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# The Effect of Audio Visual and Booklet to Increase Behaviour of Screening IVA Test at Sukarasa Public Health Center

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## ABSTRACT

**Introduction:** Women's health is an indicator of health achievement in the world, including in Indonesia. Cervical cancer is a female cancer that causes the most deaths due to cancer, especially in developing countries.

**Objective:** The study aims to analyse the effect of audio-visual and booklet in education to increase behavior of screening IVA test at the Sukarasa Public Health Center Area.

**Method:** This research used a quasi-experimental design with a pretest posttest non-equivalent control group design. Data analysis in this study used univariate analysis, bivariate analysis using paired T-test, independent T-test, Mc-Namer, chi-square and multivariate test using multiple logistic regression.

**Results:** The results of this study show that the results of the paired T-test of knowledge have a p-value (p=0.001) in the intervention and the control (p=0.724). In the attitude category, p-value is a (p=0.001) in the intervention and the control (p=0.469) so it can be concluded that there are differences in knowledge and attitudes before and after the intervention. In the practice category using the Mc-Nemar test produced a p-value (p=0.001) in the intervention and control so that there were differences in practice before and after intervention. The results of the independent T-Test showed a p-value for knowledge (p=0.001) and attitude (p=0.001), which means there were differences after the intervention. The results of knowledge and attitudes the chi-square test show (p=0.001), which means there is a relationship between knowledge with practice, and attitude with practice. Multivariate test on knowledge of occupational confounders. In attitude there is a confounder of education, while in practice there are confounders, namely age and education.

**Conclusion:** Audio visual and booklet can increase behaviour of screening IVA Test at the Sukarasa Community Health Center, Bandung City.

**Keywords:** Audio Visual; Booklet; Behaviour

## INTRODUCTION

Women's health is one of the indicators of health achievement in the world, including in Indonesia. Women's health issues are still a task for the government and health workers, related to the high maternal mortality rate. One of the causes of the high maternal mortality rate is cervical cancer. Cervical cancer is a female cancer that causes the most deaths due to cancer, especially in developing countries. Cervical cancer, which in health terms is cervical cancer, is a cancer that occurs in the uterine cervix, an area in the female reproductive organs which is the entrance to the uterus located between the uterus and the vagina (1).

Based on data obtained from the International Agency for Research on Cancer (IARC) WHO in 2012 there were 527,624 new cases of cervical cancer experienced by women worldwide with a total of 14.1 million cases. The number of cervical cancers is 85% in developing countries, including Indonesia. According to the World Cancer Observation (Globocan) in Indonesia there were 36,633 new cases and 21,003 deaths due to cervical cancer in 2020. This figure shows that there are 50 cases detected every day with more than two deaths every hour. Based on the Director General of P2P, cancer in Indonesia is ranked 8th in Southeast Asia and 23rd in Asia (2).

One strategy to change behavior, such as preventing cervical cancer, is by providing information through health education that can increase public knowledge about healthy behavior. In previous research (3,4), said that age can affect the knowledge of women of childbearing age. There are many ways that can be done as a medium for health education. Education can be provided using several media, such as audiovisual and booklets. Health education using audiovisual media can increase women's knowledge and participation in the cervical cancer early detection program, namely IVA. Booklets can also influence increased knowledge and attitudes, compared to visual media such as posters (5).

The purpose of this study was to determine the influence of audio visuals and booklets in educating to improve IVA test screening behavior at the Sukarasa Health Center.

## METHOD

This study is an experimental study using a quasi-experimental design with a pretest posttest non-equivalent control group design. The population in this study were 234 women of childbearing age and the sample of this study was 44 intervention groups and 44 control groups. The independent variables in this study were audio-visual media and booklets. Meanwhile, the dependent variable was the behavior of women of childbearing age who underwent IVA screening tests. Data analysis in this study used univariate analysis, bivariate using paired T-test, independent T-test, Mc Namer, chi square and multivariate test using multiple logistic regression. The knowledge and attitude questionnaire was made by the researcher himself with a total of 15 questions. Validity and reliability tests were carried out in the Sukarasa Health Center Work Area in different RWs with 20 people. This study has received approval from the Ethics Committee of General Achmad Yani University with the ethics number: 09/KRPK/FITKes-UNJANI/XI/2023.

## RESULTS

**Table 1.** Distribution of Respondent Characteristics at Sukarasa Health Center

| Characteristics | Intervetion | | Control | |
|---|---|---|---|---|
| | Amount | % | Amount | % |
| Age | | | | |
| 26-35 Years | 24 | 54.6 | 23 | 52.3 |
| 36-45 Years | 17 | 38.6 | 15 | 34.1 |
| 46-55 Years | 3 | 6.8 | 6 | 13.6 |
| Education | | | | |
| Elementary School | 6 | 13.6 | 7 | 15.9 |
| Junior High School | 15 | 34.1 | 8 | 18.2 |
| Senior High School | 23 | 52.3 | 25 | 56.8 |
| University | 0 | 0 | 4 | 9.1 |
| Occupation | | | | |
| Not working | 42 | 95.5 | 40 | 90.9 |
| Working | 2 | 4.5 | 4 | 9.1 |
| Income | | | | |
| < Rp. 4.048.462 | 44 | 100 | 42 | 95.5 |
| ≥ Rp 4.048.462 | 0 | 0 | 2 | 4.5 |
| Total | 44 | 100 | 44 | 100 |

Based on the table above, in the intervention group, the most vulnerable age is 26-35 years old, which is 24 people (54.6%), the same as the control group of 23 people (52.3%). In the intervention group, the majority of respondents had a high school education, as many as 23 people (52.3%), as well as the control group of 25 people (56.8%). The same number of respondents in the intervention and control groups were unemployed, namely 42 people (95.5%) in the intervention group and 40 people (90.9%) in the control group. All respondents in the intervention group did not earn ≥ Rp. 4,048,462, while in the control group there were 42 people (95.5%) who earned <Rp. 4,048,462.

**Table 2.** Changes in Knowledge, Attitudes, and Practices Given Audio Visual and Booklets in the Intervention and Control Groups

| Catagori | Intervention | | | | Control | | | |
|---|---|---|---|---|---|---|---|---|
| | Pretest | | Posttest | | Pretest | | Posttest | |
| | Amount | % | Amount | % | Amount | % | Amount | % |
| Knowledge | | | | | | | | |
| Less | 21 | 47.7 | 0 | 0 | 22 | 50.0 | 23 | 52.3 |
| Enough | 16 | 36.4 | 3 | 6.8 | 18 | 40.9 | 15 | 34.1 |
| Good | 7 | 15.9 | 41 | 93.2 | 4 | 9.1 | 6 | 13.6 |
| Attitude | | | | | | | | |
| Negative | 20 | 45.5 | 22 | 50.0 | 25 | 56.8 | 26 | 59.1 |
| Positive | 24 | 54.5 | 22 | 50.0 | 19 | 43.2 | 18 | 40.9 |
| Practice | | | | | | | | |
| Do not practice | 44 | 100 | 24 | 54,5 | 44 | 100 | 41 | 93,2 |
| Do practice | 0 | 0 | 20 | 45,5 | 0 | 0 | 3 | 6,8 |

Based on the table above, it can be explained that there are changes in knowledge, attitudes and practices before and after intervention in the form of audio visuals and booklets was given to respondents. Knowledge Before the intervention, most had poor knowledge, 21 people (47.7%) in the intervention group and poor knowledge, 22 people (50%) in the control group. After the intervention, most had good knowledge, 41 people (93.2%) in the intervention group. While in the control group, most had poor knowledge, 23 people (52.3%).

Attitudes before the intervention were mostly positive attitudes as many as 24 people (45.5%) in the intervention group and negative attitudes as many as 25 people (56.8%) in the control group. After the intervention, most had good attitudes as many as 22 people (50%) in the intervention group. While in the control group most had negative attitudes as many as 26 people (59.1%).

Practices before the intervention were mostly not doing as many as 44 people (100%) in the intervention group and not doing as many as 44 people (100%) in the control group. After the intervention, most had not doing as many as 24 people (54.5%) in the intervention group. While in the control group, most had not doing as many as 41 people (93.2%).

**Table 3.** Change of Knowledge Given Audio Visuals and Booklets in the Intervention and Control Groups

| Category Knowledge | Mean | Standard Deviation | Standard Eror | p-value | Frequency |
|---|---|---|---|---|---|
| Intervention Group | | | | | |
| Pretest | 9,00 | 2,430 | 1,041 | 0,001 | 44 |
| Posttest | 13,45 | 1.088 | 0.164 | | |
| Control Group | | | | | |
| Pretest | 8,48 | 2,592 | 0,391 | 0,724 | 44 |
| Posttest | 8,57 | 2,528 | 0,381 | | |

Based on table 3, describe about statistic differences knowledge in intervention group and control group before and after given audio visual and booklet. Before given audio visual and booklet in intervention group have mean of knowledge is 9,00 with standard deviation is 2,430. Meanwhile, in control group have mean of knowledge is 8,48 with standard deviation is 2,592. After women get education with audio visual and booklet have mean of knowledge is 13,45 with standard deviation is 1,088 in intervention group. Control group after education have mean of knowledge is 8,57 with standard deviation is 2,528.

A result test using Paired T Test show in intervention group have a difference mean value is 4,59 and control group have mean value is 0,09. Hypothesis test in intervention group is p<0,000 it's mean there are effect of given audio visual and booklet to increase women knowledge. Meanwhile, in control group have p value >0,724 it's mean there are not affect of audio visual and booklet to increase women knowledge.

**Table 4.** Change of Attitude Given Audio Visuals and Booklets in the Intervention and Control Groups

| Category Attitude | Mean | Standard Deviation | Standard Eror | p-value | Frequency |
|---|---|---|---|---|---|
| Intervention Group | | | | | |
| Pretest | 40,39 | 4,525 | 0,682 | 0,001 | 44 |
| Posttest | 55,39 | 2,581 | 0,389 | | |
| Control Group | | | | | |
| Pretest | 46,16 | 6,813 | 1,027 | 0,469 | 44 |
| Posttest | 46,70 | 7,319 | 1,103 | | |

Based on table 4, describe about statistic differences attitude in intervention group and control group before and after given audio visual and booklet. Before given audio visual and booklet in intervention group have mean of attitude is 40,39 with standard deviation is 4,525. Meanwhile, in control group have mean of attitude is 46,16 with standard deviation is 6,813. After women get education with audio visual and booklet have mean of attitude is 46,70 with standard deviation is 6,813 in intervention group. Control group after education have mean of knowledge is 46,70 with standard deviation is 7,319.

A result test using Paired T Test show in intervention group have a difference mean value is 15,00 and control group have mean value is 0,54. Hypothesis test in intervention group is p<0,001 it's mean there are effect of given audio visual and booklet to increase women attitude. Meanwhile, in control group have p value >0,469 it's mean there are not effect of audio visual and booklet to increase women attitude.

**Table 5.** Change of Practice Given Audio Visuals and Booklets in the Intervention and Control Groups

| Category Practice | Do Practice | Do Not Practice | p-value | Frequency |
|---|---|---|---|---|
| Intervention Group | | | | |
| Pretest | 0 | 44 | 0,001 | 44 |
| Posttest | 20 | 24 | | |
| Control Group | | | | |
| Pretest | 0 | 44 | 0,001 | 44 |
| Posttest | 3 | 41 | | |

Based on table 5, describe about statistic differences practice in intervention group and control group before and after given audio visual and booklet. Before given audio visual and booklet in intervention group and control group there are not practice IVA Test. Meanwhile, after given audio visual and booklet in intervention group there are 20 women do practice and in control group 3 women do practice IVA Test.

A result test using Nc Nemar show in intervention group and control group have p values p<0,001 it's mean there are effect of given audio visual and booklet to increase women practice to do IVA Test.

**Table 6.** Analysis Difference after Given Audio Visuals and Booklets in the Intervention and Control Groups

| Category | Mean | Standard Deviation | Standard Eror | p-value | Frequency |
|---|---|---|---|---|---|
| Knowledge | | | | | |
| Posttest Intervention | 13,59 | 1,041 | 0,157 | 0,001 | 44 |
| Posttest Control | 8,57 | 2,528 | 0,381 | | 44 |
| Attitude | | | | | |
| Posttest Intervention | 55,39 | 2,581 | 0,389 | 0,001 | 44 |
| Posttest Control | 46,70 | 7,319 | 1,103 | | 44 |

Based on table 6, mean of knowledge in intervention group is 13,59 with standard deviation is 1,041. Meanwhile, in control group mean of knowledge is 8,57 with standard deviation is 2,528. Statistic test using Independent T test show that p value 0,001 it's mean there are difference knowledge between intervention group and control group.

Mean of attitude in intervention group is 55,39 with standard deviation is 2,581. Meanwhile, in control group mean of attitude is 46,70 with standard deviation is 7,319. Statistic test using Independent T Test show that p value 0,001 it's mean there are difference attitude between intervention group and control group.

**Table 7.** Relationship Between Knowledge and Practice in the Intervention and Control Groups

| Knowledge | Practice | | | | Total | | PR (95% CI) | p-value |
|---|---|---|---|---|---|---|---|---|
| | Do Not practice | | Do Practice | | | | | |
| | N | % | n | % | n | % | | |
| Less | 37 | 90,2 | 4 | 9,8 | 41 | 100 | | 0,001 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Good | 28 | 59,6 | 19 | 40,4 | 47 | 100 | 1,515 (95%CI |
| Total | 65 | 73,9 | 23 | 26,1 | 88 | 100 | 1,173-1,957) |

n= Frequency

Based on table 7, relationship between knowledge with practice that there are 4 respondents do practice have less education and there are 19 respondents do practice have a good knowledge. Statistic test using Chi-Square get p value p=0,001 it's mean there are relationship between knowledge and practice. Prevalence Ratio (PR) in this analysis is 1,515 it's mean good knowledge have 1,5 times more likely do to the test.

**Table 8.** Relationship Between Attitude and Practice in the Intervention and Control Groups

| **Attitude** | **Practice** | | | | **Total** | | **PR (95% CI)** | **p-value** |
|---|---|---|---|---|---|---|---|---|
| | **Do Not Practice** | | **Do Practice** | | | | | |
| | **N** | **%** | **n** | **%** | **n** | **%** | | |
| Negative | 44 | 91,7 | 4 | 8,3 | 48 | 100 | 1,746 (95%CI 1,285- | 0,001 |
| Positive | 21 | 52,5 | 19 | 47,5 | 40 | 100 | 2,373) | |
| Total | 65 | 73,9 | 23 | 26,1 | 88 | 100 | | |

n= Frequency

Based on table 8, relationship between Attitude with practice that there are 4 respondents do practice have negative attitude and there are 19 respondents do practice have positive attitude. Statistic test using Chi-Square get p value p=0,001 it's mean there are relationship between attitude and practice. Prevalence Ratio (PR) in this analysis is 1,746 it's mean positive attitude have 1,7 times more likely do to the test.

**Table 9.** Multivariate Knowledge, Attitude, And Practice

| **Variabel** | **B** | ***P*** | **Exp (B)** | **OR (95% Cl)** |
|---|---|---|---|---|
| Knowledge | | | | |
| Intervention | 4,545 | 0,000 | 94,146 | (21,207-417,956) |
| Working | 0,936 | 0,429 | 2,549 | (0,251-25,919) |
| Constant | -1,959 | 0,000 | 0,141 | (0,000) |
| Attitude | | | | |
| Intervention | 0,516 | 0,250 | 1,676 | (0,695-4,040) |
| Level of Education | 0,934 | 0,043 | 2,545 | (1,030-6,291) |
| Constant | -1,006 | 0,027 | 0,366 | (0,000) |
| Practice | | | | |
| Intervention | 2,816 | 0,000 | 16,711 | (3,996-69,880) |
| Age | -1,153 | 0,240 | 0,316 | (0,046-2,165) |
| Level of Education | 1,137 | 0,055 | 3,117 | (0,974-9,977) |
| Constant | -2,531 | 0,016 | 0,080 | (0,000) |

Based on table 9, describe about analysis multivariate knowledge, attitude, and practice. In knowledge category, cofounding factor is working. In attitude category, cofounding factor is level of education. In practice category, cofounding factor is age and level of education.

## DISCUSSION

### Characteristics Overview

This study was conducted in the Sukarasa Health Center working area of Bandung City. From the results of the sample calculation, the number of samples in each group was 44 people with a total of 88 people. The results of the study explained that the distribution of respondent age data was 26-35 years as many as 24 people (54.5%) in the intervention group and the control group, the age distribution was 26-35 years as many as 23 people (52.3%). Similar to the study conducted by Siwi (2017) where the characteristics of the respondents were also mostly (60%) in early adulthood(Siwi RPY, et al, 2017). Then in the research conducted by Destriani (2022) also has similar research characteristics, namely the majority of respondents are aged 25-36 years as much as (48.8%). The characteristics of the research conducted by Silalahi V (2018) where the majority of respondents are in early adulthood. It can be seen that the majority of respondents are aged 26-35 years which is early adulthood(3). In addition, research conducted by Nurislamiyati (2022) also has the same age characteristics, namely early adulthood (26-35 years) as much as

35.4%.(7). According to data from the West Java BPS, the distribution of the population by age group and gender in women aged 26-35 years is an age that has a large number, namely 190 thousand people in 2022. Early adulthood is believed to be an age that can determine beliefs about something that will affect the health behavior that is carried out.

The results of the study showed that more than half of the respondents had a high school education or equivalent. This is similar to the characteristics of the study conducted by Purnami (2022) where the majority of respondents had secondary education (39%).(8). In line with the characteristics of respondents in the study conducted by Nurislamiyati (2022), the majority of respondents had a high school background, as many as 59.6%.(7). As done by Dewi (2021), the majority of respondents had high school education (52.8%).(9). Education is a basic thing that can help women improve their behavior to achieve optimal health. Researchers assume that the higher a person's level of education, the easier it is for someone to receive information, so the more knowledge they have. Likewise, the opposite assumption.

More than half of the work in the intervention and control groups was the majority unemployed. In line with the characteristics of the study conducted by Fauza M (2019) where the majority of respondents, 87 people (79.1%), were unemployed.(10). Similarly, the research conducted by Purnami (2022) found that the majority of respondents worked as housewives or did not work (29.7%).(8). This happened because the majority of respondents in this study turned out to be housewives who were considered unemployed because they did not have their own income.

The results of the distribution of respondent data can be seen that all respondents in the control group have an income below the 2023 Bandung City UMP and only 2 people in the control group have an income above the 2023 Bandung City UMP.(11). This is influenced because the majority of respondents in the intervention and control groups do not work or work as housewives. This is in line with Hanifah L's research (2019) which states that respondents who have less knowledge are mostly in the lower income group.(12). Adequate family income will support a person's knowledge. This shows that income plays an important role in influencing participation in early detection of cervical cancer through the IVA method.

**Overview of Knowledge, Attitudes, and Practices**

Before the provision of audio visuals and booklets, the average knowledge before being given audio visuals and booklets in the intervention group was 9.00 and in the control group 8.48. After being given audio visuals and booklets, there was a significant increase in the intervention group from 7 people to 41 people with good knowledge. Meanwhile, in the control group, there was no significant increase. The increase in the amount of knowledge was greater in the intervention group than in the control group. Knowledge about cervical cancer and cervical cancer screening with the IVA method is an important domain for the formation of actions in the form of women's participation in carrying out IVA screening. In a study conducted by Dewi (2021), it was stated that the majority of respondents had good knowledge (50.9%). Respondents who have high knowledge about IVA examinations will tend to have a greater awareness to improve their health status, so they are more likely to carry out IVA examinations.(9).

After being given audio visuals and booklets, the attitudes of the intervention group increased by an average of 15.00, while the control group also increased by 0.545. In a study conducted by Dewi (2021), it was explained that attitudes were significantly related to IVA examination behavior.(9). A person's positive response is shown from their attitude, if the response is positive, then the behavior tends to be positive, and vice versa. Someone who has a positive attitude towards the IVA examination, then someone will do the IVA examination. In a study conducted by Astuti (2023) said that the behavior of the IVA test examination is related to attitude, meaning that a positive attitude will continue to do the IVA test(13). The results of this study are in line with the theory of Budiman and Riyanto (2016) that an assessment is made by a person towards an object or situation accompanied by certain feelings to produce a response to what will be done.(14). In line with Notoadmodjo's theory (2018), attitude is a real action that is manifested in an action, a mother's positive attitude if there is support or stimulus from outside and conditions that allow it.(15).

Before being given audio visuals and booklets in the intervention and control groups, all respondents did not take the test. Then after being given audio visuals and booklets in the intervention group, 20 people (45.5%) took the test, while in the control group, 3 people (6.8%) took the test. In a study conducted by Angriani (2019), it was stated that there was a significant relationship between behavior and participation in the IVA examination.(Angriani SD et al., 2019). Behavior is a form of response or reaction to external stimuli and stimulation, but in giving a response it depends on the characteristics or other factors of the person concerned. In line with Notoadmodjo's theory (2018), practice or action is a change in attitude to carry out an IVA examination including, a person's perception of the IVA test will produce a positive response, from perception there is a response and mechanism to change a person's thinking that the IVA test is good and needed for married WUS(15). From the level of perception, response and positive

mechanisms, that is what supports someone who wants to adopt actions to change their behavior from not doing IVA to doing IVA examination.

**Differences in Knowledge, Attitudes, and Practices Before and After Intervention**

In the knowledge of the intervention group, it can be concluded that there is an effect of providing audio visuals and booklets on knowledge and in the control group, it can be concluded that there is no effect of health education on knowledge. This is supported by previous research.(3), which shows that health education using audiovisual media and booklets is effective in improving respondent behavior in conducting IVA screening. The increase in knowledge of the intervention group was greater than that of the control group. In line with research(17), The results show that there is a significant difference between women's knowledge about fertile age before and after being given health education with (p value = 0.0001 < α = 0.05). While in the control group produced a value of 0.725> 0.05 which can be concluded that there is no effect of health education on knowledge. In line with research(18)which states that there is a significant relationship between knowledge and interest in cervical cancer screening.

Furthermore, the attitude in the intervention group can be concluded that there is an influence of providing audio visuals and booklets on attitudes, while in the control group it can be concluded that there is no influence of providing health education on attitudes. This is supported by previous research.(3)which shows that health education using audiovisual media and booklets is effective in improving respondents' behavior in conducting IVA screening. The increase in attitudes of the intervention group was greater than that of the control group. In line with previous research which stated that health education has a positive influence on improving respondents' attitudes about cervical cancer and cervical cancer screening.(19). The right method in providing information will stimulate positive health attitudes in an effort to improve health. While in the control group produced a value of 0.469>0.05 which can be concluded that there is no effect of providing health education on attitudes.

Next, the practice variable, after being given Health education in the form of audio visual and booklets in the intervention group, there were 20 people who took the test, while 24 people did not take the test. In the control group before being given Health education, all of them did not take the test, then after being given Health education, 3 people took the test. From the test carried out, the p-value result was 0.000, which means that there is a significant relationship between audio visual and booklets on the practice of IVA test examination in the intervention group. The results of this study are in line with the research conducted by Muharani et al., where the findings in this study explain that there is a change in WUS behavior before and after being given audio visual intervention with the practice of IVA test examination, other results also state that in general the data has changed, where the behavior of WUS after the intervention almost half have good behavior, enough and not a single bad behavior was found(20).

**Differences in Knowledge and Attitudes After Intervention**

Based on the results of statistical tests, it is known that there is a significant difference between knowledge in the intervention group and the control group. In line with research conducted by Abdullah et al, (2019) there is a significant relationship between the provision of audio-visual media and booklets on increasing knowledge of women of childbearing age regarding iva tests, combining audio and visual media, providing better ability in conveying information(21). This media also acts as an educational tool that is easily understood by various groups of people, from children to adults. The language used must be clear and understandable to all groups and ages. Supporting research conducted by Addelia and Nurul (2018). Shows that there is a significant difference between the influence of counseling using Booklets on the level of knowledge of women of childbearing age about cervical cancer detection, with a value (p = 0.000 <0.05)(Izmi et al., 2023; Yosibeliataufik A, 2018). Counseling conducted by selecting the method, namely the audio-visual method and the use of media in the form of Booklets will create viewing and listening activities, so that the delivery of information becomes more optimal.

The results of the statistical test also show that there is a significant difference between the attitudes of the intervention group and the control group. In line with the research conducted by(24). Shows that learning media using videos and brochures are effective in improving women's attitudes about cervical cancer and cervical cancer screening with the Pap Smear method. Measurement of posttest 1 to posttest 2, the average increase in attitudes in the intervention group was greater than the control group. This happens because respondents in this case no longer receive health interventions and they only remember the material that has been given before and also a long time interval. Other supporting research was conducted by Sumayanti (2023). Shows that it is proven to have an effect on providing counseling with audio-visual media on the attitudes of women of childbearing age in IVA examinations with a value (p = 0.000 <0.05)(Sumayanti, 2023). This means that it is proven that providing counseling with audio-visual media can effectively increase the knowledge of women of childbearing age (WUS) at the Sukawati Health Center.

**The Relationship Between Knowledge and Practice**

The results of the analysis showed a significant relationship between knowledge and practice in conducting the test. Of the respondents who had good knowledge, most took the test, while those with less knowledge only a few took the test. The Odds Ratio (OR) of 1.515 shows that individuals with good knowledge are 1.5 times more likely to take the test compared to those with less knowledge. The results of the same study were also conducted by Trisnowati et al., (2020) which stated that there was a significant relationship between knowledge and practice of IVA test examinations. This study used a questionnaire, no respondents had low knowledge (0%), while a small portion had adequate knowledge (6.7%) and most had good knowledge (93.3%)(26). This study is in line with previous research by Imelda et al., (2021) on the effects of cervical cancer health education with audio-visual media on the motivation to undergo IVA tests in women of childbearing age in Nglarang Lor, Sidoarum, Godean.(27). The majority of respondents have high motivation for VIA examination while the number of respondents with low motivation is only a few. The same thing shows that the results of the study are in line with the study conducted by Izmi et al., (2023) which showed that there was a significant relationship between knowledge and WUS behavior in detecting cervical cancer with the method of increasing knowledge will not always cause changes in behavior, but shows a positive relationship between the two variables so that if the level of knowledge is high, the behavior tends to be good(22).

**The Relationship Between Attitude and Practice**

Based on the results of the analysis, it shows that there is a significant relationship between attitudes and practices. Then from the results of the analysis, POR = 1.746 was obtained, which means that a positive attitude has a 1.7 times greater chance of doing the test. In line with previous research conducted by(Cahyaningsih Oktaviani et al., 2020).Shows that there is a significant relationship between the variables of attitude and early detection behavior of cervical cancer where the value (p value = 0.011 <0.05). This means that there is a relationship between the attitude of WUS and early detection of cervical cancer. Thus, modifications are needed in providing counseling such as the use of leaflets, flipcharts and health videos in order to increase WUS participation in carrying out early detection to prevent cervical cancer. Supporting research conducted by Susanti et al., (2018), stated that there is a significant relationship between attitudes towards early detection behavior of cervical cancer with the value (p value = 0.015 <0.05)(29). This shows that the more mothers of fertile age couples (PUS) have a supportive attitude towards early detection of cervical cancer, the better their behavior towards early detection of cervical cancer.

**Analysis of Confounding Variables on Knowledge, Attitudes, and Practices**

Based on the results of the multivariate analysis, there are variables that are significantly related to audio-visual intervention and booklets on knowledge, namely work, or it can be said that the confounding variable for knowledge is work. This is supported by research conducted by Masruroh and Cahyaningrum, (2019), showing that there is a relationship between work and knowledge of women of childbearing age (WUS) about early detection of cervical cancer through IVA in the Bergas Health Center area.(30). Having a job will cause someone to spend a lot of time and energy to complete work that is considered important so that they tend to have a lot of time to exchange opinions/experiences with friends at their workplace. The work environment allows WUS to get information about early detection of cervical cancer with the IVA test. Previous research that supports this study was conducted by Farazi et al., (2019). Shows that participants who indicate their employment status as housewives are statistically significant. This is comparable to research conducted in Ethiopia and Iran, stating that employment status is related to knowledge of women of childbearing age, cervical cancer screening(31). The findings of the researchers showed that the work variable was one of the confounders in this study, this was related to the results of field data that most respondents worked as housewives so that with this condition it was difficult to obtain information related to increasing knowledge related to prevention when there was no stimulus or external stimulation to carry out cervical cancer prevention practices.

Based on the results of the multivariate analysis, there are variables that are significantly related to audio-visual interventions and booklets on attitudes, namely education. This is supported by research conducted by Nita and Novi (2020). The results of the analysis that have been carried out from experiencing an increase in attitudes influenced by the level of education where health education in efforts to prevent cervical cancer is very important because the more someone knows information or knowledge about cervical cancer, the more women of childbearing age in particular can carry out early examinations to prevent delays in handling(32). Other studies that showed the same pattern were also conducted by Arimurti, et al (2020) there was a significant relationship between education and attitudes in early detection of cervical cancer, where women with secondary education were 5.3 times more likely to do early detection. Women who checked themselves to detect cervical cancer early through health workers came from groups with higher education, this was also proven based on the findings of researchers in the intervention and control groups, respondents with higher education were aware of doing iva tests at health facilities(33).

The results of the confounding analysis on the practice variables against the practice, namely age and education, at the age of the relationship between age and IVA (Visual Inspection of Acetic Acid) examination in the detection of cervical cancer are as follows, increasing risk with age, although cervical cancer can occur in women of various age ranges, the risk of developing cervical cancer tends to increase with age. Therefore, IVA examination is usually recommended for women aged 30 years or older, especially if they are sexually active. This is in line with research conducted by Ngatun and Danik (2019) there is a significant relationship between age and IVA test examination so that if there are precancerous cells it will turn white(34). Other risk factors that affect cervical cancer are age>35 years, age of first marriage having sexual intercourse, high sexual activity, changing partners, parity, use of oral contraceptives and smoking. The older the age, the greater the risk of cervical cancer.

## CONCLUSION

The conclusion, in the intervention group, the most vulnerable age was 26-35 years old, the same as the control group. In the intervention group, the majority of respondents had a high school education, as did the control group. Respondents in the intervention and control groups were equally unemployed. All respondents in the intervention group did not earn ≥ Rp. 4,048,462, while in the control group there were respondents with income <Rp. 4,048,462.

Respondents' knowledge is known to be the most with the less category. The attitude of the most respondents is with the positive attitude category. After being given intervention, the distribution of respondents' attitudes with positive and negative attitudes is the same.

There were differences in attitudes before and after the provision of audio visuals and booklets in the intervention group and control group, with an average increase of 15.39 in the intervention group and 0.54 in the control group.

There were differences in practices before and after the provision of audio visuals and booklets in the intervention group and control group, and there was no increase or decrease in values because before the provision of audiovisual education and booklets in the intervention and control groups, no tests were carried out at the beginning.

There was a difference in knowledge after giving audio visuals and booklets in the intervention group and control group, and there was an average increase of 4.59 in the intervention group, and 0.9 in the control group.

There was a difference in attitude after being given audio visuals and booklets in the intervention and control groups with an average value of 55.39 in the intervention group and 46.70 in the control group.

There is a relationship between knowledge and practice in the intervention group and the control group. An d there is a relationship between attitudes and practices in the intervention group and the control group.

The confounding variable in the multivariate analysis on the knowledge variable is occupation, while on the attitude variable is education, then on the practice variable is age and education.

## SUGGESTION

Booklet and audiovisual media in the form of videos can be used in all health facilities. Small and practical booklets can be placed on the service desk in health facilities. Audio visuals in the form of videos can be played on TVs in health facilities.

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