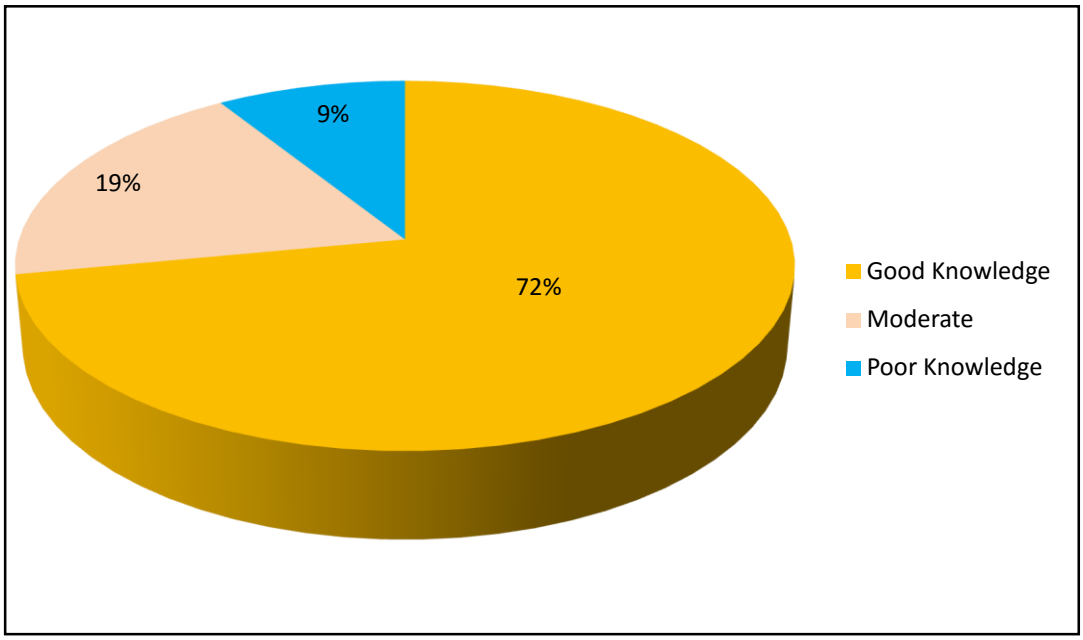
Knowledge: The knowledge of Cervical cancer screening was assessed using ten (10) questions with a maximum score of 10 and a minimum of 0. The overall knowledge was found, using Bloom's cut-off point.

Practice: The practice of Cervical cancer screening was assessed on two(02) questions whether participants had taken HPV vaccines and done PAP Smear or not.

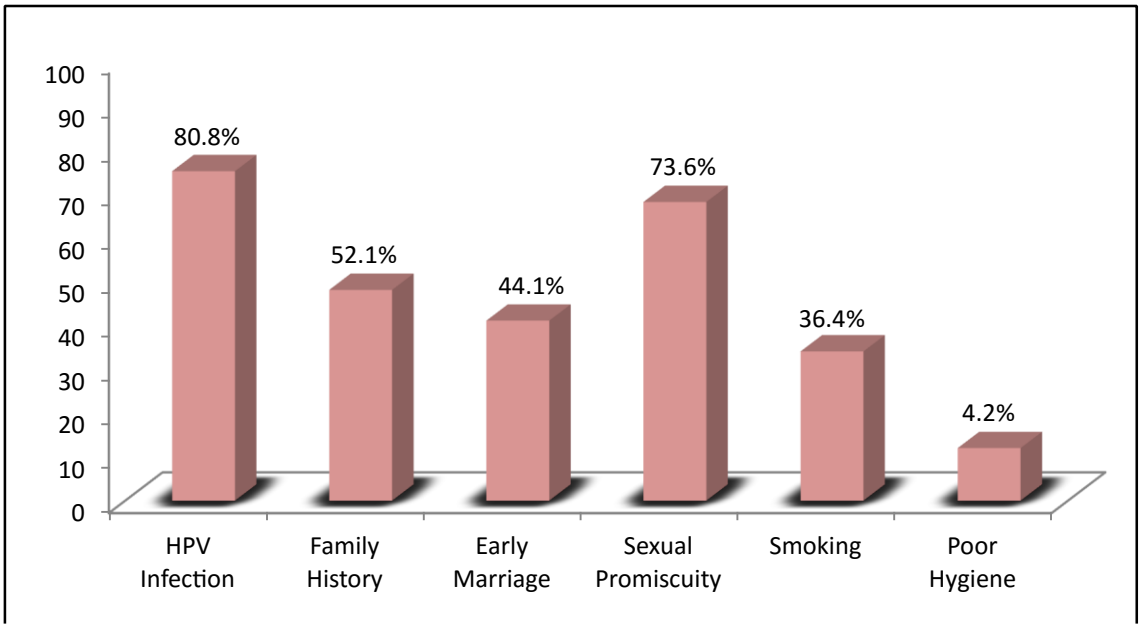
Statistical analysis:

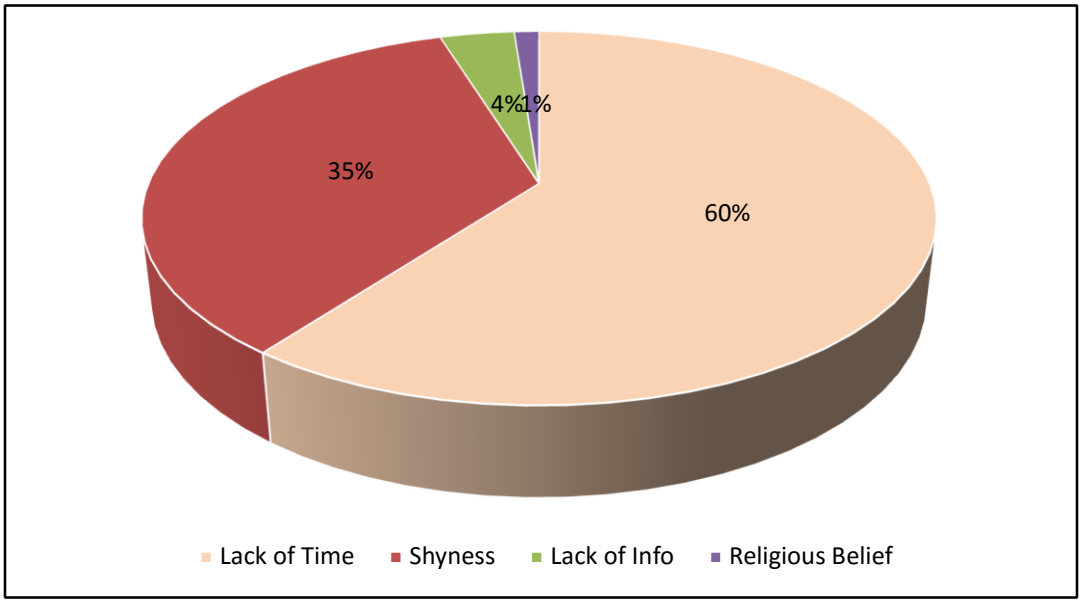
After the collection of data and analysis on google forms, descriptive analysis using frequency, mean, median, SD, pie charts, and bar graphs was carried out with the help of MS Excel.

Results:

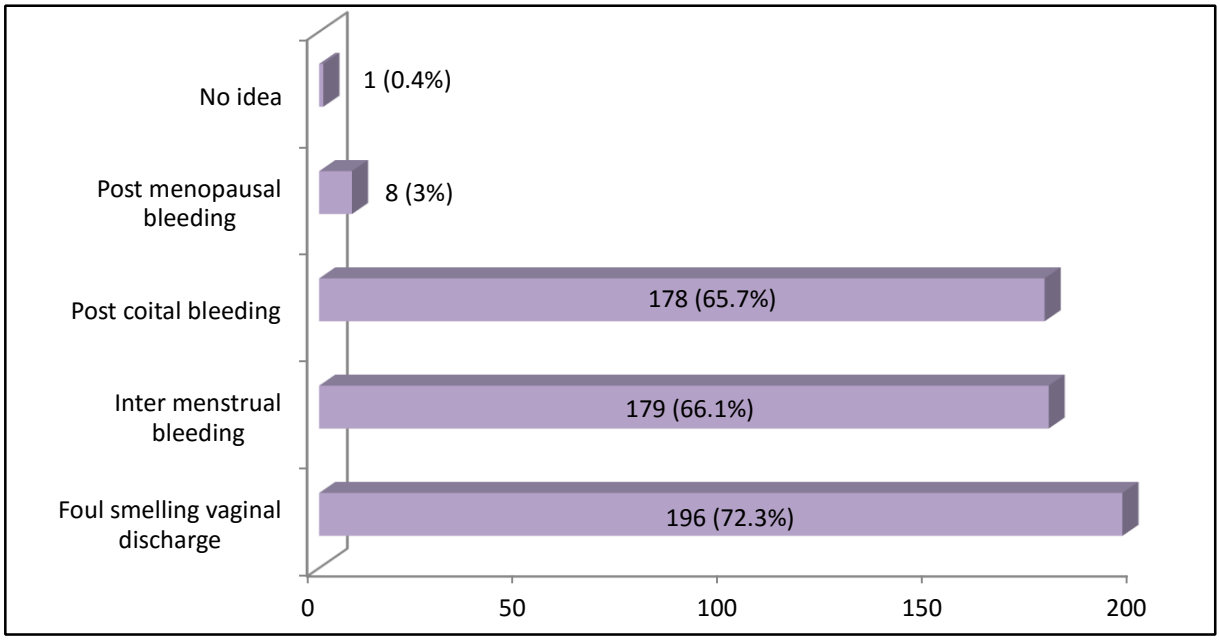


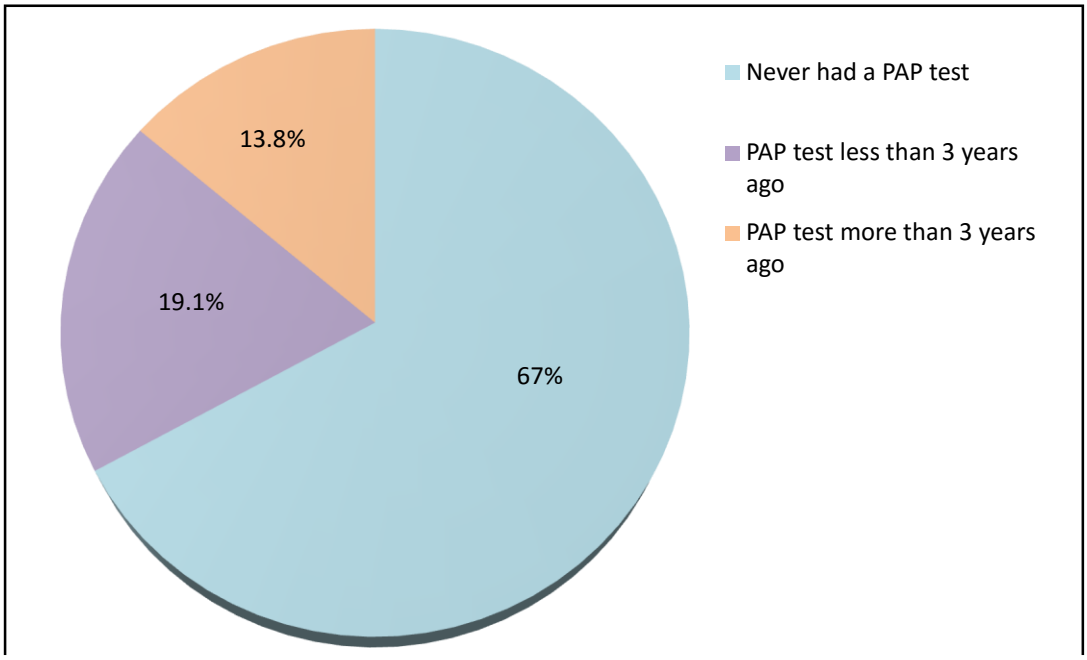
Following were the correct choices answered about the risk factors: HPV infection (80.8%), Family History (48.8%), Early marriages (44.8%), Sexual promiscuity (73.8%), Smoking (36.5%), Poor hygiene (4.2%) (Figure 3).

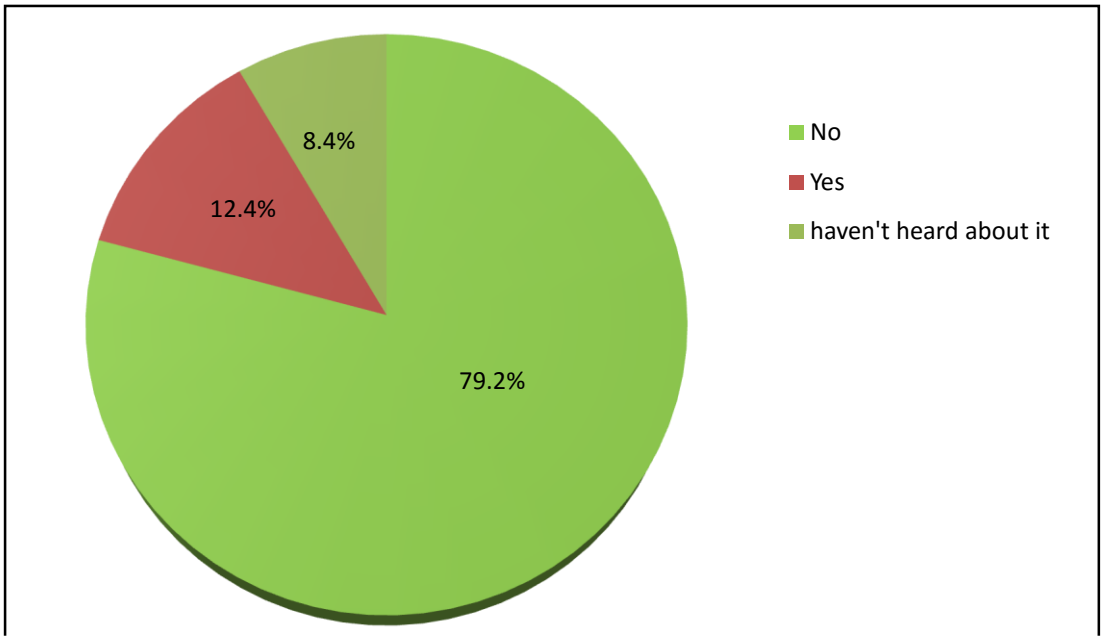




Most of them confirmed that screening facilities were very easily accessible to them. They had good knowledge about the signs and symptoms of the disease too (Figure 5). 225 (80.4%) participants knew that Cancer Cervix is a preventable disease and almost all (97%) knew about the PAP test as a screening tool for Cancer Cervix. Even though the majority of them were so knowledgeable of the condition, it was a reality check that out of 282 participants (234 were in the eligible age group for receiving the HPV vaccine) only 34 (12.4%) had been fully vaccinated against HPV (Figure 7) and 189(67%) had never undergone a single PAP test (Figure 6). 260 (97.4%) agreed that Cancer cervix can be prevented by the HPV vaccine alone. They had heard about it through seminars, posters, and social media. 178 (63.6%) ladies knew that the said vaccine was available in the city. At the end of the questionnaire, 210 (75.3%) were fully convinced about getting screened and vaccinated. There was a good motivation among them to educate and vaccinate friends and families. Many of them later visited the Gynecology OPD for a PAP test / HPV vaccination. The above data in this study depicts that the knowledge among the study participants about the cancer cervix and its screening and preventive measures was good. But the participants hadn't screened themselves and most of them hadn't been vaccinated yet.







Discussion:

Cervical cancer is a preventable disease. Any woman can reduce the risks of getting Cervical cancer by regular screening, HPV vaccination, and avoiding high-risk factors like smoking, promiscuous behavior, early sexual debut & multiple pregnancies.

HPV vaccines are recommended for primary prevention. Secondary prevention methods are screening by PAP tests and HPV tests. In our study conducted on women healthcare professionals in Kolkata city, India, the majority of individuals were knowledgeable about cervical cancer, its signs & symptoms, highrisk factors, and primary

and secondary prevention protocols. (This study group comprised of educated professionals) A similar study in the same city done many years back (Roy & Tang, 2008) had shown poor knowledge. Similar studies on nursing staff from Rural India (Singh et al., 2012), Alzahra maternity hospital, Iran (Esmailpour et al., 2011), and Ethiopia (Getaneh et al., 2021) had shown moderate to good knowledge. In an Iranian study (Asgarlou et al., 2016) and an Indian study (Manisha et al., 2013) the knowledge among medical students and staff was not found to be up to the mark as compared to ours. In spite of good knowledge about the disease both studies showed that the majority had never had a PAP test. In our study, 66.9% had never undergone a PAP test vis-a-vis only 47% in the above studies.

There is a lack of information about Cervical cancer being a preventable disease. Therefore most of the detections are late. In a similar survey among nursing staff in Gujrat India (Shah et al., 2012) only 8% had undergone a PAP test ever vis-a-vis our study whereas 33.5% had undergone a PAP test at least once. Although 97% of study participants knew that the HPV vaccine is the elixir for Cervical cancer prevention only 12.4% of eligible women had yet been vaccinated by their own interest and resources. HPV infection prevention is crucial for preventing cervical cancer. The development of the HPV vaccine has been a huge benefit. Over the past years, numerous studies on the acceptance, knowledge, attitudes, and behaviors around the HPV vaccine have been conducted worldwide (Sankaranarayanan & Ferlay, 2006 & Małgorzata, 2021). According to the studies (Aswathy et al., 2012 & Ali et al., 2010 & Nganwai et al., 2008 & Alnafisah et al., 2019 & Tiro et al., 2007) high-income countries had a good understanding of cervical cancer, the PAP test, and the HPV vaccine, but low-income nations including Thailand, Turkey, Pakistan, and Taiwan had little to no knowledge of these topics.

The Indian government has not yet provided funding for primary prevention through immunization of the appropriate population of women (9-26 years old). The National Vaccination Schedule for our Country does not yet include it. India launched its locally manufactured HPV vaccine (CERVAVAC) in January 2023 and is getting ready for vaccination campaigns for females between the ages of 9 and

Limitations of the study:

1. The sample population doesn't necessarily reflect the results of the general population .
2. The questionnaire was an online self-administered one and hence there can be a risk of recall bias or contamination by participants.

Strength of Study:

It has inspired most of the participants to get themselves screened and vaccinated after taking the survey.

Conclusion:

The researcher conclude from the above results that these women health care professionals had average to good information about Cervical cancer and its prevention protocols. But they were ignorant about their own health and had voluntarily procrastinated their doctor visits and vaccination schedules. Once healthcare professionals are motivated themselves they are more likely to correctly advise it to their clientele. We need better patient engagement tools and basic info propagation with empathetic conversation around screening and vaccination protocols. It is important we decrease the existing wide gap between the perception and practice of cervical cancer screening. We should materialize it by propagating more educational and motivational programs for healthcare professionals. Let our motto be: 'Get Informed, Get Screened, Get Vaccinated'.

Ethics approval and consent to participate

The Command Hospital's ethics committee in Kolkata, India gave its approval to this study. All participants gave their informed consent. Procedures were followed in compliance with the applicable committee policies and rules.

Conflicts of Interest

The author declares no conflicts of interest.

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Women health care professionals of age group 21-65 years

The questionnaire had sixteen(16) questions; the first three were related to the socio-demographic profile (age, educational qualification, and marital status), Ten(10) questions were pertaining to knowledge (risk factors, signs-symptoms, screening protocols, and preventive measures) and remaining three(03) were for assessing the practice of cervical cancer screening. Knowledge about the topic was assessed using a 10-point scale. There were 10 knowledge-related questions that carried 10 correct responses. Each correct response was given 1 point and the wrong answer was given 0.

HPV vaccine recommendations for 9-14 years old children are 2 doses 6-12 months apart. For ages 15-26 years, it's three doses at 0, 1-2 months & 6 months. 27-45-year-old women may get vaccinated after consulting their doctor about their risk of new HPV infections and the possible benefits of vaccination (CDC).

Most of the reasons (for not getting screened) were shyness (35%) or procrastinating for lack of time (60%). Some had religious beliefs too (Figure 4).

Figure 1: Cervical Cancer information pamphlet
Figure 2: Knowledge level of participants about Cervical cancer and its screening
Figure 3: Knowledge about High-Risk Factors for Cancer cervix
Figure 4: Reasons for No Screening of Cancer cervix
Figure 5: Knowledge about Symptoms-signs of Cervical Cancer
Figure 6: Cancer cervix screening among participants
Figure 7: HPV vaccine coverage among participants

The maximum points expected were 10 and the minimum was 0. Bloom's cut-off points were used to categorize knowledge levels, where 80%–100% correct responses comprise a score of 8–10 and meant good knowledge, 60%–79% correct responses comprise a score of 6–7 and meant moderate knowledge, and <60% correct responses comprise score of ≤6 and meant poor knowledge.

14.

Women below the age of 21 years

Women above the age of 65 years

282 participants responded completely to the questionnaire. The basic demographic parameters were collected. Most of the candidates were between the ages of 21-45 years (84.8%). Most of them were educated at the graduate level or above. Only 8 (3%) had not had their sexual debut and weren't at risk of HPV infection. 72 % (203) Participants had good knowledge, 19% (54) had moderate while 9%(25) had poor knowledge about Cervical cancer, its screening tests, and high-risk factors (Figure 2).