

## Promoting Healthy Lifestyles for Cervical Cancer Prevention Among Adolescents: A Systematic Literature Review

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### Abstract

**Background:** Cervical cancer constitutes a major worldwide health concern, especially in developing nations, where it persists as a primary cause of cancer-related mortality among women. Adolescents represent a pivotal population for intervention, as they are in a stage where healthy lifestyle habits can be established to mitigate the risk of cervical cancer in the future.

**Purpose:** This study aims to systematically review existing literature to identify effective strategies for promoting healthy lifestyles among adolescents to prevent cervical cancer.

**Method:** A systematic literature review was performed utilizing databases including PubMed, Scopus, and Web of Science. Articles published between 2018 and 2025 were selected according to inclusion criteria emphasizing cervical cancer prevention, promotion of healthy lifestyles, and teenage demographics. We identified and examined essential themes and tactics to assess their effectiveness.

**Results:** The review identified three primary strategies to prevent cervical cancer: (1) enhancing public awareness and education regarding the HPV vaccine and cervical cancer risk factors; (2) promoting healthy behaviours such as proper nutrition, regular exercise, and smoking cessation; and (3) engaging adolescents through school-based initiatives, social media campaigns, and peer-led interventions. The findings indicate that treatments including culturally sensitive strategies and engaging parents and teachers significantly enhance the efficacy of preventative measures.

**Conclusion:** In conclusion, advocating for healthy lifestyles among adolescents is essential for mitigating the future incidence of cervical cancer. Integrated techniques that amalgamate education, behavioural interventions, and supportive environments effectively cultivate awareness and preventive practices. Further study is essential to evaluate the long-term effects of these interventions and to investigate creative strategies to enhance their reach and efficacy.

**Keywords:** Cervical cancer prevention, Healthy lifestyles, Adolescents, HPV vaccination, Systematic literature review, Health promotion, Risk factor education, Behavioural interventions, School-based programs, Public health strategies.

### Introduction

Cervical cancer is a significant public health concern and is one of the most common causes of cancer-related deaths among women around the world. Most of the reported instances of cervical cancer happen in low- and middle-income countries (LMICs), even though it can be prevented. This creates enormous difficulties. Preventive methods are particularly important for adolescents because early intervention can have a significant impact on their health in the long run. This systematic literature review intends to investigate the promotion of healthy lifestyles as a way to prevent cervical cancer in adolescents. It will address gaps in the present body of research and provide new insights into intervention approaches. The World Health Organization (WHO) estimates that there were 604,000 new cases of cervical cancer and 342,000 deaths from the disease worldwide in 2020. The disproportionate impact on LMICs is disturbing, with approximately 90% of infections originating from these regions [1]. Persistent infection with high-risk human papillomavirus (HPV) strains is the main cause of cervical cancer, and these strains are responsible for almost all instances [2]. Economic, cultural, and infrastructural constraints have delayed similar progress in LMICs, despite the dramatic reduction in cervical cancer incidence in high-income countries due to breakthroughs in screening and immunization.

Because HPV infections can begin at a young age and this stage of development is when lifelong health practices can be established, adolescents are a key group for preventing cervical cancer. In order to address the global burden of cervical cancer, it is essential to implement comprehensive prevention measures that include vaccine, education, and lifestyle interventions. Adolescence is a time of transformation that is characterized by changes in physical, emotional, and social aspects. This era is a good time for preventative interventions since health behaviours and attitudes that are acquired during this stage often continue into adulthood. According to research, adolescents are more open to health education and behavior modification programs when they are presented in ways that are interesting and relevant to their culture [3]. However, the effectiveness of these interventions can vary greatly depending on socioeconomic and cultural settings.

Vaccination, safe sexual practices, food and nutrition, and physical activity are some of the factors that can help prevent cervical cancer and promote a healthy lifestyle. One of the most effective ways to prevent cervical cancer is to get the HPV vaccine. Gardasil and Cervarix are two vaccines that protect against high-risk HPV strains 16 and 18. These two kinds are responsible for over 70% of cervical cancer incidences [4]. The World Health Organization (WHO) recommends that girls

between the ages of 9 and 14 receive the HPV vaccine on a regular basis, preferably before they start having sex. Even said, there are still major differences in vaccine coverage between wealthy and poor nations, and the overall worldwide vaccine coverage is still not good enough [5]. Adolescents are less likely to get the HPV vaccine because of vaccine reluctance, misinformation, and practical obstacles in vaccine delivery. The attitudes and opinions of parents are also very important because they can have a big impact on the health decisions that teenagers make. School-based vaccination programs and public awareness campaigns are examples of innovative community-based techniques that have been shown to be effective in increasing the number of people who become vaccinated [6].

Having sex at a young age and engaging in risky sexual practices are important risk factors for getting HPV and developing cervical cancer later on. It is important to have comprehensive sexual education programs in order to give teenagers the information and skills they need to make educated choices about their sexual health. According to research, teenagers who get sexual education that is based on scientific evidence are more likely to wait longer to have sex, use condoms on a regular basis, and go to the doctor for regular health check-ups [7]. Even while sexual education programs have been shown to be successful, their implementation is still variable in different places. The incorporation of comprehensive sexual education into school curricula is often hindered by cultural taboos and a lack of policy support. In order to tackle these difficulties, it is necessary for legislators, educators, and healthcare providers to work together to make sure that teenagers have access to correct information that is also sensitive to their culture.

Eating a nutritious diet is very important for keeping your immune system strong and lowering your chances of getting cancer. A diet that is high in fruits, vegetables, and antioxidants has been linked to a reduced incidence of HPV persistence and cervical cancer. However, adolescents frequently have difficulties in maintaining a balanced diet because of socioeconomic constraints, peer pressure, and limited availability to healthful food options. In order to prevent cervical cancer, it is important to promote nutritional education and make sure that people have access to inexpensive, nutritious food. Programs that provide meals at schools and community campaigns that highlight the significance of healthy eating can assist overcome these obstacles and promote lasting improvements in people's diets [8]. Another important part of a healthy lifestyle is physical activity, which helps improve general well-being and reduce the risk of cancer. Regular exercise lowers the chance of obesity, which is a known risk factor for many malignancies, including cervical cancer. It also reduces systemic inflammation and improves immunological function. Getting teenagers to participate in sports, recreational programs, and active transportation can have long-term health advantages [9].

The community, on the other hand, is confronted with a number of challenges. Adolescents' ability to adopt and maintain healthy lifestyles is greatly affected by socioeconomic inequality. In LMICs, restricted access to healthcare services, nutritious food, and recreational facilities creates considerable obstacles. Furthermore, the fees that families must pay out of their own pockets for HPV vaccinations and health check-ups frequently discourage them from pursuing preventative care [10]. Cultural attitudes and social conventions can either help or hinder the adoption of healthy practices. In many communities, it is

considered inappropriate to talk about sexual health and how to prevent cervical cancer. Because of this, teenagers are unable to get reliable information. It is essential to engage with community leaders and use communication tactics that are acceptable for the culture in order to overcome these obstacles [11]. Digital platforms provide useful chances for promoting health, but they also help propagate false information regarding the HPV vaccine and cervical cancer. Adolescents are especially susceptible to false statements that damage public health efforts because they are active users of social media. Misinformation can be reduced by improving digital literacy and launching focused internet initiatives [12].

There have been many studies that have looked at certain parts of cervical cancer prevention, including the HPV vaccine or sexual education. However, there has not been much study that has looked at how healthy lifestyles affect adolescents as a whole. This review seeks to address this gap by bringing together research about the relationship between lifestyle variables and the prevention of cervical cancer. The findings will provide useful information for creating integrated therapies that meet the specific needs of teenagers in a variety of environments. Encouraging young people to live healthy lives is an important way to prevent cervical cancer. Adolescence is a time when it is possible to teach habits that lower the risk of cancer, such as getting the HPV vaccine, practicing safe sex, and eating a balanced diet. Innovative and collaborative techniques are needed to address challenges to implementation, such as socioeconomic inequities, cultural norms, and disinformation. We can help adolescents live healthier lives and lower the worldwide burden of cervical cancer by merging community participation, technology-driven solutions, and supportive legislation.

## **Method**

### **Study design**

This study employs a methodology for performing a systematic literature review that is based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approved standard. The purpose of this study is to find out if articles are suitable for inclusion in connection to the promotion of cervical cancer prevention and to develop inclusion criteria based on the PICOS (Population, Intervention, Comparison, Outcome, Study Design) framework. In order to ensure that the process is both reproducible and transparent, the PRISMA framework was applied step by step.

### **Database and search strategy**

Studies are assessed according to a set of inclusion and exclusion criteria that have been determined beforehand. Data extraction was performed according to approved procedures. The findings from the selected studies have been compiled into a synthesis. When reporting results, it is necessary to follow the PRISMA guidelines. Methods for Databases and Searches.

We conducted a comprehensive search of the following databases: PubMed, Google Scholar, and ScienceDirect. The vast coverage of health-related literature that these databases provide, which includes papers that have been subjected to peer review, was a crucial reason in our choice to acquire them for this kind of systematic examination. PubMed is a well-known medical database, Google Scholar gives users access to a wide range of articles covering a variety of subjects, and ScienceDirect provides access to high-quality publications that have been vetted by other experts in the domains of health education and medical sciences.

**Table 1:** The keywords utilized in the literature search were determined using the PICO method.

PICOS Component	
P (population)	Adolescents
I (intervention)	Health promotion
C (comparison)	Use comparison group and not use comparison group
O (outcome)	cervical cancer prevention
S (study design)	A variety of research approaches, experimental studies, mixed-methods, randomized controlled trials (RCTs), longitudinal multicentric prospective interventional study, are included in the study design

We limited the search to papers that were published in English between 2018 and 2025. This was done to make sure that those researches were current and applicable. We did not place any further limits based on the specific type of publishing or the locality. In order to maintain consistency with materials that were subjected to peer review, we did not include grey literature, such as theses and reports.

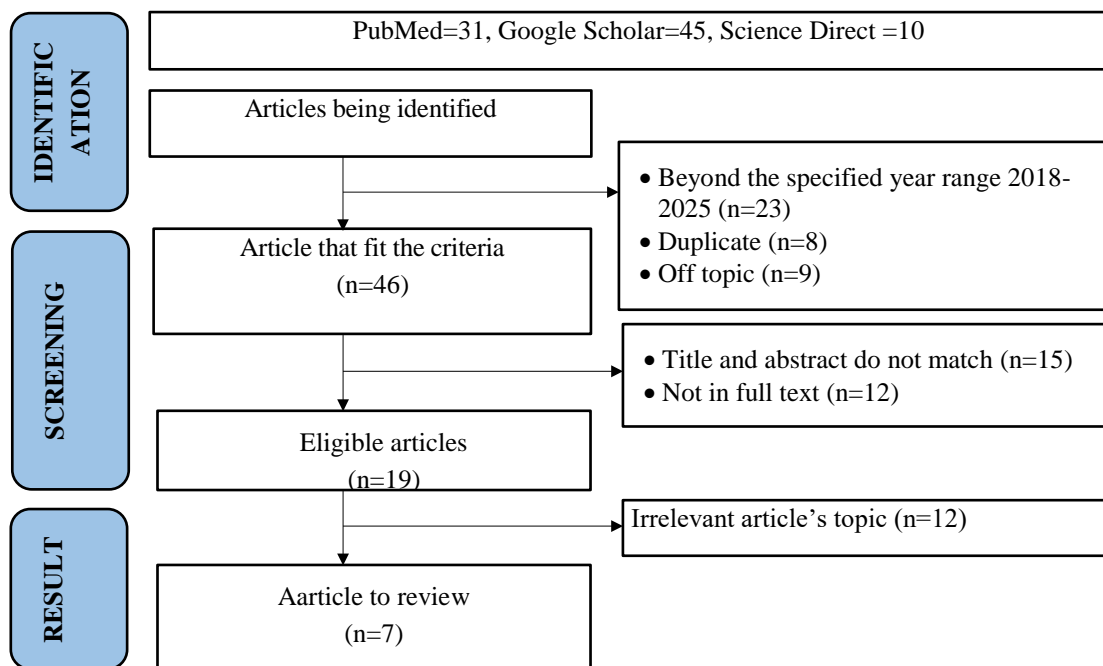
**The compilation and examination of data**

We collected the information that was obtained from the nine selected research by using a technique called narrative synthesis. The synthesis was intended to summarize the most significant data, identify trends that were observed across studies, and draw conclusions on the effectiveness of health promotion in preventing cervical cancer.

In order to reduce the possibility of biases (for example, publication bias or selection bias), we made sure to include research from a variety of geographical regions and situations, including a range of healthcare infrastructures. In addition, we examined the grey literature in order to find any important unpublished studies that could help reduce publication bias, but unfortunately, we did not choose any.

**Identification of study**

The process of study selection is depicted in the PRISMA flow diagram (Figure 1) provided below. This graphic presents the quantity of papers identified, screened, and incorporated into the study, along with the justifications for exclusions at each phase.



**Figure 1:** PRISMA Flow Diagram.

Result

**Table 2:** The Main Characteristics of Included Studies.

Author (Year) (Country)	Purpose	Method	Results	Database
(Chehab et al., 2024) (Lebanon)	The purpose of the study was to determine how effective a community-based intervention was in increasing women's knowledge and preventative measures (K&P) on breast cancer, cervical cancer, and personal hygiene.	This research was a longitudinal multicentric prospective interventional study that was conducted on women living in Lebanon who were between the ages of 18 and 83. The awareness seminars were held either in person or online to discuss these three themes, and they covered all eight governorates of Lebanon. Our sample consisted of women from the general community as well as women from the Order of Malta Lebanon's (OML) centers and mobile medical units. We used a stratified random sample procedure that took into account both age and governorates. We interviewed women both before (pre-test) and after (post-test) the awareness session. The K&P score and the improvement after the intervention were shown as a function of all the variables in the study. A p value of less than 0.05 was deemed to be statistically significant.	657 women completed the poll. The majority of them had a bachelor's degree as their highest level of education and did not smoke. The results indicated that there was a substantial overall improvement in the K&P mean score of 50.48% between the pre- and post-tests. The average score was $22.01 \pm 5.95$ over 38 (57.93% of correct answers) for the pre-test and $33.12 \pm 3.41$ over 38 (89.58% of correct answers) for the post-test ( $p < 0.001$ ). In addition, there was a significant difference between the pre- and post-tests ( $p < 0.001$ ) for each of the three themes when they were tested separately. For instance, there were improvements of 52.39% in personal hygiene, 60.00% in cervical cancer, and 22.27% in breast cancer.	Google Scholar
(Drokow et al., 2021) (Ghana)	The purpose of this research was to evaluate the effectiveness of a video-based educational intervention that focused on health beliefs and transtheoretical models of behavioral changes in promoting HPV vaccination, cervical cancer awareness, and willingness to get a Pap smear test (PST) among women in Ghana.	We employed easy, intentional, and stratified random sampling approaches to obtain the desired sample size. We used SPSS version 23.0 to perform the data analysis. We used percentages and frequencies to show the demographic features of the participants and their knowledge about (1) cervical cancer, (2) the human papillomavirus vaccine, and (3) the Pap smear test. To assess the differences in replies before and after the intervention, we used McNemar's chi-square test. A p-value of less than 0.05 was judged statistically significant. We used Bonferroni's correction to change the threshold of significance because of the multiple comparisons.	Prior to the intervention, 84.2% of the participants had some knowledge or information on cervical cancer. After the intervention, 100% of the participants became aware of cervical cancer, which is a 15.8% increase at a $P < .001$ . After the educational intervention, the percentage of people who were willing to obtain a pap smear test jumped from 35.8% to 94.2% ( $df = 58.4\%$ , $P < .001$ ). After the educational intervention, the percentage of people who were willing to get vaccinated jumped from 47.5% to 81.7% ( $df = 34.2\%$ , $P < .001$ ). Six months after the intervention, we checked up with the subjects. 253 (42.2%) of the individuals had undergone cervical cancer screening (pap smear test), while 347 (57.8%) of the participants had not been checked. Of the 192 individuals (32.0%), they had begun their HPV vaccine cycle.	Google Scholar
(Ampofo et al., 2020) (Ghana)	The purpose of the study was to determine how a video-based educational intervention (VBEL) assisted senior high school (SHS) students in Ghana in learning more about cervical cancer, increasing	The study was a single-arm before-and-after study that used stratified random sampling to choose fifty (50) participants. Before and after the VBEL, participants watched a 20-minute YouTube film about cervical cancer and filled out a questionnaire	There was a substantial increase in knowledge and awareness of the causal agent of cervical cancer ( $p = 0.003$ ) and treatment results ( $p = 0.003$ ). On the other hand, there was no significant change in understanding of risk factors ( $p =$	Science direct

	their awareness of the disease, and overcoming obstacles to being screened for it.	that was tailored to the study. McNemar's test was used to determine the differences in knowledge, awareness, and perceived barriers before and after the intervention. The significance level was set at $p < 0.006$ .	0.215), signs and symptoms of cervical cancer ( $p = 0.056$ ), or barriers to cervical cancer screening ( $p = 0.322$ ).	
(Erbay et al., 2024) (Turkey)	The purpose of this study was to investigate how the peer education model affects the knowledge levels of adolescents about human papillomavirus (HPV) infection and HPV vaccination.	We carried out the study using a pretest-posttest single-group design in a quasi-experimental manner. The study sample included 913 students who were enrolled in the 9th, 10th, and 11th grades. The data for the study was collected in April and May of 2023. We gathered data using the Demographic Information Form and the Human Papillomavirus Knowledge Scale (HPV-KS).	It was found that 8.8% of the students had previously received knowledge on HPV. Of those kids, 50% had learned about it through the media, and only 0.3% had received the HPV vaccine. Before peer education, the average HPV-KS score of the pupils was $1.14 \pm 3.54$ . Following peer education, it increased to $23.78 \pm 8.32$ , and the change was statistically significant ( $p < 0.005$ ). As a result, the peer education strategy is an excellent way to improve high school students' understanding about HPV and the HPV vaccine.	Science direct
(Nyambe et al., 2019) (Zambian)	We believe that screening and vaccination habits can be affected by a number of factors, including knowledge, social interaction, health behaviors, and religion.	From February to May of 2016, we carried out a mixed-methods study that was cross-sectional in nature. Data was collected from 300 women and 300 males living in Chilenje and Kanyama (two townships of Lusaka, the capital city of Zambia) using two different questionnaires. We assessed the respondents' knowledge about cervical cancer by assessing their ability to accurately identify the causes and protective factors of the disease, assuming that they were aware of the disease. In addition to giving descriptive data for all of the study variables, we investigated four research hypotheses regarding the relationship between knowledge, attitudes, and behaviors that were provided by the literature. We did this by using suitable statistical tests, including chi-square tests, analysis of variance, and logistic regression.	Less than half of the respondents (36.8%) had heard of cervical cancer, 20.7% of women had attended screening, and 6.7% of the overall sample had vaccinated their daughter. There was a very low level of knowledge about causes and prevention. There was a considerable connection between being aware of cervical cancer and getting screened (odds ratio = 20.5, 95% confidence range = [9.214, 45.516]) and vaccinated (odds ratio = 5.1, 95% confidence interval = [2.473, 10.423]). We also discovered that social interactions have a significant impact on people's behaviors when it comes to screening and immunization.	PubMed
(Ammar et al., 2023) (United States)	The goal of the study is to address certain shortcomings of electronic health records. The goal of this study is to create and build a personal health library (PHL) that produces individualized suggestions for promoting the human papillomavirus (HPV) vaccine and preventing cancer.	We have developed a prototype for the Digital Personal Health Librarian that demonstrates its feasibility. It creates a personal health knowledge graph by using machine learning, natural language processing, and a number of innovative technologies. The technologies include the semantic web, socially linked data, web application programming interfaces, and hypermedia-based discovery.	We have created and put into action a proof-of-concept prototype that demonstrates how the PHL can be used to store an individual's health data, such as a personal health knowledge graph. We combine this with web-scale knowledge to promote the HPV vaccine and prevent HPV-associated malignancies in adolescents and their caregivers. We also showed how the Digital Personal Health Librarian uses the PHL to give tailored, evidence-based insights and knowledge-driven explanations that help people make decisions about their health.	Science direct
(Addo-Lartey et al., 2024) (Ghana)	The study investigated if sending Ghanaian women one-way mobile phone SMS text	A quasi-experimental study was conducted from August to November 2016. Eighty-eight women, aged 18 to	At the beginning, women differed in terms of their ethnicity and fortune. After the intervention, the	PubMed

	<p>messages that were culturally suited to them and contained information about cervical cancer would encourage them to get tested for the human papillomavirus (HPV).</p>	<p>39, who lived or worked in an urban community (Accra, Ghana) took part in the study. Over the course of eight weeks, we created and sent 32 text messages on cervical cancer to the personal phones of 42 participants in the intervention group. Women in the control group (n = 46) received SMS messages including basic health and lifestyle recommendations. We utilized Fischer's exact tests to compare the intervention and control groups in terms of cervical cancer screening uptake and the reasons why patients did not go. The p-value needed to be lower than 0.05.</p>	<p>participants' self-reported risk factors for cervical cancer changed. These risk variables included early menarche, usual source of medical treatment, family history of cancer, smoking, and alcohol history. After the intervention, none of the women in the intervention group sought cervical cancer screening, while only one (2.2%) of the control arm participants did. The vast majority of women (over 95%) believed that an HPV test is necessary and that frequent healthcare check-ups can help avoid cervical cancer. A number of women thought that steering clear of certain foods could help reduce the risk of cervical cancer (23.8% intervention vs. 58.7% control, <math>p &lt; 0.001</math>). The costs that had to be paid out of pocket and the limited amount of time available were major obstacles to cervical cancer screening. Conclusion: Sending a one-way SMS to women in metropolitan areas did not result in an increase in the number of women who attended cervical cancer screenings. The amount of time spent in screening facilities and the absence of coverage by the National Health Insurance Scheme restricted the number of people who participated in screening. We strongly recommend that all healthcare facilities set up screening centers and that cervical cancer screening be included in healthcare plans through cost-sharing.</p>
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## Discussion

Cervical cancer is still one of the most common causes of cancer-related deaths among women worldwide, especially in countries with poor and intermediate incomes. The majority of cervical cancer cases are caused by a persistent infection with high-risk strains of human papillomavirus (HPV). Although the introduction of HPV vaccines has made a substantial impact on reducing the number of cervical cancer cases, preventative measures must go beyond just vaccination. In order to reduce the risk of cervical cancer in teenagers, it is important for them to engage in healthy lifestyle choices, such as receiving sexual health education, quitting smoking, eating a balanced diet, and exercising regularly. This systematic literature review seeks to investigate the role of healthy lifestyle promotion in preventing cervical cancer in teenagers. It will examine the effectiveness of various interventions and identify areas for future research.

The main cause of cervical cancer is a chronic HPV infection, which is most commonly spread through sexual intercourse. According to the World Health Organization (WHO) [13], around 80% of women will contract HPV at some point in their life, and a persistent infection is a major risk factor for developing cervical cancer. According to Gonzalez et al. [14], teenagers who are sexually active at an early age, have several

sexual partners, and do not utilize protective measures such as condoms are at a higher risk of contracting HPV. According to research, tobacco usage is a major factor in the continued presence of HPV infections [15]. Therefore, it is essential to encourage good living habits in teenagers in order to decrease the likelihood of developing cervical cancer later on.

There are a number of lifestyle variables that may be changed that help prevent cervical cancer, and programs aimed at teens can be very important in lowering the risk of cancer in the future. During adolescence, individuals are at a crucial stage of development when sexual actions and attitudes start to take shape. In order to reduce risky behaviours, it is important to provide comprehensive sexual health education that includes information about HPV, safe sexual practices, and the necessity of vaccination. Research has demonstrated that teenagers who receive thorough sexual education are more likely to have safe sex and postpone the start of sexual activity, both of which lower the chances of contracting HPV [16]. In particular, teaching adolescents about HPV and its link to cervical cancer can encourage them to get vaccinated and take steps to prevent the disease. Smoking is a known risk factor for persistent HPV infection, which greatly enhances the chances of getting cervical cancer. According to research, smoking weakens the immune

system's ability to eliminate HPV infections, which results in the virus being in the body for a longer period of time [17]. In order to lower the risk of developing cervical cancer in the future, it is important to prevent young people from starting to smoke. According to Miller et al. [18], smoking prevention programs in schools have been successful in lowering the number of teenagers who smoke. These programs frequently provide instruction about the risks of smoking, as well as activities that assist young people develop skills to resist peer pressure and refrain from using tobacco.

Cancer prevention is also influenced by diet and physical activity. Eating a lot of fruits, vegetables, and antioxidants will help strengthen the immune system, which is important for getting rid of HPV infections. Researchers have found that regular physical activity is associated with reduced inflammation and enhanced immunological function, both of which help lower the risk of cancer [19]. Encouraging children to eat healthily and be active may not only enhance their overall health but also lower their chances of having cervical cancer later in life. Programs that promote health in schools and community fitness efforts, which are designed to enhance nutrition and physical activity among teenagers, have been shown to be helpful in encouraging healthier behaviours [20].

In order to prevent cervical cancer, it is essential to intervene in the lifestyle behaviours of teenagers. These interventions usually concentrate on education, skill development, and social support to assist teenagers in adopting and maintaining healthy behaviours. Interventions that take place in schools have been shown to be quite effective at encouraging teenagers to adopt healthy lifestyle habits. According to Harrison and Nguyen [19,20], these programs can offer a structured atmosphere for education on sexual health, smoking cessation, and nutrition. According to a study by Thomas et al. [21], teenagers who engaged in school-based HPV education programs were more likely to acquire the HPV vaccine and practice safer sexual behaviours. School-based programs can also help combat peer pressure, which is a major factor influencing teenage behavior, by providing chances for peer-led teaching and support. Interventions guided by peers, in which teenagers take on the roles of both students and teachers, have demonstrated potential in encouraging healthy behaviours. During adolescence, peer influence is a strong force, and include peers in health promotion initiatives can boost engagement and participation [21]. Research has shown that peer-led interventions that focus on educating about HPV, preventing smoking, and increasing physical exercise are effective at changing the health behaviours and attitudes of adolescents [22]. Community-based treatments are essential for reaching adolescents in places where school-based programs may not be practical or available. These programs frequently include families, local health groups, and community leaders in order to provide a supportive atmosphere for changing behavior. According to a study conducted by Young et al. [23], community-based treatments that included information about HPV and assistance for quitting smoking were helpful in encouraging behaviours that help prevent cervical cancer. These programs frequently have the additional advantage of promoting a feeling of community ownership and empowerment, which can improve their chances of long-term success.

There are a number of obstacles that prevent lifestyle interventions from being put into practice, even though they are successful. Prevention programs can be affected by cultural, social, and geographical factors, which can influence both their accessibility and effectiveness. For instance, young people living in rural areas may have restricted access to health information and services, such as the HPV vaccine [24]. Furthermore, misunderstanding about HPV and cervical cancer, as well as the social stigma surrounding vaccination and sexual health, can hinder teenagers from accessing preventive care. In order to address these barriers, it is necessary to implement customized interventions that take into account the distinct needs and challenges of different populations. Future studies should concentrate on determining how beneficial teenage health treatments are for preventing cervical cancer over the long term. Longitudinal studies that follow teenagers over time could provide useful insights into how early lifestyle changes affect the risk of cervical cancer in maturity [25]. In addition, we require additional studies to assess how successful integrated therapies that combine HPV vaccination with lifestyle changes are, particularly in populations that are at high risk. In addition, there is a need for interventions that are sensitive to different cultures and that address the specific needs of adolescents from diverse backgrounds. We need to modify interventions to take into account differences in cultural beliefs, social status, and access to healthcare. This will guarantee that they are effective and inclusive [26].

Encouraging teenagers to have healthy lifestyles is an important part of preventing cervical cancer. This systematic literature review emphasizes the significance of sexual health education, quitting smoking, and maintaining a healthy diet in order to lower the chance of developing cervical cancer. Interventions that are school-based, peer-led, or community-based have been shown to be helpful in encouraging teenagers to adopt healthier behaviors. We must continue our research and policy efforts in order to guarantee that all teenagers receive the information and resources they need to lower their chances of developing cervical cancer.

### **Conclusion**

Encouraging teenagers to have healthy lifestyles is very important for preventing cervical cancer later in life. This systematic literature review emphasizes the significance of sexual health education, smoking cessation, and the promotion of healthy eating and physical activity as essential preventive interventions. Comprehensive sexual health education, which includes knowledge about HPV and its connection to cervical cancer, can drastically reduce risky behaviours such as early sexual beginning and unsafe sexual practices. Programs that help people quit smoking, especially those aimed at teenagers, are very important since smoking makes it more likely that HPV infection will continue, and HPV infection is one of the main causes of cervical cancer. Promoting healthy eating habits and physical activity can improve immune function, which can further reduce the incidence of HPV infections and the development of cancer.

Successful treatments that have been shown to engage teenagers and encourage good behavior changes include school-based programs, peer-led education, and community activities. Nevertheless, we must tackle obstacles such as cultural views, socioeconomic considerations, and restricted access to healthcare in order to guarantee that all teenagers benefit from these preventive measures. Future study should investigate the

long-term effects of lifestyle therapies and examine how integrated programs that combine HPV vaccination with lifestyle changes can further reduce the risk of cervical cancer. Furthermore, we must customize interventions for different communities by adopting culturally sensitive methods in order to increase their effectiveness. In the end, we can make a substantial impact on the number of cervical cancer cases in the next generation by focusing on promoting healthy lifestyles and raising knowledge about how to avoid cervical cancer. This will help contribute to global efforts in cancer prevention and public health.

#### Conflict of interest

No conflict

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#### Contributorship

EF and MSMS wrote the first draft. TBS and JS developed the idea for the article. All authors have seen and approved the final version.

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