



Cervical Cancer

Knowledge and Attitude of Cervical Cancer Screening and Vaccination in Patients Attending Gynecology Outpatient Clinic at a Tertiary Care Hospital in Pakistan

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Abstract



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Keywords

- ▶ cervical cancer
- ▶ cervical screening
- ▶ HPV vaccination
- ▶ awareness
- ▶ knowledge
- ▶ attitude
- ▶ Pakistan

Background Cervical cancer is the third most prevalent female cancer in Pakistan; nearly 70% present at a very advanced stage of malignancy due to lack of awareness, proper screening, and vaccination. Therefore, we aimed to assess the knowledge and attitude toward screening, vaccination, and risk factors of cervical cancer in sexually active women of Pakistan.

Methods This cross-sectional study was conducted at the gynecology outpatient clinic of a public sector hospital in Karachi, Pakistan, from December 2021 to March 2022. We included sexually active women with exception of diagnosed cases of cervical cancer, pregnancy, vaginal bleeding, and psychological disorder. Collected data were regarding demographic characteristics, awareness regarding cervical cancer, screening, human papillomavirus (HPV) vaccine, and risk factors, history of cervical screening, and wiliness to opt-in for cervical screening.

Results We included 226 women with a mean age of 41.25 ± 10.54 years. The mean parity level was observed to be 3.8 ± 1.95 . A majority of women were housewives by profession (88.9%) and uneducated (61.9%). Only 41.2% (93) of women were aware of cervical cancer, 33.6% (76) were aware of cervical screening, and only 15.9% (36) had a history of cervical screening. Only four women (1.8%) were aware of the HPV vaccine and 31% (70) showed intention to opt-in for cervical screening. A vast majority of women (96.9%) were not aware of the risk factors of cervical cancer.

Conclusion(s) We have observed poor awareness regarding cervical cancer, HPV vaccination, and cervical screening among women in our population. Lack of awareness was not restricted to a certain segment but it prevails all across the demographic in our population.

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Introduction

Cervical cancer is the third major prevalent female cancer below the age of 45 in 146 of 185 countries.¹ Southeast Asia and the western Pacific, after India and Africa, are some of the global regions having the highest death rates² 87% of the cervical cancer deaths happen in underdeveloped countries.³ Cervical cancer is one of the cancers that has a precancerous period that can last for years, before invasive disease development, allowing for early detection and treatment so death occurring due to it can be minimized.⁴

The major risk factor for cervical cancer is infection with human papillomavirus (HPV). Cervical cancer is commonly related to the HPV-16 and HPV-18 subtypes. Based on known global HPV genotype distribution, it is believed that 100% coverage of HPV vaccines in females with existing vaccines might lower the worldwide incidence of cervical cancer by up to 90%.³ The American Society of Clinical Oncology expert panel emphasizes planned and extensive screening programs for early detection and management of cervical lesions in the precancerous period before they turn into invasive diseases. In the past 30 years, an 80% drop in the occurrence of cervical cancer has been attained in high-income countries with the adoption of mass-level large-scale systematic screening programs.³

Though it is an avoidable disease owing to a lack of proper screening, prevention, and immunization programs in Pakistan, as high as 70% of women present at a very advanced stage of malignancy, and the mortality rate also remains very high.⁵ Precise prevalence and incidence of cervical cancer among Pakistani women are not known predominantly due to lack of awareness and proper screening.⁶ Accordingly to a study, it ranks the third most common cancer for females in Pakistan and second major prevalent cancer in females between 15 and 44 years in Pakistan.⁷

The role of HPV in the progression of cervical cancer enables the primary prevention of cancer through the implementation of vaccinations against the oncogenic HPV kinds that result in most cervical cancer. Secondary prevention is done through cervical screening to identify and treat abnormalities when they are still in the precancerous stage, ahead of their development to cervical cancer.⁸ Developed countries have a dramatic reduction in occurrence and death due to invasive cervical cancer. As per the World Health Organization, the prevalence of cervical cancer has increased and Pakistan is included in the top 10 countries with the highest mortality rates. Sexually transmitted diseases (mostly HPV and human immunodeficiency viruses), reproductive factors (young age at first delivery, parity, and oral contraceptive tablets), sexual elements (multiple partners and young age), social elements (smoking and higher body fat), and genetic factors are all known to be linked with cervical cancer.⁹

The most effective approach to control cervical cancer is screening programs such as Pap smear and HPV screening tests.⁸ However, the uptake of those programs in many developing countries is low due to lack of knowledge about cervical cancer and its screening programs.² It has been observed that health education has a positive influence on these women's

attitudes toward cervical cancer screening, resulting in increased uptake of accessible screening facilities and thus improved women's standard of life. Cervical cancer is preventable cancer as the precancerous stage of cervical cancer is very long. General population awareness regarding screening and vaccination against cervical cancer is one of the major necessary factors to eliminate cervical cancer in Pakistan. The aim of this study was to assess the knowledge and attitude toward screening, vaccination, and risk factors of cervical cancer in sexually active women attending gynecology outpatient department (OPD) clinic at a public sector hospital in Karachi, Pakistan.

Materials and Methods

This cross-sectional study was conducted at the gynecology outpatient (OPD) clinic of a public sector hospital in Karachi, Pakistan. The study duration was from December 2021 to March 2022. Before the initiation of the study, approval was taken from the institutional ethical review board. Inclusion criteria for the study were sexually active women of any age and any parity attained at the gynecology outpatient department of Dow International Medical College (DIMC)/Dow University of Health Sciences (DUHS) Ojha campus. Before the inclusion, verbal informed consent was obtained from all the women regarding their participation in the study. All patients with diagnosed cases of cervical cancer, pregnant women, and any women with undiagnosed vaginal bleeding and with the psychological disorder were excluded. A structured questionnaire was developed and used for the collection of responses from the women. The questionnaire was designed based on previous studies and available literature regarding the study objectives. The questionnaire consisted of demographic characteristics such as age, education, occupation, parity, age at menarche, awareness, and source of awareness regarding cervical cancer, screening, and HPV vaccine, history of cervical screening (voluntary screening), willingness to opt-in for cervical screening, and awareness regarding risk factor of cervical cancer. This current survey was a part of an ongoing awareness campaign on the importance of screening, vaccination, and risk factors of cervical cancer for women presenting to our center that included verbal counseling along with distribution of visual aids in the form of flyers and pamphlets.

The collected information was summarized and analyzed with the help of IBM SPSS version 19. Continuous variables such as age, parity, and age at menarche were expressed as mean \pm standard deviation and categorical variables were summarized as frequency (%). Awareness and knowledge regarding cervical cancer, HPV vaccine, and cervical screening were compared against the various baseline characteristics with the help of an appropriate chi-squared test or Fisher's exact test and a p -value ≤ 0.05 was the criterion for statistical significance of the association.

Results

A total of 226 women were included in this study with a mean age of 41.25 ± 10.54 years with 47.8% (108) under

40 years of age. The mean parity level was observed to be 3.8 ± 1.95 with nullipara being 5.8% (13), multipara being 36.7% (83), and the remaining grand multipara. The reported mean age at menarche was 12.05 ± 0.95 . A majority of women were housewives by profession (88.9%) and uneducated (61.9%). Only 41.2% (93) of women were aware of cervical cancer, 33.6% (76) were aware of cervical screening, and only 15.9% (36) had a history of cervical screening. Similarly, only four women (1.8%) were aware of the HPV vaccine and 31% (70) of the women showed intention to opt-in for cervical screening. A vast majority of women (96.9%) were not aware of the risk factors for cervical cancer (**-Table 1**).

No statistically significant association was observed among the awareness regarding cervical cancer, screening, vaccination, risk factors and willingness for cervical screening, age, parity distribution, and occupation of women (**-Table 2**). Awareness about HPV vaccination and risk factors of cervical cancer was found to be significantly associated with the education of the women (**-Table 2**).

Discussion

Cervical cancer is the fourth major prevalent cancer in females globally.¹⁰ The prevalence of HPV, limited access to healthcare, unavailability of screening platforms, certain social and environmental factors, and perceptions and misconceptions regarding cervical cancer have all been identified as the factors responsible for increased risk of cervical cancer in females in various parts around the world. In a variety of settings, the HPV vaccination, solely or in combination with screening, has been reported to have a positive impact on decreasing the burden and death of cervical cancer. Despite the established importance of HPV vaccination, the fundamental knowledge about the causes of cervical cancer remains lacking in most communities, for example, misconceptions concerning HPV and cervical cancer are more common among females in developed or underdeveloped countries. These misunderstandings are most probably the result of cultural and/or educational dissimilarities.¹¹ Considering the importance of adequacy of knowledge among females, this study was conducted to evaluate the awareness level regarding cervical cancer, cervical screening, HPV vaccinations, and attitude toward cervical screening among women in our population. It has been observed that women in our population have suboptimal awareness regarding cervical cancer; only 41.2% of women were found to have heard of cervical cancer and only 33.6% of the women were aware of cervical screening. Only 15.9% of women had a history of going through voluntary cervical screening. Similarly, awareness regarding HPV vaccination and risk factors of cervical cancer was very poor with an awareness rate of 1.8 and 3.1%, respectively. Williness of cervical screening was also observed in only 31% of the women.

A low level of awareness regarding various aspects of cervical cancer among women in our populations is the depiction of ignorance and lack of health education among developed or underdeveloped countries in comparison to the developed countries as reported by many other studies from

Table 1 Baseline demographic characteristics, awareness regarding cervical cancer, screening, vaccination, and risk factors and attitude toward cervical screening among women presented at a gynecology outpatient clinic in Pakistan

	Summary
Total (n)	226
Age (y)	41.3 ± 10.5
< 40 y	47.8% (108)
≥ 40 y	52.2% (118)
Parity	3.8 ± 2
Nullipara (0)	5.8% (13)
Multipara (≤3)	36.7% (83)
Grand multipara (>3)	57.5% (130)
Occupation	
Housewife	88.9% (201)
Professional	10.2% (23)
Labor	0.9% (2)
Education	
Uneducated	61.9% (140)
Secondary	19.5% (44)
Intermediate	6.6% (15)
Graduation	9.7% (22)
Postgraduation	2.2% (5)
Awareness of cervical cancer	41.2% (93)
Source of information about cervical cancer	
Newspaper	0.4% (1)
Television	4.4% (10)
Doctor	6.2% (14)
Family	18.6% (42)
Friends	11.5% (26)
Awareness of cervical screening	33.6% (76)
Source of information about cervical screening	
Doctor	14.6% (33)
Family	15.9% (36)
Friends	3.1% (7)
Awareness of HPV vaccine	1.8% (4)
Source of information about HPV vaccine	
Doctor	50% (2)
Family	50% (2)
History of cervical screening	15.9% (36)
Willingness for cervical screening	31% (70)
Awareness of risk factors of cervical cancer	
Unaware	96.9% (219)
Multiple sexual partners	0.4% (1)
Multiple sexual partners of husband	2.2% (5)
Contraception	0.4% (1)

Abbreviation: HPV, human papillomavirus.

Table 2 Awareness regarding cervical cancer, screening, vaccination, and risk factors and willingness for cervical screening women presented at a gynecology outpatient clinic in Pakistan

	Total (n)	Awareness			History of cervical screening			Willingness for cervical screening		
		Cervical cancer	Cervical screening	HPV vaccine	Risk factors					
Age group										
< 40 y	108	40.7% (44)	32.4% (35)	2.8% (3)	0.9% (1)	16.7% (18)	29.6% (32)			
≥ 40 y	118	41.5% (49)	34.7% (41)	0.8% (1)	5.1% (6)	15.3% (18)	32.2% (38)			
p-Value	-	0.905 ^a	0.710 ^a	0.351 ^b	0.122 ^b	0.772 ^a	0.676 ^a			
Parity distribution										
Nullipara	13	46.2% (6)	30.8% (4)	0% (0)	0% (0)	7.7% (1)	15.4% (2)			
Multipara	83	39.8% (33)	33.7% (28)	3.6% (3)	6% (5)	19.3% (16)	34.9% (29)			
Grand multipara	130	41.5% (54)	33.8% (44)	0.8% (1)	1.5% (2)	14.6% (19)	30% (39)			
p-Value	-	0.901 ^a	0.975 ^a	0.272 ^a	0.147 ^a	0.467 ^a	0.342 ^a			
Occupation										
Housewife	201	41.8% (84)	35.3% (71)	1.5% (3)	3% (6)	16.9% (34)	27.9% (56)			
Professional	23	39.1% (9)	21.7% (5)	4.3% (1)	4.3% (1)	8.7% (2)	52.2% (12)			
Labor	2	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (2)			
p-Value	-	0.479 ^a	0.256 ^a	0.605 ^a	0.908 ^a	0.491 ^a	0.006 ^a			
Education										
Uneducated	140	37.1% (52)	31.4% (44)	0.7% (1)	0.7% (1)	15.7% (22)	30.7% (43)			
Secondary	44	52.3% (23)	43.2% (19)	2.3% (1)	6.8% (3)	18.2% (8)	22.7% (10)			
Intermediate	15	46.7% (7)	46.7% (7)	0% (0)	6.7% (1)	20% (3)	26.7% (4)			
Graduation	22	36.4% (8)	18.2% (4)	4.5% (1)	0% (0)	13.6% (3)	54.5% (12)			
Postgraduation	5	60% (3)	40% (2)	20% (1)	40% (2)	0% (0)	20% (1)			
p-Value	-	0.366 ^a	0.224 ^a	0.019 ^a	<0.001 ^a	0.846 ^a	0.110 ^a			

Abbreviation: HPV, human papillomavirus.

^aChi-squared test.

^bFisher's exact test.

various geographies. For instance, prior research of Chinese women from different areas regarding their awareness of cervical cancer, HPV, and vaccination yielded a variety of results.¹² About 45 to 77% of Chinese women knew something about cervical cancer, 22.1 to 35% recognized HPV as a contributing factor to cervical cancer, and 13.3 to 19.4% knew the HPV vaccine provided immunization against cervical cancer.¹²⁻¹⁴ Though, according to various studies, 94% of Australian women and migratory women in the United Kingdom were aware that HPV can cause cervical cancer.^{15,16}

Misconceptions regarding cervical screening also prevail in some communities; for instance, women in Saudi Arabia have a negative attitude toward cervical cancer screening. Most of the women believed they were not in danger of cervical cancer and did not need screening if symptoms or signs were not present. These findings point to a general unawareness regarding cervical cancer and the necessity of screening.¹¹ Furthermore, in Hong Kong, 67.6% of mothers knew about HPV.¹⁷ Only 3.2% of southern African women in former research have a positive attitude toward cervical cancer screening.¹⁸ Similarly, the Pap smear test was considered to be embarrassing and shameful by Nicaraguan women.¹⁹ Another study found that the participants' age had an impact on their knowledge and awareness about cervical cancer, with young females being more expected to understand the importance of cervical cancer screening than aged females.¹⁸

When compared with the developed world, these nations have a higher level of awareness concerning cervical cancer screening and immunization. For instance, research revealed that 96.6% of the respondents were aware of the cervical cancer screening; on the other hand, as many as 98.9% of respondents were never vaccinated for cervical cancer and 82.2% never had cervical cancer screening.²⁰ It was discovered that 91.2% of the respondents were aware that cervical cancer can be controlled, while 80.9% of them had correctly identified the Pap smear test for the detection of cervical cancer.²¹ According to some authors, as high as 30.4% of participants have not had screening because of the fear of the process.²² Similar to our findings, friends and relatives were the primary means of information regarding cervical cancer screening and immunization.²²

Healthcare workers play an important part in cervical cancer prevention by encouraging Pap smear tests and suggesting HPV immunization to the general public.²³ Mahajan et al performed a study to assess undergraduate pharmacy students' awareness of HPV infection and their attitudes toward prevention, 81% of those were aware that the HPV causes cervical cancer, and 87.8% were aware that the infection can be avoided.²⁴ Although participants had a reasonable level of awareness regarding HPV infection, cervical cancer, and HPV vaccination, they had less awareness about Pap smear tests and some concerns regarding the safety of HPV vaccines. Correct knowledge and awareness about a disease and its prevention are a basic step to cultivating a positive perception of the disease. Various other studies have shown several gaps in the information and misconceptions about cervical cancer, its prevention, and HPV vaccination in medical and nursing staff.²⁵⁻²⁸ Health-

care personnel, particularly nurses, are key contributors in making vaccine recommendations. As a result, targeted educational programs regarding cervical cancer can have a significant positive impact on their acceptance of vaccination as well as on their willingness to endorse it in the future.

Similar to what we have observed in this study, local data from the past studies in this regard are not very encouraging. Minhas et al reported poor knowledge in terms of cervical cancer (28%), screening (3%), prevention (3%), and vaccination (1%) in women.²⁹ Sultana et al conducted a study on 1,070 patients; only 2.2% had the knowledge of its signs and risk factors associated with cervical cancer.³⁰ Only 2.5% of the women knew about Pap smear as a way of cervical screening, but only 2% had their Pap smear tests done. The major barrier was reported to be insufficient knowledge and misunderstanding regarding the requirement of cervical screening. Even women who belonged to a higher socioeconomic class in our population had poor awareness and practices about the prevention and screening of cervical cancer.³¹ Inadequacy of knowledge is not restricted to any segment, but it prevails all across the demographic in our population regardless of profession and education level.³²⁻³⁴

Our study has certain limitations. Single-center coverage with a relatively small sample size can be the main limitation toward the generalizability of our study findings. The scope of the survey was limited to willingness for cervical screening; hence, no comments can be made regarding willingness and barriers to HPV vaccination. The study was conducted in a hospital setting; hence, we can expect an overestimation of knowledge level in comparison to the general population.

Conclusion

We have observed poor awareness regarding cervical cancer, its prevention with prophylactic HPV vaccination, and cervical screening for early detection and treatment of lesions in the precancerous stage. Lack of awareness was not restricted to a certain segment, but it prevails all across the demographic in our population. Proper national-level cervical cancer awareness, screening, and HPV vaccination programs need to be initiated to decrease the burden of diseases and improve the quality of life of women in our population.

Note

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Conflict of Interest

None declared.

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