

Relevancy Between Knowledge and Attitudes of Students to Human Papillomavirus (HPV) Vaccine: Literature Review

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ABSTRACT

Background: University students are the key population to be prioritized in terms of uptake and coverage of the HPV vaccine. HPV program policies have recently shifted to target pre- and early pubertal adolescents before the age of 13 years. Evidence shows that adolescents aged 13 and over are less likely to complete the HPV vaccine series. Currently, 23 million young adults aged 19-26 years are not vaccinated. In 2016, only 16% of unvaccinated children aged 13 to 17 years received both doses. In addition, adolescents are less likely to start the HPV vaccine as they age, with only 7% initiation after age 15. Such lower vaccination rates raise the need for an effective follow-up vaccination strategy that targets young populations beyond the recommended adult vaccination schedule. In fact, the CDC's Advisory Committee on Immunization practices recently recommended expanding the vaccination age range to 26 for both men and women, and for clinicians to engage in shared decision-making with older patients (ages 27-45) who might benefit of its use. **Method:** This article using method literature review. It is use selected journals or articles according to the author's criteria and analyzing them to produce a conclusion. Authors using two international database is Pubmed and Scienedirect with the keyword "knowledge and attitudes", "students", and "HPV vaccine". The analysis of the articles used is based on the publication time span of the last 5 years (2018- 2022). The type of journal used is original, full text, and open access. The design of this article was taken using case control and cross-sectional methods. **Result:** The result of a literature search on database by Pubmed and Scienedirect, there are 407 journals according to keywords and time spans. There are 122 journals from Pubmed and 285 journals from Scienedirect. Authors filtered by the title, abstract, method, and result to find relevancy between knowledge and attitudes of students to HPV Vaccine. Total of 20 articles related to this article. **Conclusion:** On average, studies from various journals state that their findings have a lot to do with knowledge and attitudes towards the HPV vaccine, so it is advisable to further promote this knowledge so that there will be more students' positive attitudes towards the HPV vaccine.

Keywords: knowledge; attitude; HPV vaccine; student

INTRODUCTION

HPV infection is known to cause cervical cancer. the prevalence of HPV in cervical precancerous lesions is single infection by HPV16 (48%), HPV18 (20%), HPV52 (4%), HPV59 (4%), and multiple infection by HPV6+31, HPV6+18, HPV6 +45, HPV16+31, HPV61+26, HPV72+68 is 4% (Prasetyo et al., 2017). Approximately 20-30% of all cervical cancer cases are adenocarcinoma and adenosquamous carcinoma. Around 70% of all of these types of cancer are related to infection of Human Papillomavirus (HPV). This study evaluated the distribution of HPV genotype in cervical adenocarcinoma and adenosquamous carcinoma. A cross-sectional study (Mastutik et al., 2021) was conducted at the Department of Anatomic Pathology, Dr. Soetomo General Academic Hospital, Surabaya, Indonesia, from January to December 2015.

The sample were 22 formalin-fixed paraffin-embedded (FFPE) of cervical adenocarcinoma tissues and adenosquamous carcinoma tissues. FFPE was used for DNA extraction and followed with HPV genotyping to detect 40 genotypes of HPV, including low risk (LR) and high risk (HR) HPV. The histopathological types of adenocarcinomas were adenocarcinoma NOS and mucinous adenocarcinoma, while the adenosquamous carcinoma types

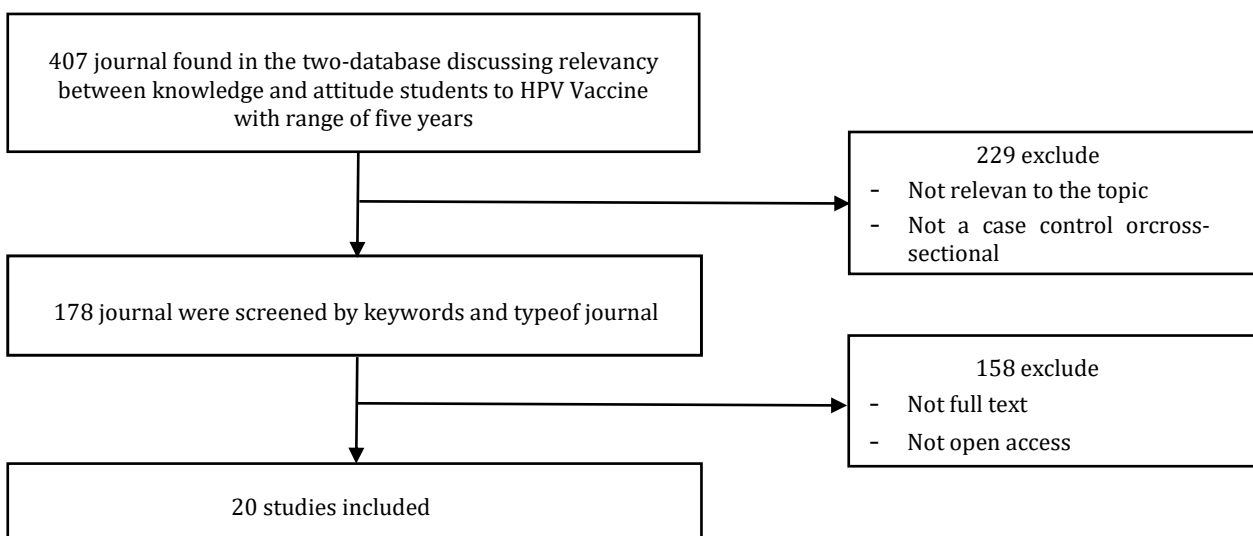
were adenosquamous carcinoma and adenosquamous carcinoma glassy. All of the specimens were infected by HPV. In cervical adenocarcinoma, the infection was by HPV 6, 11, 16, 18, 31, 45, 68B, and 72, and in adenosquamous carcinoma by HPV 6, 16, 18, 45, and 59. HPV 18 was predominant, which was found in 13/22 (59.1%) in adenocarcinoma and 19/22 (86.4%) in adenosquamous carcinoma. Single infection and multiple infections in adenocarcinoma were 13/22 (59.1%) and 9/22 (40.9%), while in adenosquamous carcinoma were 21/22 (95.5%) and 1/22 (4.5%) respectively. The most common HR HPVs found in this study were HPV 18, HPV 45, HPV 16 and LR HPV are HPV 11, HPV 6.

University students are the key population to be prioritized in terms of uptake and coverage of the HPV vaccine. HPV program policies have recently shifted to target pre- and early pubertal adolescents before the age of 13 years (Bernstein et al., 2017a; Bernstein et al., 2017b; Meites et al., 2016). Evidence shows that adolescents aged 13 and over are less likely to complete the HPV vaccine series. Currently, 23 million young adults aged 19-26 years are not vaccinated (Williams et al., 2017). In 2016, only 16% of unvaccinated children aged 13 to 17 years received both doses.

In addition, adolescents are less likely to start the HPV vaccine as they age, with only 7% initiation after age 15 (Bednarczyk et al., 2019). Such lower vaccination rates raise the need for an effective follow-up vaccination strategy that targets young populations beyond the recommended adult vaccination schedule. In fact, the CDC's Advisory Committee on Immunization practices recently recommended expanding the vaccination age range to 26 for both men and women, and for clinicians to engage in shared decision-making with older patients (ages 27-45) who might benefit of its use (CDC, 2019).

METHOD

This article using method literature review. It is use selected journals or articles according to the author's criteria and analyzing them to produce a conclusion.



A research study conducted at the University of Indonesia, where 433 students from the Faculty of Medicine, Nursing, Social Sciences and other faculties participated in the survey showed that more than 90% of students knew about cervical cancer and HPV, but only 68% knew about the HPV vaccine before participate in research. Even though knowledge about the HPV vaccine reached an average, the students showed a strong desire to receive the vaccine around 95.8%. They believe that the HPV vaccine is safe and effective and will protect against HPV infection. High costs and lack of adequate information flow on HPV related topics have been identified as potential barriers to the adoption of the HPV vaccine in Indonesia. Despite the high willingness for the use of the HPV vaccine among students, there is a need to provide education on HPV vaccine related topics to Indonesian students through awareness and training programs and improve the academic curriculum on vaccination for the long-term sustainability of the HPV vaccination program. (Khawatida, 2021)

Research on students of Tunku Abdul Rahman University in Malaysia mostly have good knowledge about HPV vaccination. However, they show a negative attitude towards HPV vaccination so it is necessary to instill and intensify health awareness in all students, especially among male students. (Tusimin, 2019). This is in line with research conducted by (Biselli, 2020) that more than 83% of women and 66% of men know that HPV can cause cervical cancer, but less than 30% of students know that HPV can cause cancer of the vulva, rectum, penis, and oropharyngeal. Less than half of students know that HPV causes genital, anal, and oropharyngeal warts.

Authors using two international database is Pubmed and Scienedirect with the keyword "knowledge and attitudes", "students", and "HPV vaccine". The analysis of the articles used is based on the publication time span of the last 5 years (2018-2022). The type of journal used is original, full text, and open access. The design of this article was taken using case control and cross-sectional methods.

RESULT

The result of a literature search on database by Pubmed and Scienedirect, there are 407 journals according to keywords and time spans. There are 122 journals from Pubmed and 285 journals from Scienedirect. Authors filtered by the title, abstract, method, and result to find relevancy between knowledge and attitudes of students to HPV Vaccine. Total of 20 articles related to this article. The explanation is in the table below.

Compared to students, seniors have more knowledge about the fact that HPV is sexually transmitted, and HPV infection can be asymptomatic. The vaccination rate is 26% for women, and 8% for men.

Research conducted by (Ramesh, 2021) states that there is no significant difference in the average value of knowledge between the sexes. Medical students and health workers had an average knowledge score that was much higher than non-medical students (8.97 and 9.33 vs 7.08). The knowledge of the participants in this study regarding HPV was not high and their awareness regarding HPV vaccination was relatively low. This study shows that there is a need to offer more aggressive educational and promotional activities about HPV and HPV vaccination to college students regardless of their background. Taken together these results emphasize that education about HPV is urgently needed to address some of the worrying knowledge gaps. Research (Anzer, 2022) also agrees that medical students' knowledge of cervical cancer and vaccination is more accurate than non-medical students. They recommend including necessary information about vaccines in schools, colleges, and public education programs. Undergraduate dentistry and medicine students in India indicated an average level of knowledge and awareness about HPV and its prevention. This reflects a greater need to educate health professionals to have a ripple effect on society at large. (Balaji, 2020). Medical students in Ukraine show low knowledge about HPV vaccination and very low rates of HPV vaccination, but the level of awareness of HPV-related cervical cancer is higher.

A large number of students are not sexually active or have never had unprotected sex, so HPV vaccination remains important (Chernysov, 2019).

Another study found that knowledge of the HPV vaccine among students at Peking University was low to moderate, and vaccine uptake was only 9.5%, which was significantly related to knowledge of HPV, vaccines and other factors. There is a need for school-based education to increase knowledge about HPV, as schools are the main and most common source that students look forward to obtaining information. The government should take several steps to increase public awareness about HPV and its vaccine, such as health education programs through social media, to increase the uptake of the HPV vaccine. This is in line with the low level of knowledge about prevention and treatment of cervical cancer among students in Zhengzhou. Many students have poor knowledge about the HPV vaccine, but their willingness to vaccinate is quite high. Various health education should be carried out for people with different characteristics, to increase their knowledge about cervical cancer prevention and promote the vaccination process. (Liu, 2020; Zhang, 2022)

The depth of knowledge of Turkish students about cervical cancer, HPV infection, and vaccination is inadequate so (Cinar, 2018) suggests it is important to provide education and counseling services to make students aware of HPV infection and vaccination. Findings (Bencherit, 2022) indicate a low level of awareness about HPV and the HPV vaccine among Algerian university students, even if their cervical cancer awareness level is satisfactory. Taken together, these results highlight the fundamental need to develop a national awareness plan on cervical cancer, HPV vaccination and HPV using modern communication skills, particularly social media platforms. This is supported by research (Voidazan, 2022) where most of the respondents collected their information about HPV infection and vaccination from Internet sources and assessed their level of knowledge for themselves whether it was satisfactory or bad. Very few respondents sought information from their GP or HPV specialist, at the same time considering that accurate information about HPV must be provided by doctors and health professionals. To reduce the risk of HPV-associated cancers, adherence of the population to screening programs and dissemination of relevant information by medical staff are key elements. Vaccination information campaigns and screening programs are effective ways to reduce the incidence, mortality, and morbidity associated with HPV infection. Education of adolescents and young adults about HPV can make them more sexually responsible, which may also predispose them to be vaccinated. An important role can also be played by schools, where biology teachers, class leaders, and school doctors can provide relevant information about common aspects of HPV infection. In addition, sex education classes can be conducted by a mixed team of medical specialists and psychologists, covering sexual health topics such as HPV infection and vaccination, as well as prevention of other sexually transmitted infections.

Research (Chew, 2021) on students who have received vaccines, knowledge of HPV vaccination for cervical cancer prevention has poor knowledge about Pap smears and does not consider regular Pap smears as an important cervical cancer screening tool after HPV vaccination, so further health education is still needed to increase perception and knowledge about HPV infection and prevention of cervical cancer in adolescents in the community. Another study by (Fernandes, 2018) stated that the prevalence of immunization with at least 1 dose of the HPV vaccine was 49% in the study population.

Although the overall attitude of study participants toward the vaccine was positive, respondents who were vaccinated had a better attitude toward the vaccine than respondents who were not vaccinated. About half of the unvaccinated respondents are interested in receiving the vaccine in the future. The main barriers to HPV vaccination identified by respondents who were not vaccinated were lack of knowledge about the vaccine, potential side effects of the vaccine, and the cost of vaccination. Multivariable analyzes comparing unvaccinated respondents who intend to be vaccinated and those who do not show that the former group has a better attitude toward the vaccine and will be influenced by the doctor's recommendation. Offering HPV vaccination to women aged 18 to 25 provides an opportunity to address sub-optimal vaccination coverage in the population and can reduce the health inequalities represented by the variation in cervical cancer incidence within jurisdictions.

In the study (El, 2022), they showed that the majority of students 391 out of 479 had heard of cervical cancer, but only 23 out of 479 students were aware that HPV infection was related to the development of cervical cancer. Indeed, we found that the factors most significantly associated with better awareness of the respective HPVs were: (i) higher education level; (ii) the presence of a curriculum related to biology, while the only factor associated with high knowledge of HPV is female gender. Two-thirds of students intend to receive the HPV vaccine. Although overall awareness about HPV-related diseases and their prevention is good, sizable knowledge gaps exist in many areas suggesting that more education about HPV disease and the benefits of vaccination should be included in undergraduate medical school curricula. (Shetty, 2019)

Most medical students in East, Central and West China are also willing to receive the HPV vaccine. Their perception of the valence and origin of the HPV vaccine may affect their willingness to be vaccinated and pay for the vaccine. Increasing awareness of the HPV vaccine and inclusion of the HPV vaccine in Medicare reimbursement policies or immunization programs can increase coverage of the HPV vaccine (Zhou, 2022). This study revealed a lack of awareness of HPV and the use of the HPV vaccine in a sample of young Moroccan university women. This lack of awareness requires intervention, and it is important to develop awareness programs for the young female population both within and outside universities to promote vaccination uptake and ultimately lower cervical cancer rates in Morocco (Yacouti, 2022). The study examined current HPV vaccine hesitancy among female students in China, revealing that about 89.7% of students were willing to accept the HPV vaccine without hesitation and 8.9% had vaccine hesitancy. Participants were selected from comprehensive universities and allocated to 1 of 2 groups: intervention or control. After the baseline survey, participants in the intervention group were given online IMB model-based education for 10 minutes every day for 7 days. A self-administered questionnaire survey on Human papillomavirus knowledge, HPVV acceptance, and the IMB construct of HPV vaccination was conducted pre- and post-intervention. This IMB model-based intervention demonstrated a positive effect on participants' perceived knowledge, motivation, and objective skills towards HPV vaccination and has the potential to increase vaccination among Chinese female students (Si, 2022). Based on the WHO vaccine hesitancy 3Cs model, this study found that trust related to vaccine efficacy, perceived risk of infection with HPV, price, and distance/time are factors that influence vaccine hesitancy. Levels of HPV knowledge and education were also statistically relevant.

It is recommended that the relevant scientific knowledge about cervical cancer and the HPV vaccine should be disseminated in campuses, the procedure for appointing vaccinations should be simplified, and the affordability of vaccination should be increased through strategic purchasing or providing subsidies (Huang, 2022).

Educational programs about HPV infection and vaccination should be included in the curriculum as early as, if possible, from elementary school because the vaccine works best before the start of sexual activity. In college students, education programs can encourage sexually inexperienced students to receive the vaccine, as they are still the ideal group for follow-up vaccination. In addition, parental education is very important, as national vaccination programs usually target younger people. Knowledge sharing by learned people and organizations can increase the level of information in society. As a result, people are becoming aware of primary prevention by vaccination, which can lead to increased vaccination rates and ultimately lower HPV-associated cancers. The success of the HPV vaccination program is closely related to the awareness of health professionals of the importance of this primary prevention intervention. Therefore, there is a need for education and information programs aimed at medical schools, especially undergraduate nursing programs, to increase the knowledge of health care operators about HPV infection and their awareness of HPV vaccination. Research (Aksoy, 2022) states that participants' awareness of HPV, HPV vaccination, and cervical cancer is quite high when compared to other studies. However, there are knowledge gaps that need to be corrected and provided through educational programs. (Chanprasertpinyo; Pelullo, 2019)

CONCLUSION

On average, studies from various journals state that their findings have a lot to do with knowledge and attitudes towards the HPV vaccine, so it is advisable to further promote this knowledge so that there will be more students' positive attitudes towards the HPV vaccine.

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