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Attitude and Acceptance of HPV Vaccination among Postgraduate Medical Students in South India

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ABSTRACT: INTRODUCTION: Cervical cancer is the fourth leading cause of cancer and cancer deaths in women in 2022, with an estimated 660 000 new cases and over 350 000 deaths We chose postgraduate medical students for the simple reason that in a few years these students will be the practicing clinicians, and will be sought by the population as the first line information resources and can play a pivotal role in spreading awareness among a wide range of population. Educational initiatives targeting health care professionals have a definitive role in fostering vaccine acceptance.

AIMS AND OBJECTIVES: This study assess the knowledge and awareness of HPV vaccination and acceptability of vaccination among postgraduate medical students in south India.

MATERIALS AND METHODS: This is a cross sectional study to know the awareness and attitude towards HPV vaccination among postgraduate medical students in south India. The students who were present on that day were taken into consideration. The students were assured of confidentiality of information and questionnaire was given after obtaining their consent. The filled forms were collected immediately.

RESULTS: Majority of postgraduate medical students were aware regarding cervical cancer and its prevention by HPV Vaccination but only 25 % students have taken vaccine. Most of the students were willing to get vaccinated after the study.

CONCLUSION: Being future physicians, it's their responsibility towards community to educate the women about the benefits of vaccination. The attitude of majority of students towards receiving vaccination and willingness to get educated regarding vaccination was positive. Thus, we recommend health educational programmes and group discussions where HPV infection, cervical cancer, and its vaccine are discussed which may help in improvement of knowledge regarding HPV and HPV vaccine acceptability.

KEYWORDS: HPV vaccination, Cervical cancer, Postgraduate medical students,

I. INTRODUCTION

Cervical cancer has been a major public health problem for women for several decades. It is the fourth most diagnosed cancer among women worldwide, with 660 000 new cases and 350 000 deaths Cervical cancer is a malignant tumor arising from the cells of the uterine cervix. The oncogenic human papillomavirus (HPV) infection is the main causative agent of cervical cancer [1, 2]. HPV-16 and 18 are the most important high-risk types, accounting for about 70% of cervical cancers worldwide reported in 2018.

- Age standard incidence rate of cervical cancer cases attribute to HPV in INDIA - 14.7(estimates for 2018) . Underdeveloped and developing countries bear more than 80% of the global cervical cancer burden (WHO,2010).[3]
- The high mortality rate from cervical cancer globally could be reduced by effective interventions.
- Primary prevention begins with HPV vaccination of girls aged 9-14 years, before they become sexually active
- Prophylactic HPV vaccines were developed to target the commonest high and low risk HPV genotypes.
- Two such vaccines were first licensed for clinical use in 2006 following phase-3 clinical trials, which showed efficacy, safety and immunogenicity against vaccine related HPV types.
- As preventing cancer with the help of a vaccine is a comparatively new concept, awareness and education will have important implication in the implementation of this strategy. It should be well understood that the mere availability of an effective vaccine is not synonymous with an effective vaccination program.
- We chose postgraduate medical students (age group: >25yrs) for the simple reason that in a few years these students will be the practicing clinicians, and will be sought by the population as the first line information resources and can

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play a pivotal role in spreading awareness among a wide range of population. Educational initiatives targeting health care professionals have a definitive role in fostering vaccine acceptance.

- Currently available vaccines now include bivalent(targets HPV 16/18) [4,5,] quadrivalent(targets HPV 16/18/6/11) and nonavalent (targets HPV 16/18/6/11 as well as five next most oncogenic types 8 found in cervical cancer,31/33/45/52/58) .
- Clinical trials indicated efficacy of the vaccines against HPV types included in the respective vaccines as well as some modest cross protection against some nonvaccine but phylogenetically related strains(HPV 31,33 for HPV 16 related types and HPV 45 for HPV 18 related types) .
- Two types of recombinant vaccines against HPV have been approved for use in India marketed as Gardasil and Cervarix.
- The awareness and attitudes about HPV vaccine among postgraduate medical students have been reported, but data are limited regarding HPV vaccine acceptability and recommendation to others.
- Medical as well as other health care professional students, as future physicians and health care providers are the key stakeholders in improving awareness of HPV-related disease burden and advocate for HPV vaccination programs.

II. AIMS AND OBJECTIVES

This study assesses the status and acceptability of HPV vaccination among postgraduate medical students who will be the future clinicians to create awarness in public regarding importance of HPV vaccination in prevention of cancer cervix.

III. MATERIALS AND METHODS

This is a cross-sectional study conducted from august 2023 to January 2024 to know the awareness and attitude towards HPV Vaccination among postgraduate medical students in south India.

- This study conducted among female postgraduate's medical students of all the departments in south India. The students who were present on that day were taken into consideration. The students were assured of confidentiality of information and questionnaire was given after obtaining their consent. The filled forms were collected immediately.

IV. ANALYSIS

Analysis was done based on study variables like knowledge and awareness about HPV infection and vaccine, attitude towards HPV vaccination and prevalence of vaccination among study population.

V. RESULTS

The study sample consisted of 180 postgraduate medical students.72 were gynecology postgraduate medical students and 108 were non-gynaecolgy postgraduate medical students. Their age ranged between >24years.

AGE DISTRIBUTION

TABLE - 1

AGE GROUP	**GYNECOLOGY PGS (n=72)**	**NON- GYNECOLOGY PGS (n= 108)**
<25 yrs	6 (8.3%)	18 (16.6%)
25-30 yrs	62 (86.6%)	78 (72.2%)
30-35 yrs	4 (5.5%)	12 (11.1%)
>35 yrs	0	0

MARITAL STATUS

TABLE - 2

MARITAL STATUS	**Gynecology PGs** (n=72)	**Non- Gynaecology** (n=108)
MARRIED	48 (66.6%)	52 (48.1%)
UN-MARRIED	24 (33.3%)	56 (51.8%)

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Knowledge regarding HPV vaccination:

CORRECT ANSWERS REGARDING HPV VACCINATION	GYNECOLOGY PG MEDICAL (n=72)			NON-GYNECOLOGY PG MEDICAL STUDENTS (n=108)		
	CORRECT ANSWERS	INCORRECT ANSWERS	NOT ANSWERED	CORRECT ANSWERS	INCORRECT ANSWERS	NOT ANSWERED
Target age group for HPV vaccine 9 to 26yrs	58 (80.5%)	14 (19.4%)	0	62 (57.4%)	46 (42.5%)	0
Can it be given to boys? YES	64(88.8%)	8(11.1%)	0	58(55.7%)	46(44.2%)	4
Can it be given to sexually active girls? YES	61(84.7%)	11(15.2%)	0	64(59.2%)	44(40.9%)	0
Do girls/woman need to be screened for HPV before getting vaccinated? NO	69(95.8%)	3(4.1%)	0	54(52.9%)	48(47%)	6

	GYNECOLOGY PGS			NON-GYNECOLOGY PGS		
Can it be given to a woman with h/o HPV infection / abnormal Pap smear? YES	52(72%)	20(27%)	0	70(70%)	30(30%)	8
How many doses of HPV vaccine are required for protection a. if given at less than 15 years of age - 2 doses b. If given at more than 15 years of dosesage 3	62(86%)	10(13.8%)	0	64(66.9%)	32(33.3%)	12
Is it recommended to repeat the schedule for any missed dose NO	64(88%)	8(11%)	0	72(66%)	36(33%)	0
According to recent evidence, single dose of HPV vaccine is equally effective compared to 2 doses in < 15yrs of age - YES	60(83%)	12(16%)	0	64(59.2%)	44(40.7%)	0
Is HPV vacccine contraindicated during lactation ? NO	66(91%)	6(8.3%)	0	82(75.9%)	26(24%)	0

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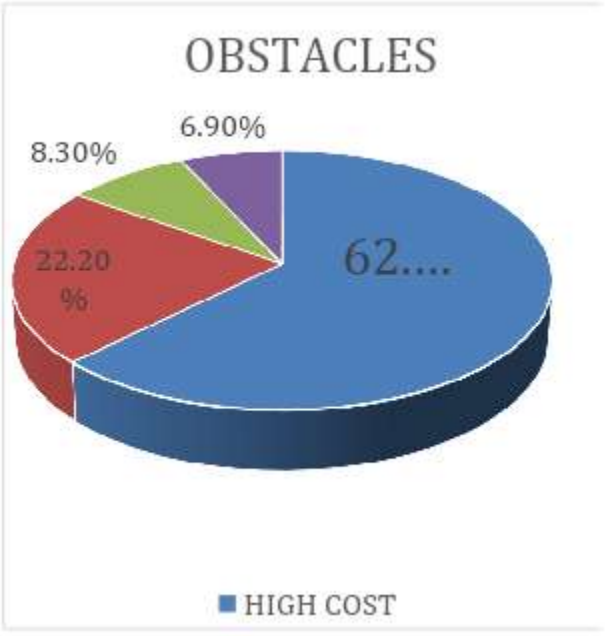
	GYNECOLOGY PGS			NON-GYNECOLOGY PGS		
Is pregnancy testing necessary prior to HPV vaccine? NO	68(94%)	4(5.5%)	0	92(85%)	16(14%)	0
Is there a need for booster dose after HPV vaccination schedule? NO	58(80.5%)	14(19%)	0	56(51%)	52(48%)	0
Is it safe to have sex without condom after HPV vaccine? NO	62(86.1%)	10(13%)	0	78(72.2%)	30(27%)	0
Do girls/women who have already been vaccinated , require cervical cancer screening? YES	64(88.8%)	8(11%)	0	62(57%)	46(42.5%)	0
Cervical cancer protection provided by HPV vaccine for sexual exposure? 97-100%	60(83.3%)	12(16%)	0	72(66.6%)	36(33.3%)	0

ACCEPTANCE OF VACCINATION:

	ONE DOSE	TWO DOSES	TOTAL VACCINATED
Number of students received vaccination	18(10%)	14(7.7%)	32(17.7%)
NUMBER OF STUDENTS NOT RECEIVED VACCINATION	148 (82.2%)		
NUMBER OF STUDENTS READY TO ACCEPT VACCINE	148(82.2%)		

OBSTACLES PREVENTING TO RECEIVE VACCINATION IN OBGY POSTGRADUATES:



OBSTACLES PREVENTING TO RECEIVE VACCINATION IN NON-OBGY POSTGRADUATES:

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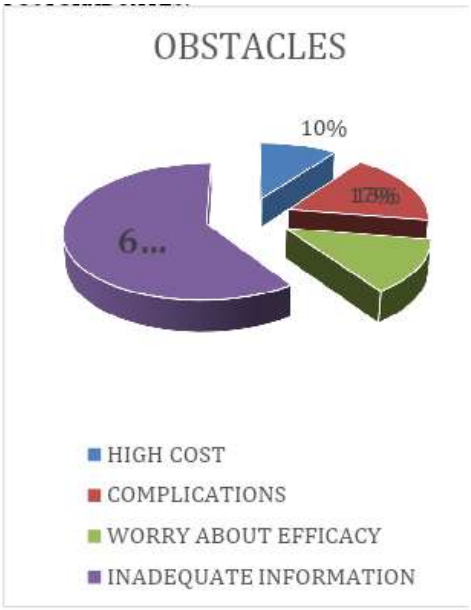

Knowledge Regarding HPV Vaccine: Out of 180 students who were included in this study. Out of this,72(40%) were gynecology postgraduate medical students and 108(60%)were non gynecology postgraduate medical students

- About 66% answered correctly about the age group in whom the vaccine can be administered out of which 58 (80.5%) subjects were gynecology postgraduate's medical students and 62(57.4%) were non-gynecology postgraduate medical students
- All students who were aware of availability of vaccine were also aware of HPV vaccine dosage schedule among which 62(86%) were gynaecology postgraduates and 64(66.9%) were non-gynecology postgraduates.
- Awareness regarding there is no need to repeat the schedule for any missed dose among which 64(88%) students were gynecology PGs and 72(66%) were non gynecology PGs
- Awareness regarding single dose of HPV vaccination is equally effective compared to 2 doses in <15yrs of age among which 60 (83%) Gynecology PGs and 64(59.2%) non Gynecology PGs were aware of it.
- Awareness regarding there is no need of screening for HPV before getting vaccination 69 (95.8%) gynecology pgs and 54(52.9%) non gynecology pgs were aware of it.
- Awareness regarding woman with history of HPV infection/abnormal pap smear, vaccine can be given in which 52(72%) gynecology pgs and 70(70%) non gynecology pgs aware that vaccine is recommended.
- 68(94%) gynecology pgs and 92(85%) non gynecology pgs were aware that pregnancy testing is not needed prior to HPV vaccine
- Awarness regarding protection provided by HPV vaccination against cervical cancer is 97-100% among which 60 (83.3%) gynecology pgs and 62(57%) non gynecology pgs were aware of this.

ATTITUDE TOWARDS HPV VACCINATION

Out of 180 students, only 32(17.7%) received vaccine, 18(10%) students received 1 dose and 14(7.7%) students received 2 doses of vaccine 148(82.2%) students not received vaccination, and all are ready to receive vaccine

VI. DISCUSSION

In our study 70% answered correctly about administration of HPV vaccine dosage schedule which was slightly higher than the study done by K Swarnapriya et al[5] where it was 44.4%.

- In our study 45.6% answered correctly about the efficacy of HPV vaccine whereas it is only 17.9% in a study by K Swarnapriya et[5]
- The willingness to advice/receive the vaccine was 82.2% in our study which is slightly higher than the study by K Swarnapriya et al where it was 51.46%. similar results were observed in studies by Mehta et al it was 66.8 % and 64% by Kamini et al, 88% in Sharma et al .
- The major obstacles to implementation of HPV vaccine programs in our country as mentioned by Bhatla N et al included cost, acceptability, lack of public awareness and infrastructure,

concern about unknown side-effects and social and religious barriers

- In their review article by Bharadwaj at el, high cost of the vaccines was stated as the major concern for mass vaccination program in India[7] . Majority of participants agreed that most important obstacle in implementation of HPV vaccination program in our country is inadequate information.
- Gradually its awareness in general population and more specifically among medicos is rising but unfortunately only a few are getting themselves vaccinated. Out of the 180 female postgraduate medical students in the present study, only 32 participants had received the HPV vaccination. In another study from Rajasthan, from a different medical college, 6.25% students were vaccinated. Similar vaccination acceptance rate of 6% and 10% was observed in two different medical colleges of India and slightly higher rate of 21.1% in a Brazilian study. The willingness to accept vaccine was 66.8% in a study by Mehta et al. and 64% by Kamini et al. versus 88% in our study

VII. CONCLUSION

The present study reports that more than half of the students were aware of HPV vaccine, majority being GYNECOLOGY postgraduate medical students reflecting that the medical curriculum does play a role in spreading awareness. Despite good awareness among Gynecology medical students when compared to non-gynecology students, very less number of them received vaccination, the main reason being the high cost of vaccine and inadequate information about vaccine.

- However, the attitude of majority of students towards receiving vaccination and willingness to get educated regarding vaccination was positive. Thus, we recommend health educational programmes and group discussions where HPV infection, cervical cancer, and its vaccine are discussed which may help in improvement of knowledge regarding HPV and HPV vaccine acceptability.
- Being future physicians, it's their responsibility towards community to educate the women about the benefits of vaccination. The attitude of majority of students towards receiving vaccination and willingness to get educated regarding vaccination was positive. Thus, we recommend health educational programmes and group discussions where HPV infection, cervical cancer, and its vaccine are discussed which may help in improvement of knowledge regarding HPV and HPV vaccine acceptability.

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