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Enhancing Knowledge Through Education on Cervical Cancer Awareness and Human Papillomavirus Vaccination Early on Using Counseling Methods and E-Booklets

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Abstract

Adolescents have not been the target of reproductive health programs, resulting in a lack of knowledge and motivation regarding reproductive health. This situation leads to many cases of reproductive health issues among adolescents. Knowledge correlates with the attitude of adolescents toward cervical cancer prevention. A negative attitude towards reproductive health, especially cervical cancer, will not trigger preventive actions. This community service activity aims to enhance knowledge of cervical cancer and the Human Papillomavirus (HPV) vaccine among adolescents at SMA Pembangunan Jaya 2. The method used in this community service activity is Asset-Based Community Development (ABCD). The activity includes health education on cervical cancer and the HPV vaccine using counseling methods and an e-booklet. The media to deliver the material consists of an e-booklet and a counseling presentation through PowerPoint (PPT). The target group comprises 71 female students from the 10th and 11th grades at SMA Pembangunan Jaya 2. An evaluation was conducted to measure the activity's success in implementing this community service. The evaluation was done by providing a pre-test before the health education material was delivered and a post-test after the material was provided. The results of this community service show an increase in knowledge about cervical cancer and the HPV vaccine. The pre-test results showed that most participants had poor knowledge, and after the educational session, the post-test results indicated that most participants had good knowledge. This shows an improvement in the participants' knowledge about cervical cancer and HPV vaccination through counseling methods and e-booklets.

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INTRODUCTION

Cervical Cancer is a malignant disease affecting the cervix. This disease is caused by a human papillomavirus (HPV) infection, which can metastasize to other organs in the body. Risk factors that increase the incidence of cervical cancer related to adolescence include sexual intercourse before the age of 20, multiple sexual partners, having parents or family members with a history of cervical cancer, being an active or passive smoker, and nutritional deficiencies (Dewi et al., 2021; Juwita, 2023; Nurwijaya et al., 2010). Research shows that adolescents over the age of 17 experience a physical and psychological transition toward adulthood, making them at risk for initiating sexual activity (Antarsih &

Kusumastuti, 2019). A study conducted on adolescent girls in Bialo Village indicated that the majority of their knowledge about cervical cancer was poor (Purnamasari & Kamaruddin, 2020). Knowledge is related to attitudes toward the prevention of cervical cancer in adolescents. Negative attitudes toward reproductive health, particularly cervical cancer, will not trigger preventive behavior (Rachmani et al., 2012). Low knowledge may be due to adolescents not being the target of reproductive health programs, leading to a lack of motivation toward reproductive health, resulting in many reproductive health problems among adolescents (Wahidah, 2023).

In Indonesia, there are 40,000 new cancer cases reported annually, with cervical cancer being the most common, accounting for 36% of all cancers (Rasjidi, 2009). A study conducted on female university students about cervical cancer and the HPV vaccine showed that 51% had insufficient knowledge (Ekowati et al., 2017). A community service project conducted on adolescents in Bone before providing educational material showed that 55% of adolescents had poor knowledge of cervical cancer. After receiving information about cervical cancer, the percentage of adolescents with poor knowledge dropped to 20% (Indryani, 2019). Research on adolescents' attitudes toward cervical cancer and the HPV vaccine revealed that more than 50% had negative attitudes, and 92.2% of adolescents had not received the HPV vaccination (Dethan & Suariyani, 2017). Other data shows that 58 million women in Indonesia are at risk of cervical cancer, with an age range of 15-64 years (Melva et al., 2014).

Risk factors for cervical cancer include sexual intercourse before the age of 18, sexual partners with penile cancer, sexual partners who have had contact with cervical cancer patients, early pregnancy, parity, improper management of childbirth, the relationship between clear cell adenocarcinoma of the cervix and exposure to DES in utero, infectious agents, HPV, herpes simplex virus, active or passive smoking, use of birth control pills, a diet low in carotenoids and folic acid, low socioeconomic status, jobs involving metals or chemicals, a family history of cervical cancer, and autoimmune diseases. Sexual activity before the age of 18 and multiple sexual partners are factors particularly related to adolescents. The increased risk of sexual activity at a young age is because columnar cells in the cervix are more sensitive to metaplasia when an individual reaches adulthood (Dewi et al., 2021; Juwita, 2023; Rasjidi, 2009). Adolescents infected with HPV who have low immunity may develop cervical cancer, which can lead to death (Melva et al., 2014). On the other hand, knowledge is also a key factor related to cervical cancer occurrence because knowledge can determine attitudes toward cervical cancer prevention (Gee et al., 2021; Thanasas et al., 2020). Knowledge determines an individual's health awareness (Masliha, 2022; Patila & Sumargi, 2017). A study conducted in Bali explained that poor knowledge about cervical cancer leads to inadequate preventive behavior (Dethan & Suariyani, 2017).

Cognitive knowledge is the dominant and important factor in an individual's actions, which determines one's decisions in dealing with problems (Mutyah, 2023; Notoadmodjo, 2012). Research has concluded that there is an effect of knowledge and attitudes on behavior related to HPV vaccination (Darmawan et al., 2023; Rahmadani et al., 2022). There is a need for socialization and support for adolescents to avoid incorrect information about sexual and reproductive health impacts (Purbosari et al., 2021). Providing education through booklets positively impacts adolescents, increasing their knowledge about reproductive health (Mintarsih & Patimah, 2018; Sahertian & Latumenasse, 2017). Early prevention, especially starting during adolescence, can have a positive impact by avoiding risk factors (Karningsih et al., 2022; Surbakti et al., 2022). The goal of this community service activity is to increase adolescents' knowledge about cervical cancer and the HPV vaccine so that they can avoid risk factors during adolescence.

METHODS

The team uses the community service method Asset Based Community Development (ABCD). In January 2024, the team took an approach to explore problems and explore partners' wishes, then planned activities by utilizing the potential of potential participants. In July 2024, the team submitted a proposal to the principal of SMA Pembangunan Jaya 2 Sidoarjo. After obtaining permission for activities, the team coordinated with the teacher in charge of student affairs. In the next stage, the team conducted a location survey, collected participant data, and coordinated to determine the time, place of activity, and rundown. After finding an agreement, the team made preparations for implementing activities related to preparing materials and questionnaires. Community service activities were carried out on August 19 and 20 at the SMA Pembangunan Jaya 2 Sidoarjo Hall. Before the material was given, all participants were given a pre-test questionnaire. After the pre-test was carried out, the material and e-booklet prepared by the head of the implementation team were continued, followed by discussion and questions and answers. After the material was completed, participants were given a post-test questionnaire.

The entire activity process was carried out for 2 months, from field surveys to activity evaluation. The participants of this activity were 71 teenage students under 18 at SMA Pembangunan Jaya Sidoarjo. The implementation of this community service program was carried out through counseling and the provision of e-booklets. The materials provided include:

A. Cervical Cancer:

1) Introduction to female reproductive organs
2) Definition
3) Prevalence
4) Etiology
5) Signs and
6) Therapy and
7) Prevention
8) detection

B. HPV (*Human Papilloma Virus)* Vaccine

1) Definition
2) Type
3) Benefits
4) Dosage of
5) HPV vaccine schedule and implementation

RESULTS AND DISCUSSION

The material delivery media used are power presentations (PPT) and e-booklets (see Figure 1a). All community service activity materials are given to participants. The activity stage consists of a Pre-test, counseling on cervical cancer and HPV vaccine, then an e-booklet, and continued with discussion and questions and answers. The question and answer process and discussion went well, with the enthusiasm of the participants. The second stage is the post-test by giving a questionnaire about cervical cancer and the HPV vaccine. Figure 1b shows the community service team's process of providing cervical cancer and HPV vaccine material. The team delivered material using PowerPoint. Figure 1c shows the process of providing materials through the cervical cancer and HPV vaccine e-booklet. This process went well, and all participants were cooperative. Figure 1d shows the discussion and question-and-answer process, which was very well carried out, as illustrated by the participants' liveliness when asking questions about the extension material.

(a) (b) (c) (d)

Figure 1 (a) E-booklet cover, (b) Cervical cancer and HPV vaccine material presentation, and (c) The process of distributing the cervical cancer and HPV vaccine e-booklet, (d) Discussion and question-and-answer process

Demographic characteristics of age, father's education, mother's education, father's occupation, mother's occupation, and place of residence of participants are listed in Table 1.

Table 1 Demographic characteristics age, father's education, mother's education, father's occupation, mother's occupation, participant's residence

No.	Characteristics	Total	%
1	Age		
	15 years old	30	42.25%
	16 years old	23	32.39%
	17 years old	18	25.36%
2	Father's Education		
	Junior high school	1	1.41%
	Senior high school	20	28.17%
	Higher Education	50	70.42%
3	Mother's Education		
	Senior high school	23	32.39%
	Higher Education	48	67.61%
4	Father's occupation		
	Private	34	47.89%
	Self-employed	28	39.44%
	ASN/TNI/POLRI	9	12.68%
5	Mother's Occupation		
	Not working	35	49.30%
	private	17	23.94%
	self-employed	16	22.54%
	ASN/TNI/POLRI	3	4.23%
6	Place of Residence		
	Nuclear Family	70	98.59%
	Extended Family	1	1.41%

Table 1 presents the following data: the majority of participants were 15 years old at 42.25%, the father's last education was college at 70.42%, the mother's last education was college at 67.61%, the father's occupation was private at 47.89%, the mother did not work at 49.30%, and the participants lived with nuclear families at 98.59%.

Figure 2 is a diagram that describes the results of the knowledge assessment of community service participants.

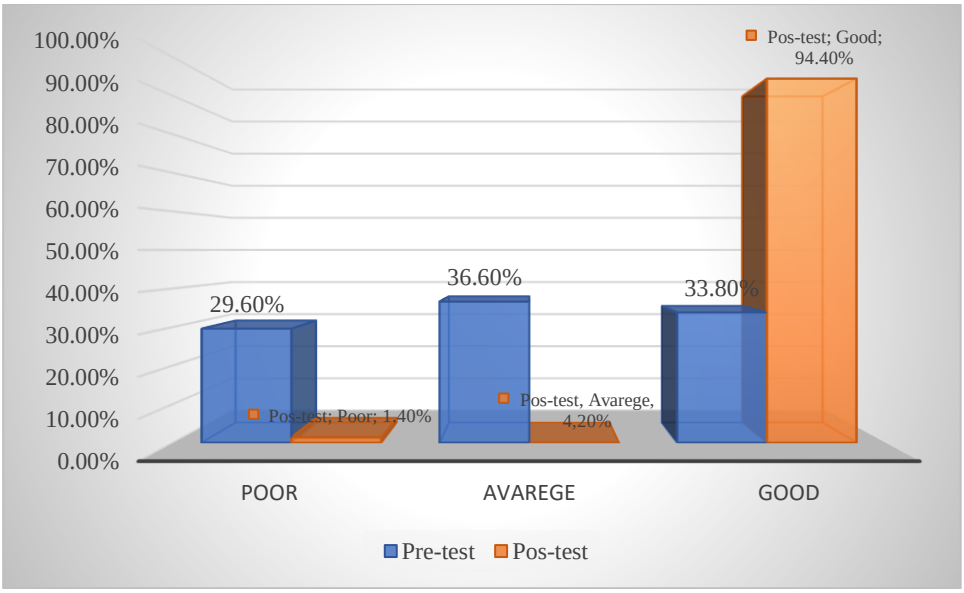

Figure 2 Pre-test and post-test scores on knowledge of cervical cancer and hpv vaccine

Figure 2 explains that there is an increase in knowledge about cervical cancer and HPV vaccine after being given counseling and e-booklets. Most had sufficient knowledge before providing counseling and e-booklets (36.6%); after providing education, most participants' knowledge became good (94.4%). For participants with sufficient knowledge, most of the number has decreased by increasing to good knowledge. However, after the material provision, some participants still have insufficient knowledge (1.4%). The results of this knowledge are in line with previous community service, namely an increase in knowledge in female students about cervical cancer and prevention efforts after being given knowledge exposure through counseling (Harwati, 2023; Widiastini et al., 2021). Health promotion methods and techniques are a combination of methods and instruments that can be used to implement health promotion (Machfoedz & Suryani, 2013). Providing health education works by using the senses because the senses are used in receiving something. Knowledge will be obtained more and more clearly if it involves more senses. Knowledge can be obtained through various educational media tools in individual or community education. Tools will improve the counseling process because they can help convey things the extension agent cannot. One of the extension media is a booklet, which is a small book. The general purpose of booklets can change knowledge because booklets provide specific material that can be used for learning media (Masliha, 2022; Raidanti et al., 2022). The results of this community service align with previous studies that state that e-booklets are helpful for changing knowledge. E-booklets can have an influence and increase knowledge on the early detection of cervical cancer, as well as differences in respondents' (Sasaswati et al., 2024; Zuhra et al., 2022) knowledge before and after providing interventions using e-booklets.

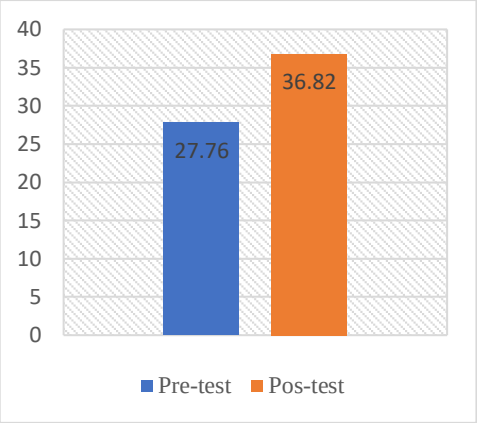

Figure 3 Average pre-test and post-test scores on knowledge of cervical cancer and HPV vaccine

Figure 3 shows the results of the average pre-test knowledge score of 27.76 and the average post-test score of 36.82. This shows an increase in the average knowledge score. The author argues that this is influenced by the father and mother's education, namely most college graduates. Parents who have higher education have paid attention and prepared children to learn to acquire knowledge. This opinion aligns with previous research results that state that parents' educational background influences good study habits and learning styles. High parental education will positively impact children, improving learning outcomes (Cholifah et al., 2016). Another researcher's opinion explains that there is a relationship between parents' education level and a high level of education, which will help make it easier to provide and apply the knowledge given to adolescents (Salamah & Ayu, 2017). This shows that when adolescent participants are given knowledge through counseling and e-booklets, they have the readiness and ability to receive information well, making it easy to receive information related to cervical cancer and HPV vaccines.

CONCLUSION

Based on the evaluation carried out, it can be concluded that the pre-test and post-test scores obtained by community service participants are increased knowledge of adolescent girls about cervical cancer and Human Pappiloma Virus (HPV) vaccination with counseling and methods.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS STATEMENT

Conceptualization, LJ and NA.; methodology, LJ and SA.; formal analysis, SA.; writing—preparation of the original draft, LJ.

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