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Influence of Emo-Demo for Woman of Childbearing Age to Perform Cervical Cancer Screening

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Abstract
The lack of knowledge about cervical cancer in woman of childbearing age is the cause of high mortality rate problem. The awareness of performing inspection with acetic acid is low. 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 undertook this research using quasi experimental research with nonequivalent control group design. The sample selection was made probability sampling 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. The results show there is a meaningful difference between pretest and posttest on knowledge, attitude and participation in cervical cancer screening using VIA method with p = 0.000. In conclusion, there is increase in knowledge, attitudes and participation in screening cervical cancer using VIA.

Keywords: EMO DEMO, VIA, Woman, Influence

1. Introduction

Cervical cancer in 2012 was reaching 528,000 new cases and 266,000 death where 70% are deaths in developing countries. The rate in Indonesia increased to 98,692 cases in 2013 and 235,000 are death cases (Bott, 2014). In 2016, the number of cervical cancer in Jakarta was 269 cases, Bali 254 cases and Bangka Belitung 227 cases (Pusdatin Kemenkes RI, 2017). It shows that Bali is one of areas with high risk of cervical cancer.

Visual Inspection with Acetic Acid (VIA) 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. VIA is intended to observe the cervical cells in dysplasia (Mulyati, Suwarsa, & Arya, 2015). 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(Momenimohayed & Salehiniya, 2017). It was targeted in 2014 in Bali that VIA examination reached 1.28% of the population of women aged 30 -50. In the implementation, the result was beyond the target with the coverage of 2.69%. While in 2015, in Karangasem, it was conducted a screening to 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% (Dinas Kesehatan Kabupaten Karangasem, 2017).

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. There should be awareness of women of childbearing age for screening against cervical cancer by VIA check-up. The 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 (Weng, Jiang, Haji, Nondo, & Zhou, 2020). Educational influence is inevitable for such case, intended to woman of childbearing age on VIA test with Emo Demo (Emotional Demonstration) method. Emo Demo is the method of public education using a new approach which focuses 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 (Aunger & Curtis, 2015)(Aunger & Curtis, 2016)(Birawida, Selomo, Mallongi, & Adilah, 2019). The information given in Emo Demo is educational activity accompanied by demonstrations that need emotional power. Implementation of counseling with Emo Demo method takes only 15 – 20 minutes. The activity includes also fun games and watching movies.

Based on empirical studies performed, Karangasem regency, especially the work area of Public Health Service of Rendang, experienced 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 urgency.

Cervical cancer is one of cancers which leads to hundreds of thousands premature death among women and 8-% from developing countries and is second common cancer in woman (Germar & Merialdi, 2003)(Ginsburg et al., 2018). Human papillomavirus (HPV) is the cause of invasive cervical cancer in which 70% of all cervical cancer are with HPV -16 and 18 (Chan, Aimagambetova, Ukybassova, Kongrtay, & Azizan, 2019)(Okunade, 2019). Key components to comprehensive approach of cervical cancer prevention are community education, social mobilization, vaccination, screening, and treatment to palliative care(World Health Organization (WHO), 2013). 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 (Qiao et al., 2015). 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 were willing and accept VIA test. Meaning that the test can arise their awareness. However, that should be simultaneously done with education. 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.

2. Method

We initiated this research in June to August 2019 with experimental research quasi nonequivalent control group design. The population in this study was 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. Total respondents were as much as 60 people per group. The data collection was done using questionnaire for the data of knowledge and attitudes as well as 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

3. Results

3.1. Characteristics of Respondents

Characteristics of respondents are organized based on respondents' ages and educational background, occupation, income, number of children and source of information. The results of characteristics of respondents according to ages are shown in Table 1.

Table 1: Characteristics distribution based on ages

No	Group	N	Mean	Median	Modus	SD	Min-Max
1	Control	30	34.12	35	35	7.321	21-41
2	Intervention	30	30/90	29	25	6.724	19-48

Table 1 shows the information of 60 respondents in the control group, the average age is 34.12 with a median of 35. Meanwhile the highest age is 35 with a standard deviation of 7.321, and the youngest is 21 years old and the oldest is 41. Apart from control group, the intervention group shows the average age is 30.90 with a median of 29. Most age is 25 with a standard deviation of 6.724. The youngest age is 19 and the oldest is 48 years old.

Second results of educational background, occupation, income, number of children and source of information are shown in Table 2.

Table 2: Characteristics based on educational background, occupation, income, number of children and source of information

Variable	Control		Intervention	
	f	%	f	%
Educational background Elementary School	11	18.3	21	35.0
Junior High School	14	23.3	15	25.0
Senior High School	30	50.0	19	31.7
University	5	8.3	5	8.3
Total	**60**	**100**	**60**	**100**
Occupation				
Private employer	10	16.7	15	25.0
Private employee	7	11.7	3	5.0
Labour/Farmer/Breeder	4	6.7	16	26.7
Tailor	1	1.7	0	0
Civil servant	2	3.3	0	0
Housewife	36	60.0	26	43.3
Total	**60**	**100**	**60**	**100**
Income				
None	38	63.3	43	71.7
≤1.900.000 (IDR)	5	8.3	3	5.0
>1.900.000 (IDR)	17	28.3	14	23.3

Total	**60**	**100**	**60**	**100**

Number of children

1	17	28.3	26	43.3
2	26	43.3	23	38.3
3	14	23.3	10	16.7
4	3	5.0	1	1.7
Total	**60**	**100**	**60**	**100**

Source of information Community leader	18	30	16	26.7
Health worker	7	11.7	21	35.0
Social media	35	58.3	23	38.3
Total	**60**	**100**	**60**	**100**

Table 2 indicates that most of them are 50% high school graduates, while in the intervention group, most of them are 35% elementary school graduates. Based on the occupations in both the control and intervention groups, it was found that most of the respondents' are housewives. According to income, most of them, namely 63.3%, have no income and in the intervention group, most of them also have no income. From the number of children in the control group, 43.3%, have 2 children, while in the intervention group, most of them 43.3%, have 1 child. Based on sources of information in the control group, it was found that most of them, namely 58.3%, received information from social media, while in the intervention group, most of them, namely 38.3%, also received information from social media.

3.2. Research Variables

The results of observation on knowledge of screening cervical cancer using VIA is shown in Table 3.

Table 3. Knowledge variable

No	Group		N	Mean	Median	Modus	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	Intervention	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 intervention group, it can be seen that there is different number in pre and post-tests. From the control group, the post-test mean and median is higher than pre-test. While the most value is same, in 76. Those condition is also shown in intervention t group in which the mean, median and mode of post- test is higher than its pre-test. Between control and intervention group, the one that has better Min-Max value is the intervention group. Secondly, the results with research variables of attitude shows the data in Table 4.

Table 4: Attitude variable

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 intervention group has better mean, median and mode in its each post-test than the pre-test. Although in general, intervention group has better result that control group. In addition, the Min-Max value of intervention group is better than control group. It can be seen in its post-test that intervention 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 5.

Table 5: Distribution of women of childbearing age based on participation

| No | Group | | Participation | | | | Total | |
| | | | 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 5 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% did cervical cancer screening with VIA.

3.3 Data Analysis

The data of knowledge was analyzed using Wilcoxon and Mann Whitney as the data is not normally distributed with $p < \alpha$ (0.05). In terms of knowledge, the result of analysis show that there is improvement in knowledge both in control group from mean 73.37 to 78.50 and intervention group from 68.38 to 80.36. While in p value, the analysis obtain 0.000, which indicates that there is a difference of knowledge in respondents (women of childbearing age) in performing cervical cancer using VIA either in control and intervention group.

Apart from knowledge, the results of analysis on attitude also show improvement either in control group (mean 72.07 to 78.78) and intervention group (73.28 to 83.15). The result of p – value also show 0.000 which means there is difference in attitude performing cervical cancer screening using VIA. While in participation, it also shows p value of 0.000 which indicates there is difference in participation on performing cervical cancer screening using VIA.

4. Discussion

These tests revealed a significant difference in the control group regarding women of childbearing age knowledge in cervical cancer screening using the VIA before and after counseling with the Emo Demo method (p value 0.000). The results of the knowledge pretest, respondents obtained a mean value of 68.38 with a standard deviation of 10.44. The value of knowledge before education with the Emo Demo method is 52-90. This shows that the level of knowledge of respondents varies greatly, meaning that there is a considerable difference in knowledge between respondents. Although health counseling about cervical cancer screening using the IVA method is rarely held, there are respondents who get a knowledge score of 85 at the time of the pretest. These data indicate that respondents have been well-informed to information about cervical cancer. Information sources collectively develop and influence individual decisions regarding specific tasks, behaviors, or appearance or achievement (Bandura, 1997).

The results of the posttest knowledge obtain a mean value of 80.36 with a standard deviation of 9.47. The value of the range of knowledge of the respondents after the training is 65-98. This shows that the Emo Demo method can take respondents' attention. Thus the respondents are more knowledgeable. Based on education 50% of respondents received secondary education equivalent to formal high school education. The respondent's educational background has effect on the respondent's knowledge after the intervention was given with Emo Demo. Hence, there are differences in the results of the pretest and posttest. These results are in line with (Idris, Hassan, Ya, Kaur, & Aziah, 2012)that educational factors affect a person's knowledge and it is undeniable that the higher a person's education, the easier it is for them to receive information and the more knowledge they are able to receive.

There is an increase in attitude after intervention of Emo Demo method compared to previous attitude. Before the intervention, the average value was 73.28 while after the intervention with emo demo it increases to 83.15. The results of the bivariate analysis using the Wilcoxon test and obtained p value = 0.000 which indicates that there are differences in the attitudes of women of childbearing age in screening cervical cancer using the IVA method before and after the intervention of Emo Demo. Attitude is the second domain after knowledge in the level of behavior change. Knowledge of respondents about cervical cancer screening in the intervention group significantly increased. Change in attitude cannot be separated from an increase in one's knowledge (Arlinghaus & Johnston, 2017). Regarding our research, the addition of a property in the form of cervical phantom succeed to increase emotions and feelings of the respondents. This is in line with the theory of Behavior Centered Design (BCD) that education is aimed at feelings not thoughts, so changing feelings can increase women of childbearing age attitudes. BCD theory states that an intervention must change something in the environment (Aunger & Curtis, 2016).

In the treatment group of 60 respondents, it was found that in the pre-test all of them had not screened for cervical cancer using the VIA, while after the posttest most of them, 55.0%, had screened cervical cancer with VIA. This shows that the percentage of respondents who participate in cervical cancer screening activities is greater after counseling with the Emo Demo method. Emo demo is used as a way to carry out education because this method can provide detailed and clear information as it uses teaching aids easily understood by respondents directly and most importantly by involving emotions from respondents.

The difference of participation in cervical cancer screening is influenced by many factors, in this case is the intervention method carried out. Emo Demo is not only a method to give health information but also to boosts emotion of the respondents to change their behavior. Fear is one of the emotions that can be increased to change the behavior of research subjects. An individual will naturally avoid painful threats (Harrison, Ahn, & Adolphs, 2015). The good knowledge possessed by woman in childbearing age about cervical cancer and its examination can be a motivating factor for them to try to avoid cervical cancer. Lack of knowledge and awareness of the importance of examination is an inhibiting factor for cervical cancer screening. Individual knowledge about disease will shape individual perceptions about disease threats and beliefs about disease susceptibility. Thus, it will motivate individuals to perform health behaviors (Asgarlou et al., 2016). The Emo Demo method was carried out as an intervention using the Behavioral Centered Design (BCD) approach. This approach includes psychological elements as innovations to change individual behavior. The combination of science and creativity in the preparation of messages makes this method able to transfer behavior change messages.

5. Conclusion

We have implemented Visual Inspection of Acetic Acid 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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