

# Awareness and Knowledge Regarding Cervical Cancer Screening and its Association with Demographic Characteristics

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## Introduction

Cervical cancer is the second most common cancer among females over the globe and is most common in the developing part of the world.<sup>1</sup>

Pakistan has been ranked 7<sup>th</sup> in deaths related to cervical cancer out of 50 countries by the Cervical Cancer Global Crisis Card (CCGC)<sup>[2]</sup>. A report by WHO shows that Pakistan has been moving from a low level risk zone to a high level risk zone due to an increase in the number of cases reported of cervical cancer from <9 per 100,000 in 2002 to 13.6 per 100,000 in 2008.<sup>3</sup> Deaths from cervical cancer in India, account for 25% of deaths worldwide which is quite alarming.<sup>4</sup>

Vaccination with 9-valent, quadrivalent, or bivalent HPV vaccine provides a direct benefit

## ABSTRACT

**Objective:** To assess awareness and knowledge regarding cervical cancer screening, Pap smear screening, HPV infection, vaccine and their association with demographic characteristics.

**Methodology:** This is a questionnaire based cross sectional study with a sample size of 100 female patients. This study was conducted in (OB/GYN OPD) in tertiary care setting of Military Hospital and Combined Military Hospital, Rawalpindi. Duration of study was 1 month i.e. April 2018.

**Results:** Only 44.4% of patients had heard about cervical cancer. Awareness regarding PAP smear and HPV vaccination was present in around 20% patients. The results of the study revealed that higher socio-economic status ( $p=0.048$ ) and education ( $p=0.03$ ) was linked to more awareness regarding cervical cancer. Educational status had a linear relationship.

**Conclusion:** The lack of knowledge to cervical cancer occurs in higher socio economic class also. There is a need of more education for increased awareness in all patients to enhance uptake of preventive strategies.

**Keywords:** Awareness, Knowledge, Cervical Cancer, HPV, Pap smear, HPV vaccine.

to female recipients by safely protecting against cancers that can result from persistent HPV infection. This preventive effect is most notable and best studied with cervical cancer, which is one of the most common female cancers worldwide. HPV types 16 and 18, which are targeted by all three HPV vaccines, cause approximately 70 percent of all cervical cancers worldwide.<sup>5</sup>

In Pakistan, there are 62.8 million women at risk of cervical cancer, with approximately 5,233 reported cases of cervical cancer annually and 2,876 reported deaths from cervical cancer alone. Despite such a high prevalence of cervical cancer in our setup, only 2.3% of women aged 25-64 years are screened every 3 years.<sup>6</sup> This study aimed to

assess the level of knowledge and awareness of Pakistani women with regards to cervical cancer, Pap smear, HPV infection and HPV vaccine in order to determine which sources of information can be used for effective education.

## Methodology

This questionnaire based cross-sectional study was carried out among the women attending the outpatient department of department of obstetrics and gynaecology of Military hospital and Combined Military Hospital in Rawalpindi. The study duration comprised of one month i.e. April 2018. Sample size for the study was calculated using OpenEpi sample size calculator version 3.01 after inserting the 74.6% knowledge of cervical cancer at 8.6% margin of error and 95% confidence interval we required N=99 samples for this study.<sup>7</sup> A total number of 100 participants appeared during this study duration which were included in the study. The questionnaire comprised of questions regarding demography, socio-economic status, patients' knowledge and awareness regarding cervical cancer, Pap smear screening and HPV vaccine. Informed consent was taken prior collecting information.

### OPERATIONAL DEFINITIONS

- **Cervical Cancer:** a type of cancer that occurs in the cells of the cervix- the lower part of the uterus that connects to the vagina.
- **Pap smear:** the examination of cells under the microscope. The cells are collected from the cervix, smeared on a slide and specially stained to reveal premalignant (before cancer) and malignant (cancer) changes as well as changes due to noncancerous conditions such as inflammation from infections.
- **HPV:** Human Papilloma Virus is the most common sexually transmitted infection (STI). There are 100 types of HPV strains, most of which affect the genitals. 14 of these HPV strains are considered 'high risk' for cervical cancer.
- **HPV Vaccine:** A vaccine used to prevent genital warts, anal cancer, cervical cancer, vulvar cancer, and vaginal cancer caused by certain types of human papillomavirus (HPV). It is also used to prevent lesions that are caused by those viruses and that can lead to anal, cervical, vulvar, or vaginal

cancer. Also called human papillomavirus vaccine.<sup>5</sup>

**Statistical Analysis:** Data were stored and analysed using IBM SPSS version 23.0, count and percentages were reported for baseline sample characteristics included age group, ethnicity, education and socioeconomic status, Bar chart used to give the percentage of knowledge on cervical cancer, pap smear, HPV and its vaccine, Pearson Chi square test was used to see the association of knowledge of these factors with other socioeconomic factors, all p-values less than 0.05 were considered significant.

## Results

One hundred participants were participated in the study. All of them were females (N=99) with the Mean  $\pm$  SD age was  $32.5 \pm 10.0$ . Majority of the participants (51%) belonged to the lower middle socioeconomic class. Most common ethnic group was Punjabi (69.6%). Other demographic variables are demonstrated in Table I

Characteristics	n	%
<b>Mean age <math>\pm</math> SD</b>	32.5 $\pm$ 10.0	
<b>Age Group</b>	<b>less than 30</b>	52 / 52.5
	<b>31 to 40</b>	32 / 32
	<b>41 and above</b>	15 / 15
<b>Ethnicity</b>	<b>Punjabi</b>	69 / 69.6
	<b>Pathan</b>	9 / 9
	<b>Kashmiri</b>	10 / 10.1
	<b>Saraiki</b>	1 / 1
	<b>Other</b>	10 / 10.1
<b>Education</b>	<b>No school</b>	5 / 5.1
	<b>Primary school</b>	14 / 14.1
	<b>Secondary school</b>	19 / 19.1
	<b>University</b>	61 / 61
<b>Socioeconomic status</b>	<b>Lower class</b>	26 / 26.1
	<b>Lower middle class</b>	51 / 51.1
	<b>Upper middle class</b>	15 / 15.1
	<b>Upper class</b>	7 / 7

Forty five percent of our patients have heard about cervical cancer, 20% had heard about

**Table III: Association of Cervical Cancer & Pap Smear with demographic features**

Factors		Have you heard of cervical cancer (Yes)		p-value	Have you heard of pap smear? (yes)		p-value
		n	%		n	%	
Age Group	less than 30	20	45.5	0.30	8	40.0	0.39
	31 to 40	17	38.6		8	40.0	
	41 and above	7	15.9		4	20.0	
Ethnicity	Punjabi	30	68.2	0.35	15	75.0	0.87
	Pathan	6	13.6		2	10.0	
	Kashmiri	3	6.8		1	5.0	
	Saraiki	0	0.0		-	-	
	Other	6	11.4		2	10.0	
Education	No school	0	0.0	0.03*	-	-	0.22
	Primary school	6	13.6		1	5.0	
	Secondary school	5	11.4		3	15.0	
	University	34	75.0		16	80.0	
Socioeconomic status	Lower class	8	9.8	0.06	1	5.3	0.019*
	Lower middle class	23	56.1		10	2.6	
	Upper middle class	9	22.0		4	21.1	
	Upper class	5	12.2		4	21.1	

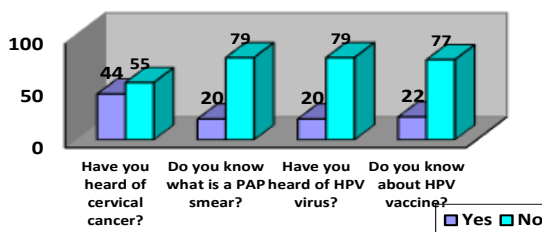
\*p<0.05 was considered significant using Pearson Chi Square test

HPV and Pap smear and 22% had some degree of information regarding HPV vaccine. This is demonstrated in Bar chart 1.

Table II displays the various sources of information that were used to provide awareness and knowledge regarding cervical cancer, HPV, Pap smear and its vaccine.

**Table II: Sources of information for cervical cancer**

Source of information	N =44*	%
Media	23	52.2
Medical staff	12	27.2
Family/ friends	2	5
School/ College	3	6.8
Self-awareness	4	9



**Figure 1. Knowledge of Cervical Cancer, Pap Smear, HPV Virus and Vaccination (N=99)**

\*Only patients with awareness of cervical cancer were counted in this table

Table III reports the association of knowledge of cervical cancer and pap smear with socio economic factors, results showed that, 45.5% participants of age less than 30, 68.2% Punjabi ethnicity, 75% participants from university level, and 56.1% participants from lower middle class heard on cervical cancer and education gives significant association with knowledge on cervical cancer. In the same table it was observed that, 20.0 % samples of age forty-one or above, 75.0 % Punjabi ethnicity, 80% university attended participants and 52.6% lower middle class heard on pap smear, where socio economic status gives significant association with knowledge of pap smear with p-value less than 0.01.

Table IV reports the association of knowledge of HPV and its vaccine with socio economic factors, results showed that, 70% participants of age less than 30, 65% Punjabi ethnicity, 85% university attended participants, and 44.4% from lower middle class heard on HPV and education gives significant association with knowledge on cervical cancer, whereas it was observed that, 13.6% samples of age forty-one or above, 63.6% Punjabi ethnicity, 86.4%

**Table IV: Association of HPV & HPV Vaccine Knowledge with demographic features**

Factors		Have you heard of the HPV virus? (Yes)		p-value	Do you know of a vaccine for HPV? (yes)		p-value
		n	%		n	%	
		<b>Age Group</b>	<b>less than 30</b>		14	70.0	
	<b>31 to 40</b>	3	15.0	7	31.8		
	<b>41 and above</b>	3	15.0	3	13.6		
<b>Ethnicity</b>	<b>Punjabi</b>	13	65.0	0.85	14	63.6	0.04*
	<b>Pathan</b>	3	15.0		3	13.6	
	<b>Kashmiri</b>	2	10.0		-	-	
	<b>Other</b>	2	10.0		5	22.7	
<b>Education</b>	<b>Primary school</b>	1	5.0	0.10	2	9.1	0.048*
	<b>Secondary school</b>	2	10.0		1	4.5	
	<b>University</b>	17	85.0		19	86.4	
<b>Socioeconomic status</b>	<b>Lower class</b>	1	5.6	<0.01*	3	14.3	0.89
	<b>Lower middle class</b>	8	44.4		12	57.1	
	<b>Upper middle class</b>	4	22.2		4	19.0	
	<b>Upper class</b>	5	27.8		2	9.5	

\*p<0.05 was considered significant using Pearson Chi Square test

university attended samples and 57.1% lower middle class heard on HPV vaccine, where Ethnicity and education gives significant association with knowledge of HPV vaccine with p-value less than 0.01.

## Discussion

We used four very basic questions. Some of the questions in the questionnaire were very stigmatizing, and do not apply to our culture. So for a conservative Muslim country like ours, we kept it to a minimum.

This study shows that 44% of patients in gynaecology clinic knew of cervical cancer, which was slightly more than that reported among Chinese women attending health clinics (38%).<sup>8</sup>

Knowledge in the other three subjects was only seen in approximately 20% of participants, much lower than the awareness levels assessed in a study carried out in Saudi Arabia.<sup>9</sup>

Patients who reportedly had heard of cervical cancer were then asked if they were aware of its risk factors, and 15 of the 44 patients said they did. Of the 15 patients, 14 considered Sexually transmitted disease to be a potential risk factor for cervical cancer. Despite proven to be important cofactors for cervical cancer

in separate meta-analyses studies, smoking and having multiple partners were not chosen as risk factors.<sup>10,11</sup>

In any case, majority of patients cited media to be the source of their information. This highlights the importance of media and the need to utilize its role in spreading awareness about the subject matter. The results of this study also showed positive correlation between socio-economic status and awareness of Pap smear test (p value<0.01). In a study done among rural women in Iran participants pointed to the financial difficulties and lack of awareness as some of the main barriers against the Pap smear test<sup>12</sup>. Therefore, special budget allowance should be allocated for not only health education activities but also for mass screening programs targeting the lower socioeconomic classes in population.

Moreover, since 12 of the patients resided in rural areas, it would be a better idea to spread cervical cancer awareness through health talks and interviews. Women belonging in rural areas tend to prefer face-to-face seminars or watch health promotion videos, as reported in Chinese women from rural population. A study carried out in rural Nigeria reported improved uptake of cervical cancer screening as well.<sup>14</sup>

Hospital and medical staff was chosen as the second most common source of information in

our study. This may be because many of the patients interviewed had previous gynecology visits and may therefore have been familiar with cervical cancer and its testing. A similar study conducted among Omani woman revealed only 23 (11.3%) of outpatients surveyed were in their first time visit to the Gynecology Department while the rest of them had visited the department at least two to six times previously. Medical staff was also a common source of information in the study for this very reason.<sup>15</sup>

It was seen that patients with University level education made up 85% of those that were aware of the HPV virus. Similar findings were seen regarding the vaccine, cervical cancer and Pap smear. These findings indicate that education plays a positive role in informing young women important aspects about cervical cancer and its screening.

However, it was seen that only 54% and 26% of university graduated participants had heard of cervical cancer and Pap smear test respectively. Moreover, only half the students aware of Pap smear had undergone the test. According to American guidelines, cervical carcinoma screening should begin at 21 years of age. This falls in the age group that exists in universities across Pakistan so proper guidance and provision of knowledge would help such women to increase uptake of cervical cancer screening from a young age. There is also a need to incorporate cervical screening into the pre-existing university health services. Only 20% of the study sample had heard of the Pap smear test, which was appallingly low when compared to studies in other countries with similar religious, socio economic conditions.

Out of these 20 patients, only 8 of them had undergone cervical cancer screening. The rest of the patients were asked why they had not done the test despite being aware of it. Most of them felt that it was not important for them to be tested for cervical cancer as it seemed a rare disease. This concurs with a study which found that women's perceived susceptibility to cervical cancer predicts their cervical screening behavior.<sup>16</sup>

When patients who had heard of the Pap smear test were asked about its function, it became apparent that even fewer were able to

answer correctly. Doctors and other university graduates were able to state that it was used to 'detect existing cervical cancer'. However, it needs to be emphasized that Pap smear is done to diagnose cervical cancer by detecting lesions that occur early on, preventing disease progression.

Regarding HPV vaccine, it was alarming to note that none of the participants had been vaccinated against HPV in the past. On the other hand, a study conducted in Texas, US revealed 26% of girls aged between 11-17 had begun or ended the three-dose vaccination series.<sup>17</sup>

Upon comparison of this data, it is suggested that parents need to be educated about HPV and informed about the benefits of the vaccine against HPV.

Thus, efforts to promote cervical cancer screening uptake among women should focus more on informing women of their susceptibility to cervical cancer and encouraging a belief that active and regular screening can detect cervical cancer at the pre-cancerous stage, hence enabling the early treatment and prevention of cancer. Women should be encouraged to take responsibility for their own health and be active participants in the screening program. In most studies knowledge regarding cervical screening translates into an attitude of availing cervical screening services in most of the third world countries. If we want to launch a national cervical screening program at any level we will have to initially improve awareness. This will follow through into successful uptake of the facility. Most of our respondents had little or no knowledge regarding cervical cancer screening and prevention. The armed forces need to put in place a policy of screening for cervical cancer with appropriate screening guidelines. This template could serve as an exemplar for the rest of the country.

**Limitations of study:** The study provides insights into the awareness of women toward cervical cancer screening in relation to demographic characteristics. The study was conducted in hospitals fairly moderate resources compared to most government hospitals that are extremely low resource. The findings of our survey may not be applicable to these hospitals.

## Conclusion

Considering the mortality and morbidity from cervical cancer in Pakistan and the lack of research in regards to this topic, a lot has to be done. Emphasis should be focused in education of the mass public especially women of the reproductive age group. The government should add Pap smear into routine antenatal checkup and clinicians can encourage women to come for Pap smear in order to screen for cervical cancer. Vaccine should be easily made available and at a cost the community can afford. Taboos in regards to vaccination should be discouraged.

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