



Original Article

Knowledge regarding Human Papillomavirus Infection among female students in Kalutara District, Sri Lanka

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Abstract

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Introduction: Human Papilloma Virus (HPV) infection is a significant public health issue, particularly among young women who are at risk of developing related complications. These complications can include cervical cancer, genital warts, and other serious health problems that can have long-term effects. Therefore, understanding the level of knowledge about HPV and its transmission is essential for developing targeted educational and preventive strategies to mitigate these risks.

Objective: This study aimed to assess the knowledge regarding HPV infection among female Advanced-Level students in Kalutara District, Sri Lanka.

Methodology: A descriptive cross-sectional study was conducted among 439 voluntarily consenting female Advanced-Level students in Kalutara District, Sri Lanka. The data were collected using a self-administered questionnaire and were analysed using descriptive statistics via IBM SPSS version 25. The total knowledge scores ranged from 0-10 and categorised according to the Bloom's cutoff as follows: high knowledge (80%-100%), moderate knowledge (60%-79%) and low knowledge (<59%). The ethical approval was obtained from the Ethics Review Committee of KIU (KIU/ERC/22/083).

Results: Of the 439 participants, the majority of the participants were 18 years (98.4%, n=432) and Buddhists (87.47%, n=384). Nearly half of the participants (54.90%, n=241) have not heard of HPV infection. The majority of the participants (81.32%, n=357) did not know the mode of transmission of HPV and their main source of information was parents (28.02%, n=123). The total mean knowledge score was 1.16±1.56 whilst most of the participants (98.63%, n=433) had low level of knowledge regarding HPV infection and only 6 (1.37%) participants had moderate knowledge whilst none of them had high level of knowledge.

Conclusion: The study concludes with a low level of knowledge regarding HPV infection among female students in Sri Lanka. The study findings highlight the current knowledge levels, which emphasize the importance of monitoring and evaluating the impact of educational programs over time.

Keywords: Female students, Human Papilloma Virus, Knowledge, Sri Lanka

Introduction

Sexually transmitted infections (STIs) are initially contracted through sexual contact and have a high global rate of morbidity and mortality, affecting 50% to 70% of sexually active individuals (Yarbrough & Burnham, 2016). Human papillomaviruses (HPVs) are a diverse group of double-stranded DNA viruses that target epithelial cells (Egawa & Doorbar, 2017). Persistent HPV infection is a significant sexually transmitted disease, responsible for more than 5% of all cancers worldwide. In fact, more than half of all infection-related malignancies are caused by HPV (Plummer et al., 2016). Approximately 90% of HPV infections clear or become dormant within 1 to 2 years. Statistics indicate that the majority of women who test positive for high-risk HPV serotypes develop cervical cancer within 3 to 5 years (de Sanjose et al., 2010).

At the same time, cervical cancer, caused by HPV, is the fourth leading cause of cancer-related deaths among women globally. According to the World Health Organization (WHO), there were 604,000 new cases and 342,000 deaths in 2020. Several risk factors including early age of first sexual intercourse, multiple sexual partners, smoking, transmission from mother to baby during pregnancy and poor immune function are common aetiological factors that contribute to the spread of HPV infection (Sri Lanka: Human Papillomavirus and Related Cancers, Fact Sheet, 2023).

In the context of Sri Lanka, 8.83 million women aged 15 years and older are at risk of developing cervical cancer. Current data indicate that every year, 1,407 women are diagnosed with cervical cancer and 780 dies from the disease occurring for the second most frequent cancer among women in the country (Gunasekara, et al., 2022). However, the HPV vaccine has proven efficacy in protecting against HPV-related diseases, thus reducing the disease burden. In Sri Lanka, vaccines against HPV were approved in 2009,

and in July 2017, the government introduced a two-dose schedule of HPV vaccination for all 10-11-year-old girls as part of the National Immunization Program. Meanwhile, in 1998, the country initiated cervical cancer screening using conventional Papanicolaou (Pap) smear tests in Well Women Clinics (WWCs) However, even after two decades of Pap cytology screening, there has been no significant reduction in the incidence, morbidity, and mortality rates of cervical cancer in the nation (El-Mansouri et al., 2022). This suggests that although the developed countries have effectively controlled the incidence of cervical cancer, the developing countries have struggled, accounting for 90% of new cases and deaths worldwide in 2020 (Sung et al., 2020). Therefore, the study aims to assess the knowledge about HPV infection among female Advanced-Level students in the Kalutara District of Sri Lanka.

Methodology

Study design, setting and sample

A descriptive cross-sectional study was conducted among voluntarily consenting female Advanced-Level students in Kalutara District, Sri Lanka. The study population, which comprised of female students aged 18 or above, was selected through a simple random sampling technique from eight different schools in Kalutara District, Sri Lanka. Conversely, exclusion criteria precluded individuals with communication impairments, mental disorders, critical illnesses, and the questionnaires with incomplete responses. The sample size was calculated using the Daniel formula which comprised 439 participants.

Study instruments

The data were collected using a self-administered questionnaire, which was administered in either English or Sinhalese, according to the linguistic preferences of the participants. The questionnaire comprised two sections including (1) demographic details such as age, religion, stream and general information regarding HPV such as its consciousness, mode of transmission and source of information; (2) 10 items regarding the knowledge on HPV, which was developed based on the literature review of previous studies (Kasymova et al., 2019; Saqer et al., 2017; Khan et al., 2016). The questionnaire was pre-tested using 30 participants, thereby obtaining a Cronbach's alpha of 0.84, which demonstrates its satisfactory reliability in the current study.

Data analysis

The data were entered in Microsoft Excel and all variables were reviewed to ensure data accuracy and to identify missing values. Data were analyzed using the IBM Statistical Package for Social Sciences (SPSS) version 26. Descriptive statistics, including frequency, mean, standard deviation, and percentages, were employed to present participants' demographic data whilst the knowledge related items were analysed based on Bloom's cut off point.

Possible responses for the knowledge-related items included "true", "false" and "do not know". The total knowledge scores ranged from 0-10, with 1 point awarded for each correct response and none for an incorrect response. The "do not know" option was included to minimise the guessing effect and was scored as incorrect. Further, the total knowledge scores were categorised based on Bloom's cutoff categorising into 3 levels as high knowledge (scores from 8-10) (80%-100%), moderate knowledge (scores from 6-7.9) (60%-79%) and low knowledge (scores from 0-5.9) (<59%). In

addition, the mean total knowledge score was also determined.

Ethical considerations

The study protocols were reviewed and approved by the Ethics Review Committee of KIU, Sri Lanka (KIU/ERC/22/083) whilst the permission was granted from the eight schools in Kalutara District, Sri Lanka. An informed consent was taken from all the voluntary participants and their responses were maintained with anonymity and confidentiality.

Results

Demographics of the participants

Of the 439 participants, all the participants responded thereby giving a response rate of 100% and almost all of them were female students aged 18-19 years. The majority of the participants were 18 years (98.4%, n=432) and only 1.6% (n=7) were 19 years. Among them, most of the participants were Buddhists (87.47%, n=384). In terms of academic streams, the largest contingent, comprising 35.31% (n=155) of the participants was enrolled in the commerce stream. Following closely, the second-highest participation was observed in the biology stream, accounting for 32.12% (n=141) (Table 1).

Out of the total participants, nearly half of them (54.90%, n=241) have not heard of HPV infection. On a similar note, a significant majority of the participants (81.32%, n=357) did not know the mode of transmission of HPV. Meanwhile, parents (28.02%, n=123), teachers (18.45%, n=81), and television (21.87%, n=96) play significant roles as information sources (Table 1).

Table 1: Demographic characteristics of the participants (N=439)

	Frequency (N=439)	Percentage (%)
Mean age	18±0.1 years	
Age		
18 years	432	98.40
19 years	7	1.60
Religion		
Buddhist	384	87.47
Catholic	45	10.25
Other	10	2.28
Stream		
Biology	141	32.12
Physical science	88	20.04
Commerce	155	35.31
Technology	0	0
Arts	55	12.53
Heard of HPV infection		
Yes	198	45.10
No	241	54.90
Mode of transmission of HPV		
Air	0	0
Sexual intercourse	74	16.85
Food	8	1.83
Do not know	357	81.32
Source of information of HPV		
Teachers	81	18.45
Parents	123	28.02
Friends	94	21.41
Television	96	21.87
Books	45	10.25

Knowledge of HPV infection among the participants

According to Table 2, it was revealed that most of the participants responded “do not know” option regarding the knowledge on HPV infection. On the other hand, the total mean knowledge score was 1.16±1.56. In addition, Figure 1 demonstrates that, most of the participants (98.63%, n=433) had low level of knowledge regarding HPV infection where, only 6 (1.37%) participants had moderate knowledge whilst none of them had high level of knowledge.

Table 2: Knowledge related to HPV infection

	True n (%)	False n (%)	Do not know n (%)
There is a cure for HPV infection	0 (0)	22 (5.02)	417 (94.98)
An abnormal pap smear indicates that woman has HPV	45 (10.25)	3 (0.68)	391 (89.07)
HPV is not a very common virus	53 (12.07)	36 (8.20)	350 (79.73)
HPV increase with the number of sexual partners	24 (5.47)	85 (19.36)	330 (75.17)
HPV vaccine is currently offered freely to secondary school girls	142 (32.35)	8 (1.82)	289 (65.83)
HPV vaccine is delivered in a series of 3 shot injections over a monthly schedule	1 (0.22)	42 (9.57)	396 (90.21)
HPV cause cervical cancer	132 (30.07)	10 (2.28)	297 (67.65)
HPV affect both men and women	42 (9.57)	89 (20.27)	308 (70.16)
HPV can spread through blood or other body fluids	41 (9.34)	18 (4.10)	380 (86.56)
HPV do not have visible signs and symptoms	31 (7.06)	8 (1.82)	400 (91.12)

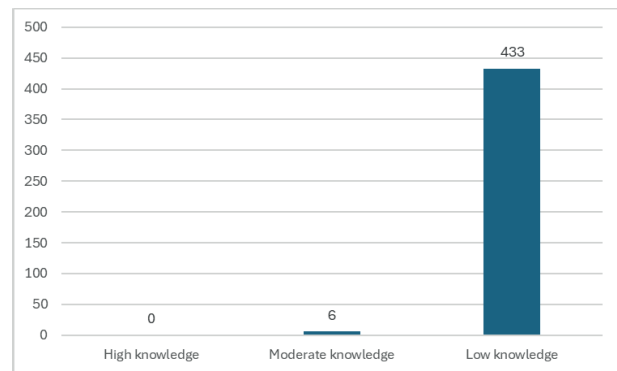


Figure 1: Overall prevalence of knowledge on HPV infection among female students in Kalutara District, Sri Lanka

Discussion

This study aimed to determine the level of knowledge about HPV infection among Advanced-Level female students in Kalutara District, Sri Lanka. Overall, the findings of the study revealed low level of knowledge among the students, which is unsurprising, given the lack of public education regarding the virus despite the inclusion of HPV vaccination in the national immunisation schedule. Meanwhile, nearly half of the participants had not heard of HPV infection and a significant number of participants did not know about the mode of transmission of HPV infection. Additionally, parents were the most common source of information regarding HPV infection. This contrasts with the growing trend globally, where social media increasingly serves as a source of health information (Schwendener et al., 2022).

Nevertheless, the disparity in knowledge levels regarding HPV infection varies across countries and regions. A similar study conducted in Sri Lanka among female students aged 18-20 years showed moderate level of knowledge (83.90%) about HPV infection (Bandara et al., 2023). However, other Asian countries have reported a low level of knowledge on HPV infection (Priyadarshani, Arunasalam & Noordeen, 2023). Similarly, a Lebanese study conducted among college students revealed their knowledge on

HPV infection was poor to moderate (Dany et al., 2015). Further, a study conducted in Turkey showed low knowledge among young girls and older individuals regarding HPV infection (Turhan et al., 2019).

These disparities of knowledge regarding HPV infection among these Asian countries could be attributed to several reasons such as cultural norms and attitudes, educational curricula about sexual health, healthcare infrastructure and accessibility to information regarding public health (Honnavar et al., 2023; Shetty et al., 2019; Kasymova et al., 2019). Notably, developing countries like Antigua and Barbuda exhibited higher awareness, attributed to the better knowledge among college-level students, who accessed information about HPV from the internet and health centers (Honnavar et al., 2023). Additionally, a survey conducted in Ethiopia (Getahum, et al., 2013), reported low knowledge of HPV infection which could be linked with a lack of efforts by policymakers and stakeholders to provide resources to enhance knowledge and attitudes toward HPV through mass media and health education outlets (Humnesa et al., 2022).

Regarding knowledge of preventive measures, most respondents were unaware that PAP smear screening is a preventive measure. According to a study by Makwe et al. in 2012, knowledge of HPV infection, cervical cancer risk factors, and preventive measures was poor among university students and healthcare workers. Similarly, another study conducted in Sri Lanka found that the overall knowledge score of the participants was inadequate (Priyadarshani, Arunasalam & Noordeen, 2023).

Most respondents in the current study were unaware that having multiple sexual partners is a risk factor for acquiring HPV infection. Similar findings were observed in a 2011 study among young, educated females from Sri Lanka, India, and Nepal (Joy et al., 2011). Awareness

of risk factors and transmission routes can encourage participants to adopt more effective preventive measures against HPV infection and cervical cancer. Conversely, a study conducted by Priyadarshani et al. (2023) reported high knowledge levels, indicating that the risk of HPV increases with the number of sexual partners. However, the accuracy of the study findings relies on the nature of the study population and the selection of an appropriate sample size (Priyadarshani, Arunasalam & Noordeen, 2023).

Conclusion

The current study findings reveal that low knowledge of HPV infection among female Advanced-Level students in Sri Lanka. This lack of knowledge is concerning given the significance of HPV as a major risk factor for cervical cancer. The insights gained from this study highlight the urgent need for targeted educational interventions. Furthermore, the study provides a baseline understanding of the current knowledge levels, which can be used to monitor and evaluate the impact of educational programs over time.

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Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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