REVIEW ARTICLE

REVISTA ENFERMAGEM ATUAL IN DERME

KNOWLEDGE, ATTITUDES AND PRACTICES OF UNIVERSITY STUDENTS ON HPV AND CERVICAL CANCER PREVENTION: INTEGRATIVE REVIEW

CONHECIMENTOS, ATITUDES E PRÁTICA DE UNIVERSITÁRIAS SOBRE PREVENÇÃO DO HPV E CÂNCER CERVICAL: REVISÃO INTEGRATIVA

CONOCIMIENTOS, ACTITUDES Y PRÁCTICAS DE ESTUDIANTES UNIVERSITARIAS SOBRE LA PREVENCIÓN DEL VPH Y EL CÁNCER DE CUELLO UTERINO: REVISIÓN INTEGRADORA

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ABSTRACT
Introduction: Cervical cancer (CC) is a global public health problem due to its high incidence and mortality rates. In addition, the lack of accurate and comprehensive information on the subject can lead people to engage in risky behaviors. Objective: To identify knowledge, attitudes and practices of university students regarding the prevention and control of Human Papillomavirus (HPV) and cervical cancer. Methods: This is an integrative review, carried out in October 2024, with searches in the following databases: MEDLINE via Pubmed, Latin American and Caribbean Literature in Health Sciences and Base de Dados em Enfermagem, using controlled and uncontrolled descriptors selected from the Health Sciences Descriptors and Medical Subject Headings. Results: The final sample consisted of 19 studies. It was found that the students have adequate knowledge about HPV and CC, risk factors, means of transmission and prevention and screening methods, however, gaps remain regarding clinical manifestation, HPV infection, diagnostic methods and vaccination. Regarding attitudes and practice, the students have favorable attitudes towards early detection through cytopathological examination, however, they presented unsatisfactory practices in relation to cytopathological examination and vaccination. Conclusion: There is a need for more comprehensive and investigative educational strategies to be implemented, especially in the university context, to promote proactive attitudes and health practices that minimize vulnerability to the Human Papillomavirus and cervical cancer.
Keywords: Health Knowledge, Attitudes, Practice; Human Papillomavirus Viroses; Uterine Cervical Neoplasms; Students.

RESUMO
Introdução: O câncer de colo uterino (CCU) é um problema de saúde pública mundial devido às suas altas taxas de incidência e mortalidade. Além disso, a ausência de informações precisas e abrangentes sobre o tema pode levar as pessoas a se exporem a comportamentos de risco. Objetivo: Identificar conhecimentos, atitudes e prática de estudantes universitárias sobre a prevenção e controle do Papilomavírus Humano (HPV) e do câncer de colo uterino. Métodos: Trata-se de revisão integrativa, realizada em outubro de 2024, com busca nas bases de dados: MEDLINE via Pubmed, Literatura Latino-Americana e do Caribe em Ciências da Saúde e Base de Dados em Enfermagem, utilizando descritores controlados e não controlados selecionados dos Descritores de Ciências da Saúde e Medical Subject Headings. Resultados: A amostra final foi composta por 19 estudos. Verificou-se que as estudantes têm conhecimento adequado sobre HPV e CCU, fatores de risco, meios de transmissão e métodos de prevenção e rastreamento, entretanto, ainda persistem lacunas relativas à manifestação clínica, à infecção por HPV, aos métodos de diagnóstico e à vacinação. No que tange às atitudes e prática, as estudantes possuem atitudes favoráveis quanto à detecção precoce por meio do exame citopatológico, contudo, apresentaram práticas insatisfatórias em relação ao exame citopatológico e à vacinação. Conclusão: Observa-se a necessidade de que estratégias educativas mais abrangentes e investigativas sejam implementadas, especialmente no contexto universitário, para promover atitudes proativas e práticas de saúde que minimizem a vulnerabilidade frente ao Papilomavírus Humano e câncer de colo uterino.
Palavras-chave: Conhecimentos, Atitudes e Prática em Saúde; Papillomavirus Humano; Neoplasias do Colo do Útero; Estudantes.

RESUMEN
Introducción: El cáncer cervicouterino (CCU) es un problema de salud pública mundial debido a su alta incidencia y mortalidad. Además, la falta de información precisa y completa sobre el tema puede llevar a las personas a exponerse a conductas de riesgo. Objetivo: Identificar los conocimientos, actitudes y prácticas de estudiantes universitarios respecto a la prevención y el control del Virus del Papiloma Humano (VPH) y el cáncer cervicouterino. Métodos: Se realizó una revisión integrativa en octubre de 2024, con búsquedas en las siguientes bases de datos: MEDLINE vía Pubmed, Literatura Latinoamericana y del Caribe en Ciencias de la Salud y la Base de Datos de Enfermería, utilizando descriptores controlados y no controlados seleccionados de los Descriptores de Ciencias de la Salud y Medical Subject Headings. Resultados: La muestra final consistió en 19 estudios. Se encontró que los estudiantes poseen conocimientos adecuados sobre el VPH y el CaCu, sus factores de riesgo, vías de transmisión y métodos de prevención y cribado; sin embargo, aún existen lagunas en cuanto a las manifestaciones clínicas, la infección por VPH, los métodos de diagnóstico y la vacunación. En cuanto a las actitudes y prácticas, los estudiantes muestran una actitud favorable hacia la detección temprana mediante el examen citopatológico; sin embargo, presentaron prácticas insatisfactorias con respecto al examen citopatológico y la vacunación. Conclusión: Es necesario implementar estrategias educativas más integrales e investigativas, especialmente en el contexto universitario, para promover actitudes proactivas y prácticas de salud que minimicen la vulnerabilidad al Virus del Papiloma Humano y al cáncer de cuello uterino.
Palabras clave: Conocimientos, Actitudes y Práctica en Salud; Virus del Papiloma Humano; Neoplasias del Cuello Uterino; Estudiantes

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INTRODUCTION

Human Papillomavirus (HPV) is a DNA virus from the Papillomaviridae family, consisting of more than 170 types divided into low-risk and high-risk HPV. Low-risk viruses are associated with common clinical manifestations, such as genital warts. In turn, those considered high-risk (16, 18, 31, 45, among others) are related to precancerous lesions and the development of cervical cancer (CCU),[1,2] with HPV16 and HPV18 subtypes being responsible for more than 70.0% of cases of this neoplasm.[2]

The incidence of CCU was approximately 660,000 cases worldwide, with more than half having negative outcomes, such as deaths. Because of this, cervical cancer has become the fourth most frequent and lethal cancer in the world among women.[3] In Brazil, in 2023, the incidence exceeded 17,000 cases and six thousand deaths were recorded.[4]

The women most affected by cervical cancer were those residing in developing regions, such as Brazil, and more specifically, in areas with less access to healthcare, such as the North and Northeast regions of the country. Exposure to risk factors, barriers to effective prevention, early diagnosis, and curative treatment are directly related to mortality from this type of cancer.[3]

Therefore, it is important that women, especially those exposed to sexually transmitted infections, possess adequate knowledge, attitudes, and practices regarding the prevention and control of HPV and cervical cancer, which is possible through the development of comprehensive healthcare and health education actions.

In the meantime, the literature revealed studies conducted internationally, in Brazil, and specifically in the Northeast, that address the prevention and control of HPV and CCU among female university students.[5-7] Thus, this research seeks to answer the following research question: what are the knowledge, attitudes, and practices of female university students regarding the prevention and control of HPV and CCU?

Therefore, the objective was to identify the scientific evidence regarding the knowledge, attitudes, and practices of female university students about the prevention of HPV and CCU.

METHODS

This is an integrative review, conducted in six stages: 1) development of the guiding question; 2) search and selection of primary studies; 3) data extraction from the studies; 4) critical appraisal of the primary studies included in the review; 5) synthesis of the review results; and 6) presentation of the method.[8]

For the formulation of the guiding question, the PICo strategy was used (P: university students; I: knowledge, attitudes and practice; Co: HPV and CCU prevention). Thus, the following question was defined: What are the knowledge, attitudes and practices of university students regarding HPV and CCU prevention?

The bibliographic survey, that is, the search for primary studies, was carried out in the following databases: MEDLINE via PUBMED,

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Latin American and Caribbean Literature in Health Sciences (LILACS), and Nursing Database (BDENF), using controlled descriptors from the Health Sciences Descriptors (DeCS) and Medical Subject Headings (MeSH). To identify the largest number of publications, controlled and uncontrolled descriptors and the Boolean operators AND and OR were used to establish the study search strategy (Table 1).

Table 1 - Search strategy for primary studies in the selected databases.

Database	Search Strategy	Results
PUBMED	("University Students" OR "College Students" OR "Undergraduate Students" OR "Students") AND ("Health Knowledge, Attitudes, Practice" OR "CAP Surveys" OR "CAP" OR "KAP") AND ("HPV" AND "Uterine Cervical Neoplasms" OR "Cervical Cancer" OR "Uterine Cervical Cancer" OR "Cervical neoplasm")	301
LILACS		13
BDENF		4

Source: Prepared by the authors (2024).

For the selection of primary studies, the following inclusion criteria were adopted: scientific articles, of the observational type, available in full, free of charge, in English, Portuguese, or Spanish, published between 2014 and 2024, and that answered the guiding research question. Studies that addressed knowledge, attitudes, or practice separately were also included. Duplicate articles, qualitative articles, and review articles were excluded.

Regarding the selection of primary studies, it should be noted that the titles and abstracts were read, followed by the application of eligibility criteria. After this, the final sample of articles that were read in full was defined.

For data collection, the stage involving the extraction of data from the studies, a spreadsheet was used in Google Sheets, containing the following information: article title, authors, journal, country, year of publication, approach and design of the article, level of evidence, objective, sample, participants' courses of study, questions about knowledge, attitudes and practice, and main results. Subsequently, a critical appraisal of the primary studies included in the review was carried out.

For the assessment of the level of evidence, the JBI classification was used, which separates levels into: level I: systematic review or meta-analysis; level II: randomized controlled trial; level III: non-randomized controlled trial/quasi-experimental studies; level IV: well-designed cohort or case-control studies; level V: systematic review of qualitative and descriptive studies; level VI: descriptive or qualitative studies; and level VII: authoritative opinion or expert report. The levels are classified as strong (I and II), moderate (III to V) and weak (VI to VII).[9]

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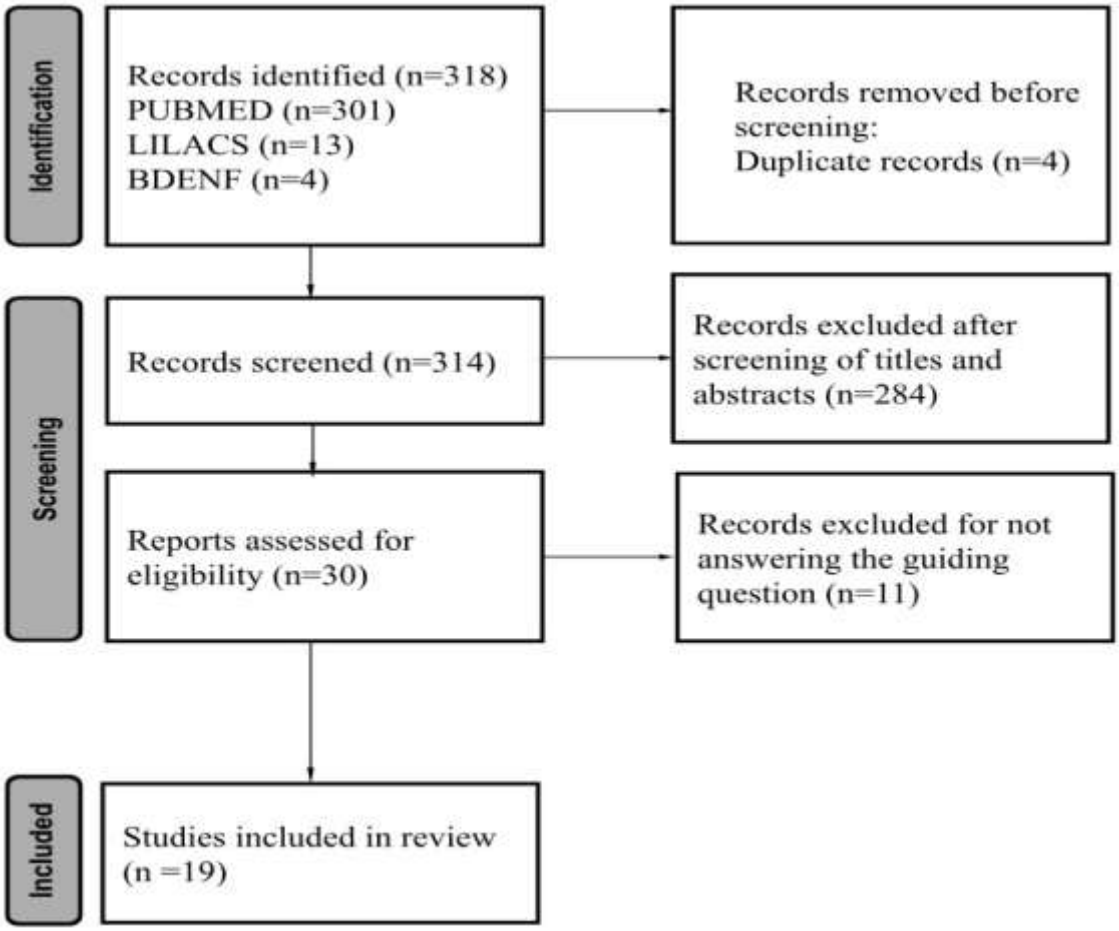
The data analysis was based on content analysis of the selected studies, in which their respective results were classified into categories that allowed inference about the knowledge, attitudes and practices of university students in the prevention and control of HPV and cervical cancer.

Approval from the Research Ethics Committee (REC) and the Free and Informed Consent Form (FICF) were waived for this study, as it is a literature review and all data used were in the public domain.

RESULTS

Based on the database search, 318 records were identified. After excluding duplicates and reading titles and abstracts, 30 articles were read in full; of these, 19 articles were selected to compose the final sample of the review. Figure 1 presents the flowchart for selecting the studies included in the integrative review.

Figure 1 - Flowchart of the process for selecting studies included in the review.



Source: Prepared by the authors (2024).

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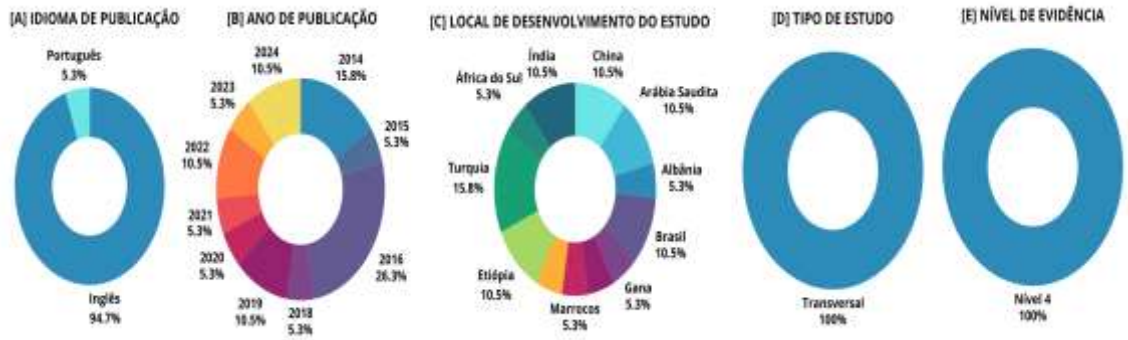
Among the studies included in the review, the majority, 18 (94.7%), were published in English between 2014 and 2024, with the highest frequency of publication in 2016 (26.3%), followed by 2014 (15.8%). Regarding the place of publication, Turkey contributed three (15.8%) publications, followed by India, China, Brazil, Saudi Arabia, and Ethiopia, all of which had two (10.5%) publications (Figure 2).

Figure 2 - Characteristics of the evidence included in the study.



[A] Language of publication; [B] Year of publication; [C] Location where the study was conducted; [D] Type of study; and [E] Assessment of the level of evidence of the studies included in the review.
Source: Prepared by the authors (2025).

Table 2 presents the characterization of the research sample, which ranged from 76 to 2,679 participants, with the population consisting of female and male university students, as well as the main results related to the knowledge, attitudes, and/or practices of university students regarding the prevention of cervical cancer and HPV. Regarding the study types, all were characterized as cross-sectional studies (100%), indicating a low level of scientific evidence (LE IV).

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Table 2 - Summary of studies regarding country and year of publication, sample, and main results related to the knowledge, attitudes, and/or practices of university students regarding the prevention of cervical cancer and HPV. Floriano, PI, Brazil, 2024. (n= 22)

Country (year)	Sample	Knowledge	Attitudes	Practice
China (2016)[5]	n=1.580	Women had more knowledge about the causative agent (45.6%), the symptoms (42.5%), and prevention methods (44%) compared to men. Regarding the area of study of the students evaluated, those studying biology showed more knowledge about cervical cancer (81.8%) and HPV (46.5%) than students from other areas.	Both female (72.25%) and male (56.4%) students expressed positive attitudes toward HPV vaccination in adolescent girls.	Only 7.16% of women and 7.42% of men received the HPV vaccine.
Saudi Arabian (2022)[6]	n=386	33.7% of participants had heard of HPV, 26.4% thought that HPV causes genital warts, and 29.5% believed that HPV infection is an STI. Regarding HPV infection, 76.2% did not believe it could occur without symptoms, and 53.4% were unaware of the health problems associated with it. Approximately 60% stated that there is no vaccine against HPV and that immunobiologicals do not minimize the risks of cervical cancer.	56.8% of participants expressed that they would seek medical advice before getting vaccinated against HPV.	Not applicable.
Albany (2023)[7]	n=503	71.2% of participants reported having little knowledge about cervical cancer; however, 20.7% knew that HPV is a risk factor, 34.0% knew that cytopathological examination is a screening procedure, and 53.7% of participants had heard of the HPV vaccine.	73.2% of students reported that they would not feel embarrassed to undergo a Pap smear, and 46.7% did not think the exam would be painful.	Only 6.8% of the students had undergone an HPV test or cytopathological examination, and 7.6% had been vaccinated.
China (2014)(10)	n=2.679	87.3% of participants were knowledgeable about HPV, 82.4% knew about cervical cancer screening, and 93.2% had heard about the HPV vaccine. Over 90% of participants were aware of HPV-related risk factors, modes of transmission, and that there are several types of HPV.	91.6% of students were willing to be vaccinated against HPV and 95.4% intended to share information about HPV vaccination with others.	Only 18.5% of the participants were vaccinated.
Brazil (2019)(11)	n=473	Over 90% of the participants were aware of the cytopathological examination and how often it should be performed. 94.5% had heard of HPV, however, only 47.6% knew that the virus can induce genital warts and 52.2% knew of its association with cervical cancer. However, only 10.6% knew the risk factors for HPV infection.	Not applicable.	Not applicable.
Gana (2016)(12)	n=410	85.6% of the participants were familiar with cervical cancer (CCU), however, only 53.4% knew about screening for CCU. 43% associated the neoplasm with a family history of cancer and 31% were unaware of any related risk factors. Approximately 30% associated abnormal vaginal bleeding as a symptom of CCU.	79.7% agreed that all women are susceptible to developing cervical cancer, and 82.4% understood that cytopathological examination is fundamental for the prevention of this neoplasm.	92% of female students who were aware of the screening process had not taken the test in the last two years.

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Pakistan (2016)(13)	n=390	More than 50% of students knew about HPV and stated that the virus is a cause of cervical cancer. 68% did not believe that HPV occurs without symptoms. 40.5% did not know the means of transmission, 44.8% stated that HPV can be prevented by vaccination, and 41.2% stated that they had no knowledge about HPV prevention.	53% of students stated that the vaccine does not protect against HPV, and 64% stated that vaccination does not minimize the chances of women developing cervical cancer.	Not applicable.
Morocco (2022)(14)	n=479	10% of participants had heard of HPV, however, only 1.5% knew that HPV is an STI and 81.6% had heard of cervical cancer. Among the students who were aware of HPV, 47.9% knew of the relationship between the virus and cervical cancer, and 54.2% responded that HPV infection is the main cause for the development of the neoplasm.	Not applicable.	Not applicable.
Ethiopia (2021) (15)	n=403	90% of the participants had heard of cervical cancer, but only 52% knew the signs and symptoms of the neoplasm, and 33% were unaware of the risk factors for cervical cancer. Regarding prevention methods, 34.7% were unaware of any method, 25.1% indicated avoiding multiple sexual partners, and 16.9% indicated avoiding early sexual intercourse.	90% of the participants believed that any woman can develop cervical cancer, and 80.6% believed that cytopathological examination helps in the prevention of cervical cancer.	Only 0.5% had undergone screening for cervical cancer and 1.2% had been vaccinated.
Malasia (2019)(16)	n=425	59.8% of students had heard of HPV and 49.6% had heard of the HPV vaccine. 22.9% obtained information related to HPV during their undergraduate studies and 16.8% through the internet. Students in Health Sciences had greater knowledge compared to students from other fields.	27.4% of students were willing to be vaccinated against HPV if suggested by a healthcare professional.	Only 28.5% of participants were vaccinated.
Ethiopia (2018)(17)	n=584	40.5% of participants had heard of cervical cancer (CCU), 79.4% did not know its etiology, 61.5% were unaware of the modes of transmission, and 67.1% were unaware of the symptoms of CCU. Only 11.7% knew that the neoplasm is caused by HPV and 28.8% knew that transmission occurs through sexual intercourse. 38.8% knew about the cytopathological examination and 20.7% about the HPV vaccine as methods of preventing CCU.	85% of participants understand cervical cancer as a severe disease, 65.2% believe it is a curable disease, and 74.5% believe that cytopathological examination can prevent cervical cancer.	Only 0.9% of the students had undergone a Pap smear.
South Africa (2024)(18)	n=190	90% of the participants had heard of cervical cancer, and 63.7% knew of its association with HPV infection. 70.5% of the students recognized the existence of methods for effectively reducing the incidence of cervical cancer, 43.2% knew about the HPV vaccine, and 32.6% had heard of the Pap smear test.	Not applicable.	Only 19.5% had been vaccinated.
Turkey (2015)(19)	n=800	76% had heard of cervical cancer and 24.5% believed it was a preventable neoplasm. 83.2% were unaware of the symptoms of cervical	For 97.2%, early diagnosis is important for the prognosis of the	Only 1.1% had undergone a Pap smear and 0.3% had been

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		cancer, 87% were unaware of methods for early diagnosis, and 94.4% did not believe that cervical cancer could be prevented by vaccination.	disease, and 94.4% do not believe in the effectiveness of the cervical cancer vaccine.	vaccinated.
India (2020)(20)	n=577	Over 90% of participants had knowledge about HPV and associated diseases. 28.2% knew the modes of transmission, 34.1% knew the types of HPV related to various types of cancer, 50.2% had knowledge about the vaccine, and 42.2% had knowledge about the Pap smear test.	Not applicable.	Not applicable.
India (2024)(21)	n=380	54.7% had heard of cervical cancer, 49.7% pointed to sexual intercourse and 31.6% to HPV as causes of cervical cancer. 27.1% indicated HPV infections, 28.9% multiple sexual partners and 22.4% early sexual intercourse as risk factors for cervical cancer.	60.5% think that late diagnosis is due to a lack of knowledge about prevention. 39.7% believe that the vaccine is effective in preventing cervical cancer.	Only 22.9% had undergone a Pap smear at least once.
Saudi Arabia (2014)(22)	n=1.258	51.1% of participants considered cervical cancer a preventable disease, and 59.6% identified STIs as a risk factor for cervical cancer. 46.7% had heard of the Pap smear test, and 30% stated that it is a means of early detection of cervical cancer.	Not applicable.	Not applicable.
Turkey (2014)(23)	n=463	37.2% of first-year students and 64.3% of fourth-year students had heard of CCU. 37.2% of first-year students and 61.4% of fourth-year students had heard of the HPV vaccine; 59.2% of first-year students and 54.9% of fourth-year students were aware of the age range in which the vaccine should be administered.	Not applicable.	Only 3.8% of female students in Health Sciences and 1.8% of female students in other fields were vaccinated.
Turkey (2016)(24)	n=725	90.9% of female medical students knew that HPV is a cause of cervical cancer, and 66.7% knew that the vaccine protects against cervical cancer. Obstetrics and nursing students gave more correct answers about the use of cytopathological examination for cervical cancer screening compared to medical students. Regarding reasons for not vaccinating, 34.8% were unaware of its availability in Turkey, 22.2% said the vaccine was expensive, and 17.4% were concerned about side effects.	Not applicable.	Only 0.9% of the participants were vaccinated against HPV.
Brazil (2016)(25)	n=76	55.2% of participants acquired knowledge about the cytopathological examination through university, 72.3% stated that the purpose of the examination is to screen for cervical cancer, 71% pointed to genetic factors and 48.66% to sexual habits as the main risk factors, and 51.3% did not consider HPV as a risk factor.	Not applicable.	81.5% of the students have already undergone a Pap smear, however, none of the students have been vaccinated.

Source: Prepared by the authors (2024).

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Table 3 presents a compilation of questions about knowledge, attitudes, and practices present in the studies.

Table 3 - Questions about knowledge, attitudes, and practices from the studies included in the review.

Knowledge		Attitudes	Practice
Have you ever heard of cervical cancer? [7 9 14 15 17-19 21 23]	Where did you get your information about cervical cancer? [9 15 23]	Should only teenage girls receive the HPV vaccine? [7]	Have you already received the HPV vaccine? [7 9 15 18 19]
What are the causes of cervical cancer? [7 17 21]	What are the risk factors for cervical cancer? [9 12 15 17-19 21 22 24 25]	Would you be embarrassed to have a Pap smear?? [9]	
Is there any association between HPV and cervical cancer? [7 14]	What are the diagnostic methods for cervical cancer? [9 16 18 19]	Do you think Pap smears are painful? [9]	Have you ever had an HPV test? [9]
What are the main types of HPV that cause cancer? [7 10 18 20]	Have you ever heard of a Pap smear?? [9 11 12 18 20-22]	Do you think that fear of the test result is a inhibiting factor?? [9]	
Does HPV cause genital warts? [7 8 10 11 13 18 19 24]	At what age should cervical cancer screening begin? [9 15 21]	Do you think condoms prevent HPV infection? [9]	Have you ever had a Pap smear?? [12 15 19 21]
Have you heard about the HPV vaccine? [7-9 13 18 19 23]	How often should a Pap smear be done?? [9 11 15 21 22]	Do you think cervical cancer is a terminal illness? [12 15]	
Do you know the names of the HPV vaccines? [7 20]	Can HPV cause HIV/AIDS? [10 18]	Do you think cervical cancer can be sexually transmitted? [12]	Why haven't you had a Pap smear yet?? [15]
Who is eligible to receive the HPV vaccine? [7 19 20 23]	Can HPV be cured with antibiotics? [10 16 18]	Do you think cervical cancer is curable?? [12]	
Have you ever heard of HPV? [8 11 13 14 19 20]	Do most sexually active people contract HPV at some point in their lives? [10 16 18]	Do you think cervical cancer can cause infertility? [18 23]	At what age did you have sexual intercourse for the first time? [9 15]
Is HPV sexually transmitted? [8 10 13 16 18 24]	HPV usually requires treatment.? [10 18]	Do you believe that all women are at risk of cervical cancer? [12 15]	How many sexual partners have you had? [9 15]
Does HPV cause cervical cancer? [8 10 11 13 16 18 19 24]	Does the HPV vaccine offer protection against genital warts? [10 18]	Do you plan to have a Pap smear in the future? [12 15]	
Can HPV infect both men and women? [8 13 16 19 20 24]	Does the HPV vaccine offer protection against all sexually transmitted infections? [10 18]	Do you believe you have a chance of developing cervical cancer? [15 18]	Have you had cervical cancer screening in the last 3 years? [21]

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HPV infection can occur without symptoms.? [8 10 13 14 18 20]	What are the symptoms identified in cervical cancer?? [12 15 17 19 21 22 24]	Do you think there are effective methods to reduce the risk of cervical cancer? [15 18]	
HPV can cause other types of genital cancer (penis, anus)? [8 13]	Do you think HPV infection is the main cause of cervical cancer?? [14 18]	Do you think cervical cancer can be treated? [15]	Do you use condoms during sexual intercourse? [9]
What health problems are associated with HPV? [8 13 14 20]	What is the causative agent of cervical cancer?? [15]	Do you think the vaccine offers lifelong protection against HPV? [19]	
What are the methods for preventing HPV? [8 9 13-1 17-19 21]	Can cervical cancer be cured in its early stages? [15]	Do you believe that cervical cancer can be prevented with a vaccine?? [19 21]	Did you use a condom the last time you had sex? [9]
What are the modes of transmission for HPV? [8 13 17 19 20 21]	How can cervical cancer be treated? [15 21]		
Does the HPV vaccine protect against cervical cancer? [8-10 13 18]	Is cervical cancer a terminal illness? [18]		
Once vaccinated, do women need to be screened for cervical cancer? [8 10 13 18 20]	Where did you get your information about HPV? [19]	Do you think there is a need for better education about HPV and related diseases? [20]	What is the reason why you don't use a condom when you have sex? [9]
Is the HPV vaccine only for sexually active people? [8 13]	Can cervical cancer be prevented? [22]	Do you want to learn more about HPV and its related diseases?? [20]	You return to the doctor's office to have your Pap smear results collected.? [11]
A vacina contra o HPV deve ser administrada antes da primeira relação sexual? [8 10 13 18 24]	Para quê o teste de Papanicolau é realizado? [20 25]		

Source: Prepared by the authors (2024).

DISCUSSION

The studies included in this review demonstrate that, although many participants have a general knowledge considered adequate regarding the prevention and control of HPV and cervical cancer[9-12,15,18,19,20,24] significant gaps are observed in relation to specific aspects. Many participants revealed incipient or erroneous knowledge about symptoms, modes of HPV transmission, diagnostic methods and, in some cases, believed that there was no vaccine against HPV or that it was not effective in preventing cervical cancer.[8,17,19] This limitation in knowledge is worrying, as it indicates that general information on the subject alone is not

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sufficient to promote effective behavioral changes or ensure adequate prevention.

In contrast, other studies have found that research participants possessed adequate knowledge about HPV and its association with cervical cancer and other pathologies, knew the risk factors and modes of transmission, and were familiar with cytopathological examination as a screening method and the frequency with which it should be performed, and recognized the effectiveness of HPV vaccines in preventing cervical cancer.[10,11,18,20,24]

When evaluating the clinical skills of medical students, it was found that they had greater knowledge about the etiopathology of cervical cancer and means of prevention, compared to students from other health fields. In turn, obstetrics and nursing students possessed greater knowledge about the technique and importance of cytopathological examination and its purpose in screening for HPV and cervical cancer.[24]

Thus, the impact of health science training on the knowledge of university students is evident, which was confirmed in a study conducted in Brazil with health science students, as many of the participants acquired knowledge about cytopathological examination through university and that its purpose is the screening of cervical cancer. However, this same study identified that, despite knowing some risk factors for the development of neoplasia, about half of the participants did not consider HPV one of these factors; among these, half were nursing students and had already taken the women's health course.[25]

This information is alarming and demonstrates the need to evaluate and reformulate teaching in undergraduate health science courses, seeking to provide efficient learning of theoretical content, along with broad clinical practice that contributes to the acquisition of the skills necessary to offer quality health care. Regarding attitudes and practice, a limited number of investigations have explored these dimensions. In investigations that addressed the attitude dimension, it was observed that participants had favorable attitudes towards early detection through cytopathological examination and intended to undergo the examination,[12,15,18] believed there were effective methods for reducing the risk of cervical cancer,[15,18] and recognized the need for the development of educational actions in the university context.[20]

In this sense, it is understood that the knowledge possessed by university students regarding the severity of the neoplasm and the importance of prevention corroborates the development of favorable attitudes that contribute to an effective change in behavior, thus resulting in appropriate practice.

Regarding the “practical” dimension, it was observed that female university students had a low rate of adherence to cytopathological examination[15] and vaccination.[9,10,16,18] The main factors cited as barriers to vaccination were: lack of knowledge regarding the

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availability of the immunobiological agent in the country, the price for administering the vaccine, and concern about possible side effects.[16,24]

This review has limitations in the number of databases searched, since relevant studies may not have been included in the final sample, and the scarcity of studies developed nationally on the knowledge, attitudes, and practices of female university students regarding HPV and cervical cancer prevention.

It is worth highlighting that this review will form the basis for the development of a KAP survey on HPV and cervical cancer prevention among female university students, which may assist in the development and implementation of health promotion policies, actions, and strategies aimed at preventing HPV and cervical cancer. Understanding these aspects is fundamental to identifying gaps in knowledge, cultural influences, attitudes, and behavioral patterns that act as barriers to the implementation of effective health interventions.

FINAL CONSIDERATIONS

This study revealed that female university students have adequate general knowledge about HPV and cervical cancer, risk factors, transmission methods, and prevention and screening methods. Furthermore, they held favorable attitudes towards early detection through cytopathological examination and intended to undergo the examination. Regarding practice, despite understanding the neoplasm as a fatal disease, low rates of adherence to cytopathological examination and vaccination were observed.

It was found that the students have insufficient knowledge on topics such as symptoms, means of HPV infection, diagnostic methods, and vaccination. Therefore, it is crucial that more comprehensive and investigative educational strategies be implemented, especially in the university context, to promote proactive attitudes and health practices that minimize vulnerability to HPV and cervical cancer.

Thus, it is necessary for healthcare professionals working in Primary Health Care to reinforce strategies and actions aimed at primary and secondary prevention. Seeking to achieve vaccination goals for the target population and reinforce the importance of cervical cancer screening with cytopathological examination as a complementary action in the prevention of neoplasia.

In addition, it is essential that higher education institutions actively cooperate in the development of educational actions for the prevention of HPV and cervical cancer among their students and reformulate teaching in undergraduate health courses, thus contributing to a comprehensive education aimed at quality healthcare.

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Conflict of Interest Statement

Nothing to declare.

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