

## Effectiveness of video education on intention for cervical cancer screening

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### ABSTRACT

Cervical cancer represents 7.5% of deaths caused by cancer in women. Prevention of cervical cancer can be done by cervical cancer screening. The purpose of the study was to determine the effect of video on knowledge level, attitude, and intention for cervical cancer screening in Yogyakarta. This study was a quantitative study with a quasi-experimental nonequivalent control group design. The study was carried out in April-October 2021. The population of the study was all women of childbearing age. The sample was 50 respondents for each group, experiment group and control group. The intervention was given through video education for the experiment group and pocketbooks for the control group. Data analysis used T-test, Wilcoxon test, and Mann-withney. There was a difference in the pre-test and post-test of knowledge level ( $p=0.002$ ), attitude ( $p=0.023$ ), intention ( $p=0.005$ ) in the experiment group and knowledge level ( $p=0.001$ ), attitude ( $p=0.000$ ), intention ( $p=0.004$ ) in the control group. There was a significant difference in women's intention ( $p=0.001$ ) for cervical cancer screening with the video education method than pocketbooks. The method of providing educational videos and pocketbooks is effective for increasing the knowledge level, attitude, and intention for cervical cancer screening. Video has influence on intention to detection cervical cancer.

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## 1. INTRODUCTION

Cervical cancer is a matter of public health concern and the most common cancer in 42 low-income countries. Half a million women will die each year from cervical cancer in 2030 and 95% will occur in low-middle-income countries [1]. Indonesia is stated as lower middle income country, the incidence of cancer in Indonesia is 136.2/100,000. The highest cancer incidence rate in Indonesia for women is breast cancer which is 42.1/100,000 with an average death rate of 17/100,000 population followed by cervical cancer of 23.4/100,000 population with an average death of 13.9/100,000 population [2]. The prevalence of cancer in Indonesia showed an increase from 1.4/1000 population in 2013 to 1.79/1000 population in 2018. The highest prevalence of cancer is in the Special Region of Yogyakarta which is 4.86/1000 population, followed by West Sumatra 2.47/1000 population and Gorontalo 2.44/1000 population [3].

Cervical cancer is a very painful cancer cervical cancer is largely preventable through interventions such screening of adult women [4]. To reduce the burden of disease, the World Health Organization (WHO) has launched a global program to eliminate cervical cancer, with the following targets: all countries have to achieve 90% vaccination coverage, 70% of screening coverage, and 90% access to treatment for cervical pre-

cancer or cancer [5]. Visual inspection with acetic acid (VIA) is recommended by WHO for servical screening. VIA is non-invasive and can be executed in low-tech health facilities with instant results. To date, a VIA-based screening strategy has been adopted by 26 countries [6]. VIA identification of abnormalities by inspection of the cervix without the benefit of magnification. Acetic acid turns abnormal cervical cells white allowing an immediate assessment [4]. Studies on knowledge and awareness of cancer cervical screening carried out in Malawi and surrounding countries showed a consistent mix of screening barriers: little knowledge on symptoms or signs of the disease, lack of information of the screening programme and limited access to screening and treatment [7], [8].

Some studies have investigated the reasons that lead to low rates of women's participation in cancer screening programs including lack of knowledge and awareness of cervical cancer cited as the most common obstacle to cervical cancer screening programs [9], [10]. The results of a study in southern Sri Lanka conducted on women and their partners showed that family income, having at least secondary education, and having good knowledge about cervical cancer are factors that influence a woman to come to a health clinic and perform an early detection test for cervical cancer [11]. The results of a study conducted in Tanzania showed that the level of women's knowledge was significant in determining cervical cancer screening [12]. Research conducted in Kenya showed that 29% of the variation in cervical cancer screening was caused by the number of sources of information received [13]. Results of the study in 2016 also showed that access to information affects women's attitudes to carry out VIA screening examinations [14]. Previous research conducted by Setiyawati and Meilani on the prevention of cervical cancer in mothers in Yogyakarta was to show the results of 45.1% of mothers who carried out examinations of VIA, there is a relationship between maternal education, knowledge levels and attitudes towards cervical cancer prevention. Mothers who do early detection of cervical cancer are still low [15]. Based on precede-procede theory, behavior is influenced by predisposing, reinforcing and enabling factors. While these factors are influenced by health education. Health education can be provided by using the right learning media.

The several Meta analysis have shown that technology can enhance learning and multiple studies have shown that video, can be a highly effective educational tool. Video may provide a significant means to improve student learning. Video improves the understanding of difficult concepts compared to when the video was not used to give an education [16]. Based on the background description, researchers are interested in finding out whether video media and pocketbooks are influential in improving awareness, attitude, and intention to do cervical cancer screening. The results are expected to enrich empirical evidence related to the influence of videos and pocketbooks on the level of knowledge, attitudes, and intentions of cervical cancer screening. In addition, the study results can increase knowledge and become a source of information and references to the development of reproductive health obstetrics services and future research.

## 2. RESEARCH METHOD

This study was quantitative research using a quasi design experiment non equivalent control group design. There are two groups in this study, the first group was respondents who were informed through video and the second group was respondents who were informed through pocket book. The study was conducted in April-October 2021. The population of this study was all women in childbearing ager in Yogyakarta. Research samples are taken with purposive sampling techniques. The sample number of these studies was 50 respondents in each experiment group and control group.

The dependent variables in the study were the provision of educational video in the experiment group and pocketbooks in the control group. Independent variables in the study included knowledge level, attitude, and intention for cervical cancer screening. This study collected the type of primary data from respondents by distributing questionnaires. The same questionnaire was used during the pre-test and post-test. The questionnaire used has been tested for validity and reliability by researchers. Data analysis was done with statistical test software. Data analysis used T-tests, Wilcoxon, and Mann-withney tests. Hypotheses in this study whether video education was effective for improvin level of knowledge, attitudes and intention for cervical cancer screening. The Ethical Committee of Poltekkes Kemenkes Yogyakarta number e-KEPK/POLKESYO/0345/III/2021, March 29 2021 granted the ethical approval for this study.

## 3. RESULTS AND DISCUSSION

### 3.1. Knowledge level, attitude and intention for cervical cancer screening

Respondents in this study amounted to 100 women divided into two groups from two district in Yogyakarta. Based on Table 1, our findings show knowledge, attitude and intention respondents about detection of cervical cancer in experiment group. There is an increase in the number of respondents who have a good level of knowledge, positive atitudes and positive intention after the post-test.

Respondents of the experiment group before the intervention as much as 8% have a level of knowledge in the good category while after the intervention with education through video, the level of knowledge of respondents in the good category increased by 18%. Respondents before the intervention as much as 44% had a positive attitude for early detection of cervical cancer. After the intervention, respondents who had a positive attitude reached 52%. In the intention category, respondents' positive intentions for early detection of cervical cancer before intervention were 50%, while the number of respondents with positive intentions increased by 54% after intervention.

Table 2 shows about distribution of knowledge level, attitudes, and intention in control group. Similar to the experimental group, the control group also increased level of good knowledge, positive attitudes, and positive intention to cervical cancer detection. Control group respondents before the intervention as much as 10% had good knowledge level while after the intervention with education through pocketbooks, the knowledge level of respondents in the good category increased by 28%. Respondents before the intervention as much as 52% had a positive attitude toward cervical cancer screening. After the intervention, respondents who had a positive attitude showed an increase of 54%. In the intention category, respondents' positive intentions for cervical cancer screening before intervention were 52%, while the number of respondents with positive intentions reached 56% after intervention. To know the differenced in average knowledge levels, attitudes, and intention in each group are showed in Table 3. In the level of knowledge and attitudes, the control group experienced more average increases than the experimental group, but for intention in the experimental group more differences in average between pre-test and post-test.

In the experiment group based on Table 4, the average level of knowledge, attitude, and intention for early detection of cervical cancer in respondents during pre-test increased during post-test. Statistical test results obtained knowledge levels (p-value 0.002), attitude (p-value 0.023), and intention (p-value 0.005) indicate that there was a mean difference in the knowledge level, attitude, and intention for cervical cancer screening between before and after the intervention with the provision of educational video. In the control group, the average knowledge level, attitude, and intention for early detection of cervical cancer in respondents during pre-test increased during post-test. The results of statistical tests obtained the level of knowledge (p-value 0.001), attitude (p-value 0.000), and intention p-value 0.004) which shows that there was a mean difference in the value of knowledge level, attitude, and, intention for cervical cancer screening with the provision of education through pocketbooks.

Health education is a component of health and medical programs consisting of advanced efforts to change the behavior of individuals, groups, and communities which is a change in the way of thinking, behaving, and doing to help the experiment of changes behavior, prevention of disease and promotion of healthy living. Health education can be done by various methods and media such as movies, drama videos, storybooks, leaflets, posters, and lectures [17]. Health education methods with the utilization of media such as videos, books, and brochures are effective modifications to improve the scope of cervical cancer screening based on previous systematic review research [18]. Health education also affects the increase in interest in cervical cancer screening [19]. In this study, health education through the provision of video and pocketbooks are an influenced by increasing the knowledge levels, attitudes, and intentions for cervical cancer screening. This is in line with the previous study mentioned that there is an increase of average score on knowledge and attitudes by providing audiovisual and visual media education about early detection of cervical cancer p-value 0.000 [20]. There was an influence of counseling with audiovisual media on the level of knowledge before and after counseling about cervical cancer [21].

Video is an audiovisual educational medium. Audiovisual method education is the provision of information with media that can display the elements of images and sounds simultaneous when communicating with messages or information to reveal an event and object with its actual circumstances. Health education audiovisual methods are considered more attractive and understandable. The study mentioned that the video delivery intervention group with a paired sample T-test showed a result of 0.000. It can be concluded that there was a difference in the value of early detection behavior of cervical cancer during pre-test and post-test. In the control group with the provision of media leaflets, there was no average increase before and after the intervention p-value of 0.476 [22]. Other studies also mentioned that there are different visits for cervical cancer screening in the group of education through videos and leaflets [23]. This shows that the provision of video as a medium of health education is considered effective to increase the knowledge levels, attitudes, and intentions that can affect the formation of behavior.

Knowledge is a factor that facilitates the realization of a certain behavior so often referred to as the predisposition factor in the concept of behavior. Knowledge is a very important domain for the formation of behavior. Positive behavior can last a long time if based on sufficient knowledge. This is because behavior occurs due to coercion or rules that can be learned and required to do [24]. Previous American research has found that women with good knowledge are 6.5 times more likely to have early detection of cervical cancer

(OR 6.49; 95% CI 2.8-14.7) [25]. While a study in Indonesia stated that women with good knowledge are 5.8 times more likely to have cervical cancer screening [26].

Attitude is a factor in the occurrence of a behavior. Attitude is the readiness to react to objects. Attitude has three main components: cognition, affection, and conation. In the conation component, there is a tendency to act. The three components of the attitude form one whole attitude (total attitude). This is evidence that attitude is very closely related to the occurrence of a behavior. Attitude is covert behavior that can be manifested by real behavior (overt behavior) when a person has reached the stage of action [27]. The intention is a cognitive and conative representation of an individual's readiness to display behavior. The intention is the determinant and disposition of behavior until the individual has the right opportunity and time to display real behavior. Women with good attitudes have the potential to do early detection of cervical cancer by 5 times compared to women with negative attitudes. The ratio of the probability of women with positive intentions to detect cervical cancer is 8.83 [28].

Table 1. Distribution of knowledge levels, attitudes, and intentions before and after being given video to the experiment group

Category	Pre-test		Post-test	
	n=50	%	n=50	%
<b>Knowledge</b>				
Good	4	8	9	18
Less	46	92	41	82
<b>Attitude</b>				
Positive	22	44	26	52
Negative	28	56	24	48
<b>Intention</b>				
Positive	25	50	27	54
Negative	25	50	23	46

Table 2. Distribution of knowledge levels, attitudes, and intentions before and after being given pocketbooks to the control group

Category	Pre-test		Post-test	
	n=50	%	n=50	%
<b>Knowledge</b>				
Good	5	10	14	28
Less	45	90	36	72
<b>Attitude</b>				
Positive	26	52	27	54
Negative	24	48	23	46
<b>Intention</b>				
Positive	26	52	28	56
Negative	24	48	22	44

Table 3. Differences in average knowledge levels, attitudes, and intentions before and after intervention in the experiment group and control group

Group		Mean	Mean Difference	p-value
<b>Knowledge</b>				
Experiment	Pre-test	58.12	5.29	0.002
	Post-test	63.41		
Control	Pre-test	58.94	8.35	0.001
	Post-test	67.29		
<b>Attitude</b>				
Experiment	Pre-test	76.52	3.22	0.023
	Post-test	79.74		
Control	Pre-test	76.07	3.65	0.000
	Post-test	79.72		
<b>Intention</b>				
Experiment	Pre-test	76.39	4.56	0.005
	Post-test	80.95		
Control	Pre-test	78.53	4.05	0.004
	Post-test	82.58		

**3.2. Differences in the average of knowledge levels, attitudes, and intentions for cervical cancer screening in the experiment group and control group**

Analysis with simple linear regression showed that a meaningful difference between the intention for detection of cervical cancer in the experiment group and the control group. The differences can be seen in Table 4. The difference in the mean value of knowledge levels in the experiment group and the control group was 3.88. The results of the statistical test showed a p-value of 0.092 which means there was no significant difference between the knowledge levels of the experiment group compared to the control group. The mean attitude score for cervical cancer screening in the experiment group and control group showed a difference of 0.03. The results of the statistical test showed a p-value of 0.985, therefore it can be concluded

that there is no significant difference between the value of attitudes in the experiment group and the control group. However, the average value of the experiment group was higher than the control group. The results concluded that the provision of video media is effective for increasing knowledge and attitudes but does not have a meaningful influence on the increase in the level of knowledge and attitudes with a value of  $p > 0.05$ . The results of previous research also stated that the provision of video media had no significant effect on the increase in knowledge and attitude. The assumption of the researchers in the study, the provision of the video did not affect the increase in knowledge level and attitude due to the ability to absorb different information from each respondent and the lack of intention and willingness of respondents to look at the information from the video in full [29]. This leads to a lack of information provided by researchers. In line with the study, the researchers' assumption of this study is that the provision of interventions in the form of providing information through video conducted online is also a difficulty in this study. Researchers are limited to being able to control whether respondents pay attention to the video and fill out questionnaires and answer statements in earnest. This can affect the results of the study.

The difference in the average value of the intention of the experiment group and the control group was 1.63. Based on statistical tests showed a p-value of 0.001 so that there can be a significant difference between the intention for cervical cancer screening in the experiment group and the control group. Intervening with educational video significantly affected the increase in the value of intention for cervical cancer screening. This is in line with a previous study that states that the desire for early detection of cervical cancer increased from 35.8% to 94.2% after intervention with a video p-value of 0.001 [30].

Planned Behavior theory explains that a person's behavior begins with an intention to behave and an intention to behave is influenced by a person's attitude towards the behavior [31]. Therefore, the provision of good manners is necessary to produce good intentions. Research suggests that positive attitudes are associated with intentions for early detection of cervical cancer (95% CI: 4,048, 9,387) [32]. results of the study are supported by other studies that state that a positive attitude is the strongest determinant for the formation of good intentions OR 1.26 [33]. Meanwhile, qualitative research in 2019 states that a person's knowledge of an object contains two aspects, namely positive aspects and negative aspects. Both of these aspects will determine a person's attitude. If more and more positive aspects of the object are known, it will lead to more positive attitudes [34]. Good knowledge can lead to good attitudes. This is in line with a previous study that mentioned that there is a relationship of knowledge with attitudes towards early detection of cervical cancer with a p-value of 0.000 [35]. Based on the results of the study, the provision of educational video and pocketbooks is effective for increasing the knowledge levels, attitudes, and intentions for cervical cancer screening. The provision of video media affects the intention of behaving in the early detection of cervical cancer. Knowledge, attitude, and, intention as a unit are factors that influence the formation of behavior.

Table 4. Differences in the average of knowledge levels, attitudes, and intentions in the experiment group and the control group

Group	n	Mean±SD	Mean Difference	p-value
Knowledge				
Experiment	50	63.41±10.312	3.88	0.092
Control	50	67.29±11.531		
Attitude				
Experiment	50	79.74±7.061	0.03	0.985
Control	50	79.71±9.168		
Intention				
Experiment	50	8.95±8.431	1.63	0.001
Control	50	82.58±11.902		

#### 4. CONCLUSION

In the experiment group, there was a mean difference in knowledge levels, attitudes, and intentions before and after being given an intervention by providing educational video. In the control group, there was also a mean difference in knowledge levels, attitudes, and, intentions before and after the intervention with the provision of education through pocketbooks. There was a significant difference between the intention for early detection of cervical cancer in the experiment group and the control group. Educational methods of providing video and pocketbooks are effective for increasing the level of knowledge, attitudes, and intentions

for cervical cancer screening. Educational video significantly affected the increase in the value of intention for cervical cancer screening. Video can be used for health promotion media to increase women's participation in cervical cancer screening. For other researchers can develop other media to increase women's participation in cervical cancer of pandemic COVID-19.

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