

# EMO-DEMO Influence to Woman of Childbearing Age in Performing Visual Inspection with Acetic Acid (VIA)

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**ABSTRACT:** The high mortality rate due to cervical cancer in Indonesia is caused by 95% of women not undergoing early examinations, causing delays in diagnosis. Data shows that public awareness, especially women of childbearing age to carry out inspection of acetic acid is still low. This problem occurs because the woman of childbearing age knowledge about cervical cancer is lacking, feels ashamed, feels no symptoms of cervical cancer, and feels no need to have a check-up. The aim of the study is to find the EMO-DEMO educational influence on the enhancement of knowledge, attitudes and participation of women of childbearing age in screening cervical cancer using the method of Visual Inspection with Acetic Acid (VIA). We used *Quasi experimental research with nonequivalent control group design*. In June until August 2019, the sample selection was done by probability sampling with simple random sampling for 60 respondents per group, the data collected using the questionnaire for the knowledge and attitude data and the interview sheets for the participation data. We found that there is a meaningful difference between pre test and post test on knowledge, attitude and participation in cervical cancer screening using VIA method with  $p = 0.000$ . Therefore, there are increasing knowledge, attitudes and participation in screening cervical cancer using VIA method on treatment.

**KEYWORDS:** VIA method, Knowledge, Attitude, Participation, Cervical cancer screening.

## I. INTRODUCTION

The incidence rate of cervical cancer in 2012 was estimated at 528,000 new cases and 266,000 deaths from cervical cancer, as well as 70% of deaths occurred in developing countries. The incidence rate of cervical cancer in Indonesia continues to increase to 98,692 cases in 2013 and about 235,000 cases including the death [1]. Data on the early detection of cervical cancer in Indonesia in 2016 showed suspicious numbers of cervical cancer in several provinces namely Jakarta 269 cases, Bali 254 cases and Bangka Belitung 227 cases [2]. The data shows that Bali is one of the areas that have a high cervical cancer number.

The Visual Inspection with Acetic Acid (VIA test) is a cervical cancer screening method using a 3-5% acetic acid solution in the cervix and seeing the discoloration that occurs after the spreads. The objective of VIA to see the presence of cervical cells in dysplasia [3]. VIA test has been widely used in primary health care because VIA method is relatively simple, easier and more cost effective so that it can increase the coverage of VIA [4].

In Bali, 2014 VIA examination target of 1.28% of the population of women aged 30-50 and the acquisition of coverage of 2.69% exceeds the target set [5]. That was in 2015 took place in Karangasem, was done screening against women aged 30-50 and found 19.8% VIA in positive result and in 2016 found 5.45 with positive VIA. Rendang sub district, one of the sub-districts in Karangasem Regency, is a sub-district with the highest positive result of 30.4% [5].

The high mortality rate caused by cervical cancer in Indonesia is because 95% of women do not perform early examination, causing a late diagnosis of cervical cancer and lowering the life expectancy of women [3]. There should be awareness of women of childbearing age for screening against cervical cancer by VIA check-up. Data shows that public awareness especially women of childbearing age to perform VIA is still low, whereas the Government has encouraged healthy lifestyle and early detection. This problem occurs because their knowledge of cervical cancer is lacking, felt ashamed, felt no symptoms of cervical cancer, and felt no need to be checked [3].

One of the efforts that need to be done to raise the awareness of women of childbearing age is the education provision on VIA test with *emo demo* method. The provision of information on women of childbearing age that had

been done was to provide counseling about the prevention and early detection of cervical cancer. Education with *Emo demo* method is an educational activity accompanied by demonstrations that need emotional power. Implementation of counseling with *emo demo* technique takes only 15 – 20 minutes and was done simply. The activity was given to women of childbearing age through fun games and watching movies

Based on empirical studies performed, Karangasem regency, especially the work area of Public Health of Rendang, experiencing problems of low number of woman of childbearing age performing VIA test as early detection of cervical cancer due to lack of knowledge and information about its importance.

Paper is organized as follows. Section II describes Visual Inspection with Acetic Acid and its importance on woman of childbearing age. Afterwards, the quasi experimental research with non-equivalent control group design is given in Section III. Section IV presents experimental results showing results of test. Finally, Section V presents conclusion.

## II. RELATED WORK

Cervical cancer is one of cancer which leads to hundreds of thousands premature death among women and 8-% from developing countries[6][7][8][9]. Human papillomavirus (HPV) is the cause of invasive cervical cancer in which 70% of all cervical cancer are with HPV-16 and 18[10][11][12]. Cervical cancer itself is the second common cancer in women. Key components to comprehensive approach of cervical cancer prevention are community education, social mobilization, vaccination, screening, and treatment to palliative care[13]. Summary estimation of visual inspection with acetic acid (VIA) was done with 29 studies review in which the summary sensitivity and specificity of VIA for CIN2+ were 73.2% and 86.7%. VIA is proven good in its sensitivity detecting severe outcome, in spite of slight loss is specificity. VIA could be a good option for cervical cleaning in low-resource settings[14]. Yet, community based screening programs require sophisticated infrastructure, highly trained personnel, as well as adequately equipped laboratories and good referral system. The study with cross-sectional with questionnaires with samples by simple random sampling was done and the majority of reproductive age and married woman are willing and accept VIA test. Meaning that the doing the test can arise their awareness. However, that should be simultaneously done with education.

Emotional Demonstration also known as Emo Demo is the method of public education using a new approach which focus on Behaviour Centred Design (BCD). BCD finds how brains learn with a practical set of steps and tools to create successful behaviour change programs in which the change can be achieved with response to something new and challenging. There are five steps regarding behaviour change, i.e. Assess, Build, Create, Deliver and Evaluate. [15][16][17]. Somehow, the studies about Emo Demo is still few discussed. One thing to understand is that the future of emotion research can be successful if keep in mind that emotion became respectable, need to focus on experimental approach that simplified the problem in way to make it tractable[18].

## III. METHODOLOGY

This research is an *experimental research quasi with nonequivalent control group design*. The study was performed in June to August 2019. The population in this study of all women of childbearing age in Karangasem Regency, Bali, Indonesia with analysis unit or respondent of this research is women of childbearing age in Rendang District. The selection of samples was *probability sampling by simple random sampling* in accordance with the criteria of inclusion and exclusion criteria with the number of respondents as many as 60 people per group, the data collected using the questionnaire for the data of knowledge and attitudes. In addition, interview sheets for the participation data. All data is processed with normality test using Kolmogorov Smirnov with the results of undistributed data and different tests using non parametric tests: Wilcoxon, Mann Whitney, and Chi-Square

## IV. EXPERIMENTAL RESULTS

The distribution characteristics of women of childbearing age is that from 60 respondents in the control group is found that the average age is 34.12, with median 35, the most age is 35 with a standard deviation of 7.321, and the youngest age is 21 while the oldest age is 41. Meanwhile, the treatment group derived the average age of 30.90 with a median of 29 years old, and the most age is 25 with a standard deviation of 6.724, and the youngest is 19 while the oldest age is 48 years old. The characteristics of respondents based on education, employment, income, number of children and the source of information shows from the educational characteristics of the 60 respondents in the control group gained 50% of respondents are High School graduate while in the treatment group is largely 35% elementary graduate. The characteristics of the respondents based on revenue in the control group gained that the majority of the



63.3% had no income and in the majority of the treatment group, 71.7% also had no income. When viewed from the characteristics of the number of children in the control group, it obtained the majority of 43.3% have 2 children while the treatment group is mostly at 43.3% have 1 child. Characteristics of respondents based on the source of information in the control group gained that the majority of 58.3% get information from social media while the treatment group of the majority is 38.3% also get information from social media.

**4.1 Observation results on respondents to research variables**

The results of observation on knowledge of screening cervical cancer using VIA is shown in Table 1.

Table 1. Distribution of women of childbearing age based on knowledge

No	Group		N	Mean	Median	Mode	SD	Min-Max
1	Control	Pre	60	73.37	76	76	12.117	47-95
		Post	60	78.50	81	76	11.281	60-98
2	Treatment	Pre	60	68.38	67	66	10.440	52-90
		Post	60	80.36	80	78	9.476	65-98

Of the 60 respondents either in the control or treatment group, it can be seen that there is different number in their pre and post-tests. From the control group, the post-test mean and median is higher than its pre-test. While the most value is same, namely in 76. Those condition is also shown in treatment group in which the mean, median and mode of post-test is higher than its pre-test. Between control and treatment group, the one that has better Min-Max value is the treatment group. Secondly, the results with research variables of attitude shows the data in Table 2.

Table 2. Distribution of women of childbearing age based on attitude

No	Group		N	Mean	Median	Mode	Sd	Min-Max
1	Control	Pre	60	72.07	70	69	5.772	59-93
		Post	60	78.78	77.50	75	5.012	67-96
2	Treatment	Pre	60	73.28	73	69	4.923	64-88
		Post	60	83.15	81.50	80	4.967	75-97

The results show that both control and treatment group has better mean, median and mode in its each post-test than the pre-test. Although in general, treatment group has better result that control group. In addition, the Min-Max value of treatment group is better than control group. It can be seen in its post-test that treatment group gained 75-97, better than that in control group with only 67-96.

Last variable which is participation, obtained data as shown in Table 3.

Table 3. Distribution of women of childbearing age based on participation

No	Group		Participation				Amount	
			Do		Not		F	%
			F	%	F	%		
1	Control	Pre			60	100	60	100
		Post	21	35.0	39	65.0	60	100
2	Treatment	Pre			60	100	60	100
		Post	33	55.0	27	45.0	60	100

Table 3 shows that from 60 respondents in the control group specifically in *pre-test*, didn't do screening cervical cancer with VIA, while in the *post-test* most of the 65.0% also did not do cervical cancer screening by VIA. The treatment group of 60 respondents in *pre-test* also didn't perform cervical cancer screening with VIA while *posttest* data is mostly 55.0% didcervical cancer screening with VIA.

**4.2 Analysis of Data**

Normality test on knowledge and attitude of women of childbearing age shows that the value of P before and after condition of knowledge and attitude have a value of P less than  $\alpha$  (0.05), meaning that the data is not a normal distribution. Afterwards, it was then carried out data transformation yet the results remain the same. This means that the analysis couldn't use normality test, and it drives to use Wilcoxon and *Mann Whitney*



The analysis of knowledge is shown in Table 4.

Table 4. Bivariate analysis of knowledge in performing cervical cancer screening using VIA

No	Group		N	Mean	Difference of Mean	p Value
1	Control	Pre	60	73.37	5.43	0.000
		Post	60	78.50		
2	Treatment	Pre	60	68.38	11.98	0.000
		Post	60	80.36		

Using Man Whitney test, it was found that there is an increase in the average knowledge after given counseling compared to it wasn't before, in as much as 5.43, with an average value of 73.37 increased to 78.50 after given counseling. While in the treatment group also occurs the increase in the average knowledge after given educational method using the *Emo demo* method compared with before given education with *emo demo* as much as 11.98, with an average value of 68.38 at the time before given education with *emo demo* increased to 80.36 after being given education with *emo demo*. Results of bivariate analysis using *Wilcoxon* test and obtained  $p = 0.000$  value in the control and treatment group. Due to the value of  $P < \alpha (0.05)$ , then  $H_0$  is rejected. This means that there is a difference in the knowledge of women of childbearing age in performing cervical cancer screening using VIA method in terms of before and after treatment.

Level of knowledge of respondents varies greatly, meaning that there is a considerable difference in knowledge among respondents. Based on the facts above, although health education is rarely held about cervical cancer screening using VIA, there are respondents who obtained a knowledge score of 85 at the time of the pre-test. This data shows that respondents have been exposed to information about cervical cancer. Information sources jointly develop and influence individual decisions related to specific tasks, behaviours, or appearance or achievements[19]. The results of knowledge post-test obtained a mean value of 80.36 with a standard deviation of 9.47. The value of the respondent's knowledge range after treatment is 65-98. This shows that the *Emo Demo* method carried out can arouse the attention of women of childbearing age to listen. Thus the information submitted can be received well and clearly by respondents. Based on education, 50% of respondents received secondary education equivalent to formal high school education. The respondent's education level can influence the respondent's knowledge after the *EmoDemo* method so that there are differences in the results of the pre-test and post-test. This result is reinforced by the theory put forward by [20]that the educational factor influences one's knowledge and it cannot be denied that the higher a person's education the easier they receive information and the more knowledge they have.

The results of knowledge pre-test obtained a mean value of 73.37 with a standard deviation of 12,117. The value of the range of respondents' knowledge before treatment is 47-95. This shows that respondents already considered cervical cancer screening activities important. This is due to the sufficient knowledge of the respondents, so they have the readiness and motivation to do cervical cancer screening.

The results of knowledge post-testobtained a mean value of 78.50 with a standard deviation of 11.28. The value of the respondent's knowledge range is 60-98. This increase in knowledge was due to the mother having gained knowledge of cervical cancer screening using VIA methods in counselling activities so that respondents' knowledge increased. This gives awareness to innovate and change mindset, and improve health status. This is in line with research conducted by [21]which states that health education can have a positive impact on women of childbearing age in order to increase knowledge about cervical cancer so that the incidence rate of cervical cancer will decrease. The results of research from [22]on the effect of counselling on knowledge about cervical cancer in fertile-aged women in Bongsari village, West Semarang, also showed that there was an increase in knowledge between before and after health education about cervical cancer.

The analysis differences in attitude can be seen in Table 5.

Table 5. Bivariate analysis of attitude in performing cervical cancer screening using VIA

No	Group		N	Mean	Difference of Mean	p-Value
1	Control	Pre	60	72.07	6.71	0.000
		Post	60	78.78		
2	Treatment	Pre	60	73.28	9.87	0.000
		Post	60	83.15		



It was found that there are increase in either control or treatment group in its each pre and post-test. In control group, it increased from 72.07 to 78.78 while in treatment group from 73.28 to 83.15. The average difference in attitude in the treatment group who were given education by the emo demo method was higher at 9.87 compared to the control group which is only 6.71. The results of the bivariate analysis used Wilcoxon and Mann Whitney test that obtained the value of  $p = 0,000$  in either the control ortreatment group. Because the value of  $p < \alpha (0.05)$ ,  $H_0$  is rejected, meaning that there is difference in attitude of respondents in performing cervical cancer screening using VIA.

An increase in the average attitude of respondents after being given education with the EmoDemo method compared to before being given education with Emo Demo from an average value of 73.28 to 83.15. In the concept of health behaviour it is stated that attitude is the second domain after knowledge in the level of behaviour change. Women of childbearing age in the treatment group significantly increased knowledge of cervical cancer screening using the VIA method. Changing attitudes is inseparable from increasing one's knowledge. The increase in the average score of women of childbearing age attitudes in screening for cervical cancer using VIA with Emo Demo is because at the time of the study, it was added property in the form of cervical *phantum* that can arouse emotions and feelings of respondents. This is in line with the theory of BehaviourCentred Design (BCD) that education is intended for feelings, not thoughts, so that changes in feelings can improve the attitude. BCD theory states that an intervention must change something in the environment.

Improving the attitude of women of childbearing age to screen for cervical cancer using VIA is a good method compared to counselling, this can be seen from the difference in the average attitude. This difference is caused because in promoting cervical cancer screening using the emo demo method, researchers conduct two-way interactions with research subjects accompanied by props that can arouse the feelings and emotions of respondents, thereby giving rise to the trust of research subjects towards researchers.

Table 6 shows the analysis results on participation variable. It is obtained that participation in the treatment group given the education with the *Emo demo* method is higher in 33 respondents compared with the control group with 21 respondents. Regarding the analysis on participation as the third variable, this part as bivariate analysis used Chi Square test and obtained  $p = 0,000$ . Since  $p$ -value is less than  $\alpha (0.05)$ , then in conclusion, there is a difference of participation on respondents in response of VIA application.

Table 6. Bivariate analysis of participation in performing cervical cancer screening using VIA

No	Group	N	Post participation	p-Value
1	Control	60	21	0.044
2	Treatment	60	33	

In the treatment group, of the 60 respondents it was found that all pre-test had not performed cervical cancer screening by VIA, while after the post-test most of it was 55.0% screened for cervical cancer by VIA. This shows that the greater the percentage of respondents who participated in cervical cancer screening activities with the emo demo method. Emo demo is used as a way to carry out education because this method can provide a detailed and clear information and easily understood by respondents directly and most importantly by involving the emotions of the respondents. The difference in woman of childbearing age participation in screening for cervical cancer using VIA method is influenced by many factors, in this case the method of intervention being carried out. Fear is an emotional one that can be raised to change the behaviour of research subjects. An individual naturally will avoid painful threats[23]. The description of changes in the cervix from normal to having cancer can arouse the feelings of research subjects. This motivation is what makes research subjects participate in cervical cancer screening activities using VIA. Unlike Emo-Demo, promotion of cervical cancer by extension methods only provides information in one direction to 60 respondents, so it is difficult to measure the things that can be understood and can be learned. Health education in general is one-way communication with few opportunities to measure the amount that can be learned or understood and only a small portion that seems to be remembered at the end of the meeting and will be reduced in a few days[24]. Woman of childbearing age's knowledge also influences its participation in cervical cancer screening using the IVA method. Lack of knowledge and awareness of the importance of testing is an inhibiting factor for cervical cancer screening. Individual knowledge about the disease will shape the individual's perception of the threat of disease and belief in the vulnerability of the disease and will motivate the individual to perform health behaviours[25]. The Emo-Demo method which is carried out as an intervention uses the BehaviouralCentred Design (BCD) approach. This approach seeks to incorporate psychological elements as innovations to change individual behaviour. The combination of knowledge and creativity in composing messages, making this method can transfer the message of behaviour change that is more easily accepted by the target.

## V. CONCLUSION

We have implemented Visual Inspection of Acetic Acid (VIA) with Emo-Demo (Emotional Demonstration) towards women of childbearing age. This method brings results on differences in knowledge, attitude and participation of the respondents. There are meaningful differences in knowledge, attitude and participation of the respondents namely women of childbearing age in as much as 60 persons provided with p-value of less than 0.05.

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