Indonesian Journal of Global Health Research
Volume 8 Number 1, February 2026
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

CERVICAL CANCER PREVENTION: A SCOPING REVIEW OF NURSING IMPLEMENTATION STRATEGIES

Agung Subakti Nuzulullail[1]*, Magdalena Rindawati[1], Ika Arif Lidiyana[1], Avantika Puspa Imelda Wensi[1], Prisa Tifa Azizah[1], Anya Bunga Fakhriyah[1], Wiwin Lismidiati[2]
[1]Master of Nursing, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Senolowo, Jl. Farmako, Sekip Utara, Depok, Sleman, Yogyakarta 55281, Indonesia
[2]Department of Maternity Nursing, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, Senolowo, Jl. Farmako, Sekip Utara, Depok, Sleman, Yogyakarta 55281, Indonesia
*agungsubaktinuzulullail@mail.ugm.ac.id

ABSTRACT
Cervical cancer remains one of the most common cancers among women, with incidence rates continuing to rise. Nurses play an important role in determining strategies to prevent cervical cancer. However, to date, there have been few reviews discussing strategies that nurses can implement to reduce prevalence. This scoping review aims to identify various programs that can be used as nursing interventions in cervical cancer prevention. This scoping review was conducted through PubMed, Science Direct, ProQuest, and EBSCOhost. The selection of studies was based on the PRISMA-ScR 2020 guidelines with the following scheme: (P): Women, Concept (C): Cervical cancer prevention programs, (C): Community and health services. Inclusion criteria included original articles published between 2020 and 2025, Randomized Controlled Trials (RCTs), and quasi-experimental studies. Article quality was assessed using the JBI critical appraisal tool. From 930 records, 13 articles met the criteria. The program was conducted in community and clinical settings such as education, HPV vaccination, screening, information provision, counseling, and training with technology integration strategies such as AI, communication platforms, e-leaflets, social media, and self-sample kits. The program was assessed to be able to increase knowledge, attitudes, participation, and literacy, which can be implemented by nurses.

Keywords: cancer prevention; cervical cancer; nursing interventions; prevention programs

How to cite (in APA style)
Nuzulullail, A. S., Rindawati, M., Lidiyana, I. A., Wensi, A. P. I., Azizah, P. T., Fakhriyah, A. B., & Lismidiati, W. (2026). Cervical Cancer Prevention: A Scoping Review of Nursing Implementation Strategies. Indonesian Journal of Global Health Research, 8(1), 439–450. https://doi.org/10.37287/ijghr.v8i1.633.

INTRODUCTION

Cancer remains a major global public health challenge. In 2022, the World Health Organization (WHO) reported 660,000 cases of cervical cancer and approximately 350,000 deaths, with most cases occurring in low- and middle-income countries (WHO, 2025). The main cause is human papillomavirus (HPV) infection. Additional risk factors include early sexual activity, having multiple sexual partners, hormonal influences, genetic factors, smoking, having many children, and low socioeconomic status (Adigun et al., 2023; Amin et al., 2025)

Cervical cancer can be prevented through vaccination, early screening, and timely treatment (Plagens-Rotman et al., 2023). However, the success of cervical cancer prevention programs is often hampered by a lack of public awareness, stigma surrounding screening, limited access to services, and unequal distribution of health workers. These targets may not be achieved without tailored interventions to increase the utilization of cervical cancer screening services in health facilities and communities (WHO, 2025). Furthermore, cervical cancer prevention remains a challenge for health workers due to various issues such as workforce limitations, inadequate infrastructure, financial constraints, and a lack of awareness and training among health service providers and the community (Castle, 2024).

Prevention is crucial and necessary because it can save lives and support global goals to eradicate cervical cancer, including HPV vaccination programs and Pap smears (Mariño et al., 2023). This strategy is considered cost-effective and has the potential to significantly reduce mortality rates if implemented consistently (El-Bakry et al., 2025). Therefore, it is essential to have cervical cancer prevention programs that can be implemented in both clinical and community settings (Bukauskaitė-Žiūkienė & Liepinaitienė, 2024). The benefits include increasing public awareness and encouraging active participation in screening and vaccination, thereby potentially reducing the incidence of cervical cancer significantly (Ghosh et al., 2024).

Nurses play an important role by providing education, support, and interventions to improve health outcomes in various settings like hospitals, schools, and community (Liebermann et al., 2023a). Nurse help patients understand lifestyle risks, encourage cancer screenings and vaccinations, and advocate for policy changes. Nurses are ideally positioned to address barriers to cervical cancer screening and improve health literacy among women (Amin et al., 2025). In addition, nurses act as trusted health information providers, patient advocates, and navigators to ensure timely and effective preventive measures are taken, thereby reducing the global burden of disease (Adigun et al., 2023).

Currently, there are many interventions that can be implemented for cervical cancer prevention, but few studies have mapped and reviewed the types of interventions that can be implemented in nursing. A review conducted by (Johnson et al., 2018) emphasizes that educational strategies are widely used, but their effectiveness is limited. Previous studies have also not covered cervical cancer prevention interventions during the COVID-19 pandemic from 2020 to January 2024. Therefore, this scoping review aims to identify various forms of programs that can be used as cervical cancer prevention strategies, suitable for implementation by nurses in both clinical and community settings, with a focus on evidence-based practices and recommendations for implementation.

METHOD

Study Design

This study used a scoping review design, which is a research method that aims to explore a topic comprehensively (Peterson et al., 2017). The writing and implementation of this study were guided by the methodological framework of Arksey and O'Malley, includes five main stages: (1) formulating research questions, (2) identifying relevant studies, (3) selecting studies, (4) mapping data, and (5) compiling, summarizing, and reporting findings (Arksey & O'Malley, 2005). Scientific literature sources were used to answer the research question, "*What are the best recommendations for the implementation of cervical cancer prevention interventions by nurses in various health settings?"*

Search Strategy

Literature searches were conducted in four scientific databases, namely ScienceDirect, PubMed, EBSCOhost, and ProQuest. To ensure that the articles obtained were relevant to the research question, the Population (P): Women , Concept (C): Cervical cancer prevention program, Context (C): Community and health services. Based on this framework, the researchers conducted a search process using keywords that had been adapted to Medical Subject Headings (MeSH) (see Table 1). The researchers established the following inclusion criteria: original research articles, publication period between January 2020 and June 2025, discussion of cervical cancer prevention strategies, randomized controlled trials (RCTs), and quasi-experimental designs. Review articles, protocols, pilot studies, editorials, and books were excluded from this study.

Table 1.
Keywords in the literature search

Database	Keywords	Results
PubMed	("nursing" OR "nursing care" OR "nurse-led" OR "nurse practitioners") AND ("preventive health services"[MeSH] OR "prevention" OR "preventive strategies" OR "health promotion") AND ("uterine cervical neoplasms"[MeSH] OR "cervical cancer" OR "cervical carcinoma")	559 article
ScienceDirect	("nurse-led" OR "nursing intervention" OR "community nursing") AND ("preventive care" OR "health promotion") AND ("HPV vaccination" OR "screening") AND "cervical cancer"	29 article
ProQuest	("nurse-led" OR "nursing intervention" OR "community nursing") AND ("preventive strategy" OR "health promotion") AND ("HPV vaccination" OR "screening") AND "cervical cancer"	207 article
EBSCOhost	("nurse-led" OR "nursing intervention" OR "community nursing") AND ("preventive care" OR "health promotion") AND ("HPV vaccination" OR "screening") AND "cervical cancer"	135 article

Article Selection

Article screening was conducted by three researchers (ASN, ABF, API) based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) 2020 guidelines. The selection process was conducted using the Rayyan tool to ensure relevance to the research topic and to systematically identify outcomes (Rožanc & Mernik, 2021). The screening stages included checking for duplication, selection based on inclusion and exclusion criteria, and assessment of relevance to the PICO framework. After all articles were screened, four researchers (IAL, MR, PTA, ASN) worked in pairs to review the full text of the articles to determine their eligibility and suitability in answering the research questions. Differences of opinion between researchers were resolved through discussion until agreement was reached. In this study, there were no differences of opinion between researchers.

Eligibility Criteria

Quality assessment is not mandatory in scoping review designs, but researchers still conduct assessments as a form of transparency in the article review process (Peters et al., 2020). Article quality assessment was conducted by three researchers (ABF, AIP, IAL) using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist (2020 and 2023). The assessment criteria were based on a percentage score, with >70% categorized as high quality or low risk of bias, 50–70% as moderate risk of bias, and <50% as high risk of bias (Melo et al., 2018). Differences in assessment results were discussed by the three researchers until a consensus was reached. None of the researchers found any differences in this evaluation. The eligibility assessment results are shown in detail in Table 2.

Data Extraction

Before data synthesis was performed, the researchers extracted the research results using the Update Guidance for Conducting Systematic Scoping Review guidelines (Peters et al., 2020). Three researchers (ASN, MR, WL) worked in pairs to extract the article identities, including the authors, year, research design, objectives, country of study, population, and outcomes of the study (Table 2).

Data Synthesis

The researcher used narrative synthesis to systematically integrate findings, identify patterns, and build a comprehensive understanding of the results (Phillips & Barker, 2021) .After data extraction, three researchers (ASN, WL, MR) read and coded the findings inductively such as reading, organizing, and developing initial categories (Kyngäs et al., 2020). Based on the data extraction that had been carried out, five (ASN, MR, IAL, APIW, PTA) researchers mapped and linked findings across articles using an initial identification table to examine key relationships (Brown et al., 2018). Disagreements were resolved through

discussion until consensus was reached. The final results were grouped into three main findings representing cervical cancer prevention strategies (Table 3). All researchers aligned with the findings.

RESULT

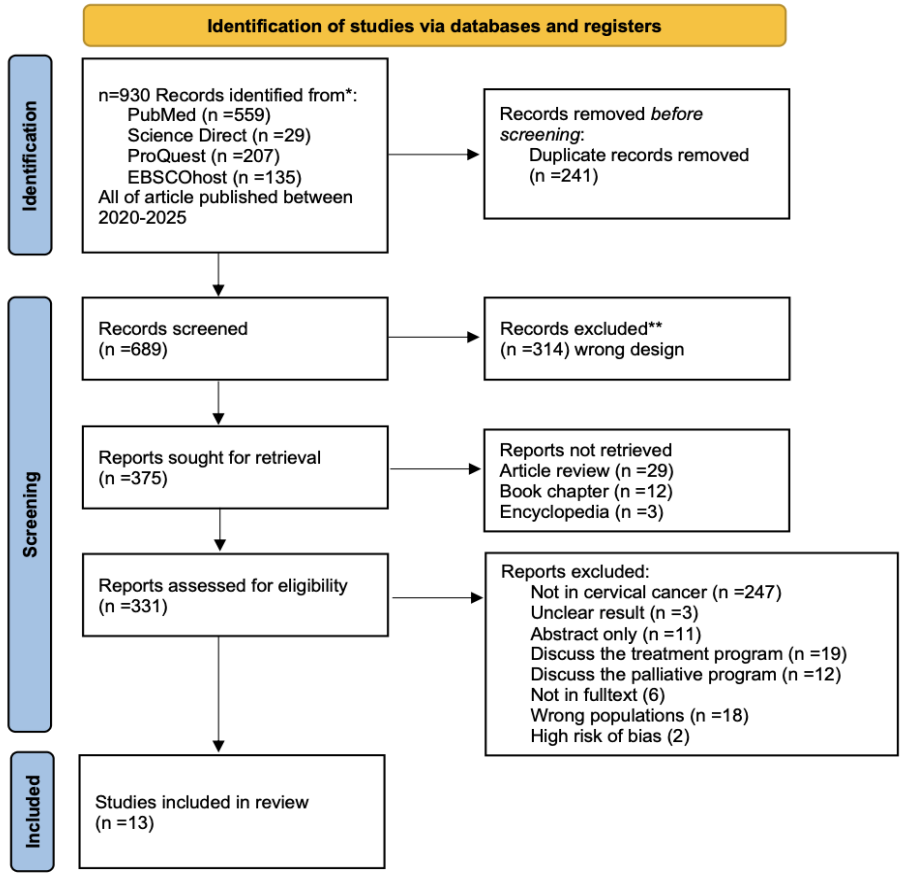

Figure 1. PRISMA flow diagram

Search results

The article screening process in this scoping review was then reported based on the PRISMA scheme (Figure 1). Four databases identified a total of 930 articles published between 2020 and 2025 (PubMed = 559, Science Direct = 29, ProQuest = 207, EBSCOhost = 135). Of these, 241 duplicate articles were removed, leaving 689 articles for selection. 314 articles were eliminated due to inappropriate research design, leaving 375 articles for further review. Forty-four reports were inaccessible because they were review articles (n = 29), book chapters (n = 12), or encyclopedias (n = 3), and 331 articles eligible for feasibility assessment. 318 articles were again excluded for the following reasons: not related to cervical cancer (n = 247), unclear results (n = 3), only available in abstract form (n = 11), discussing treatment programs (n = 19) or palliative programs (n = 12), full text not available (n = 6), inappropriate population (n = 18), and high risk of bias (n = 2). 13 articles that met the criteria to be included in the scoping review for data extraction and synthesis.

Study Characteristics

The researchers included thirteen articles in this study, consisting of RCTs (n=6) and quasi-experimental studies (n=7). Six RCTs were from the United States (n=1), Turkey (n=1), China (n=1), India (n=1), Tanzania (n=1), and Japan (n=1). Seven quasi-experimental studies came from Turkey (n=1), Kenya (n=1), Japan (n=2), Egypt (n=1), Nigeria (n=1), and the United States (n=1). Overall, the distribution of countries was Japan (n=3), United States (n=2), Turkey (n=2), and n=1 each for China, India, Tanzania, Kenya, Egypt, and Nigeria. These studies involved women with approaches ranging from educational programs to the use of digital technology. A summary of the characteristics of the articles in this review is presented in Table 2.

Table 2.
Characteristic of included study

Author and Year	Design	Country	Aim	Populations	Intervention	Setting	Outcome	Risk of Bias
(Duzova et al., 2025)	Quasi-experimental	Turkey	Evaluate the impact of cervical cancer and HPV vaccine education on students' perceptions of vaccination.	87 woman average age 20.7 ± 2.5 years	Education program	Community	1. Increasing knowledge about cervical cancer 2. Increasing awareness and attitudes about the importance of the HPV vaccine	7/9 (77,7%) Low risk
(Montealegre et al., 2020)	RCT	USA	Measuring the effectiveness of self-sample HPV kits via mail & patient navigation in increasing cervical cancer screening participation	2268 woman aged 30–65 years,	Self-sample kit-based screening program	Community	Increased participation in cervical cancer screening after HPV kit administration.	9/13 (69,2%) Moderate risk
(Ogoncho et al., 2025)	Quasi-experimental	Kenya	Assessing the impact of nurse education on knowledge, perceptions, and participation in HIV-positive women	300 woman ages ranged between 15-49 years	Education program	Clinical	1. Increased knowledge 2. Increased perception 3. Increased participation of women in cervical cancer screening	8/9 (88,9%) Low risk
(Altinel & Akin, 2022)	RCT	Turkey	Analyzing the effect of interventions on beliefs, health responsibility, and participation in cervical cancer screening..	248 woman aged 40–55 years	1. Training 2. Counseling 3. Telephone Reminders 4. Education	Community	1. Increasing participation in cervical cancer screening 2. Increasing health responsibility 3. Reducing information barriers to Pap smears	10/13 (76,9%) Low risk
(Hou et al., 2025)	RCT	China	Evaluating the effectiveness of using AI-based chatbots in increasing HPV vaccination in female junior high school students	2,671 woman aged 12–15 years	Information and education program through AI Chatbot	Community	1. Improving HPV vaccination scheduling for children 2. Increasing literacy about the HPV vaccine	11/13 (84,6%) Low risk
(George & Batra, 2022)	RCT	India	Assessing the effectiveness of community-based nurse interventions in improving cervical cancer screening knowledge, attitudes, and behaviors.	419 woman aged 30–60 years	1. Education 2. Telephone reminders 3. Pap smear assistance	Community and clinical	1. Increased knowledge and prevention 2. Improved attitudes 3. Increased participation and Pap smear screening behavior	8/13 (61,5%) Moderate risk

Author and Year	Design	Country	Aim	Populations	Intervention	Setting	Outcome	Risk of Bias
(Kawata & Saito, 2023)	Quasi-experimental	Japan	Evaluate the effectiveness of cervical cancer prevention programs in improving health literacy (HL) among college students	28 woman average age 20.7 ± 0.7 years	Education and reminder program every 3 months	Community	1. Improved health literacy 2. Increased knowledge of women's reproductive health 3. Increased confidence in health workers 4. Increased cervical cancer screening behavior	9/9 (100%) Low risk
(Shehta Said Farag et al., 2024)	Quasi-experimental	Egypt	Evaluating the effectiveness of an educational intervention program about cervical cancer on knowledge, attitudes, and practices	150 woman average age 34.21 ± 10.71 years	Education program	Community	1. Increased knowledge about cervical cancer 2. Increased positive attitudes about cervical cancer vaccines 3. Increased participation in Pap smear screening	7/9 (77,7%) Low risk
(Believe et al., 2022)	Quasi-experimental	Nigeria	To determine the effectiveness of health education interventions to increase knowledge and awareness about cervical cancer, HPV, and self-sampling techniques.	230 woman average 41.08 ± 8.45 years	Education program	Community	1. Increasing awareness of cervical cancer, HPV, and self-sampling 2. Increasing knowledge about cervical cancer	6/9 (66,6%) Moderate risk
(Mboineki et al., 2022)	RCT	Tanzania	Assessing the effectiveness of the Peer-Led Navigation (PLNav) approach in improving knowledge, intention, and practice of cervical cancer screening.	88 woman aged 21-50 years	Peer-Led Navigation (PL-Nav) Program	Community	1. Increased knowledge about cervical cancer 2. Improved screening practices	8/13 (61,5%) Moderate risk
(Ota et al., 2022)	RCT	Japan	Assessing the use of LINE as an information dissemination tool can increase HPV vaccination intentions.	357 woman aged 18-35 years	1. Education using e-leaflets 2. Providing information via LINE	Community	1. Increasing HPV vaccination intentions 2. Increasing knowledge about HPV and cervical cancer prevention	11/13 (84,6%) Low risk

Author and Year	Design	Country	Aim	Populations	Intervention	Setting	Outcome	Risk of Bias
(Kim et al., 2023)	Quasi-experimental	Japan	Assessing the effects of HPV prevention education on knowledge about cervical cancer, HPV, vaccination, and attitudes.	131 2-year-old girls	Education program	Community	Significant increase in knowledge about cervical cancer, HPV, and vaccination	8/9 (88,8%) Low risk
(Brandt et al., 2020)	Quasi-experimental	USA	Evaluating the effectiveness of technology-based interventions to increase awareness	58 woman average age of 21.6 ± 2.2 years.	Social media-based educational program and email reminders	Community	1. Increased knowledge about HPV and vaccination 2. Increased knowledge	7/9 (77,7%) Low risk

The results in the reviewed articles were categorized according to education-based programs, technology-integrated programs, and settings. Most articles discussed education programs as the main strategy for preventing cervical cancer in clinics and communities (Table 3).

Table 3.
Synthesis of prevention program findings

Educational program	Direct education	(Altinel & Akin, 2022; Believe et al., 2022; Brandt et al., 2020; Duzova et al., 2025; Farag et al., 2024; George & Batra, 2022; Kawata & Saito, 2023; Kim et al., 2023; Mboineki et al., 2022; Ogoncho et al., 2025; Ota et al., 2022)
	Navigation/accompaniment	(George & Batra, 2022)
	Training	(Altinel & Akin, 2022)
Technology integration	Artificial intelegence	(Hou et al., 2025)
	Communication media	(Altinel & Akin, 2022; Brandt et al., 2020; George & Batra, 2022; Hou et al., 2025; Kawata & Saito, 2023; Ota et al., 2022)
	E-Leaflet	(Ota et al., 2022)
	Social media	(Brandt et al., 2020; Ota et al., 2022)
	Self-sample kit	(Montealegre et al., 2020)
Types of preventive interventions	Screening	(Mboineki et al., 2022; Montealegre et al., 2020)
	Vaccine	(Believe et al., 2022; Brandt et al., 2020; Hou et al., 2025; Kim et al., 2023; Ota et al., 2022)

Educational Program

Most of the findings in this scoping review point to educational programs for women to increase their knowledge about cervical cancer, the HPV vaccine, Pap smears, and how to prevent it. We then divided these interventions into three major areas: direct education, (Altinel & Akin, 2022; Believe et al., 2022; Brandt et al., 2020; Duzova et al., 2025; Farag et al., 2024; George & Batra, 2022; Kawata & Saito, 2023; Kim et al., 2023; Mboineki et al., 2022; Ogoncho et al., 2025; Ota et al., 2022), assistance through navigation programs (George & Batra, 2022), and also training the community on how to carry out screening (Altinel & Akin, 2022).

Technology Integration

Technological advances are now making it easier to implement cervical cancer prevention efforts (Alshammari et al., 2024). In general, technological advances are revolutionizing cervical cancer prevention through AI-based diagnostics, smart self-sampling devices, and integrated digital platforms that improve accessibility, data management, and communication for screening and treatment (Adebamowo et al., 2025).

Types of preventive interventions

Cervical cancer prevention programs are crucial and involve clinic-based services such as vaccination and HPV screening, as well as community-based approaches that include education, outreach, and mobilization to increase awareness and access to health services (Gomes et al., 2025). Clinics provide direct services, while community programs address barriers such as cost and distance, ensuring broader participation and long-term success by fostering trust and providing culturally appropriate support. A combined approach is crucial because it addresses both direct medical interventions and the social factors that influence program acceptance and long-term effectiveness (Gomes et al., 2025; Mantula et al., 2025).

DISCUSSION

This scoping review discusses interventions in cervical cancer prevention that can be recommended for nursing interventions. The main roles of nursing include educating patients using culturally sensitive methods, integrating technology, supporting patients through the screening process, and advocating for increased access to prevention services (Alkhebri et al., 2024). Based on our findings, some articles discuss educational strategies for cervical cancer prevention programs. Cervical cancer education programs generally focus on raising awareness about human papillomavirus (HPV), promoting vaccination and screening (e.g., Pap smears), and dispelling myths to improve early detection and prevention. Effective programs often use community- and clinically-based approaches, tailored to local cultures, and can be delivered through various methods, including online courses, group sessions, pamphlets, and text message reminders.

In addition, the findings of this scoping review highlight the integration of technologies such as AI and chatbots, communication platforms, email, and even research using self-kits for self-administered cervical cancer screening by respondents. This shows that technological advances are very helpful in cancer prevention programs, improving early detection through AI-based imaging, developing less invasive diagnostics, enabling personalized treatment planning, and increasing patient engagement with digital health devices (Arora et al., 2022; Gentile & Malara, 2024). These innovations result in earlier diagnoses, more effective interventions, and better overall outcomes by improving accuracy in screening, understanding, and care delivery (Gentile & Malara, 2024).

Interventions that can be carried out by nurses based on data synthesis results can also be implemented in clinical and community settings. Nursing interventions are crucial for cervical cancer prevention in clinical and community settings because nurses are trusted sources of health information who can educate women, improve access to screening and vaccination, and advocate for preventive behaviors, ultimately reducing the high global burden of this largely preventable disease by detecting precancerous lesions and implementing timely treatment (Liebermann et al., 2023). All findings in this scoping review emphasize several interventions that can be recommended for further nursing interventions. Our findings are supported by previous studies that say nursing interventions are very successful in preventing cervical cancer by promoting HPV vaccination and cervical cancer screening, increasing public awareness, and coordinating care for early detection and treatment (Alkhebri et al., 2024).

The nursing implications of education-based programs for cervical cancer prevention emphasize the active role of nurses in direct education in clinics and communities to increase knowledge about

HPV, vaccination, and the importance of screening. Nurses also serve as health navigators who facilitate access to services, provide emotional support, and facilitate the use of technology digital platforms, mobile applications, social media, e-leaflets including the use of self-sample kits to simplify screening. The integration of this technology strengthens the reach of interventions at both the clinical and community levels.

The strength of this scoping review is its ability to identify a variety of nursing interventions and highlight the use of technology to improve the accessibility and effectiveness of education, HPV vaccination, and screening. However, its limitation lies in the dominance of studies from developed countries with better health infrastructure, thus limiting its generalization to developing countries. Further research is needed in resource-limited contexts to evaluate the effectiveness of interventions, while mapping the barriers and enabling factors for their implementation.

CONCLUSION

This scoping review identified three main domains of nurse-led cervical cancer prevention: education, technology integration, and preventive interventions. Year after year, the quality and variety of interventions have shown improvement, especially in technology-based strategies. Consistently, interventions have increased literacy and knowledge, improved attitudes and intentions toward HPV vaccination, and increased screening participation including after HPV self-sampling, while reducing information barriers and strengthening health responsibility.

ACKNOWLEDGEMENTS

We would like to express our gratitude to Universitas Gadjah Mada for facilitating researchers' access to international databases, enabling them to access global data sources. Also we acknowledge the Lembaga Pengelola Dana Pendidikan (LPDP)/Indonesia Endowment Fund for Education under the Ministryof Finance of the Republic of Indonesia for sponsoring themaster’s studies (A.S.N).

REFERENCES

Adebamowo, C., Rossi, P. G., & Castle, P. E. (2025). Challenges and Opportunities for Global Cervical Cancer Elimination: How Can We Build a Model for Other Cancers? American Society of Clinical Oncology Educational Book, 45(3). https://doi.org/10.1200/EDBK-25-473702

Adigun, M. O., Esan, D. T., Adeyanju, B. T., & Oyinloye, B. E. (2023). The role of nurses in the prevention of cervical cancer: Cervical screening, an unkept promise by the majority of women in Nigeria. Journal of Integrative Nursing, 5(4), 311–316. https://doi.org/10.4103/jin.jin_65_23

Alkhebri, A. A., Alkhebri, T. A., Alkhebri, S. A., Jabari, A. A., Alotaibi, M. D. G., Al doseri, A. O. S., Al Harthy, F. M. S., ALRUWAILY, K. M. A., Mubarak, A., Alanazi, N. M. S., Salawi, M. J. H., AlHarbi, H. O. S., Asiri, A. A., Binjidah, H. A. mohammed, & ALRWali, T. K. (2024). The Role of Nursing in the Management of Cervical Cancer and Tumors: A Comprehensive Overview of Diagnosis, Biomarkers, and Nursing Intervention. Egyptian Journal of Chemistry, 67(13), 1465–1476. https://doi.org/10.21608/ejchem.2024.335783.10783

Alshammari, A. H., Ishii, H., Hirotsu, T., Hatakeyama, H., Morishita, M., & di Luccio, E. (2024). Bridging the gap in cervical cancer screening for underserved communities: MCED and the promise of future technologies. Frontiers in Oncology, 14. https://doi.org/10.3389/fonc.2024.1407008

Altinel, B., & Akin, B. (2022). The effect of multiple ınterventions for women at risk for cervical cancer on their health responsibility, beliefs regarding cervical cancer and having screening: a randomized controlled trial. Health Education Research, 37(2), 94–103. https://doi.org/10.1093/her/cyac004

Amin, S. M., Metwally El-Sayed, M., Hashem El-Monshed, A., & Hussein Ramadan Atta, M. (2025). Unlocking prevention: the role of health literacy in cervical cancer screening:

community nursing perspective. BMC Nursing, 24(1), 160. https://doi.org/10.1186/s12912-025-02797-4

Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. International Journal of Social Research Methodology, 8(1), 19–32. https://doi.org/10.1080/1364557032000119616

Arora, S., Ryals, C., Rodriguez, J. A., Byers, E., & Clewett, E. (2022). Leveraging Digital Technology to Reduce Cancer Care Inequities. American Society of Clinical Oncology Educational Book, 42, 559–566. https://doi.org/10.1200/EDBK_350151

Believe, O., Omosivie, M., Soter, A., & Adekunbiola, B. (2022). Effect of Health Education on the Knowledge of Cervical Cancer, Human Papillomavirus and Self-sampling Among Women in a Low- Resource Setting. European Journal of Medical and Health Sciences, 4(3), 145–151. https://doi.org/10.24018/ejmed.2022.4.3.1316

Brandt, H. M., Sundstrom, B., Monroe, C. M., Turner-McGrievy, G., Larsen, C., Stansbury, M., Magradey, K., Gibson, A., & West, D. S. (2020). Evaluating a Technology-Mediated HPV Vaccination Awareness Intervention: A Controlled, Quasi-Experimental, Mixed Methods Study. Vaccines, 8(4), 749. https://doi.org/10.3390/vaccines8040749

Bukauskaitė-Žiūkienė, G., & Liepinaitienė, A. (2024). Implementation of the Cervical Cancer Prevention Policy in one of the Regions of Lithuania. European Journal of Midwifery, 8(September), 1–5. https://doi.org/10.18332/ejm/192520

Castle, P. E. (2024). Looking Back, Moving Forward: Challenges and Opportunities for Global Cervical Cancer Prevention and Control. Viruses, 16(9), 1357. https://doi.org/10.3390/v16091357

Duzova, U. S., Kaplan Serin, E., Mutlu, A., Ocal, N., Akkus, H., Toprak, N., & Ceylan, D. (2025). The Effect of Cervical Cancer and Human Papillomavirus Vaccine Education on Vaccination Perception in University Students: A Quasi-Experimental Controlled Educational Intervention. Journal of Adolescent and Young Adult Oncology, 14(1), 94–104. https://doi.org/10.1089/jayao.2024.0121

El-Bakry, M. S. Z., Hassan, S. I., & El-Nemer, A. (2025). Assessment of nursing staff attitude regarding prevention of cervical cancer. BMC Nursing, 24(1), 910. https://doi.org/10.1186/s12912-025-03546-3

Farag, S. S. D., Shaban Abdelazim Mohamed, S., Nabil Malk, R., & Elzeblawy Hassan, H. (2024). Effectiveness of Educational Intervention Program about Cervical Cancer on Working Women's Knowledge, Attitude, and Practice at Beni-Suef University. Egyptian Journal of Health Care, 15(1), 1–16. https://doi.org/10.21608/ejhc.2024.335701

Gentile, F., & Malara, N. (2024). Artificial intelligence for cancer screening and surveillance. ESMO Real World Data and Digital Oncology, 5, 100046. https://doi.org/10.1016/j.esmorw.2024.100046

George, T. J., & Batra, K. (2022). Effect of a community-based multicomponent intervention on cervical cancer behavior among women – A randomized controlled trial. Journal of Education and Health Promotion, 11(1), 329. https://doi.org/10.4103/jehp.jehp_1742_21

Ghosh, S., Mallya, S. D., Pattanshetty, S. M., Pandey, D., Kamath, V. G., Kabekkodu, S. P., Satyamoorthy, K., & Shetty, R. S. (2024). Awareness, attitude, and practice towards cancer cervix prevention among rural women in southern India: A community-based study. Clinical Epidemiology and Global Health, 26, 101546. https://doi.org/10.1016/j.cegh.2024.101546

Gomes, M., Provaggi, E., Pembe, A. B., Olaitan, A., & Gentry-Maharaj, A. (2025). Advancing Cervical Cancer Prevention Equity: Innovations in Self-Sampling and Digital Health Technologies Across Healthcare Settings. Diagnostics, 15(9), 1176. https://doi.org/10.3390/diagnostics15091176

Hou, Z., Wu, Z., Qu, Z., Gong, L., Peng, H., Jit, M., Larson, H. J., Wu, J. T., & Lin, L. (2025). A vaccine chatbot intervention for parents to improve HPV vaccination uptake among middle school girls: a cluster randomized trial. Nature Medicine, 31(6), 1855–1862. https://doi.org/10.1038/s41591-025-03618-6

Johnson, L. G., Armstrong, A., Joyce, C. M., Teitelman, A. M., & Buttenheim, A. M. (2018). Implementation strategies to improve cervical cancer prevention in sub-Saharan Africa: a systematic review. Implementation Science, 13(1), 28. https://doi.org/10.1186/s13012-018-0718-9

Kawata, S., & Saito, E. (2023). Effectiveness of a cervical cancer prevention program to improve health literacy among Japanese undergraduate females in their 20s: A quasi-experimental study. Journal of International Nursing Research, 2(1), 2021–0029. https://doi.org/10.53044/jinr.2021-0029

Kim, J. H., Park, S., Cho, Y., & Sok, S. (2023). Effects of a Human Papilloma Virus (HPV) Prevention Education among Girls in 6 th Grade Elementary School, South Korea. Sage Open, 13(3). https://doi.org/10.1177/21582440231194223

Kyngäs, H., Mikkonen, K., & Kääriäinen, M. (Eds.). (2020). The Application of Content Analysis in Nursing Science Research. Springer International Publishing. https://doi.org/10.1007/978-3-030-30199-6

Liebermann, E., Sego, R., Vieira, D., Cheng, Q., Xu, B., Arome, M., Azevedo, A., Ginsburg, O., & So, W. K. W. (2023). Roles and activities of nurses in cancer prevention and early detection in low- and middle-income countries: A scoping review. Asia-Pacific Journal of Oncology Nursing, 10(7), 100242. https://doi.org/10.1016/j.apjon.2023.100242

Mantula, F., Toefy, Y., & Sewram, V. (2025). Strategies for strengthening cervical cancer screening programmes in Gwanda district, Zimbabwe: a qualitative study. BMC Public Health, 25(1), 235. https://doi.org/10.1186/s12889-025-21373-8

Mariño, J. M., Nunes, L. M. P., Ali, Y. C. M. M., Tonhi, L. do C., & Salvetti, M. de G. (2023). Educational interventions for cervical cancer prevention: a scoping review. Revista Brasileira de Enfermagem, 76(5). https://doi.org/10.1590/0034-7167-2023-0018

Mboineki, J. F., Wang, P., Dhakal, K., Getu, M. A., & Chen, C. (2022). The Effect of Peer-Led Navigation Approach as a Form of Task Shifting in Promoting Cervical Cancer Screening Knowledge, Intention, and Practices Among Urban Women in Tanzania: A Randomized Controlled Trial. Cancer Control, 29. https://doi.org/10.1177/10732748221089480

Melo, G., Dutra, K. L., Rodrigues Filho, R., Ortega, A. O. L., Porporatti, A. L., Dick, B., Flores-Mir, C., & De Luca Canto, G. (2018). Association between psychotropic medications and presence of sleep bruxism: A systematic review. Journal of Oral Rehabilitation, 45(7), 545–554. https://doi.org/10.1111/joor.12633

Montealegre, J. R., Anderson, M. L., Hilsenbeck, S. G., Chiao, E. Y., Cantor, S. B., Parker, S. L., Daheri, M., Bulsara, S., Escobar, B., Deshmukh, A. A., Jibaja-Weiss, M. L., Zare, M., & Scheurer, M. E. (2020). Mailed self-sample HPV testing kits to improve cervical cancer screening in a safety net health system: protocol for a hybrid effectiveness-implementation randomized controlled trial. Trials, 21(1), 872. https://doi.org/10.1186/s13063-020-04790-5

Ogoncho, I., Wakasiaka, S., Mageto, I., & Chege, M. (2025). Effect of a Nurse-Led Educational Intervention on the Knowledge, Perceptions and Uptake of Cervical Cancer Screening among HIV-Infected Women in Kenya. Asian Pacific Journal of Cancer Prevention, 26(5), 1591–1597. https://doi.org/10.31557/APJCP.2025.26.5.1591

Ota, Y., Nomura, K., Fujita, N., Suzuki, T., Kamatsuka, M., Sakata, N., Nagashima, K., Hirayama, J., Fujita, N., Shiga, K., Oyama, N., & Terada, Y. (2022). Influence of LINE-Assisted Provision of Information about Human Papillomavirus and Cervical Cancer Prevention on HPV Vaccine Intention: A Randomized Controlled Trial. Vaccines, 10(12), 2005. https://doi.org/10.3390/vaccines10122005

Peters, M. D. J., Marnie, C., Tricco, A. C., Pollock, D., Munn, Z., Alexander, L., McInerney, P., Godfrey, C. M., & Khalil, H. (2020). Updated methodological guidance for the conduct of scoping reviews. JBI Evidence Synthesis, 18(10), 2119–2126. https://doi.org/10.11124/JBIES-20-00167

Peterson, J., Pearce, P. F., Ferguson, L. A., & Langford, C. A. (2017). Understanding scoping reviews. Journal of the American Association of Nurse Practitioners, 29(1), 12–16. https://doi.org/10.1002/2327-6924.12380

Plagens-Rotman, K., Merks, P., Pisarska-Krawczyk, M., Bojanowska, K., Jaguszewska, E., Lewek, A., Madziar, K., Kapczuk, K., Goździewicz, T., Guszczyńska-Losy, M., Durda-Masny, M., Luwański, D., Kędzia, W., & Jarząbek-Bielecka, G. (2023). Cervical Cancer Prevention: The Role of the Nurse and Medical Care in Primary and Secondary Cancer Prevention. Clinical and Experimental Obstetrics & Gynecology, 50(4). https://doi.org/10.31083/j.ceog5004082

Rožanc, I., & Mernik, M. (2021). The screening phase in systematic reviews: Can we speed up the process? (pp. 115–191). https://doi.org/10.1016/bs.adcom.2021.01.006

WHO. (2025). Preventing cancer. https://www.who.int/activities/preventing-cancer