

## Research Article

## Does Knowledge Affect the Attitude of Fertile Aged Women in Visual Inspection with Acetic Acid Examination? A cross-sectional study

### *Apakah Pengetahuan Mempengaruhi Perilaku Wanita Berusia Subur pada Pemeriksaan Inspeksi Visual Asetat? Sebuah Studi Potong Lintang*

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#### Abstract

**Objective:** To find out the relationship between knowledge and attitudes of fertile aged women with IVA examination behaviour at Bitung Barat Public Health Center in Bitung City.

**Method:** This was a cross-sectional study. Samples of 145 fertile aged women in area Bitung Barat Public Health Center Bitung city.

**Results:** Of the 145 respondents, the highest group had sufficient and good knowledge. The highest percentage is respondents who have sufficient knowledge with a percentage of 44.14%. The attitude towards the IVA examination was assessed as good as 122 people (84.14%). The number of respondents who did not do an IVA examination is 94 people (64.83%) more than respondents who did not do an IVA examination that is 51 people (35.17%). Based on the results of statistical tests it is known that the significance value of  $p = 0.000$ . The attitude of women of childbearing age is good then the behaviour of IVA examination is also good with the results of statistical tests known that the significance value  $p = 0.001$ .

**Conclusions:** Respondents with good IVA examination behaviour have good knowledge and attitude.

**Keywords:** attitude, behaviour, IVA examination, knowledge.

#### Abstrak

**Tujuan:** Mengetahui hubungan antara pengetahuan dan sikap perempuan usia subur dengan perilaku pemeriksaan IVA di Puskesmas Bitung Barat Kota Bitung.

**Metode:** Metode penelitian berupa analitik observasional dengan rancangan potong lintang. Sampel sebesar 145 perempuan usia subur di wilayah Puskesmas Bitung Barat Kota Bitung.

**Hasil:** Dari 145 responden, kelompok tertinggi memiliki pengetahuan yang cukup dan baik. Persentase tertinggi yaitu responden yang memiliki pengetahuan cukup dengan persentase 44,14%. Sikap terhadap pemeriksaan IVA dinilai baik yaitu sebanyak 122 orang (84,14%). Jumlah responden yang tidak melakukan pemeriksaan IVA yaitu 94 orang (64,83%) lebih banyak dari responden yang tidak melakukan pemeriksaan IVA yaitu 51 orang (35,17%). Berdasarkan hasil uji statistik diketahui bahwa nilai signifikansi  $p = 0,000$ . Sikap perempuan usia subur yang baik maka perilaku pemeriksaan IVA juga baik dengan hasil uji statistik diketahui bahwa nilai signifikansi  $p = 0,001$ .

**Kesimpulan:** Responden dengan perilaku pemeriksaan IVA yang baik memiliki pengetahuan dan sikap yang baik.

**Kata kunci:** pengetahuan, pemeriksaan IVA, perilaku, sikap..

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## INTRODUCTION

Until now, cervical cancer is still one of the most deadly cancers in women in the world. The incidence of cervical cancer shows that cervical cancer is a type of cancer in women who ranks fourth in the world. The incidence of cervical cancer was recorded as many as 527,624 women in the world or as much as 7.5 per cent of cancer sufferers in women in the world based on Global Cancer project data from the International Agency for Research on Cancer in 2012.<sup>1-3</sup> Types of cancer in women who rank first the most in the world, namely breast cancer followed by colorectal cancer, lung cancer and the fourth-highest number is cervical cancer. The mortality rate of all cervical cancer sufferers in the world is 265,672 women and the prevalence rate of 5 years of cervical cancer is 1,547,161 women.<sup>1,4,5</sup>

According to WHO and the International Cancer Control Union (IICC) predict in 2030 there will be a surge of 300% sufferers in the world and 70% of them in Indonesia up to 7 times.<sup>4,6</sup> Data from the Ministry of Health of the Republic of Indonesia in 2012 states, the incidence of cervical cancer is 17 per 100,000 where the estimated mortality rate in Indonesia for this cancer is 8.2 deaths per 100,000 population. This is estimated because about one-third of cancer cases, including cervical cancer, come to health services at an advanced stage.<sup>7-9</sup> Bitung City is one of the cities in North Sulawesi Province with a high incidence of cervical cancer, considering various risk factors for the incidence of cervical cancer are many. The various ways of preventing cervical cancer can be done at various levels of the facility. WHO uses a special approach to examine pre-cervical cervical cancer lesions so that prevention of uterine cancer becomes more effective, the speed of diagnosis to the prompt and proper handling. The examination that is considered simple in the early detection of cervical pre-cancerous lesions includes Pap Smear and Visual Acetate Acid Inspection (IVA) with various advantages and disadvantages of each.<sup>10</sup>

Acetic Acid Visual Inspection Examination (IVA) is an examination conducted to detect cervical pre-cancerous lesions in the "Cancer Prevention and Early Detection Movement for Women" carried out by the Ministry of Health of the Republic of Indonesia from 2015 to 2019. This activity aims generally to reduce morbidity and mortality due to breast cancer and cervical cancer as the most cancers suffered by women.

It is hoped that this activity can improve early detection of cervical pre-cancerous lesions. This IVA examination is simple, easy, inexpensive, fast and can be done at a first-level health facility by midwives and doctors in health centres.<sup>11</sup> Based on diagnostic test results, IVA examination has a sensitivity of 84%, specificity of 89%, the positive predictive value of 87%, and the estimated negative value is 88% while the pap smear examination has a sensitivity of 55%, a specificity of 90%, a positive predictive value of 84%, and a negative predictive value of 69%, so from these results, it can be concluded that the IVA examination gives a faster sensitivity result. high.<sup>12,13</sup>

The cause that becomes an obstacle for women in conducting early detection of cervical cancer is a lack of knowledge and doubts about the importance of the examination, fear of pain and reluctance due to feelings of shame and anxiety when doing the examination, even as for fear because of fear of knowing if the woman was proven to suffer uterine cancer. Low awareness in the community is one of the factors that contribute to the high incidence of cervical cancer in Indonesia.<sup>14</sup>

The high death rate due to cancer, especially in Indonesia, is due, among others, to the limited knowledge of the community about the dangers of cancer, early signs of cancer, risk factors for cancer, how to treat them correctly, and habits to a healthy lifestyle.<sup>15</sup> About 87% of deaths from cervical cancer women are in developing countries including Indonesia. Every 1 minute 1 new case appears and every 2 minutes 1 woman dies due to cervical cancer.<sup>1,2</sup>

The City of Bitung is a port city where the activities of ship workers take turns changing both the local population, outside the region and from abroad. As for certain areas that provide sexual services both directly and indirectly around the port area. Several national and international articles write that sexual activity in the port area is considered high in status outside marital ties, this is related to the behaviour of ship workers, the economic needs of the community and the level of education. This is encouraging due to the availability of localization of commercial sex workers. Based on data from the Bitung city social service in 2017, of the 87 CSWs recorded there were dozens of them aged 12-17 years.<sup>16,17</sup>

Bitung City with an area of 31,350.35 Ha with a population of Bitung city based on the 2017 population projection of 212,409 people

with 48.92% of the population is women. The population density in the city of Bitung in 2017 reached 677 inhabitants / km<sup>2</sup>. There are 9 health centres in the city of Bitung and 3 hospitals. The number of health workers included 117 doctors, 44 of whom were expert doctors and 73 general practitioners. Recorded in 2017 as many as 306 nurses and 102 midwives spread across various health facilities in the city of Bitung. Maesa Subdistrict, the largest sub-district in the city of Bitung, is located in the centre of the city with an area that is mostly a shopping centre, entertainment centre and port.<sup>12</sup>

Data from the North Sulawesi Provincial Health Office in 2017 recorded an examination of Acetic Acid Visual Inspection (IVA) of 20,002 women with 422 of them being declared IVA positive. In North Sulawesi Province currently, the highest target of IVA examination is in Bitung City, which reaches 51% of the target number. In 2017 data from the Bitung City Health Office registered 16.170 women involved in the IVA examination which were considered quite successful. The 2016 IVA examination activity data in the city of Bitung where the districts with the most positive IVA results are in the Maesa sub-district, but the achievement of IVA examinations in women of childbearing age is only 1.47% of the number of women of childbearing age in the district.<sup>12</sup>

Several studies like this have been conducted in other areas, in Mojokerto, at the Buleleng Health Center-Bali, in Yogyakarta,) in the Tempuran hamlet Karawang District, West Java.<sup>18-21</sup> Based on the above background, the researcher is interested in conducting research on the relationship between the level of knowledge and attitudes of women of childbearing age to the behaviour of IVA examinations in the Bitung Barat Public Health Center in the Maesa district of Bitung.

## METHODS

This study was an observational analytic study with a cross-sectional design. This research was conducted at the Bitung Barat Public Health Center in Maesa district, Bitung City. When the research will be conducted from October 2019 to December 2019.

The population in this study were women of childbearing age at the Bitung Barat Public Health Center in Maesa district, Bitung City. Based on calculations using a single proportion formula, 145 women of childbearing age were needed

as samples in this study. All women aged 15-49 years old at the Bitung Barat Public Health Center in the City of Bitung.

In this study, the inclusion criteria in the form: population can read and write, and Willing to be a respondent, while the exclusion criteria in the form of women who have never had sexual intercourse, history or are suffering from psychiatric illnesses In this study, the dependent variable is in the form of Knowledge and attitudes, while the independent variable: IVA Examination Behavior.

In this study, there are operational limitations IVA or Acetic Acid Visual Inspection is a method of early detection of cervical precancerous lesions by applying 3-5% acetic acid liquid to the entire surface of the portio, waiting for 1 minute, then observed with the naked eye without any enlargement. What was observed was the presence of white spots (ace to white).

The level of education is divided into Basic Education: Initial education for 9 years, namely elementary school for 6 years and junior high school for 3 years Secondary Education: The level of further education in basic education is high school / vocational school for 3 years. Higher Education: Level of education after secondary education which includes diploma, bachelor, master, and doctoral education organized by tertiary institutions. Knowledge is the result of knowing that occurs after someone senses a certain object. Knowledge about IVA examination is what the respondent knows about the understanding, benefits, objectives and instructions of IVA examination. The assessment of the level of knowledge of IVA examination is divided into Good knowledge: if the respondent fills in a questionnaire with a level of > 75%, Knowledge is sufficient: if the respondent fills in the questionnaire with a 55-75% truth level, Less knowledge: if the respondent fills in the questionnaire with a truth level <55%

Attitudes namely the style, feelings and tendencies of reactions that are evaluative of the object at hand. For the assessment of attitude through filling out a questionnaire, with the division: Good attitude if the respondent answers with value > 50%, Bad attitude if the respondent answers with value <50%. The behaviour of an IVA examination is what is done by the respondent towards an IVA examination, assessment by conducting an IVA examination or not doing an IVA examination; Age is the age of the woman when the study was based on the last birthday,

Fertile Age Women are women aged 15-49 years.

The research instruments used were: informed consent sheet, questionnaire sheet. Procedure and stage of this research, This research was conducted on subjects who met the inclusion and exclusion criteria by being explained the research procedures to be carried out and their benefits. Prospective research subjects who are willing to take part in this research are asked to fill out and sign the informed consent form that has been provided. Research subjects fill out a research questionnaire Every subject included in this study is adjusted to the principles of research ethics, that is, every subject who meets the inclusion and exclusion criteria is first informed and counselled. If you agree to take part in this research, prospective subjects must sign an informed consent. This research was conducted with the approval of the Prof. RSUP Ethics Committee Dr. R. D. Kandou Manado, and permission from the Government and the Bitung City Health Office.

## RESULTS

Research has been conducted on the relationship of knowledge and attitudes of women of childbearing age to the behaviour of IVA examinations in the Bitung Barat Public Health Center in the city of Bitung with a sample of 145 respondents. This research is an analytic observational study with a cross-sectional study design.

Data collection was carried out for women of childbearing age at the Bitung Barat Public Health Center who met the inclusion criteria and signed the consent letter. Respondents answered questionnaires representing questions to assess the level of knowledge, attitudes of respondents and IVA examination behaviour. The results of this study were carried out by analyzing the data to be used in this study, namely by analyzing the characteristics descriptively presented in the form of a frequency distribution. Data processing with SPSS version 20 and the results of the assessment of the level of knowledge and attitudes of the questionnaire to see the relationship of knowledge and attitudes of women of childbearing age to IVA examination behaviour by using a statistical test that is the X<sup>2</sup> test (Chi-square).

General characteristics of women of childbearing age who are the subject of research include age, level of education, occupation, and whether the respondent has ever received

information about IVA examinations.

Based on data from respondents, the distribution of respondents based on age found that the highest age group is above 35 years, which is 77 respondents (53.10%) and there are also 2 respondents aged under 20 years (1.38%). Based on the level of education it is known that most respondents in the secondary education group are 55 respondents (37.93%), the lowest percentage at the elementary level is 24 people (16.55%) and respondents with a tertiary education level are 24 people (16.55%). 81.38% of respondents did not work and 18.62% of respondents worked. From a total of 145 respondents it is known that 73.10%, as many as 106 people have heard about IVA tests, with the most information sources namely from health workers by 64.15%.

The results of the level of knowledge of respondents to the IVA examination of 145 respondents, 60 people have good knowledge with a percentage of 41.38%, 64 people have sufficient knowledge with a percentage of 44.14% and there are 21 people known to have a level of lack of knowledge about IVA examination with percentage of 14.48%.

Based on the level of education, the obtained distribution of respondents with a good level of knowledge on average has a level of secondary education and above. 24 people (16.55%) have secondary education and 22 people (15.17%) have higher education. For the distribution of respondents with the most basic education level, they have enough knowledge, 38 people (26.21%). There are no respondents who have a high level of education who have low knowledge.

The attitudes of women of childbearing age about IVA examinations, where most groups have good attitudes of 122 people with a percentage of 84.14%. While 15.86% or many 23 women have bad attitudes.

One hundred fifty five women of childbearing age as respondents, it is known that 51 people with a percentage of 35.17% have done or have had an IVA examination. This number is lower than respondents who did not do IVA examination, namely 94 people (64.83%).

The respondents who behaved carried out the IVA examination with the highest percentage having a good level of knowledge, namely 62.75% as many as 32 people and the lowest percentage having a lack of knowledge level, namely 3.92% (2 people). For the group of respondents who did not do an IVA examination, the highest

percentage was 50.00% in the knowledge group as many as 47 people, and the lowest group had 19 people less knowledge with a percentage of 20.21%. From statistical calculations, the Chi-Square test shows that  $\chi^2 = 14,805$  with  $p = 0.000$  which indicates that there is a significant relationship between knowledge and behaviour.

The relationship between attitudes of women of childbearing age with IVA examination behaviour, wherein the group of respondents who did IVA examinations 98.04% or as many as 50 people had good attitudes and 1 person (1.96%) had bad attitudes. In the group of respondents who did not do an IVA examination, 72 people (76.60%) were considered to have a good attitude. Another 22 people (23.40%) did not conduct an IVA examination indeed classified as having an attitude that is bad for IVA checks. Chi-Square Test shows that  $\chi^2 = 11.391$  with  $p = 0.001$  which shows that there is a significant relationship between attitude and behaviour.

**Table 1.** Characteristics of Research Subjects

Characteristics	N	%
<b>Age</b>		
<20	2	1.38
20-35	66	45.52
> 35	77	53.10
<b>Education</b>		
Elementary school	24	16.55
Middle School	42	28.97
High school	55	37.93
College	24	16.55
<b>Profession</b>		
Does not work	118	81.38
Work	27	18.62
<b>Knowledge of IVA Test</b>		
Yes	106	73.10
No	39	26.90
<b>Resources</b>		
Mass media	17	16.04
Health workers	68	64.15
Family/community	6	5.66
Counselling	15	14.15

**Table 2.** Relationship of Knowledge of Fertile Age Women with IVA Examination in Bitung Barat Public Health Center in Bitung City

Knowledge	Behaviour				Total		P-value
	Do		Not Do		N	%	
	N	%	N	%			
Well	32	62.75	28	29.79	60	41.38	0.000
Enough	17	33.33	47	50.00	64	44.14	
Less	2	3.92	19	20.21	21	14.48	
Total	51	100.00	94	100.00			

**Table 3.** Relationship between Attitudes of Fertile Age Women with IVA Examination in the Bitung Barat Public Health Center in Bitung City

Attitude	Behaviour				Total		P-value
	Do		Not Do		N	%	
	N	%	N	%			
Well	50	98.04	72	76.60	122	84.14	0.001
Bad	1	1.96	22	23.40	23	15.86	
Total	51	100.00	94	100.00			

## DISCUSSION

Government efforts to reduce morbidity and mortality from breast cancer and cervical cancer as the most cancers suffered by women is by early detection. As in one of the government activities "Movement for Prevention and Early Detection of Cancer in Women" carried out by the Ministry of Health of the Republic of Indonesia from 2015 to 2019, Visual Inspection of Acetic Acid (IVA) is an examination carried out to detect pre cervical cancer lesions. With the participation of women in the IVA, the examination is expected to increase

early detection for cervical pre-cancerous lesions. This IVA examination is simple, easy, inexpensive, fast and can be done at a first-level health facility by midwives and doctors at the public health centres.<sup>11</sup>

The cause that becomes an obstacle for women in conducting early detection of cervical cancer is a lack of knowledge and doubts about the importance of the examination, fear of pain and reluctance due to feelings of shame and anxiety when doing the examination, even as for fear because of fear of knowing if the woman was proven to suffer uterine cancer. Low

awareness in the community is one of the factors that contribute to the high incidence of cervical cancer in Indonesia.<sup>14</sup>

In this study, the results showed from 145 samples of female respondents of childbearing age at the Bitung Barat Public Health Center in the Bitung city. From table 1, the general characteristics of respondents are divided into various distribution groups based on age, education level and employment status. The most known age group is over 35 years, which is 77 respondents (53.10%) and there are also 2 respondents under the age of 20 years (1.38%). The age group of 20-35 years was 66 people (45.52%). Based on the level of education it is known that the most respondents in the secondary education group are 55 respondents (37.93%), followed by the junior high school level as many as 42 people (28.97%), the elementary education level is 24 people (16.55 %) and respondents with tertiary education were 24 people (16.55%). 81.38% of respondents work as housewives and 18.62% of respondents are employed, including private employees, entrepreneurs and civil servants. From a total of 145 respondents, it is known that 73.10%, as many as 106 people have heard about IVA tests, with the most information sources namely from health workers by 64.15%. Apart from health workers, there were also respondents who heard information about IVA from the mass media (16.04%), from family/relatives (5.66%) and 14.15% information sources from extension activities. Judging from the number of respondents who had heard about the term and IVA examination described the socialization regarding this early detection method quite well.

The level of knowledge of respondents by level of education, obtained distribution of respondents with a good level of knowledge on average has a level of secondary education and above. Twenty four people (16.55%) have secondary education and 22 people (15.17%) have tertiary education. For the distribution of respondents with basic education level, 14 people (9.66%) had good knowledge about IVA examinations, 38 people (26.21%) had sufficient knowledge, and as many as 14 people (9.66%) were known to have low level of knowledge about IVA examination.

Education is a process of changing the attitudes and behaviour of a person or group and also efforts to mature humans through teaching and training efforts aimed at educating people.

The level of knowledge influences the response to something that comes from outside. Highly educated people will provide a more rational response to the information coming in. From the research data it can be concluded that the higher a person's level of education, the response to information and the ability to perceive certain knowledge/information the better.

The attitudes of women of childbearing age about IVA examinations, where most groups have good attitudes of 122 people with a percentage of 84.14%. While 15.86% or a number of 23 women have bad attitudes. An attitude is a form of evaluation or feeling reaction. A person's attitude towards an object is a feeling of support (favourable) and a feeling of not supporting (unfavourable) on the object. The emergence of attitudes is based on the evaluation process in individuals who give the case the impulse of a stimulus in the form of good or bad value, positive or negative, pleasant or unpleasant.

Of 145, 51 (35.17%) respondents had undergone IVA examination. Another 64.83% as many as 94 people did not do IVA examination. The IVA examination in 2017 in the city of Bitung was considered quite successful, but the participation of women in Maesa district was very low. In this study, it is known that more people did not do IVA examination than did IVA examination. As for some of the limitations of this study include the researchers did not examine more deeply the reasons or causes of respondents not doing IVA examination. In addition, the questionnaire used was not accompanied by a question about whether the respondent had ever had a pap smear examination or not. Because there is a possibility of women of childbearing age who do not have an IVA examination but have already had a pap smear. If found by respondents like this, then the actual behaviour of the examination for early detection of cervical cancer is quite good. In the group of respondents who did IVA examinations, this study lacked a description of the behaviour of whether conducting routine IVA examinations or simply because there were activities. For that, we need a form of qualitative research using the deep interview method.

Table 2. shows that the respondents who behaved conducted an IVA examination with the highest percentage having a good level of knowledge, namely 62.75%, as many as 32 people. Of the respondents who did an IVA examination, 33.33% (17 people) had a sufficient level of knowledge, and the lowest percentage

had a lack of knowledge level of 3.92% (2 people). For the group of respondents who did not do an IVA examination, the highest percentage was 50.00% in the knowledge group with 47 people, followed by the good knowledge group of 28 people (29.79%), and the lowest group had 19 knowledge with the percentage 20.21%. The results obtained from this study are respondents with a good level of knowledge, the behaviour also tends to be good. Based on the results of statistical tests it is known that the significance value of  $p = 0.000$  or smaller than 0.05. It can be concluded that there is a significant relationship between knowledge of women of childbearing age with IVA examination behaviour. This study has the same results as several other studies conducted previously, in Mojokerto, at the Public health Center of Buleleng-Bali, in Yogyakarta, in Tempuran sub-village, Karawang Sub-district, West Java.<sup>18-21</sup>

Table 3. shows the relationship between attitudes of women of childbearing age with IVA examination behaviour. As for the data from this study, it was found that more respondents did not carry out IVA examinations, from this table in the group of respondents who did IVA checks 98.04% or as many as 50 people had good attitudes. Only 1 person (1.96%) was judged to have a bad attitude towards IVA examination. Whereas in the group of respondents who did not do an IVA examination, of 94 people, 72 people (76.60%) were considered to have a good attitude. Another 23.40%, as many as 22 people who did not do an IVA examination indeed classified as having a bad attitude towards IVA examination. The results of this research data prove that the attitude of women of childbearing age is good then the IVA examination behaviour is also good. The relationship between the attitudes of women of childbearing age with IVA examination behaviour was stated to be meaningful based on the results of statistical tests known that the significance value of  $p = 0.001$  or smaller than 0.05. A study conducted in Yogyakarta has the result that there is no relationship between the attitude and behaviour of IVA examination with a statistical test of  $p = 0.086$ .<sup>20</sup> The difference in outcome is likely to be influenced by other factors. But other previous studies mostly have the same conclusions with this research in Mojokerto, research in Tempuran

sub-village of Karawang Sub-district of West Java, and research at the Public Health Center of Buleleng-Bali, the relationship between attitude and IVA examination behavior has a value of  $p = 0.014$ .<sup>18,19,21</sup>

Various factors are known to influence the reason for women of childbearing age doing IVA examinations. In this case a person with a good education is known to have a good level of knowledge of IVA examinations which will then behave well in an IVA examination. So, with good IVA examination, the prevalence of cervical cancer is also expected to decrease. In addition to the low level of knowledge and attitudes of women of childbearing age, geographical factors because a place to live far from the inspection location can also be a cause of women of childbearing age in the Bitung Barat Public Health Center not conducting IVA examinations. The lack of opportunity and time to do the examination can also be a cause of women not doing IVA examination.

## CONCLUSION

Women of childbearing age in the Bitung Barat Public Health Center in the majority of Bitung have a fairly good level of knowledge. The majority of women of childbearing age at the Bitung Barat Public Health Center in the Bitung city have a good attitude towards IVA examination. The level of education influences the level of knowledge and attitude towards IVA examination. Women of childbearing age with good IVA examination behaviour have a good level of knowledge. Women of childbearing age with good IVA examination behaviour tend to have good attitudes.

## SUGGESTION

Further research can be done with a larger population and sample, to assess the behaviour of IVA examinations linked to other factors, or it can also be done in qualitative research. Collaboration from various parties, both government and health facility staff, is needed to increase socialization with various information media regarding early detection of cervical precancerous lesions and more approaches to the community so that community interest in conducting IVA examinations increases.

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