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EFFECT OF VIDEO-BASED HEALTH EDUCATION ON HPV VACCINATION KNOWLEDGE AND INTEREST

Anny Fauziyah[1)], Tinah Purwaningsih[2)], Hudinoto Eko Yudyarto[3)]
Email: annyfauziyah@gmail.com[1)], tinahpurwaningsih69@gmail.com[2)], yudyartonoto@gmail.com[3)]
[1,2,3)]Kementerian Kesehatan Poltekkes Semarang
Jl.Tirto Agung Pedalangan, Banyumanik Semarang 50268

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Abstract

Cervical cancer is the highest type of cancer in Indonesia after breast cancer. In 2022 there will be 660 thousand new cases, and at least 350,000 women worldwide will die from cervical cancer. Prevention efforts that can be taken are HPV vaccination. The 2022-2024 Immunization Introduction Program only targets elementary school girls in grades V and VI, while outside the target group it is carried out independently. Women's low knowledge about HPV affects their confidence in vaccination. The research aims to measure the effectiveness of providing Health Education with videos on the level of knowledge and interest in HPV Vaccination of Tegal City High School Female Students. This research used a quasi-experimental design, the research population was 621 female students at SMUN 3 Tegal City, the research sample was 30 respondents in the intervention group and 30 respondents in the control group. Data collection using questionnaires, data analysis using Mc. Nemar's test and Fisher's test. The research results concluded that Health Education with videos had an effective effect in increasing knowledge compared to education without videos (p value 0.00) but was not effective in increasing interest (p value 0.067).

***Keywords**: Health Education, Knowledge, Interest in HPV vaccination*

Correspondence:
Anny Fauziyah, Kementerian Kesehatan Poltekkes Semarang Jl.Tirto Agung Pedalangan, Banyumanik Semarang, annyfauziyah@gmail.com

1. Introduction

Cancer is the leading cause of death globally. It is a disease that can impact anyone and any part of the body. After breast cancer, cervical cancer ranks as one of the most prevalent cancers among women. Cervical cancer, a gynecological malignancy, poses health challenges for women [1]. The human papillomavirus causes this disease. In Indonesia, there are approximately 90-100 new cases per 100,000 individuals yearly, totaling 40,000 cases annually. The incidence of cervical cancer not only affects the patients and their families significantly but also impacts the government's healthcare budget. Hence, all stakeholders must enhance efforts in the prevention and early detection of cervical cancer [2].

The Minister of Health's Decree No. HK.01.07/MENKES/ 6779/2021 outlines the crucial HPV Immunization Program for 2022-2024,[3] emphasizing the significance of HPV vaccination in preventing cervical cancer, known to be

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caused by human papillomavirus infection.

HPV vaccination provides targeted protection against cervical cancer [4]. Before infection, it effectively guards against 70% of potential cervical cancer cases. For optimal efficacy, the government recommends that females aged 9 - 13 receive the HPV vaccine [5], While the primary focus is on children and adolescents, vaccination is also suitable for ages 10 - 18, with adults eligible from 19 - 55 years. The 2022-2024 Human Papillomavirus Vaccine (HPV) Introduction Program concentrates solely on primary school girls in grades V and VI. Outside this demographic, vaccinations are administered independently for a fee [3].

Adolescents are not the primary focus of the government's vaccination efforts from 2022 to 2024, emphasizing the importance of understanding cervical cancer and HPV. Individuals must have a good understanding in order to choose to vaccinate independently. Limited knowledge among women regarding cervical cancer and HPV vaccination undermines their confidence in making vaccination decisions. Independent vaccination hinges on a strong intention rooted in comprehensive knowledge about cervical cancer, its risks, and preventive measures that should be taken prior to engaging in sexual activity - starting from a young age, continuing through the teenage years, up to before marriage [6].

Knowledge plays a vital role in shaping motivation and forming beliefs that drive individuals to take action, such as Health Education on HPV vaccination [7]. Health Education initiatives utilizing videos have shown promise in enhancing awareness of HPV and its implications, particularly in preventing cervical cancer among women of childbearing age in Wori village. This heightened knowledge about HPV is a motivating factor for vaccination uptake [8].

Given this premise, researchers find it imperative to investigate the impact of video-based health education on HPV knowledge and vaccination interest, particularly in the context of preventing cervical cancer in young women at SMA III Tegal City. Thus, the research question arises: How does health education through videos influence knowledge and interest in HPV vaccination to combat cervical cancer among adolescent girls at SMA III Tegal City? This study seeks to assess the effects of video-based health education on both HPV knowledge and interest in vaccination.

2. Method

This quantitative research utilized a quasi-experimental design involving a two-group pretest and posttest to assess the impact of health education on knowledge and interest in HPV vaccination among female students at SMA III Tegal City. The study population comprised 631 female students, 30 selected for the intervention and control groups using purposive random sampling. The sample size was determined based on a 5% Type I error rate ($Z\alpha = 1.96$), a 20% Type II error rate ($Z\beta = 0.84$), and a 20% discrepancy margin (0.2).

The researchers set the odds ratio at 1.5, indicating that the group receiving health education is expected to grow 1.5 times more than the non-educated group. Using this, P1 is calculated as follows: P1 = 0.37. Once P1 is determined, the minimum significant difference value is considered:

$P_2 - P1 = 0{,}65 - 0{,}37$
$= 0{,}28$
$= 28\ \%$

For instance, the following calculation can be employed to determine the sample size needed for a significance level of 95% and 80% power

$$N1 = N2 = \frac{(Z\alpha + Z\beta)^2 f}{(P1 - P2)^2}$$

= 28 respondents

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Determined by each researcher to avoid the possibility of dropout. The study's variables include an independent variable, health education with video for the intervention group, and health education without video for the control group. The dependent variables studied were knowledge about HPV vaccination and interest in HPV vaccination. Data on knowledge and interest in HPV vaccination were collected through questionnaires before and after the health education intervention.

3. Result And Discussion

Tabel 1. Respondent characteristic

No	Variable	Control Group (n=30)		Experimental Group (n=30)	
		n	%	n	%
1	Age				
	14 - 17	30	100%	30	100%
	> 17	0	0%	0	0%
2	Knowledge Improvement				
	Increased	4	13%	22	73%
	Not Increased	26	87%	8	27%
3	Increased Vaccine Interest				
	Increased	4	13%	10	33%
	Not Increased	26	87%	20	67%

Based on the findings in Table 1, it is noteworthy that the intervention and control groups consisted of respondents within the 14-18 age bracket, with occupations as students having attained high school or vocational education. The similarity in age distribution within the two research groups, predominantly within the 14-17 range, indicates that the respondents fall within the productive age range, per the standards set forth by the World Health Organization for necessitating HPV vaccination.

The educational level of all respondents, who were classified as upper secondary level, suggests an elevated capacity for knowledge absorption. It is widely acknowledged that individuals with a higher level of education are more receptive to educational stimuli [9].

Exposure to readily available and frequently disseminated health information is associated with an augmentation of health knowledge. Notably, the intervention group, which received video-based education, exhibited a 73% increase in knowledge, while the control group, receiving solely verbal health education, experienced a mere 13% increase. The heightened knowledge acquisition within the intervention group can be attributed to the ability of video-based education to facilitate repeated viewing and review, leading to a more pronounced knowledge enhancement [10].

Videos serve as a medium through which individuals can harness knowledge via their five senses, with the majority being acquired visually (83%) and a significant proportion audibly (11%). At the same time, smaller percentages are mediated through taste (1%), touch (2%), and smell (3%) [11]. The increase in interest towards HPV vaccination within the intervention group displayed a notable increase of ten individuals (33%), whereas the control group exhibited a smaller upsurge of four individuals (13%). It is discerned that the spike in interest regarding HPV vaccination is not as pronounced as the knowledge increase, primarily due to the influencing factor of motivation. The development of motivation post-learning necessitates additional time after the educational process.

The increased interest following the information-seeking process is consistent with a previous research findings indicating a correlation between public interest in booster vaccination behavior and the administration of a third dose of the Covid-19 vaccine. Studies during the Covid-19 pandemic demonstrate that public interest and enthusiasm towards Covid-19 booster vaccination have risen in parallel with information seeking efforts [12].

Table 2. Respondents' Knowledge Level Before and After Given Health Education with Video

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		Knowledge Level (After)		p-value	Increased Knowledge Level		p-value
Group	Knowledge Level (Before)	Excellent (%)	Poor (%)		Increased	Decreased	
Intervention	Excellent	4 (13 %)	0 (0%)	0,00	22 (73%)	8(27%)	
	Poor	22 (73%)	4 (13%)				0,00
Non-intervention	Excellent	10 (33%)	0 (0%)	0,00	4 (13%)	26 (87%)	
	Poor	16 (53%)	4 (13%)				

Noteworthy results displayed in Table 2 delve into the enhanced knowledge within the intervention group after implementing health education interventions with video aids, with a statistically significant p-value of 0.00. The efficacy of video health education in augmenting knowledge is further consolidated by a p-value of 0.00. These findings align with existing research indicating the effectiveness of video-based interventions in heightening the knowledge and instigating intentions to vaccinate against HPV among elementary school girls [13] particularly emphasized by the substantial disparity in knowledge pre and post-video-based health education within the intervention group.

Table 3. Respondents' Interest Level Befor and After Given Health Education with Video

		Interest (After)		p-value	Increased interest		p-value
Group	Minat sebelum	Excellent (%)	Poor (%)		Increased	Decreased	
Intervention	Excellent	2 (6 %)	1 (3%)	0,00	10 (33%)	20 (67%)	
	Poor	10 (73%)	17 (57%)				0,067
Non-intervention	Excellent	4 (33%)	0 (0%)	0,125	4 (13%)	26 (87%)	
	Poor	4 (33%)	22 (73%)				

*tes signifikansi menggunakan McNemar, tes signifikansi menggunakan ChiSquare

Table 3 presents the notable surge in interest in HPV vaccination, corroborated by an explanation. The disparity in interest levels pre and post-health education intervention within the intervention group signifies a statistically significant difference, substantiated by a p-value of 0.012. The impact of video education on cultivating interest in the HPV vaccine is evident from these results. Parallel investigations among female high school students in Badung Regency, Bali, revealed that individuals possessing sound knowledge regarding the HPV vaccine are significantly more inclined towards a positive attitude concerning the vaccine [14]. Similarly, a study encompassing Udayana students corroborated a direct relationship between knowledge levels and the willingness to undergo vaccination (p-value 0.021) [15]. Furthermore, research focusing on the driving forces behind HPV vaccination uptake among adults underscored knowledge as the principal motivator for engaging with HPV vaccination [7].

In a study evaluating the efficacy of video content as an informational resource in HPV vaccination campaigns, student feedback on preferred media for receiving vaccine-related information advocated creating educational videos featuring healthcare providers, with suggestions to disseminate them on platforms like YouTube [16].

The assessment of the efficiency of video health education interventions in stimulating interest presents a marginally significant p-value of 0.067, indicating a less pragmatic orientation towards increasing interest. This outcome is intertwined with multiple motivating factors influencing vaccine interest, including the prevailing high cost of standalone HPV vaccines. These findings align with prior research emphasizing the necessity for parental empowerment and health-economic considerations to bolster HPV vaccination adherence [17]. Observations from the study participants also noted a prevailing lack of public interest in HPV vaccination, predominantly due to the prohibitive cost of the vaccine for students, which their

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parents often bear. This corroborates the findings of Nurjanah and Puspaningrum (2015), who highlighted the negligible impact of health education on the attitudes of health cadres towards HPV immunization within the operational realms of the Pegandan Semarang Community Health Center [18].

4. Conclusion

This study reaches these conclusions: Video health education significantly boosts HPV vaccination knowledge. However, video health education does not notably raise interest in HPV vaccination.

Research implications suggest a need for emphasis on HPV vaccination benefits and cervical cancer severity in health promotion/education initiatives. Additionally, there is a call for research on government financing/subsidy policies for HPV vaccination costs for adolescents beyond elementary school age.

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