

DOI: <http://dx.doi.org/10.36568/ceh10102>

Peer Group Method Can Improve Adolescent Behavior in Prevention of Cervical Cancer

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Submitted: November 12, 2022

Revised: March 10, 2023

Accepted: July 11, 2023

Published: January 31, 2024

ABSTRACT

Cervical cancer is a disease that frequently affects women's reproductive health. Therefore, a study is needed to evaluate the effectiveness of training of trainers (TOT) in improving cervical cancer prevention behavior in adolescents, using a peer group approach. Facilitation activities included counseling on peer group learning methods and training on improving cervical cancer prevention behavior. The activities were carried out over a month, encompassing planning, preparation, implementation, and evaluation. A quantitative assessment of knowledge improvement was then conducted. The study results indicated an improvement in adolescent behavior, including knowledge, attitudes, and skills. It was concluded that the peer group method is effective in developing adolescent behavior in response to cervical cancer prevention. It is recommended that trained participants become tutors, able to train their peers at school and in their neighborhoods.

Keywords: cervical cancer; prevention; training; peer group

INTRODUCTION

Cervical cancer is the most prevalent type of cancer affecting women in Indonesia and remains a leading cause of death due to late detection and delayed treatment. This malignancy develops in the cervix, the lower part of the uterus that connects to the upper portion of the vagina. Cervical cancer typically affects women aged between 35 and 55 years. Approximately 90% of cases originate from squamous cells lining the cervix, while the remaining 10% arise from mucus-producing glandular cells located in the cervical canal leading to the uterus.⁽¹⁾

The primary cause of cervical cancer is infection with high-risk types of Human Papilloma Virus (HPV), particularly oncogenic strains that produce cancer-inducing proteins (oncoproteins). Notably, HPV types 16 and 18 are responsible for around 70% of cervical cancer cases. Early detection of HPV infection through Visual Inspection with Acetic Acid (IVA) and Pap Smear tests is crucial, as these methods can identify precancerous changes before they progress.⁽²⁾

Prevention efforts focus on primary strategies, including avoiding risk factors and administering HPV vaccines to protect against infection and related diseases.⁽³⁾ Research indicates that women who engage in sexual activity before the age of 17 have a threefold increased risk of developing cervical cancer compared to those who begin after the age of 20.⁽⁴⁾

Adolescent girls, as the future generation, must be particularly vigilant. Lifestyle changes such as early sexual activity, multiple sexual partners, and smoking contribute to increased vulnerability. Socioeconomic challenges further exacerbate the risk, as poor hygiene and unhealthy living conditions can facilitate the development of cervical cancer. In adolescents, symptoms may not be immediately apparent due to the long incubation period of the disease, which can span decades.⁽⁵⁾

HPV vaccination offers a highly effective and safe preventive measure, with minimal side effects. Additional preventive actions include avoiding smoking, maintaining proper vaginal hygiene, limiting sexual partners, ensuring clean living environments, and refraining from sharing personal items such as towels. Equipping adolescents with knowledge about healthy lifestyle choices and shifting from high-risk to low-risk behaviors is essential. This education should emphasize primary prevention, including risk factor elimination and HPV vaccination, as well as the importance of early detection for sexually active individuals.⁽⁶⁾

Health promotion plays a vital role in disseminating information about cervical cancer prevention. One effective approach is health education, which involves delivering targeted messages to individuals or groups in settings such as schools, homes, and workplaces. This empowers communities to make informed decisions about their health and adopt preventive behaviors.⁽⁷⁾

The Indonesian government has implemented various promotive and preventive initiatives to combat cervical cancer. One such effort is the Integrated Reproductive Health Services (PKRT), available at primary health care facilities. For

adolescents, Essential Reproductive Health Services (PKRE) integrate adolescent reproductive health education, while Comprehensive Reproductive Health Services (PKRK) encompass both prevention and treatment of cervical cancer.⁽⁸⁾

Midwives also play a critical role in cervical cancer prevention. They are authorized to conduct early detection and provide counseling to women, as outlined in the Regulation of the Minister of Health of the Republic of Indonesia Number 28 of 2017. According to Article 18 and Article 21a, midwives have the professional authority to deliver reproductive health services for women, including cervical cancer screening and education. Therefore, a study is needed to evaluate the effectiveness of training of trainers (TOT) in improving cervical cancer prevention behavior in adolescents, using a peer group approach

METHODS

This study was an action research study,^(9,10) conducted at Triguna Bakti Junior High School in Surabaya. The target group was 35 female adolescents at the school, prospective reproductive health tutors, who were selected purposively. A pre-test was conducted on the prospective tutors' knowledge, attitudes, and skills, followed by a training of trainers (TOT) using a peer group approach. The training included explaining the objectives (techniques and procedures), implementation methods (explaining knowledge about improving adolescent behavior in cervical cancer prevention, distributing modules, using peer group learning methods, teaching techniques, forming student groups, providing examples of how to deliver the material, providing opportunities and mentoring each student to deliver the material), and post-training methods (reporting on how the students have practiced delivering the material to their group mates, returning the students to the larger class, and inviting them to summarize the material together). Following the training, a pro-test was conducted on their knowledge, attitudes, and skills as peer tutors. A descriptive comparison of these three elements was conducted before and after the TOT phase.

This study was conducted in accordance with scientific ethics, including informed consent, maintaining confidentiality, acting fairly, providing benefits, and ensuring no harm to participants.

RESULTS

The student characteristics described included health status, residence, age, previous discussions about reproductive health, and discussion partners. The most common student characteristics for each component were healthy health, living with parents, age under 16, and rarely discussing reproductive health, but if they did, they often discussed it with their parents (Table 1).

Table 1. Distribution of demographic characteristics of female adolescent at Triguna Bakti Junior High School in Surabaya

No	Demographic variable	Category	Percentage
1	Health status	Healthy	60.6
		Less thahealthy	37.3
		Unhealthy	3.3
2	Tempat tinggal siswa	Parents	71
		Boarding house	29
		Rented house	1
3	Age	<16 years	94.4
		16-17 years	5.6
		18-19 years	0
4	Have had dicussion	Ever	32
		Sometimes	57
		Never	11
5	Teman diskusi	Parents	80
		Sibling	17
		Others	3

Table 2. Comparison of knowledge, attitudes and skills of female adolescent before and after TOT at Triguna Bakti Junior High School in Surabaya

No	Aspect	Pretest	Posttest
1	Knowledge	32.9	67.1
2	Attitude	31.6	69.4
3	Skills	35.4	74.6

Table 2 shows that after TOT was carried out using a peer group approach, there was an increase in the knowledge, attitudes and skills of female adolescents at Triguna Bakti Junior High School in Surabaya.

DISCUSSION

To assess students' level of knowledge regarding the material to be delivered, a pre-test was conducted. This pre-test serves to identify students' initial understanding of the topic and determine whether any participants already possess prior knowledge. It also functions as a baseline to measure students' comprehension before the training begins. The pre-test was administered prior to the educational session.

To evaluate the learning outcomes after the training, a post-test was conducted at the end of the session. The post-test helps measure the effectiveness of the training, assess knowledge gains, and identify which parts of the material remain unclear to most students. The educational session was delivered in a classroom setting to a group of 35 students, focusing on improving behaviors related to cervical cancer prevention among adolescents.

The results showed that the educational intervention significantly increased students' understanding of cervical cancer prevention behaviors. Health promotion and disease prevention efforts, particularly those aimed at improving adolescent behavior regarding cervical cancer are essential. This is especially relevant for adolescents in urban areas such as Surabaya, where lifestyle factors and poor hygiene practices can contribute to the risk of cervical cancer.

Cervical cancer is one of the most common diseases affecting women's reproductive health and is the second most prevalent malignant tumor globally. It ranks seventh in global incidence and eighth in mortality, accounting for 3.2% of cancer-related deaths. Approximately 490,000 women worldwide are diagnosed with cervical cancer annually, with 80% of cases occurring in developing countries, including Indonesia. In Indonesia, an estimated 40–45 new cases emerge daily, with 20–25 deaths reported each day.⁽¹¹⁾

Cervical cancer is characterized by the presence of abnormal cells in the cervix. It is estimated that 90% of cases are caused by Human Papilloma Virus (HPV) infection. Other contributing factors include poor reproductive hygiene, unhealthy lifestyle habits such as smoking, having multiple sexual partners, and engaging in sexual activity at an early age. Additional risk factors include exposure to viruses, bacteria, carcinogenic chemicals, ultraviolet (UV) radiation, stress, and hereditary genetic predisposition.⁽¹²⁾

Research has consistently shown that long-term infection with oncogenic HPV types is the primary cause of cervical cancer. Approximately 90% of squamous cell carcinoma cases and 10% of glandular cell carcinoma cases in the cervix are linked to oncogenic HPV infection. These HPV types are primarily transmitted through sexual contact.⁽¹³⁾

Reproductive health is a vital component of women's overall well-being. Women's reproductive health needs can be categorized into four areas: (1) specific needs related to sexual and reproductive functions, (2) vulnerability of the reproductive system to injury, (3) susceptibility to reproductive organ diseases, and (4) exposure to sexual abuse, which can have physical, mental, and social consequences. Adolescent girls, as the future generation, must be protected. Risky behaviors such as promiscuity, multiple sexual partners, and smoking are increasingly common. Low socioeconomic status further exacerbates the issue, as poor hygiene and unhealthy living conditions increase the risk of cervical cancer. Symptoms in adolescent girls may not be apparent due to the long incubation period of cervical cancer, which can span decades.⁽¹⁴⁾

To address this issue, HPV vaccination is recommended. The vaccine is highly safe and has minimal side effects. Other preventive measures include avoiding smoking, practicing proper vaginal hygiene, limiting sexual partners, maintaining a clean environment, and not sharing personal items such as towels. Adolescents should be equipped with knowledge to adopt healthy lifestyles and shift from high-risk to low-risk behaviors. Education on cervical cancer prevention should emphasize primary prevention, which includes eliminating risk factors and receiving the HPV vaccine. Early detection is also crucial, especially for sexually active women.⁽¹⁵⁾

Knowledge about cervical cancer prevention can be enhanced through health promotion, one of which is health education. Health education involves delivering information to individuals or groups in settings such as schools, homes, or workplaces, enabling them to make informed lifestyle choices, particularly those related to disease prevention.⁽¹⁶⁾

The Indonesian government has implemented various promotive and preventive efforts to reduce the incidence of cervical cancer. One such initiative is the Integrated Reproductive Health Services (PKRT), which is provided at primary healthcare facilities. For adolescents, Essential Reproductive Health Services (PKRE) are available, integrating adolescent reproductive health education. Additionally, Comprehensive Reproductive Health Services (PKRK) include both prevention and treatment of cervical cancer.⁽⁸⁾

During the educational session on improving cervical cancer prevention behavior at Triguna Bakti Junior High School in Surabaya, students showed great enthusiasm. This was likely due to the relevance of the topic and the appropriateness of the material for their age group. Each section of the material received positive responses, indicating that students were able to understand the content well. This was reflected in the post-test results, which showed an increase in students' knowledge and understanding.

The findings revealed that after the educational session and distribution of learning modules, students demonstrated improved attitudes toward cervical cancer prevention. The use of peer groups proved to be an effective method. A peer group is a social unit where members share similarities in age, needs, and goals, which strengthens group cohesion.

These groups do not require formal organizational structures, but members feel a shared responsibility for the group's success or failure.⁽¹⁷⁾

The strong influence of peer groups stems from the close bonds formed among members. This sense of unity often leads to a form of group loyalty, where each member identifies with the group and supports one another. Peer groups consist of individuals of similar age who can relate to each other's experiences. Within these groups, individuals often discover their identity and develop social awareness in line with their personal growth.⁽¹⁸⁻²⁰⁾

In peer groups, the emphasis is not on hierarchy but on shared experiences and mutual support. Members typically have similar interests, goals, and developmental needs. This environment fosters a sense of belonging and encourages open communication, making it an ideal setting for learning and behavior change.^(20,21)

Through peer group-based learning, students gained a deeper understanding of the importance of peer influence in the learning process. Learning alongside peers made it easier for students to grasp the material. They were also given the opportunity to form small discussion groups to explore the module content more thoroughly. These discussions were conducted in a relaxed and informal setting, with each group guided by a tutor. The presence of tutors helped clarify any misunderstandings and ensured that students could engage with the material more effectively.

This method proved to be beneficial, as evidenced by improved test scores and more positive attitudes toward cervical cancer prevention behaviors. To further support learning, each student received a personal copy of the module titled *Improving Cervical Cancer Prevention Behavior Through Peer Group Methods for Adolescents*. Students were encouraged to read and study the module independently. A question-and-answer session with the facilitator was also held to ensure that all students fully understood the content.

At the end of the session, after the material and module had been thoroughly discussed and understood, students were divided into peer groups. The 35 students were organized into seven groups, each consisting of five members. This structure allowed for more focused discussions and peer-led learning, reinforcing the knowledge and behaviors promoted during the session.

CONCLUSION

This action research using a peer group approach successfully improved the knowledge, attitudes, and skills of young women regarding cervical cancer detection and prevention. Participants should continue their role as tutors for their peers within their respective groups to create a healthy generation of women.

Ethical consideration, competing interest and source of funding

- All ethical principles are upheld in this research.
- The authors declare that there is no conflict of interest.
- Source of funding is authors.

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