

Original Research Article

Knowledge, attitude, practices and awareness of cervical cancer among female medical students at Faculty of Indigenous Medicine, University of Colombo: a cross-sectional study

Gunaseelan Savithri Sanjeewani¹, Mohammed Umar Ziard Noorul Farzana^{2*},
Hasan Ali Afeefa Masha²

¹Colombo, Sri Lanka

²Department of Unani Clinical Medicine, Indigenous Medicine, University of Colombo, Sri Lanka

Received: 22 May 2026

Revised: 30 July 2026

Accepted: 02 August 2026

*Correspondence:

Dr. Mohammed Umar Ziard Noorul Farzana,

E-mail: muznfarzana@fim.cmb.ac.lk

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Cervical cancer, major health problem particularly in South Asia. While it is preventable via vaccination and screening, even were knowledge and practice gaps, among future health care providers. Study aimed to determine the knowledge, attitude, practice and awareness (KAP) regarding cervical cancer among the female medical students at faculty of indigenous medicine (FIM), University of Colombo (UoC).

Methods: A descriptive cross-sectional study was conducted among 100 indigenous medical students at Faculty of Indigenous Medicine, Sri Lanka, from January–March 2023. Simple randomization was done Data were collected via a self-administered questionnaire. Among 116 students, 86.21% of the eligible students responded to this study. Data were analysed with descriptive statistics in Ms excel.

Results: Most students (90%) aware about cervical cancer, but only (46%) knew that it is preventable. Awareness of risk factors was good, HPV infection (89%) and multiple sexual partners (81%). Symptom awareness was moderate: intermenstrual bleeding (59%) and post-coital bleeding (41%). Despite the high level of awareness about treatment for cervical cancer (84%), but inadequate screening practice, with only 1/14 (7.14%) of married students stating they were screened. The major problem was lack of information (84.62%). Attitudes were favourable with 87% feeling that screening helps to prevent.

Conclusions: Students aware of cervical cancer's risk factor but lacked knowledge about the symptoms, prevention and screening practices. Targeted education and screening access are needed.

Keywords: Cervical cancer, Human papillomavirus, Pap smear test, Screening

INTRODUCTION

Cervical cancer is one of the most preventable types of cancer worldwide, it is significant issue in the health population. Globally it has been estimated that 662,044 cases and 348,709 deaths from cervical cancer occurred in 2022, almost 85% of deaths caused by the disease were in low and middle income countries, which suggests a high level of inequality in prevention and early diagnostic services.^{1,2} The incidence and prevalence of cervical

cancer in Sri Lanka are high, at about 1,407 new cases and 780 deaths per year found in 2023 and it is ranked second most prevalent cancer among women in the country.³ Cervical cancer is a cancerous lesion that starts in those cells that line the cervix, which is the lower, narrow part of the uterus that leads to the vagina. It is mostly caused by chronic infection by risk types of the Human papillomavirus (HPV), which is sexually transmitted virus. The disease is not acute one but progress gradually due to precancerous conditions, called

cervical intraepithelial neoplasia (CIN) and without detection and treatment, it may lead to invasive cancer in many years.⁴ It has been identified that persistent infection with high-risk human papillomavirus (HPV), especially HPV-16 and HPV-18, is the primary cause of cervical cancer.^{5,6} Which is transmitted via sexual contact. While most HPV infections cure naturally, a small percentage can lead to precancerous lesions and eventually cancer, especially if the infection continues. The virus is carcinogenic because it generates proteins E6 and E7 that disrupt tumor suppressing genes and influence DNA. The age of highest HPV infection is at 25 years and the second increase in cervical cancer incidence is observed after 45 years.⁷ HIV positive women are at a higher risk of contracting HPV during the period between 13 years and 18 years are also at a higher risk of getting cervical cancer.

The HIV infected women with cervical cancer have higher chances of being diagnosed within the age range of 15 years to 49 years compared to non-infected women.⁸ Other risk factors include multiple sexual partners, early age of sexual intercourse, increasing parity, prolonged use of oral contraceptive pills, sexually transmitted diseases obesity and smoking.⁹⁻¹⁴ The primary symptoms of cervical cancer are unusual vaginal bleeding, foul odour vaginal discharge and contact bleeding. Women often present completely without any symptoms.¹⁵ HPV is the main cause of cervical cancer, which can be prevented in most cases. Various tests and approaches have been offered to early detect cervical cancer and secondary prevent it. The screening tests are pap smear, VIA/VILI (visual inspection with acetic acid/ Lugol's iodine), LBC (liquid based cytology) and HPV test and vaccine.¹⁶ Among this which Pap smear is one of the most efficient, cost effective and useful one, as it is simple and very efficient.¹⁷

Findings of numerous research studies in the area revealed that women lacked the necessary knowledge and awareness on the usage and performance of pap smear test and cervical cancer.¹⁸ Evidence supports the use of invitations and to a lesser extent the use of educational resources as a good way of motivating women to seek cervical cancer screening. Screening age is recommended to be 30 years to 49 years in women.¹⁹ In developed countries, rates have declined due to better screening, prevention and the use of the HPV vaccine. Mainly Gardasil (Quadrivalent HPV vaccine), Cervarix (Bivalent HPV vaccine), Gardasil 9 (9-valent HPV vaccine) were used in Bhutan, Nepal, Sri Lanka, India, Pakistan and Maldives.²⁰

Educational programs reporting the threat of HPV and the advantages of vaccination are significant, particularly in low- and middle-income countries.²¹ Education and effective communication is important in achieving successful immunization programs.²² The management of cervical cancer depends on the stage and type of the cancer, the general health of the patient and clinical

guidelines.²³ Surgery is usually used to treat early-stage disease to physically remove cancerous and metastatic tissue as an element of primary treatment like hysterectomy, trachelectomy or conization and radiotherapy, which uses high-energy radiation and is one of the cornerstones of cervical cancer treatment, often in combination with low-dose chemotherapy of advanced lesions.^{24,25} Chemotherapy itself, commonly using platinum-based agents such as cisplatin, inhibits cancer cell growth and is typically integrated with radiotherapy for optimal efficacy.²⁶

Moreover, immunotherapy with checkpoint inhibitors such as pembrolizumab is also becoming a recommendation in recurrent or metastatic disease due to boosting immune response in the body to against the cancer progression.^{27,28} The current advances in cervical cancer prevention in the world should be transferred to the equal access of women in all regions, even the developing world. Need to increase awareness among people to reduce the burden of this disease.

Further medical students are future physicians and patients' educators the population will seek out as first line information resources. Further they are play and vital role making awareness among a diverse population. However, in Sri Lanka, despite having a strong primary healthcare network, the absence of a coordinated, call-and-recall national screening program results in low and inequitable coverage, particularly among rural and lower socioeconomic groups.²⁹ Further lacks of awareness about cervical cancer in developing countries.³⁰ Consequently, the current study was planned to analyse knowledge, attitudes and practice about cervical cancer among female medical students at Faculty of Indigenous Medicine, University of Colombo.

Objectives

This study was carried out to evaluate the knowledge, attitudes, practices and awareness of cervical cancer among female medical students at the Faculty of Indigenous Medicine, University of Colombo. Medical students are future doctors and patient educators who will act as first-line information resources and play a crucial role in raising awareness among diverse populations.

METHODS

Study design and setting

A descriptive cross-sectional study was conducted among female undergraduates at the Faculty of Indigenous Medicine, University of Colombo, Sri Lanka, between January 2023 and March 2023.

Study population and eligibility

The study population included female students enrolled in the 1st and 2nd Professional years of the Bachelor of

Ayurveda Medicine and Surgery (BAMS) and Bachelor of Unani Medicine and Surgery (BUMS) programs.

Inclusion and exclusion criteria

Participants were included into the study they were 1st and 2nd Professional year of the Bachelor of Ayurveda Medicine and Surgery (BAMS) and Bachelor of Unani Medicine and Surgery (BUMS) programs with who provided written informed consent. Participants were excluded if they were from third professional healthcare and did not give consent to the study.

Sample size determination

The sample size was calculated using the single proportion formula, based on a previously reported prevalence of cervical cancer awareness (93%), 31 among similar populations; using Yamane's simplified sample size formula, $n = N / (1 + NE^2)$ where n =required sample size, N =total number of eligible female undergraduates which is 130 and E =margin of error, taken as 0.05. Considering the accessible population of 130 with the 5% margin of error, the calculated sample size was 98.11, which was rounded to 100 for practical feasibility and to improve representativeness. Therefore, a sample size of 100 respondents was considered adequate for this cross-sectional awareness study.

Sampling procedure

A stratified random sampling technique was used to ensure study population.

Data collection and procedure

Data were collected using a structured self-administered questionnaire consisted of five parts: Such as, participants' sociodemographic information, attempted to assess the knowledge on symptoms and risk factors, knowledge on HPV vaccination and Pap smear screening, attitudes toward prevention and awareness regarding cervical cancer.

Data analysis

The collected data were entered and analyzed using Minitab statistical software packages. Descriptive statistics including frequencies, percentages, tables and graphical presentations were generated. Chi-square tests of association were performed to identify relationships between selected sociodemographic variables and awareness-related variables. A significance level of 5% was used throughout the analysis.

Ethical consideration

Written informed consent was obtained from all participants and confidentiality was strictly maintained. Participants were informed of their right to withdraw

from the study at any time without consequence. ethical approval was obtained from the ethical review committee of the faculty of indigenous medicine, university of Colombo, Sri Lanka (Reference No: ERC 22-159). Data were anonymized and used only for research purposes.

RESULTS

Table 1 presents the sociodemographic characteristics of the participants included in the study. A total of 100 female undergraduate students participated in the study. The mean age (SD) of the participants was 23.02 ± 0.94 years with the age range from 21-25 years. The majority of participants were aged 23 years (48.0%), followed by 24 years (23.0%) and 22 years (17.0%), while smaller proportions were aged 21 years (7.0%) and 25 years (5.0%). Regarding religion, more than half of the participants were Buddhists (53.0%), followed by Muslims (29.0%), Hindus (13.0%) and Catholics (5.0%).

The distribution according to academic year showed a nearly equal representation, with 49.0% from the first year and 51.0% from the second year. In terms of degree program, 59.0% of participants were enrolled in the BAMS program, whereas 41.0% were from the BUMS program. The majority of respondents were unmarried (86.0%), while only 14.0% were married. These findings indicate that the study sample predominantly consisted of unmarried young adult female undergraduates representing different academic backgrounds within the Faculty of Indigenous Medicine.

Table 2 summarizes the participants' awareness and knowledge regarding cervical cancer. The findings revealed that the majority of respondents (90.0%) had heard about cervical cancer, while only 10.0% reported that they had not heard about the disease. The proportion of participants who had heard about cervical cancer was 90.0% (95% CI: 81.2%–94.4%). Awareness among married and unmarried participants was 14.0% and 86.0%, respectively; however, the association between marital status and awareness regarding cervical cancer was not statistically significant ($p=0.682$).

Regarding the causative microorganism, 63.0% of participants correctly identified a virus as the responsible agent, whereas 26.0% believed that bacteria cause cervical cancer, 6.0% identified fungi and 5.0% did not know the causative organism. Awareness regarding cervical cancer screening programs was comparatively low, with only 41.0% of participants reporting awareness of such programs, while 59.0% were unaware.

Concerning the recommended age for cervical cancer screening, the majority of respondents (52.0%) correctly identified the age group of 25–64 years, while 8.0% believed screening should begin before 25 years of age and 11.0% believed screening is necessary only after signs and symptoms appear. Furthermore, less than half of the participants (46.0%) believed that cervical cancer is preventable, whereas 54.0% either believed it was not

preventable or were uncertain. However, a large proportion of respondents (84.0%) believed that cervical cancer is treatable, while 16.0% reported otherwise. Overall, the findings indicate that although general awareness regarding cervical cancer was relatively high, substantial gaps remain in detailed knowledge related to prevention and screening practices.

Table 3 presents participants' knowledge regarding selected risk factors associated with cervical cancer. Regarding the long-term use of contraceptives as a risk factor, 30.0% of participants strongly agreed and 44.0% agreed, while 20.0% were uncertain. Concerning HPV infection, 43.0% strongly agreed and 46.0% agreed that HPV infection is associated with cervical cancer, whereas only a small proportion disagreed or strongly disagreed.

Similarly, 45.0% of respondents strongly agreed and 47.0% agreed that weak immunity is a contributing factor for cervical cancer. With regard to having an uncircumcised sexual partner, 25.0% strongly agreed and 45.0% agreed that it may increase the risk of cervical cancer, while 23.0% remained uncertain. Awareness regarding early sexual intercourse as a risk factor was also relatively high, with 23.0% strongly agreeing and 45.0% agreeing.

In relation to multiple sexual partners, 31.0% strongly agreed and 39.0% agreed that it increases the risk of cervical cancer, while 21.0% were unsure. Concerning multiparity, 24.0% strongly agreed and 26.0% agreed that it is associated with cervical cancer, although 38.0% of respondents were uncertain. Additionally, regarding not seeking regular Pap smear screening as a risk factor, 23.0% strongly agreed and 37.0% agreed, whereas 37.0% were uncertain. Overall, the findings indicate that participants demonstrated moderate awareness regarding behavioral and reproductive risk factors associated with cervical cancer, although uncertainty remained high for several factors.

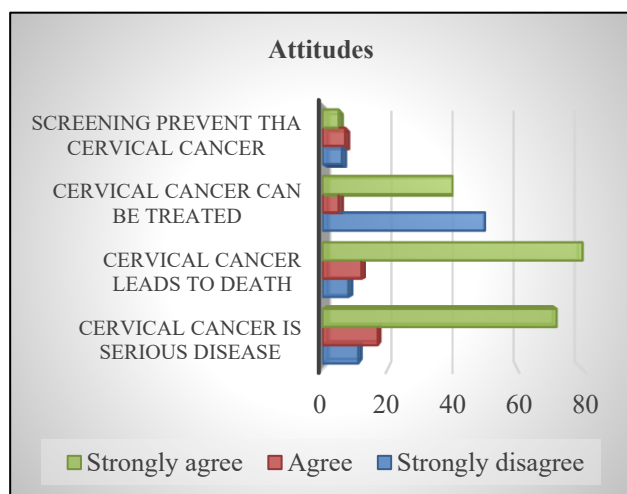


Figure 1: Attitudes of participants toward cervical cancer and screening.

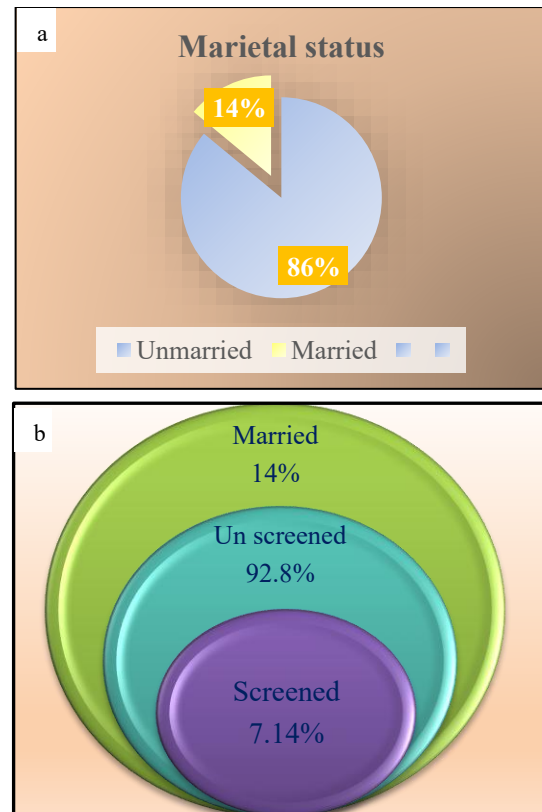


Figure 2 (a, b): Practice toward cervical cancer screening practices of participants.

Table 4 presents the participants' knowledge regarding the symptoms of cervical cancer. The findings revealed that 59.0% of respondents correctly identified intermenstrual bleeding as a symptom of cervical cancer, while 34.0% were uncertain and 7.0% disagreed. Half of the participants (50.0%) recognized vaginal discharge with unpleasant odor as a symptom, whereas 38.0% did not know. Awareness regarding dyspareunia was observed among 54.0% of participants, while 30.0% were uncertain. Similarly, 54.0% identified heavy menstrual bleeding as a possible symptom of cervical cancer, although 34.0% were unsure. More than half of the respondents (56.0%) recognized postmenopausal bleeding as a symptom, while 33.0% reported uncertainty.

Knowledge regarding postcoital bleeding was comparatively lower, with only 41.0% correctly identifying it as a symptom, while 39.0% did not know. In addition, 48.0% of participants recognized weight loss as a symptom associated with cervical cancer, whereas 39.0% were uncertain. Overall, the findings indicate a moderate level of awareness regarding the symptoms of cervical cancer among the participants, although a considerable proportion of respondents demonstrated uncertainty regarding several important warning signs. Figure 1 presents the attitudes of participants toward cervical cancer and its prevention. The majority of respondents demonstrated positive attitudes regarding the seriousness and prevention of cervical cancer. A

substantial proportion of participants (72.0%) strongly agreed that cervical cancer is a serious illness, cancer and its screening which is higher than a report in Hawassa (55.3%).³⁴ (Figure 1) while 17.0% agreed and 11.0% strongly disagreed. Similarly, 80.0% of respondents strongly agreed that cervical cancer can lead to death, whereas 12.0% agreed and only 8.0% strongly disagreed. Regarding the treatability of cervical cancer, 40.0% strongly agreed and 5.0% agreed that cervical cancer is treatable; however, more than half of the participants (55.0%) strongly disagreed, indicating misconceptions or inadequate knowledge regarding treatment outcomes.

In addition, the majority of respondents (87.0%) strongly agreed that screening can help prevent cervical cancer, while 7.0% agreed and only 6.0% strongly disagreed. Overall, the findings suggest that participants generally possessed positive attitudes toward cervical cancer prevention and recognized the importance of screening, although misconceptions regarding the treatability of cervical cancer were evident among a considerable

proportion of respondents. Regarding to screening practice, only (7.14%) of the married students had done cervical cancer screening. Although of them the main reason mentioned for unscreened was (84.62%) lack of information where the screening was given and shyness about the screening procedure is 15.38% (Figure 2).

Association between academic year and awareness variables

Chi-square analysis was conducted to examine the association between academic year and awareness-related variables. The findings indicated that awareness regarding cervical cancer screening programs significantly differed according to academic year ($p < 0.05$). Students in higher academic years demonstrated comparatively better awareness regarding cervical cancer screening programs. However, no statistically significant association was observed between academic year and general awareness regarding cervical cancer or knowledge regarding the causative microorganism.

Table 1: Sociodemographic characteristics of participants (n=100).

Characteristics	Frequency N (%)
Age (years) (mean±SD)	23.02±0.94
Religion	
Buddhist	53 (53.0)
Islam	29(29.0)
Hindu	13(13.0)
Catholic	5(5.0)
Academic years	
1 st Professional	49(49.0)
2 nd Professional	51(51.0)
Degree of study	
BUMS	41(41.0)
BAMS	59(59.0)
Marital status	
Married	14 (14.0)
Unmarried	86 (86.0)

Table 2: Knowledge of participants on cervical cancer (n=100).

Variables	Responses	Frequency (N)	(%)
Have you heard about cervical cancer	Yes	90	90.0
	No	10	10.0
Responsible microorganism of cervical cancer	Bacteria	26	26.0
	Viral	63	63.0
	Fungi	6	6.0
Is there any cervical cancer screening program	Yes	41	41.0
	No	59	59.0
If yes what age should screen for cervical cancer	<25 years	8	8.0
	25-64 years	52	52.0
	Once seen sign & symptoms	11	11.0
Is cervical cancer preventable	Yes	46	46.0
	No/ don't know	54	54.0
Cervical cancer can be treated and cured	Yes	84	84.0
	No	16	16.0

Table 3: Knowledge of participants regarding risk factors of cervical cancer (n=100).

Risk factors	Strongly agree N (%)	Agree N (%)	Not sure N (%)	Disagree N (%)	Strongly disagree N (%)
Long term use of contraceptives	30 (30.0)	44 (44.0)	20 (20.0)	5 (5.0)	1 (1.0)
Infection with HPV	43 (43.0)	46 (46.0)	9 (9.0)	1 (1.0)	1 (1.0)
Having weak immune system	45 (45.0)	47 (47.0)	6 (6.0)	2 (2.0)	0 (0.0)
Having an uncircumcised sexual partner	25 (25.0)	45 (45.0)	23 (23.0)	5 (5.0)	2 (2.0)
Starting sexual intercourse too early	23 (23.0)	45 (45.0)	25 (25.0)	4 (4.0)	3 (3.0)
Having unprotected sex with many partners	31 (31.0)	39 (39.0)	21 (21.0)	8 (8.0)	1 (1.0)
Given birth to many children	24 (24.0)	26 (26.0)	38 (38.0)	10 (10.0)	2 (2.0)
Not seeking regular Pap smear	23 (23.0)	37 (37.0)	37 (37.0)	3 (3.0)	0 (0.0)
Total	273 (30.33)	381 (42.3)	196 (21.78)	39 (4.33)	11 (1.22)

Table 4: Knowledge of participants regarding symptoms of cervical cancer (n=100).

Sign and symptoms	Yes N (%)	No N (%)	Don't know N (%)
Is it true vaginal bleeding between menstrual cycles can be sign of cervical cancer?	59 (59.0)	7 (7.0)	34 (34.0)
Is it true persistent vaginal discharge with an unpleasant smell could indicate cervical cancer?	50 (50.0)	12 (12.0)	38 (38.0)
Do you think that discomfort or painful sexual intercourse could be manifested in cervical cancer?	54 (54.0)	16 (16.0)	30 (30.0)
Could longer than usual and heavy menstrual period is seen in women with cervical cancer?	54 (54.0)	12 (12.0)	34 (34.0)
Do you think vaginal bleeding after menopause could be a sign of cervical cancer?	56 (56.0)	11 (11.0)	33 (33.0)
Do you think that bleeding during or after sex could be a sign of cervical cancer?	41 (41.0)	20 (20.0)	39 (39.0)
Would you say that unexplained weight loss is symptomatic in cervical cancer?	48 (48.0)	13 (13.0)	39 (39.0)
Total	362 (51.71)	91 (13.0)	247 (35.29)

DISCUSSION

The present study assessed/evaluated the awareness, knowledge, attitudes and practices related to cervical cancer among female undergraduate students in the Institute of Indigenous Medicine, University of Colombo. The findings demonstrated that although general awareness regarding cervical cancer was relatively high among the participants, important deficiencies remained in detailed knowledge regarding risk factors, symptoms, screening methods and preventive practices.

Knowledge of cervical cancer, its symptoms and risk factors

The good knowledge level on cervical cancer. In our research study 90% of student were aware about cervical cancer. The knowledge regarding risk factors has been reported as similar results by Bekele et al have reported the knowledge about the risk factors (84.4%) and Darwis et al have reported in Saudi Arabia (72.7-77.4%).^{32,33} Only 41.0% of respondents were aware of cervical cancer

screening programs, suggesting limited knowledge regarding preventive healthcare services. Our findings are more favourable than those cited by Heen et al.¹⁵ Although in Kuwait 76.9% of women heard the Pap smear very well and possessed sufficient information with 52.3%.³⁴ Among the individuals who heard about cervical cancer, of them 52% students identify the screening age as 25-64 years. Among the population who heard about cervical cancer, more had heard about how to prevent and treat cervical cancer 46% and 84% respectively. Knowledge regarding the causative organism of cervical cancer was moderate, as 63.0% of participants correctly identified a virus as the causative agent. However, a considerable proportion of respondents incorrectly believed that bacteria or fungi were responsible, indicating misconceptions regarding HPV infection. However, the recognition of the symptoms was not as good as it could have been. Intermenstrual bleeding was only identified as a symptom by 59 % of the respondents and other key symptoms such as post coital bleeding 41% and continuous vaginal discharge 50% were much less known. This compares with findings of study of Bansal et

al a hospital-based study, carried out in India, which revealed that only 29.2% of women reported intermenstrual bleeding as a symptom.³⁵ This is of concern to future medical professional because the high percentage of “don’t know” results (30-39%) at all the points of the symptoms indicate that there is a gap in the curriculum or informational gap in clinical symptomatology. A 92% response rate that identified immunological impairment as one of the risk factors shows a significant change, but compared to a study of Ugandan medical professional in 2006, the level of understanding of known risk factors was critically low 29%. Which has been successful in increasing awareness of opportunistic infections and malignancies such as cervical cancer in relation to the immunological defense of the body.³¹

Consistent with the findings of Mwaka et al in Northern Uganda, where 88% of the participants were aware of multiple sexual partners and 82% of the participants were aware of HPV infection being a risk factor of cervical cancer, our study reported high awareness rates with 81% recognizing multiple sexual partners and 89% recognizing HPV infection as cervical cancer risk factors.³⁶ There was also a great awareness of other known risks with 74% of respondents identifying the long term contraceptive use. Although, the study of Gichangi et al has indicated that few women 4% had cervical cancer only due to family planning.³⁷ This pattern indicates that health education about behavioural and secondary risk factors have been effectively assimilated by this target population.

Attitudes on cervical cancer

The attitudinal profile revealed a significant dissonance, only 45% of the respondents believed that cervical cancer can be cured, yet 89% of them admitted that it is a serious, 92% of them reported as fatal, yet 94% of them believed it is a preventable disease. Over all, high attitude on HPV prevention of cervical cancer among female students of FIM, UoC in Sri Lanka. Similarly, Mwaka et al revealed only 70% of participants reported that cervical cancer is preventable.³⁶ Based on Priyadarshani et al study, 69% of participants had favourable attitude toward HPV related preventive measures like vaccination and Pap smear screening, especially among female students.²⁹ The participants generally demonstrated positive attitudes toward cervical cancer prevention. Most respondents considered cervical cancer to be a serious illness and believed that screening could help prevent the disease. These positive attitudes are encouraging because favourable perceptions toward prevention may support future participation in awareness and screening programs.

Practices on cervical cancer

The extremely low cervical cancer screening rate of 7.14% in this study is consistent with those that focus on young and single individuals. Likewise in research

studies that have been done in China and Bangladesh, the unmarried women also have less than 10% rates. As an example, a 2025 national survey conducted in China established that among women aged 20-24 years, only 7.5% had ever been screened in cervical cancer.³⁸ The biggest barrier stated by the majority of our non-screener (84.6%) was the lack of awareness. This is in line with the pioneer studies carried out in Kenya and Uganda where in screening uptake was essentially impaired due to a profound lack of insights particularly among the at-risk populations and the health care workers.^{31,37} Students need to be prepared as future healthcare providers not just with knowledge, but access to and confidence of screening services. The research is among the few to target the indigenous medical students in Sri Lanka. Reliability is also increased by the high response rate and application of a validated tool. The sample was selected in one institution only and this could be limiting to generalization. There are social desirability biases that may affect self-reported data.

Awareness on cervical cancer

Although awareness regarding the importance of screening was high, the actual utilization of cervical cancer screening services was extremely low. Among the sexually experienced participants, only one individual had undergone a cervical cancer screening test. This finding highlights a substantial gap between knowledge and practice. Fear, embarrassment, lack of awareness, perceived absence of symptoms, cultural factors and limited accessibility to screening services may contribute to poor screening uptake among young women. Similar barriers to cervical cancer screening have been documented in previous studies conducted in Sri Lanka and other developing countries.

The results of a systematic review by Ampofo et al which found that school-based health education significantly improves knowledge about cervical cancer and HPV infection among female students (SMD=1.15, 95% CI: 0.67–1.63), are consistent with the high level of awareness (90%) observed in our study. Our study population, which consists of medical students who have fellow medical system, reflects this educational advantage. The majority of participants in our study were female, single students and educational exposure rather than marital status was the primary factor affecting knowledge achievement. According to Ampofo et al study was school based education homogenizes knowledge and declines the impact of demographic factors like marital status. The lack of a significant correlation can be explained by the fact that both married and single individuals in our student group most likely obtained knowledge through comparable academic.³⁹ In contrast to our findings, Ali-Risasi et al observed that, education, occupation and place of residence, being single was substantially linked with inferior knowledge (adjusted OR=0.44, 95% CI: 0.24–0.81, p=0.008) in Kinshasa, democratic republic of the congo. The disparity

could be attributed to variations in the research populations. In contrast to the Kinshasa study, which included women from the general community with a variety of educational backgrounds (only 21.6% had higher education), our study was limited to female medical students a highly educated, homogeneous cohort with a mean age of 23 years.⁴⁰ The present study also demonstrated a statistically significant association between academic year and awareness regarding cervical cancer screening programs, indicating that students in higher academic years possessed comparatively better awareness regarding screening. This may be attributed to increased educational exposure and greater access to health-related information during later years of study. However, no significant association was observed between marital status and awareness regarding cervical cancer.

CONCLUSION

Female Indigenous medical students in Colombo show a good level of knowledge on cervical cancer risks factors and positive attitudes towards screening but have a huge gap in symptom recognition and screening practices. Their curriculum should include educational interventions, which are associated with awareness of symptoms, their preventability and the significance of early screening. This at-risk category of population requires institutional initiatives to enhance access to screening services.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Wu J, Jin Q, Zhang Y. Global burden of cervical cancer: current estimates, temporal trend and future projections based on the GLOBOCAN 2022. *J Natl Cancer Cent.* 2025;5:322-9.
2. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2018;68(6):394-424.
3. Khan A, Abonyi S, Neudorf C, Galea S, Ahmed S. Barriers to and facilitators of human papillomavirus vaccination in an ethnically diverse group of migrant parents: A qualitative mixed methods study. *Human Vacc Immunotherap.* 2023;19(3):2269721.
4. World Health Organization. Cervical cancer. World Health Organization website. Available at: <https://www.who.int/news-room/fact-sheets/detail/cervical-cancer>. 2025. Accessed on 2nd December 2025.
5. Demarco M, Egemen D, Raine-Bennett TR. A Study of Partial Human Papillomavirus Genotyping in Support of the 2019 ASCCP Risk-Based Management Consensus Guidelines. *J Low Genit Tract Dis.* 2020;24(2):144-7.
6. Chen W, Zhang X, Molijn A. Human papillomavirus type-distribution in cervical cancer in China: the importance of HPV 16 and 18. *Cancer Causes Control.* 2009;20(9):1705-13.
7. Mittal S, Banks L. Molecular mechanisms underlying human papillomavirus E6 and E7 oncoprotein-induced cell transformation. *Mutat Res Rev Mutat Res.* 2017;772:23-35.
8. Adler DH, Wallace M, Bennie T. Cervical dysplasia and high-risk human papillomavirus infections among HIV-infected and HIV-uninfected adolescent females in South Africa. *Infect Dis Obstet Gynecol.* 2014;2:498048.
9. Clements AE, Raker CA, Cooper AS, Boardman LA. Prevalence and patient characteristics associated with CIN 3 in adolescents. *Am J Obstet Gynecol.* 2011;204(2):128-7.
10. Louie KS, de Sanjose S, Diaz M. Early age at first sexual intercourse and early pregnancy are risk factors for cervical cancer in developing countries. *Br J Cancer.* 2009;100(7):1191-7.
11. Muñoz N, Franceschi S, Bosetti C. Role of parity and human papillomavirus in cervical cancer: the IARC multicentric case-control study. *Lancet.* 2002;359(9312):1093-101.
12. Asthana S, Busa V, Labani S. Oral contraceptives use and risk of cervical cancer-A systematic review & meta-analysis. *Eur J Obstet Gynecol Reprod Biol.* 2020;247:163-75.
13. Gadducci A, Barsotti C, Cosio S, Domenici L, Riccardo Genazzani A. Smoking habit, immune suppression, oral contraceptive use and hormone replacement therapy use and cervical carcinogenesis: a review of the literature. *Gynecol Endocrinol.* 2011;27(8):597-604.
14. Momenimovahed Z, Salehiniya H. Incidence, mortality and risk factors of cervical cancer in the world. *Biomed. Res. Ther.* 2017;4(12):1795-811.
15. Heena H, Durrani S, Alfayyad I. Knowledge, Attitudes and Practices towards Cervical Cancer and Screening amongst Female Healthcare Professionals: A Cross-Sectional Study. *J Oncol.* 2019;2:5423130.
16. Zhang S, Xu H, Zhang L, Qiao Y. Cervical cancer: Epidemiology, risk factors and screening. *Chin J Cancer Res.* 2020;32(6):720-8.
17. Warnakulasuriya S. Burket's oral medicine: diagnosis and treatment. *British Dental Journal.* 2003;194(10):579.
18. Gamarra CJ, Paz EP, Griep RH. Knowledge, attitudes and practice related to Papanicolaou smear test among Argentina's women. *Rev Saude Publica.* 2005;39(2):270-6.
19. Everett T, Bryant A, Griffin MF, Martin-Hirsch PP, Forbes CA, Jepson RG. Interventions targeted at women to encourage the uptake of cervical screening. *Cochrane Database Syst Rev.* 2011;2011(5):2834.

20. Debellut F, Gamage D, Kumar S. Human papillomavirus (HPV) vaccination program in Sri Lanka: Ongoing costs and operational context of a routinized program. *Vaccine X*. 2024;17:100456.
21. Cheng L, Wang Y, Du J. Human Papillomavirus Vaccines: An Updated Review. *Vaccines (Basel)*. 2020;8(3):391.
22. Bello FA, Enabor OO, Adewole IF. Human papilloma virus vaccination for control of cervical cancer: a challenge for developing countries. *African J Reprod Health*. 2011;15(1):25-30.
23. Li H, Pang Y, Cheng X. Surgery of primary sites for stage IVB cervical cancer patients receiving chemoradiotherapy: a population-based study. *J Gynecol Oncol*. 2020;31(1):8.
24. Cohen PA, Jhingran A, Oaknin A, Denny L. Cervical cancer. *Lancet*. 2019;393(10167):169-82.
25. Tewari KS, Monk BJ. The rationale for the use of non-platinum chemotherapy doublets for metastatic and recurrent cervical carcinoma. *Clin Adv Hematol Oncol*. 2010;8(2):108-15.
26. Tewari KS, Monk BJ. Gynecologic oncology group trials of chemotherapy for metastatic and recurrent cervical cancer. *Curr Oncol Rep*. 2005;7(6):419-34.
27. Kagabu M, Nagasawa T, Sato C. Immunotherapy for Uterine Cervical Cancer Using Checkpoint Inhibitors: Future Directions. *Int J Mol Sci*. 2020;21(7):2335.
28. Burmeister CA, Khan SF, Schäfer G. Cervical cancer therapies: Current challenges and future perspectives. *Tumour Virus Res*. 2022;13:200238.
29. Priyadarshani HS, Arunasalam S, Noordeen F. Knowledge, attitude and practices towards human papillomavirus infection, vaccination and cervical cancer among paramedical students at a Sri Lankan University. *Sri Lankan J Infect Dis*. 2023;13(1):31-40.
30. Jassim G, Obeid A, Al Nasheet HA. Knowledge, attitudes and practices regarding cervical cancer and screening among women visiting primary health care Centres in Bahrain. *BMC Public Health*. 2018;18(1):128.
31. Mutyaba T, Mmiro FA, Weiderpass E. Knowledge, attitudes and practices on cervical cancer screening among the medical workers of Mulago Hospital, Uganda. *BMC Med Educ*. 2006;6:13.
32. Bekele HT, Nuri A, Abera L. Knowledge, Attitude and Practice Toward Cervical Cancer Screening and Associated Factors Among College and University Female Students in Dire Dawa City, Eastern Ethiopia. *Cancer Inform*. 2022;21:14808.
33. Al-Darwish AA, Al-Naim AF, Al-Mulhim KS, Al-Otaibi NK, Morsi MS, Aleem AM. Knowledge about cervical cancer early warning signs and symptoms, risk factors and vaccination among students at a medical school in Al-Ahsa, Kingdom of Saudi Arabia. *Asian Pac J Cancer Prev*. 2014;15(6):2529-32.
34. Al Sairafi M, Mohamed FA. Knowledge, attitudes and practice related to cervical cancer screening among Kuwaiti women. *Med Princ Pract*. 2009;18(1):35-42.
35. Bansal AB, Pakhare AP, Kapoor N, Mehrotra R, Kokane AM. Knowledge, attitude and practices related to cervical cancer among adult women: A hospital-based cross-sectional study. *J Nat Sci Biol Med*. 2015;6(2):324-8.
36. Mwaka AD, Orach CG, Were EM, Lyratzopoulos G, Wabinga H, Roland M. Awareness of cervical cancer risk factors and symptoms: cross-sectional community survey in post-conflict northern Uganda. *Health Expect*. 2016;19(4):854-67.
37. Gichangi P, Estambale B, Bwayo J. Knowledge and practice about cervical cancer and Pap smear testing among patients at Kenyatta National Hospital, Nairobi, Kenya. *Int J Gynecol Cancer*. 2003;13(6):827-33.
38. Zhang M, Wang L, Zhang X. Cervical cancer screening coverage among women in China 2023-2024. *China CDC Wkly*. 2025;7(10):1-6.
39. Ampofo AG, Boyes AW, Khumalo PG, Mackenzie L. Improving knowledge, attitudes and uptake of cervical cancer prevention among female students: A systematic review and meta-analysis of school-based health education. *Gynecol Oncol*. 2022;164(3):675-90.
40. Ali-Risasi C, Mulumba P, Verdonck K, Vanden Broeck D, Praet M. Knowledge, attitude and practice about cancer of the uterine cervix among women living in Kinshasa, the Democratic Republic of Congo. *BMC Women's Health*. 2014;14(1):30.

Cite this article as: Sanjeevani GS, Farzana MUZN, Masha HAA. Knowledge, attitude, practices and awareness of cervical cancer among female medical students at Faculty of Indigenous Medicine, University of Colombo: a cross-sectional study. *Int J Community Med Public Health* 2026;13:4832-40.