

A Study to Assess Knowledge Regarding Cervical Cancer and HPV Vaccine among Nursing Students

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ABSTRACT

Background: Healthcare workers, especially the nursing students, can play a significant role in providing the recommendations to prevent or manage cervical cancer (CC) caused by human papilloma virus (HPV). However, it is often observed that the awareness about the knowledge of CC and HPV is limited in the nursing students, who are part of the front-line support for managing the patients.

Objective: To evaluate the knowledge and acceptance of CC and HPV vaccine among nursing students. **Methodology:** In this cross-sectional study, 90 nursing students of the age group > 18 years were included. Their knowledge regarding cervical cancer (risk factors, screening, and prevention) was explored through a questionnaire. The acceptability of HPV vaccine among girls was also assessed. Descriptive statistics, chi-square test and regression method were used to analyze the study data with $p < 0.05$ considered as statistically significant. **Results:** Knowledge regarding cervical cancer and HPV vaccine was 2.40 times more in B.Sc nursing third year subjects than compared to B.Sc nursing 2nd year. Proportion of subjects willing for vaccination in future was high among females. Age and education were the only variables found to be significant after application of logistic regression model. **Conclusion:** The study suggests that the overall awareness and knowledge about CC, HPV and HPV vaccination was high among college students and associated with sex, education, and family background. This study inferred that a vast majority of subjects were aware of CC, but the knowledge of risk factors and prevention techniques was lacking.

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INTRODUCTION

Cervical cancer (CC) is the fourth most frequent cancer in women globally and eighth most commonly occurring cancer overall with an estimated 604000 new cases and 342000 deaths in 2020 representing 6.6% of all female cancers. Lower and middle income countries have the highest burden which reflect major inequities driven by lack of access to national HPV vaccination, cervical screening and treatment services.¹ India has a population of 511.4 million women, aged 15 years and older, who are at the risk of developing CC of which annually, 1,23,907 women are diagnosed with CC and 77348 died due to CC. It is the second most common cancer among women in the reproductive age group.² CC is caused by the human papilloma virus (HPV); HPV-16 and HPV-18 are predominantly responsible for 70%–80% of the total cases.² Based on Indian studies, about 82.7% of invasive CCs have shown the presence of

HPVs 16 or 18.2 As evidence, CC is a major public health issue in India which creates the need to spread awareness among the female population regarding its risk factors and preventive measures. There is an urgent need to sensitize them to the disease through health education and screening programs. Though Pap smear is the conventional screening method, it is less known among the rural regions. Another barrier to the diagnosis of CC is the stigma faced by the women, especially in rural area, when discussing the problem and the screening procedure.³ CC can be prevented and cured through a comprehensive approach comprising of prevention, early diagnosis, application of various screening methods and treatment measures.⁴ The health care professionals (HCP) play a vital role in prevention and spreading awareness regarding CC and HPV vaccines. HCPs including the paramedical staff comprise the most

visible front-line personnel providing health education to the patients and the general population.⁵There is an urgent need to create awareness among nursing students as they are the future nurses who will work for the betterment of the society.

Materials and methods

This cross-sectional study was conducted among 90 nursing students (45 B.Sc Nursing 2nd year students and 45 B.Sc Nursing 3rd year students) from a nursing college in Jalalabad during the period of 1st October to 31st October, 2022. Informed consent was obtained from all the participants before the commencement of the study. Self-structured questionnaire was used as study tool and information regarding sociodemographic profile of study participants, their knowledge regarding CC—risk factors, screening, and prevention were assessed. Knowledge regarding CC vaccine and the acceptability of HPV vaccine among girls was also assessed. The assessment of the knowledge was performed using a score-based method. The correct answer was scored “2”, near correct “1” and incorrect or don't know was scored as “0”. Data was analyzed using descriptive and inferential statistics and Excel. Continuous variable like age was represented in mean \pm SD form. The study population was characterized by using descriptive statistics and expressed as percentages. Chi-square test was applied to test the association

between the baseline characteristics and the score was obtained.

Results

The study included students with the mean age of 20.45 ± 1.23 years (18–25 years), predominantly females (91.1%) in B.Sc nursing 2nd year and in B.Sc nursing 3rd year (88.8%) students. Out of the total sample, students (97.7%) had no family history of CC. Majority of the participants obtained the information about CC through standard medical literature such as textbooks (65.3%), followed by internet forums (43.8%) and radio broadcasts (2%). Assessment of knowledge using questionnaire revealed that most of the students were having knowledge about the prevention of CC, its causative agent being virus, mode of transmission being sexual contact, and major risk factors being long-term use of hormonal contraceptives, early sexual intercourse, multiple sexual partners, poor hygiene and smoking. The students also acknowledged that the cervical cancer can be detected in its early stages (Table 1). With respect to screening, vaccination and preventive methods, the students were knowledgeable with the essential information. However, they had poor knowledge with respect to the types of vaccine available in India, number of doses required for age > 16 years, options of vaccination to those with HPV infection, and choice of multiple partners after vaccination.(Table 2 and 3)

Table 1 Knowledge of students regarding cervical cancer

Questions		No. of Subjects (%)	
Is cervical cancer preventable	Yes	78(86.6%)	
	No	8(8%)	
	Don't know	4(4.4%)	
What is the etiology of cervical cancer	Bacteria	5(5.5%)	
	Virus	67(74%)	
	Fungus	3(3.5%)	
	Don't know	20(22.2%)	
What is the mode of transmission of cervical cancer	Sexual contact	46(51.1%)	
	Blood Borne	20(22.2%)	
	Injection	14(15.5%)	
	Vertical	3(3.4%)	
	Don't Know	7(7.8%)	
Can cervical cancer be identified in the early stages	Yes	60(66.7%)	
	No	12(13.5%)	
	Don't know	18(20%)	
What are the risk factors for cervical cancer Long term Use of Hormonal contraceptives.	Long term Use of Hormonal contraceptives.	Yes	55(61.1%)
		No	14(15.6%)
		Don't know	21(23.3%)
	Early sexual intercourse	Yes	40(44.2%)
		No	27(30%)
		Don't know	23(25.6%)
	Multiple sexual partners	Yes	60(66.2%)
		No	18(20%)
		Don't know	12(13.5%)

	Poor Hygiene	Yes	70(77.8%)
		No	5(5.5%)
		Don't know	15(16.7%)
	Smoking	Yes	40(44.2%)
		No	21(23.3%)
		Don't know	29(32.2%)

Table 2 Knowledge of students regarding screening and preventive measures of cervical cancer

Questions			No. of Subjects (%)
What are the screening techniques for cervical cancer?		Pap smear	78(86.7%)
		Blood Culture	3(3.2%)
		PCR	2(2.1%)
		Don't Know	7(7.6%)
What is the screening interval?		Once in a Year	40(44.3%)
		Once in 2 year	12(13.2%)
		Once in 3 Years	14(15.6%)
		Don't Know	24(26.2%)
What are the preventive methods against cervical cancer?	Sexual relationship with a single partner	Yes	46(51.1%)
		No	11(12.3%)
		Don't know	33(36.7%)
	Personal Hygiene	Yes	78(86.5%)
		No	3(3.2%)
		Don't know	9(10%)
vaccination		Yes	82(91.2%)
		No	1(1.1%)
		Don't know	7(7.6%)
Regular Scanning for Cervical cancer		Yes	77(85.5%)
		No	3(3.03%)
		Don't know	10(11.2%)
Barrier methods for Contraception		Yes	70(77.8%)
		No	11(12.3%)
		Don't know	9(10%)
Good Nutrition		Yes	76(84.3%)
		No	8(8.5%)
		Don't know	6(6.6%)

Table 3 Knowledge of students regarding cervical cancer vaccine

Questions		No. of Subjects(%)
Are vaccines available in India?	Yes	77(85.5%)
	No	8(8.6%)
	Don't know	5(5.4%)
What are the types of vaccines available in India	1	3(3.2%)
	2	35(38.6%)
	3	2(2.1%)
	Don't Know	50(55.6%)
What are the number of doses required for age > 16 years	1	5(5.5%)
	2	19(21.4%)
	3	18(20%)
	Don't Know	46(51.2%)
At what age can vaccine be given (in years)	0-9	6(6.6%)
	10-30	40(44.2%)
	31-50	4(4.3%)
	= > 51	20(22.1%)
	Don't Know	20(22.1%)

Who can be vaccinated	Boys	0 (0%)
	Girls	50(55.6%)
	Both	22(24.4%)
	Don't know	18(20%)
Can the vaccine be given to a sexually active girl	Yes	52(86.6%)
	No	8(8.6%)
	Don't know	30(33.5%)
Is screening required for vaccination	Yes	46(51.2%)
	No	22(24.4%)
	Don't know	22(24.4%)
Can vaccine be administered to those infected with HPV	Yes	31(34.4%)
	No	24(26.7%)
	Don't know	35(38.9%)
Post-vaccination, can one have multiple sexual partners	Yes	12(13.3%)
	No	40(44.3%)
	Don't know	38(42.3%)
Is cervical cancer screening required following vaccination	Yes	49(54.4%)
	No	6(6.8%)
	Don't know	35(38.9%)
Will You recommend it to others	Yes	71(78.2%)
	No	2(2.1%)
	Don't know	17(18.6%)

Discussion

Cancer is an invincible disease among which CC is the most common gynaecological cancer affecting the women of age group between 15 and 44 years old. There are different modalities of treatment of cancers. Researchers have found that vaccines could be helpful in the prevention of certain cancers. But the knowledge about HPV, its association with CC and the preventable measures are low among the nursing students.⁴ Thus, the current study was conducted to evaluate the overall knowledge of B.Sc nursing students in the Jalalabad Punjab. The mean age of the subjects in the present study was 20.55 years. The study results also indicated that females had more information regarding screening and preventive measures of CC. Majority of the students (57.57%) were aware of the availability of the HPV vaccine through sources like word of mouth, internet, magazine etc. This finding was similar to the study done by Pandey et al.(2012).⁶ The study conducted by Zimet et al.(2007) showed that 48% of the non-vaccinated population were unlikely to go for vaccination and the reasons cited were that they were married and in a monogamous relationship.⁹ Similarly, most of the students in this study were unwilling to consent for vaccination as they had doubts regarding the efficacy of the vaccine. In the study, students of B.Sc nursing III year subjects illustrated good knowledge regarding cervical cancer and HPV vaccination as compared to B.Sc nursing II-year subjects. Similar findings were addressed in the study conducted by Tripathy et al. (2015).¹⁰ Female nursing students had a significant knowledge score than the

male students. Moreover, they also had very good knowledge regarding screening, preventive measures of CC and were more willing to get vaccinated in future. Similar findings were observed in the studies conducted by Fu et al.(2014), Boehner et al. (2003) and Blumenthal et al. (2012) where female students have answered most of the questions correctly and showed a positivity towards HPV vaccination.¹¹⁻¹⁴ The present study reported that there was no association of age, sex, family history, parents occupation and education which was commensurate with the observations of Swarnapriya K et al. (2015).¹⁵ This study inferred that a vast majority of subjects were fairly aware of CC, but the knowledge of risk factors and prevention techniques was poor. less. As a breach in the knowledge regarding HPV infection and vaccination was apparent a more integrated teaching approach regarding HPV carcinogenesis, vaccination and CC is crucial. HPV education should be systematically incorporated in college curriculums to increase the awareness of HPV vaccination among nursing students. Considering the small sample size and convenient sampling strategy used in this study, we look forward to undertaking a larger survey, to disseminate more knowledge and information regarding CC and HPV vaccination, which can help in many outgrowths.

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