



## Medical Students Perspective about Cervical Cancer, Screening and HPV Vaccination in a Tertiary Care Teaching Hospital in Rural Vizianagaram, Andhra Pradesh

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### Abstract

#### Objectives

- 1) To assess the knowledge regarding the risk factors of cervical cancer among medical undergraduate students.
- 2) To know their level of awareness regarding screening techniques and HPV vaccination.

**Material & Methods:** The present study was conducted in a tertiary care teaching hospital, Vizianagaram, Andhra Pradesh, India after obtaining approval from the Institutional Ethical Committee. 483 undergraduate medical students of MBBS were included in the study after taking verbal consent. A predesigned, self administered questionnaire was given to the students after explaining the purpose of study and completed forms were collected from them. Collected data was entered in MS Excel and analysed using SPSS version 21.

**Results:** Total 483 students were included in the study. The mean age of the participants was 21.47 + 0.6 years. The male students were 188(39%) and female students were 295(61%). Knowledge regarding preventable nature of cervical cancer is 97%. Awareness regarding the availability of vaccine against cervical cancer was 95.5%. Most of the students (90.7%) believed that multiple sexual partners is the major risk factor for cervical cancer. Very few students (20.9%) had knowledge regarding vaccination schedule. Majority of the students (65%) thought lack of knowledge was the most important obstacle for receiving HPV vaccination.

**Conclusion:** It is concluded from the above study that the level of knowledge regarding the risk factors of cervical cancer, routes of transmission, screening techniques and HPV vaccine is satisfactory among undergraduate students. However, there is an increasing trend in this level of knowledge between different semester students.

**Keywords:** Medical students, Cervical cancer, Screening, HPV vaccine.

### Introduction

Cervical cancer is the 2<sup>nd</sup> leading cause of cancer deaths in women of reproductive age group in India. 67,477 new cervical cancer deaths occur annually in India.<sup>[1]</sup> Cervical cancer is one of the world's deadliest but most easily preventable forms of cancer of women.<sup>[2]</sup> It is the consequence

of persistent genital infection with Human Papilloma Virus (HPV) in 99% of cervical cancer cases occurring in developing countries.<sup>[3]</sup>

To tackle cervical cancer effectively, screening programmes have a vital role in cancer prevention allowing early detection and treatment. While screening detects pre-cancerous lesions, these can easily be treated and cancer avoided. Screening is

recommended for every woman aged 30 years every 5 to 10 years. Cancer cervix mortality rates have reduced significantly in developed countries during the past 30 years largely due to screening and treatment programmes. During the same time, however, rates in most developing countries have risen or remain unchanged often due to limited access to health services, lack of awareness and absence of screening and treatment programmes.<sup>[4]</sup>

Primary prevention of HPV infection, and thus prevention of its sequelae, would be important for public health. The concept of primary prevention of HPV infection, however, has been understated and even ignored.<sup>[11]</sup>

We have the technical knowledge to prevent hundreds of thousands of unnecessary deaths of women worldwide. Very few such studies were carried out in AP. Therefore we conducted this study in a tertiary care teaching hospital in rural Vizianagaram.

### Objectives

1. To assess the knowledge regarding the risk factors of cervical cancer among medical undergraduate students.
2. To know their level of knowledge about screening techniques and HPV vaccination.

### Materials & Methods

**Study Design:** Cross- Sectional study

**Study Participants:** 483 undergraduate medical students of all semesters.

**Study Period:** Two months (1<sup>st</sup> September-30<sup>th</sup> November 2017)

**Study Area:** Maharajah's Institute of Medical Sciences, Nellimarla, Vizianagarm

**Inclusion Criteria:** All the medical students who were present at the time of data collection.

**Exclusion Criteria:** Those not willing to participate in the study.

**Ethical Clearance:** Ethical clearance was obtained from Institutional Ethical Committee.

**Study Instrument:** Predesigned, semi structured, self-administered questionnaire was given to the students after explaining the purpose of study.

**Data Analysis:** The collected data was analysed in the Department of Community Medicine, Maharajah's Institute of Medical Sciences, Nellimarla, Vizianagaram using SPSS Version 21.0. The interpretation of the results was carried out in the form of percentages and appropriate statistical tests of significance were applied wherever necessary.

### Results

The mean age of the study population is 21.47±0.6 years. 61% of the study population are girl students and 39% are boys.

**Figure 1:** Causes of Cervical Cancer

n = 483

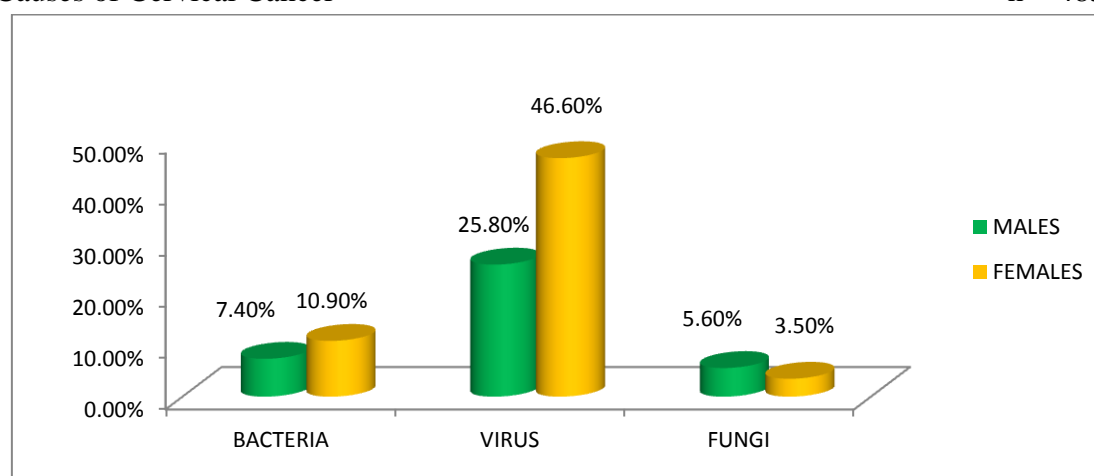


Figure 1 shows the medical students knowledge regarding the causative agent of cervical cancer.

While most of the students (72.4%) knew that the causative agent is a virus, 18.3% students thought

the cancer had a bacterial cause and 9.1% thought fungi is the causative agent of carcinoma cervix.

This difference is statistically significant with a p value of 0.04

**Figure 2: Modes of Transmission of HPV**

n =483

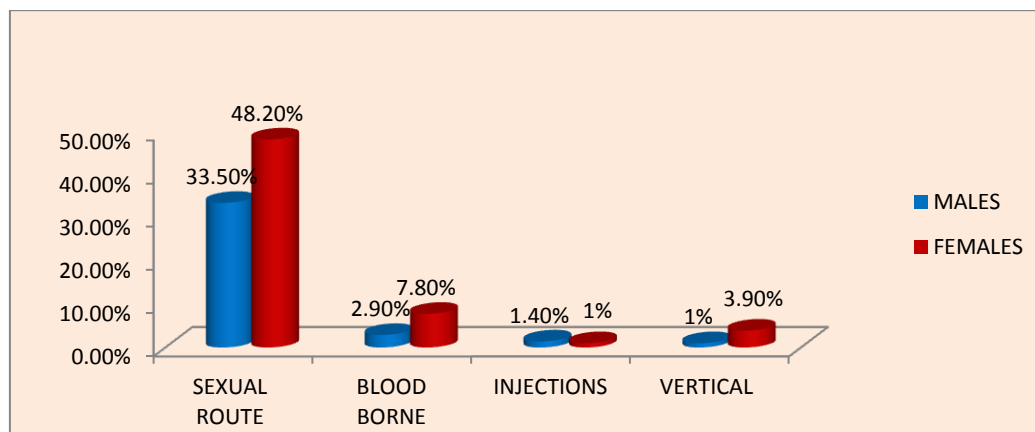
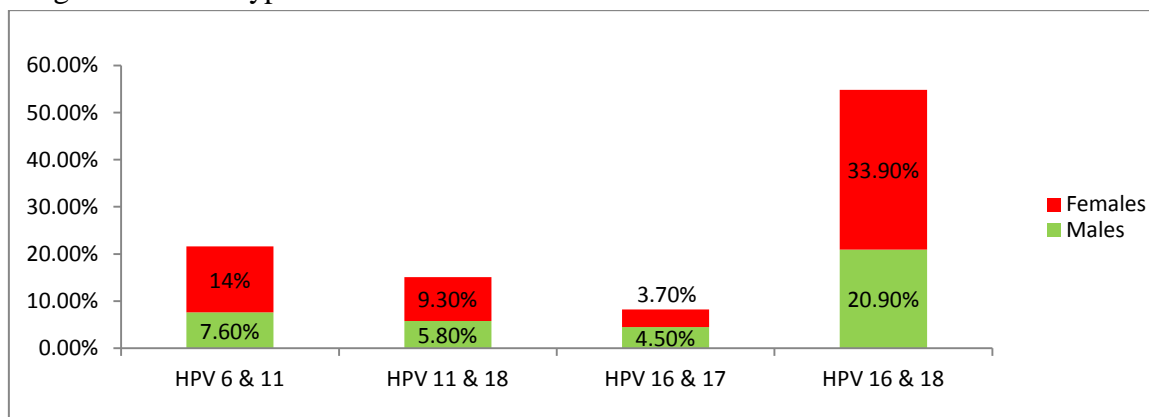


Figure 2 depicts the medical students knowledge regarding the modes of transmission of Human Papilloma Virus. 81.7% answered that sexual route was the mode of transmission, 10.7%

students answered that HPV is transmitted through blood, 2.4% though unsafe injections and 4.9% through vertical transmission.

**Figure 3: High Risk HPV Types**

n=483



From the figure number 3 it is clear that 54.8% of the medical students knew that HPV 16 and 18 are the high risk types causing cervical cancer. HPV 6

and 11 was thought to be the high risk HPV types by 21.6%, HPV 11 and 18 by 15.1% and HPV 16 and 17 by 8.2%.

**Figure 4: Risk Factors of Cervical Cancer**

n=483

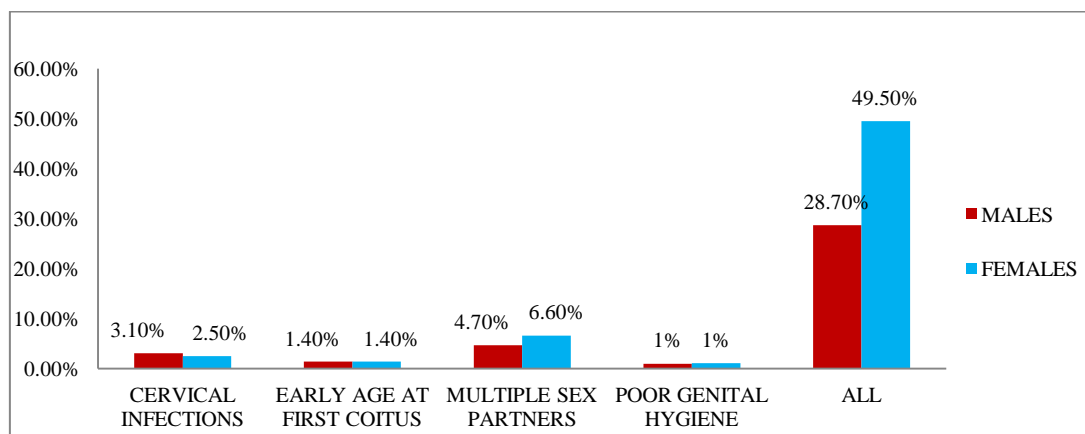
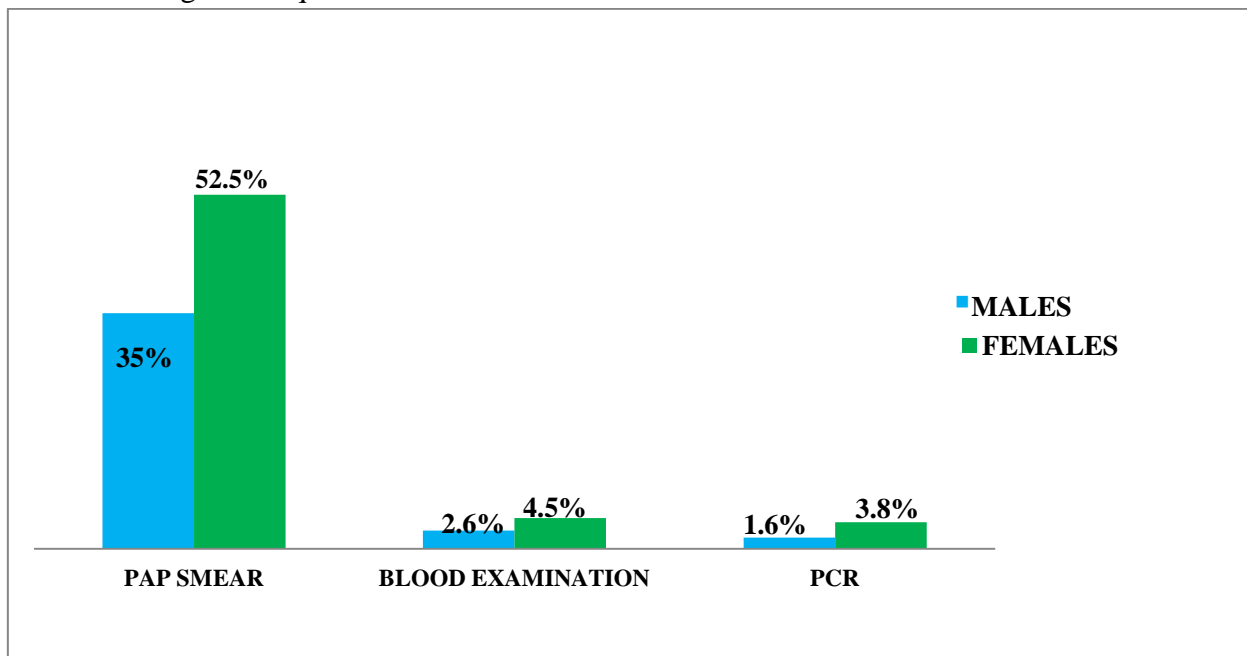


Figure number 4 shows the medical students knowledge about the risk factors of cervical cancer. Majority of the students (78.2%) answered that all the mentioned risk factors i.e cervical

infections, early age at first coitus, multiple sex partners and poor genital hygiene lead to carcinoma cervix.

**Figure 5:** Screening Techniques for Cancer Cervix

n=483



Awareness regarding the screening procedure for cervical carcinoma is shown in figure number 5. 87.5% students knew that pap smear testing is the technique adopted for screening cervical cancer. Very few students have answered that blood examination and PCR are the screening tests for cervical cancer.

The knowledge among the medical students regarding the necessity of screening for early detection of cervical cancer. 97.7 % ( 37.9% boys and 59.8% girls ) of the study population say that screening is useful tool in early identification of women with cervical cancer.

In table number 1 KAP regarding HPV vaccination is given. None of the male students

have been vaccinated with HPV vaccine while 54.8% of female students have taken the vaccine. 73.8% of the medical students know that HPV vaccine is given through intramuscular route. 59.6% knew that the vaccine is given into the deltoid. .65% students knew that 0.5ml is the correct dosage of the HPV vaccine. 43.5% students gained knowledge regarding HPV vaccine from teachers and textbooks. Lack of knowledge about the benefits of HPV vaccine (39.5%) is the main reason preventing the medical students from advising and receiving HPV vaccine

Table 1: Knowledge, Attitude And Practice Regarding HPV Vaccination

n=483

KAP REGARDING HPV VACCINATION AMONG THE MEDICAL STUDENTS	MALES	FEMALES
<b>1) HAVE YOU BEEN VACCINATED WITH HPV VACCINE</b>		
YES	0(0%)	265(54.8%)
NO	188(38.9%)	30(6.3%)
<b>2) ROUTE OF HPV VACCINE ADMINISTRATION</b>		
IM	134(27.7%)	223(46.1%)
SC	50(10.5%)	63(13%)
IV	4(0.8%)	9(1.9%)
<b>3) SITE OF HPV VACCINATION</b>		
DELTOID	112(23.2%)	176(36.4%)
GLUTEAL	56(11.6%)	71(14.7%)
FOREARM	20(4.1%)	48(10%)
<b>4) DOSAGE OF HPV VACCINE ( p=0.05 )</b>		
0.1ML	36(7.5%)	83(17.2%)
0.5ML	134(27.7%)	180(37.3%)
1.0ML	18(3.7%)	32(6.6%)
<b>5) SOURCE OF INFORMATION ABOUT HPV VACCINE</b>		
TEACHERS & TEXTBOOKS	78(16.2%)	132(27.3%)
INTERNET	58(12%)	73(15.1%)
NEWSPAPER	26(5.4%)	56(11.6%)
FRIENDS	26(5.4%)	34(7%)
<b>6) REASONS PREVENTING YOU FROM ADVISING OR RECIEVING HPV VACCINATION ( p = 0.005 )</b>		
HIGH COST	56(11.6%)	74(15.3%)
SIDE EFFECTS	32(6.3%)	59(12.2%)
DOUBT ON EFFICACY	12(2.9%)	48(9.9%)
LACK OF KNOWLEDGE	84(17.4%)	107(22.1%)

## Discussion

In the present study the mean age of the study population is  $21.47 \pm 0.6$  years. In a study conducted at Bhutan among female university graduates the mean age of the participants was  $23.43 \pm SD 2.73$  years.<sup>[6]</sup> and in a study done by Mehta S et al among medical students at Delhi the mean age was  $21.5 \pm 1.2$  years.<sup>[7]</sup>

61% of the study population are girl students and 39% are boys in the present study which is similar to China study where 32.1% of the medical students were males and 67.9% were females.<sup>[12]</sup>

In the present study most of the students (72.4%) knew that the causative agent is a virus. In the Mehta S et al study 96% implicated HPV as a causative agent of cervical cancer.<sup>[7]</sup> In a survey conducted in Portugal, 55.4% had already heard of HPV, although 88.3% amongst them knew that HPV is a risk factor for cervical cancer.<sup>[14]</sup>

In a study done among interns and nursing students in Karachi by Ali SF et al, majority of the respondents were aware that HPV is transmitted sexually (89%), which is similar to the present study (81.75%).<sup>[5]</sup>

In the present study 54.8% of the medical students knew that HPV 16 and 18 are the high risk types causing cervical cancer whereas in a study done by Pandey D et al results showed that knowledge regarding the cause of cervical cancer due to high risk HPV was 89.2%.<sup>[9]</sup>

In the Karachi study sexual practices such as unprotected sex, multiple partners and other promiscuous behaviour were reported as the most common risk factors observed (45%) whereas 16% of the sample was of the opinion that poor hygiene can be a risk factor for cervical cancer.<sup>[5]</sup>

In the present study the results were quite contrasting with 78% opining that unsafe sexual practices lead to cancer cervix. In a study

conducted at Bhutan among female university graduates, being sexually active from early age was thought to increase the risk of getting cervical cancer in 50.4% and the risk of developing cervical cancer increases with multiple sexual partners in 53%.<sup>[6]</sup> According to Mehta S study 55% students knew HPV infection spreads by sexual as well as non-sexual route but 38% said that it only spreads sexually.<sup>[7]</sup> In a study done by Hoque E and Hoque M early onset of sexual activity 28.7% and multiple sexual partners 31.1% were thought to be the risk factors of cervical cancer.<sup>[8]</sup>

In the present study 87.5% students knew that PAP smear testing is the technique adopted for screening cervical cancer. Majority of the interns and nurses in the Karachi study thought that Pap smear (61%) can be used to detect HPV.<sup>[5]</sup> In a study done by Saha A proportion of the students who have ever heard of Pap smear test and HPV were 11% and 15 % respectively.<sup>[15]</sup>

In the present study 97.7 % (37.9% boys and 59.8% girls) of the study population say that screening is a useful tool in early identification of women with cervical cancer. In the Karachi study 54% of both interns and nurses were aware that there is a screening test for cervical cancer among which 75% knew the correct screening test, which is PAP smear.<sup>[5]</sup>

None of the male students in the present study have been vaccinated with HPV vaccine while 54.8% of female students have taken the vaccine. Rashwan HH conducted a study among pharmacy students where only 11 respondents (3.6%) took the HPV vaccine.<sup>[16]</sup> In the Mehta S study 18% of the medical students did not know that HPV vaccination prevents cervical cancer.<sup>[7]</sup> In the China study 48.8% students were aware about the preventable effect of HPV vaccine on cervical cancer.<sup>[12]</sup> In a study done at Saudi Arabia 38.7% male and 27.2% female students were aware that vaccine is available against cervical cancer.<sup>[13]</sup>

Mass media (63%) and health professionals (63%) were the main source of knowledge concerning cervical cancer in the Karachi study.<sup>[5]</sup> In the

present study 43.5% students gained knowledge from teachers and text books. In a study done by Hoque E and Hoque M knowledge about HPV was gained through community health workers in 22.3%, others (radio/TV/magazine/newspaper) in 18.7% and through medical or nursing staff in 19.9%.<sup>[8]</sup> In the Pandey D study the most common source of information for the study population was medical school teaching (42.9%) followed by internet (29.9%).<sup>[9]</sup> In the China study, school courses (66.4%) were the major source of knowledge about HPV vaccination.<sup>[12]</sup>

In the present study lack of knowledge about the benefits of HPV vaccine (39.5%) is the main reason preventing the medical students from advising and receiving HPV vaccine. In a study done by Zimet CD et al among 20 adolescent women attending an urban community adolescent health clinic and 20 adult women attending sexually transmitted disease (STD) clinic, it was observed that efficacy, physician's recommendation, and cost influenced receipt of the HPV vaccine most strongly.<sup>[10]</sup> A survey conducted in Portugal revealed that 89% students (n = 841) want to be vaccinated against cervical cancer, but only 13.8% stated as main reason to be vaccinated as prevention of the disease.<sup>[14]</sup>

### Conclusion

It is concluded from the above study that the level of knowledge regarding the risk factors of cervical cancer, routes of transmission, screening techniques and HPV vaccine is satisfactory among undergraduate students. However, there is an increasing trend in the level of knowledge among the different semester students. What is needed now is the strengthening of health systems to enable them to implement women and girls access to the services they need to stay alive.

### Implications of the Study

1. To improve the status of HPV vaccination among medical students.

- To provide health education to the community regarding HPV vaccine through the medical students.

### Recommendations

- In developing countries like India where awareness regarding cervical cancer, prevention and screening is lacking among women and access to health care facilities is poor, it is mandatory for every undergraduate student to have a thorough and detailed knowledge about the spread and preventive aspects of cancer cervix, irrespective of their year of study.
- Better health education to women given by trained undergraduate students would ultimately decrease the burden of this preventable cancer through prevention and early diagnosis.

### Limitations of the Study

Medicals students represent only a small proportion of the female population in the community. KAP regarding vaccination among medical students alone would not represent the entire female population.

Conflict of Interest: Nil

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