



Original Research

Human papillomavirus infection: vaccine knowledge attitude, and informational behavior among undergraduate students

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Abstract

Background: The study aimed to know the Human Papilloma Virus infection, vaccine knowledge attitude, and informational behavior among university students. **Methodology:** The study was conducted on students of Government College University Faisalabad from January 2022 to March 2022. The study consisted of a questionnaire that verbalized the awareness and prevalence of HPV in particular age groups male and female students. The questionnaire was divided into four sections to assess the awareness, knowledge, and behavior of students toward the Human Papilloma Virus (HPV). **Results:** In the demographic representation about 85% (n=235 out of 275) of students belong to the age group of 18-22 while 14% (n=38 out of 275) students were from 23 to 24 years old. 23%(n=64) students were males while 76%(n=211) participants were females. Figures collected showed that 1%(n=3) participants were married while the remaining (about 98%) were single. According to the figures, about 70% of the partakers knew about the mode of transmission and the complications caused by the Human Papilloma Virus while 34% of all the students had no idea about HPV, its transmission, complications, or treatment. 65% had an idea that HPV causes genital warts and 75% were aware of the HPV vaccine. Moreover, 65% of students thought condoms as a source of prevention against HPV and 54% marked contact with body fluids as a mode of transmission of HPV. **Conclusion:** The knowledge and attitude towards HPV infection and HPV-related diseases and HPV vaccine among female students in the Government College University Faisalabad were significant. There is a need of well-defined education programs in the form of seminars, workshops and symposiums on the awareness of HPV infection are necessary to fill the knowledge gap among general population.

Introduction: Human papillomavirus (HPV) is a spherical, non-enveloped, double-stranded DNA virus that is a causative agent of more than one neoplasia and lesions in epithelial linings. It causes genital warts and non-genital warts which can lead to cancers. HPV is responsible for carcinomas, and lesions especially genital and not genital linings [1]. HPV has 100 types based on DNA. Homosexuals and people who have more than one sexual partner are at high risk of multiple HPV infections. Due to continuous HPV infection, there are more chances of acquiring multiple types of HPV infection [3]. One of the most prevalent illnesses spread through sexual contact is HPV. Even in the absence of clinical signs, HPV is transmitted by direct skin contact during vaginal, anal, or oral sex with an infected person. The continuous discovery of HPV, particularly high-risk HPV, in the foreskin of kids and teenagers [2] is proof that there are additional horizontal and vertical virus spread methods [3]. It has also been proven that mothers can transmit HPV to their unborn children vertically [4,5].

Human papillomavirus (HPV) is the most common sexually transmitted infection in ladies and men continuous HPV relations is strongly associated with the risk of cervical cancer and genital warts [6]. The currently accepted quadrivalent HPV vaccine objectives the HPV traces accountable for about 70% of cervical cancers and 90% of genital warts. It is also powerful in decreasing the prevalence of HPV-associated situations, particularly whilst giving previous publicity to HPV [7]. The vaccine is suggested for all girls aged 11 to twelve with trap-up vaccination for girls as much as age 26, and most coverage plans cover the vaccine. A 2d bivalent HPV vaccine is currently pending approval via the USA food and Drug Administration (FDA) [8]. HPV vaccination reduces the occurrence of HPV-associated cancers and precancerous lesions within America and abroad, even though decisions concerning the implementation of vaccination remain. all the vaccines use recombinant DNA era and are prepared from the purified L1 protein that self-assembles to shape HPV type-particular empty shells [9].

The study was conducted at Government College University Faisalabad. The study aimed to know the knowledge of Human Papilloma Viruses infection and the HPV vaccine among female undergraduate students at the University of GCUF and their behavior and attitude towards HPV-associated diseases and HPV vaccination.

Materials and methods: The cross-sectional study was conducted on students of Government College University Faisalabad (GCUF) from January 10, 2022, to March 20, 2022. Male and female students from different departments were chosen to carry out the analysis. The contemporary study was survey-based and tentative on students of GCUF.

Study setting and Sample size: The sample consisted of a questionnaire that verbalized the awareness and prevalence of HPV in particular age groups male and female students. The questionnaire was divided into four sections to assess the awareness, knowledge, and behavior of students toward the Human papillomavirus (HPV). The overall proceeding contained 275 students.

Inclusion criteria: The study included all voluntary male and female students of GCUF from both medical and non-

medical (mostly medical) fields with age limits of 18-24years.

Exclusion criteria: The study excluded all known psychological cases and involuntary students. Students except for GCUF and younger than 18 years were also precluded.

Procedure: A self-established questionnaire was designed according to necessity and pertinent questions were enumerated by literature researchers and amended from previously issued studies. After the consummation of the study, a questionnaire was precisely checked by experienced teachers and efficient professors. Questions added for the enlightenment of Human Papilloma Virus (HPV) was whether they have ever heard of HPV before taking this survey. The questionnaire also comprised questions related to their knowledge about Human Papilloma Virus (HPV). Then the details were assembled and arranged to attain results. The questionnaire consisted of four sections. The first section was about the personal information e.g., age, sex, department, and marital status of the volunteer. The second section was on general knowledge about Human Papilloma Virus (HPV) like is HPV rare or common in Pakistan, is HPV symptomatic or asymptomatic. The third portion contained questions about the transmission of HPV and the last part was about the HPV Vaccine.

Statistical analysis: Facts and figures were analyzed ably by using IBM Statistical Package for Social science (SPSS) version 20.0 (IBM SPSS Statistics for Windows, Armonk, NY) and also by Microsoft Excel 2020 (Microsoft Corp, Redmond, WA). Results were presented as frequencies and percentages.

Results: About 275 students from different medical fields of Government University and College Faisalabad participated in the current research. Age and gender were chosen as the two major demographic variables. Students were categorized into three groups according to age. The first group included 18-20years old students while the second group comprised 20 to 22 years old knowledge seekers and in the third group students from 23 to 24 years were placed. The demographic details are listed in Table1. According to the figures, about 70% of the partakers knew about the mode of transmission and the complications caused by the Human Papilloma Virus while 34% of all the students had no idea about HPV, its transmission, complications, or treatment.

The majority of the students were unaware of the Human Papilloma Virus. Only 40% of students knew about HPV. 65% had the idea that HPV causes genital warts and 75% were aware of the HPV vaccine.

Moreover, 65% of students thought condoms as a source of prevention against HPV and 54% marked contact with body fluids as a mode of transmission of HPV.

Discussion: The random sampling survey was carried out among the students of Government College University Faisalabad. Students from different departments (Departments of Eastern Medicine and Surgery (BEMS), Department of Physical Therapy (DPT), Department of Allied Health profession (AHP) Department of Pharmacy (Pharm-D), Microbiology, Zoology, etc.) and age groups took part in the survey. The cross-sectional study was a survey-based trial on male and female students of Government College University Faisalabad (GCUF).

The long-range proceeding contained 275 samples of male and female students. The sample size calculator with confine absurdity was 10 percent and the confidence interval was 90 percent. The study contained all willing male and female students of Government College Faisalabad (GCUF) including medical, living in rural and urban areas from the age limit of 18 to 24 years. The sample was a questionnaire that was related to the create awareness about knowledge, attitude, and information behavior among university students of different age groups at Government College and University Faisalabad (GCUF), Pakistan. Of the total 275 students, only 40%(n=110) were aware of HPV.

In the demographic representation, about 85% (n=235 out of 275) of students belong to the age group of 18-22 while 14% (n=38 out of 275) students were from 23 to 24 years old. 23%(n=64) students were males while 76%(n=211) participants were females. Figures collected showed that 1%(n=3) participants were married while the remaining (about 98%) were single.

Similar studies about creating awareness of HPV were conducted in past. Correspondingly, Mazen M *et al.* (2019) found awareness of human papillomavirus infection complications, cervical cancer, and vaccine among the Saudi population. They found similar demographics of different age groups. Data collected showed approximately, 50% of participants were between 15-22 years and <3% were >46years old. They found that <10% had heard of HPV [10].

Similarly, Torgyn Issa *et al.* (2021) also found knowledge and awareness of human papillomavirus infection and papillomavirus vaccine among Kazakhstani women attending gynecological clinics. They found the demographic characteristics of various age groups including about 14% from 18 to 25 years old, 39% from 26 to 35 years old, 28% were 36-45 years old and 19% were above 46 years. The majority of the participants (81%) were in a committed relationship. 53% of respondents were informed about HPV. Less than half of the respondents (46%) knew that HPV is the major cause of cervical cancer and half of the respondents (52%) were aware of the HPV vaccine [11].

A human papillomavirus is a group of sexually transmitted diseases. About 80% of females can have an acquired infection by the age of 50. HPV infections are known to cause cervical cancers (70%) and genital warts (90%).

The human papillomavirus contains DNA that causes epithelial growth at cutaneous and mucosal covering. About 100 different types of viruses are present, of which about 30 to 40 types infect the human genital tract. These include High-risk types or oncogenic which are the cause of cervical, vulvar, vaginal, and anal tumors, and low-risk types or non-carcinogenic which are the main cause of genital warts. HPV 16 is the most capable of causing cancers. HPV 16 and 18 cause about 70% of cervical cancers while HPV 6 and 11 are the commonest strains giving rise to genital warts (about 90%) [12].

Direct skin contact is the source of HPV. Somehow infection spreads through vaginal or anal intercourse and other means of sexual contact. Most infections initiate during the first year of sexual activity. The risk of infection varies with the number of partners. Condoms are thought to be a source of prevention of infection but are not 100%

effective. HPV infection can be symptomatic or asymptomatic. The chances of infection increase with immunosuppressants, smoking, and oral contraceptive use. Early HPV infections cause mild changes in the cervical epithelium, the changes are called squamous intraepithelial lesions that may be graded as high or low. HPV infections are common among young women causing not only cervical abnormalities but giving rise to cervical cancers also [12].

Conclusion: The study concluded that knowledge about HPV infection, its spread, its associated diseases, and knowledge about HPV vaccination was low among undergraduate students at the university level. The study underscores the need to conduct well-defined HPV-related awareness educational programs in which defined the spread of HPV infection, awareness about HPV infections, its risk factors, associated diseases, and knowledge about vaccination. HPV is also the major cause of cervical cancer. The educational program should be updated to contain programs associated with cervical cancer control and prevention.

Conflict of interest: The authors have no conflict of interest.

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Table 1. Major Demographic details of Participants

Variables	Number	Percentage
Age	18-20	197
	20-22	138
	23-24	040
Gender	Males	064
	Females	211

Table 2. HPV General Knowledge

Variables	Number	Percentage
Heard about HPV	110	40%
Had knowledge about genital WARTS caused by HPV	180	65.5%
Knew about HPV vaccination	207	75.3%

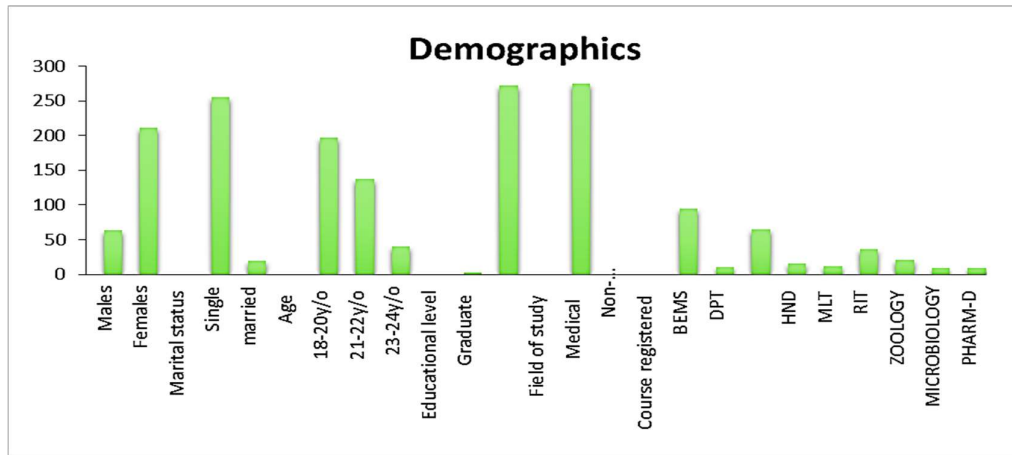


Fig. 1. Demographic Details of participants

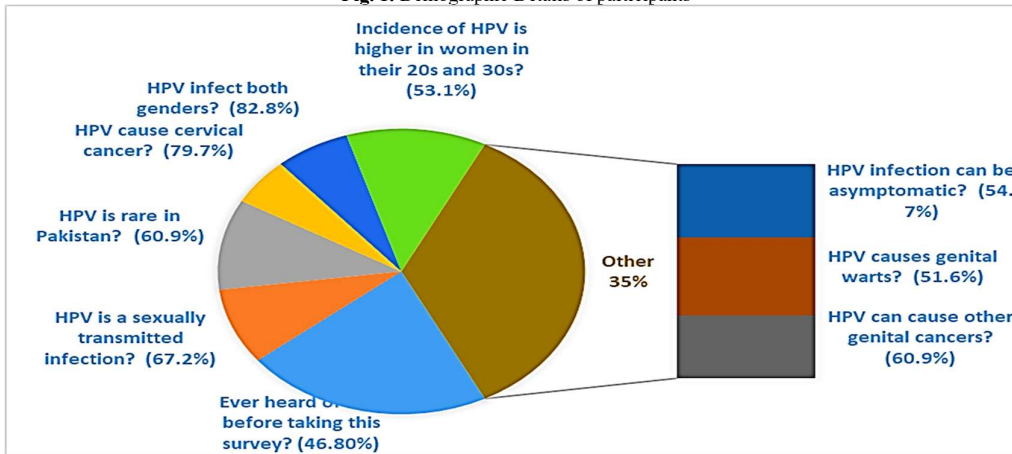


Fig. 2. HPV General Knowledge - shows figures obtained by the partakers about the vaccination against HPV

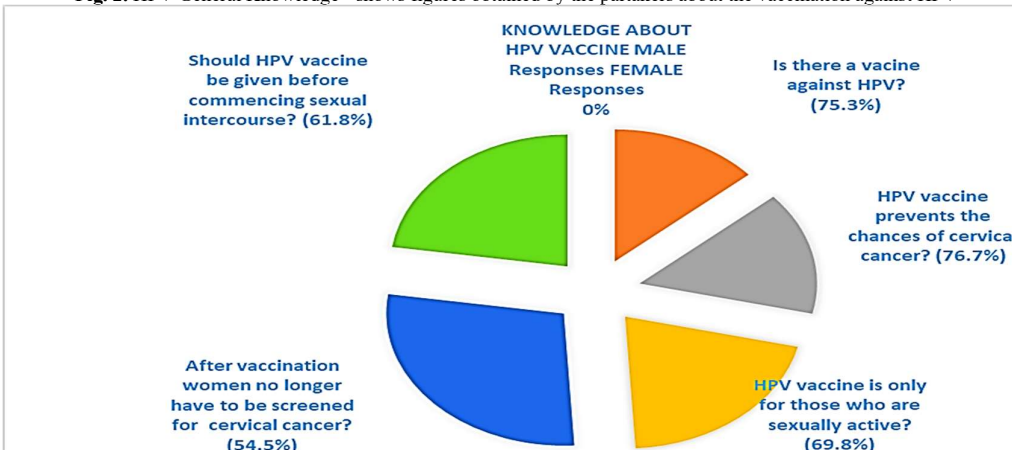


Fig. 3. Knowledge about HPV Vaccine. About 70% of questionnaire takers have faith in vaccinating before having sexual intercourse.