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Trigger, Self Efficacy and Motivation in The Implementation of Cervical Cancer Screening

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ABSTRACT

Cervical cancer is currently ranked top among the various types of cancer that causes death in women in the world. The majority of women who diagnosed with cervical cancer did not do screening tests or did not follow up after abnormal results were found. The purpose of this research was to know how path analysis between motivation variable, self efficacy and trigger in the implementation of screening cervical cancer using Visual Inspection With Acetic Acid (VIA). This research used case control design. Sample size was based on the calculation of rule of the thumb. There were 410 respondents that were divided into 205 cases and 205 controls. The sample used multi stage random sampling method. The data were analyzed by using Partial Least Square - Structural Equation Modeling (PLS-SEM). There was a positive influence of trigger variable to self efficacy and motivation variable. There was positive influence of self efficacy variable toward motivation variable and the implementation of early detection of cervical cancer VIA. There was a positive influence of self efficacy variable and motivation to the execution of early detection of cervical cancer VIA. There was an indirect effect of trigger on the implementation of early detection of cervical cancer VIA.

Keywords: Cervical cancer, Visual Inspection With Acetic Acid (VIA), Trigger, Self efficacy, Motivation,

INTRODUCTION

Early detection of cervical cancer and immediate treatment is proven effectively in reducing the morbidity and mortality of cervical cancer. However, the rate of early detection visits in developing countries was still far from being expected[(1,2)]. WHO stated that currently this cervical cancer is ranked second among the various cancers that cause death in women in the world and 85% occur in women in developing countries[(1,3)]. Cervical cancer is actually a preventable and treatable disease if it is detected early[(4)].

Based on the Globocan data, International Agency for Research on Cancer (IARC) showed that the prevalence of cervical cancer in the world reached 16 per 100.000 women[(9)]. Based on 2012 Globocan, there are 528.000 cases of cervical cancer in the world[(4)]. Indonesia was the country with the second most cervical cancer cases after China[(5)]. In Indonesia, about 13.762 women in every year were diagnosed with cervical cancer and 7.493 had died. Cervical cancer in Indonesia is also ranked second in terms of number of cancer patients in women after breast cancer[(3)]. Based on the estimated number of cervical cancer patients and breast cancer, East and Central Java had the highest case in Indonesia. East Java was the first ranked area that had the largest contributor to the number of cases of cervical cancer in Indonesia[(5)]. The number of visits of cervical cancer patients at RSUD Dr Soetomo Surabaya in every year is always be number one among other any oncology cases. Generally in Indonesia, patients with cervical cancer who went to the hospital had been in advanced stage, those were: stage IA and IIA recorded 28.6%, stage IIB to IVB recorded 66.4% and stage IIIB recorded 37.7%[(6)]. Actually, cervical cancer is easily preventable disease if detected at the stage of precancerous lesions and treated with the correct procedure[(7)]. In Indonesia cervical cancer is almost 70% found in advanced stage conditions. The majority of women diagnosed with cervical cancer did not do screening tests or did not follow up after abnormal results were found. Not doing regular screening tests is the biggest factor causing cervical cancer in someone[(8)].

VIA method is particularly suitable in developing countries (such as Indonesia) because of its easy or simple technique, low cost and high sensitivity, fast and accurate enough to find abnormalities at the stage of cell abnormality or dysplasia or before precancer. The coverage of early detection of cervical cancer in VIA method in Indonesia is still low at 2.45%, thus requiring a stronger effort to achieve the target. It is an early detection of 50% of women aged 30-50 years for 5 years[(9)].

Factors that affect the early detection visit of cervical cancer are women who have done screening before, history of sexually transmitted infections, contraceptives and condoms users, marital status, do not smoke and have given birth. In addition, the possibility of visiting is because of the growing age [(10)]. Women who are disobedient to cervical cancer screening are also affected by physical examinations, health care workers, test procedures, and low information of the risks. Women who are obedient to early detection are influenced because women feel afraid of cancer, good relationships with health workers, adequate informations, understand the risks and the importance of routine examination[(11)].

In the Fogg Behavior Model, it is assumed that human behavior occurs because of three factors: motivation, ability and trigger. The FBM also affirms that someone who wants to do target behavior if she or he has: 1) sufficient motivation, 2) sufficient ability to engage in behavior, and 3) effective or triggered triggers for behavior[(12)]. Relationship between related variables Fogg Behavior Model in the implementation of early detection of cervical cancer until now has not been studied researched.

The purpose of this research was to know how path analysis between motivation, self efficacy and trigger variables in the implementation of early detection of cervical cancer VIA method by using Structural Equation Modeling (SEM) in women in Kediri City, Indonesia .

METHODS

This research used case control design to explain the effect of motivation, self efficacy and trigger on the implementation of early detection of cervical cancer VIA method along with path analysis among these variables.

There were two populations in this research. They were: 1) Population case was all woman who was married and not pregnant and had early detection of cervical cancer VIA method in all Puskesmas Kediri in 2016; 2) The control population was all married women who were not pregnant and never had early detection of cervical cancer VIA method in all Health Center of Kediri in 2016.

The sample in this research was some married women who were not pregnant in Kediri City in 2016 who met the inclusion and exclusion criteria. They were: 1) Case respondent that some women who had been married, not pregnant and have early detection of cervical cancer method VIA ; 2) Control respondent that some women who had been married, not pregnant and never have early detection of cervical cancer method VIA.

The calculation of the sample size in this research was calculated based on the calculation of rule of the thumb. The sample was 410 respondents that were divided into 205 cases and 205 controls. Multi stage random sampling method with multilevel sampling was used in this study.

The variables in this research were: 1) Exogenous variable was trigger and 2) Endogenous variables were motivation, self efficacy and implementation of early detection of cervical cancer using VIA method. The data was collected by giving questionnaires that had been tested for validity and reliability. The first activity of the data collection was determining the respondents who became case groups. After meeting with the case respondents, the researcher looked for the control respondents. The next was the researcher explained about the purpose of this research, how to fill out the questionnaire, and the benefits of research for research subjects. The study was solely for the development of science, especially about cervical cancer and early detection of cervical cancer with VIA method. It was also about result secrecy of questionnaires. After the information about the research was given, then the respondents were required to fill out the approval format to be the respondent, in which the woman choosed to be a respondent or not. After determining the choice, then the respondents should signed the approval format. The case and control respondents were given a same questionnaire.

The approval format was signed not only by the respondent but also the researchers and witnesses. A witness was a person who lived with the respondent. If the respondents gave the consent, then the questionnaire was given which was about the trigger, perceived self efficacy and motivations in the early detection of cervical cancer VIA method. Filling in the questionnaire of each respondent took about 120-150 minutes. The data collection of this research was not only from the questionnaire but also secondary data from the record in the book of implementation of early detection of cervical cancer report in the secretariat of Indonesian Midwife Association (IBI) Kediri. It used to obtain data about the results of achievement in early detection cervical cancer VIA method. Collected data was processed by using computer through several stages: editing, coding, scoring and data entry. Furthermore, to know how the path between motivation variables, self efficacy and trigger in the implementation of early detection of cervical cancer VIA method was analyzed by using Partial Least Square - Structural Equation Modeling (PLS-SEM). The PLS-SEM analysis was divided into two parts. They were the measurement model (outer model) and the structural model (inner model).

RESULTS

The measurement Model (Outer Model)

Part of the measurements was included Convergent validity, Average Variance Extracted (AVE), Discriminant Validity and Composite reliability (Ghozali & Latan, 2015). Corvergent validity was considered valid if the value of outer loading was above 0.50, AVE value> 0.5, then for reliability test, the criterion was the value of composite reliability> 0.7.

In table 1, we could see that there was one trigger indicator whose loading factor was less than 0.5. Thus, one such indicator had to be modified. In table 1, the results showed that value of AVE for each variable was above 0.5 then it could be said that the loading factor was acceptable. Then, Test Reliability measured composite reliability. The value of the composite reliability of each variable was above 0.7. The results indicated that all the variables in the estimated model were reliable.

Table 1. The Score of Factor Loading

Variabel	Indicator	Factor loading	AVE	Composite reliability
Trigger (A)	Physic condition (a1)	0.06	0.48	0.86
	Information from television (a2)	0.78		
	Doctor's recommendation (a3)	0.78		
	Nurse's recommendation (a4)	0.81		
	Friends' suggestion (a5)	0.47		
	Have seen woman with cervical cancer (a6)	0.77		
	Have seen friends with cervical cancer (a7)	0.75		
	Reading books/leaflet (a8)	0.75		
Motivation (B)	Instrinsic (b1)	0.92	0.55	0.69
	Extrinsic (b2)	0.52		
Self Efficacy (C)			1.00	1.00
VIA examination (D)			1.00	1.00

The structural Model (Inner Model)

Table 2. The Structural Model

No	Exogen-> Endogen	Coeficient Original	T-Statistics	T-Tabel	Explanation
1	Trigger -> Self Efficacy	0.21	4.16	1.96	Significant
2	Trigger -> Motivation	0.58	15.41	1.96	Significant
3	Trigger -> VIA exam	0.04	0.76	1.96	Not significant
4	Motivation -> VIA exam	0.27	4.93	1.96	Significant
5	Self Efficacy -> Motivation	0.11	2.75	1.96	Significant
6	Self efficacy -> VIA exam	0.18	4.44	1.96	Significant

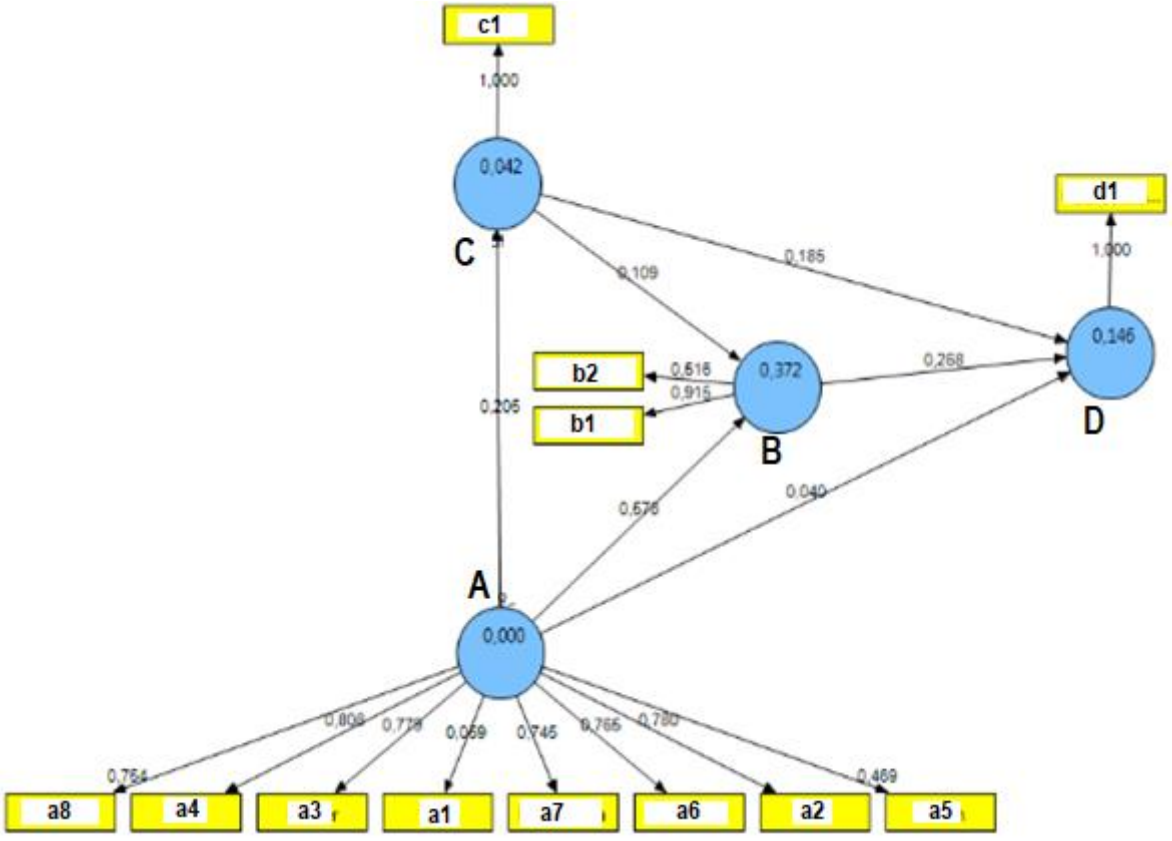

Figure 1. The first Model Analysis

Structural model analysis was to examine the effect of the relationship between exogenous factors and endogenous factors. The first step of structural model analysis was to examine the relationship between exogenous factors to endogenous factors. Test results between these factors would answer the formulation of this research hypothesis which included: 1) Trigger (X1) to self efficacy (Y1); 2) Trigger to motivation (Y2); 3) Trigger (X1) to the implementation of early detection of cervical cancer VIA method (Y3); 4) Trigger (X1) and Self efficacy (Y1) to motivation (Y2); Trigger (X1), Self Efficacy (Y1) and Motivation (Y2) to the implementation of early detection of cervical cancer VIA method (Y3). Pathway significance was to examine the significance of exogenous factors to endogenous factors. The reference value of the test was using the T-test. It was comparing the T statistics of the Inner Model with T table. If the value of T statistics > of the value of T table, then it could be concluded that there was a significant influence of exogenous factors to endogenous factors. By using two-tailed test and the fault tolerance level $\alpha = 2.5\%$, the value of T table = 1.96 was coming from table T with degrees of freedom (amount of data-1) = (n-1) = 410 - 1 = 409. In smart PLS, step testing of the significance of the path was obtained by generating T statistics from Bootstrap.

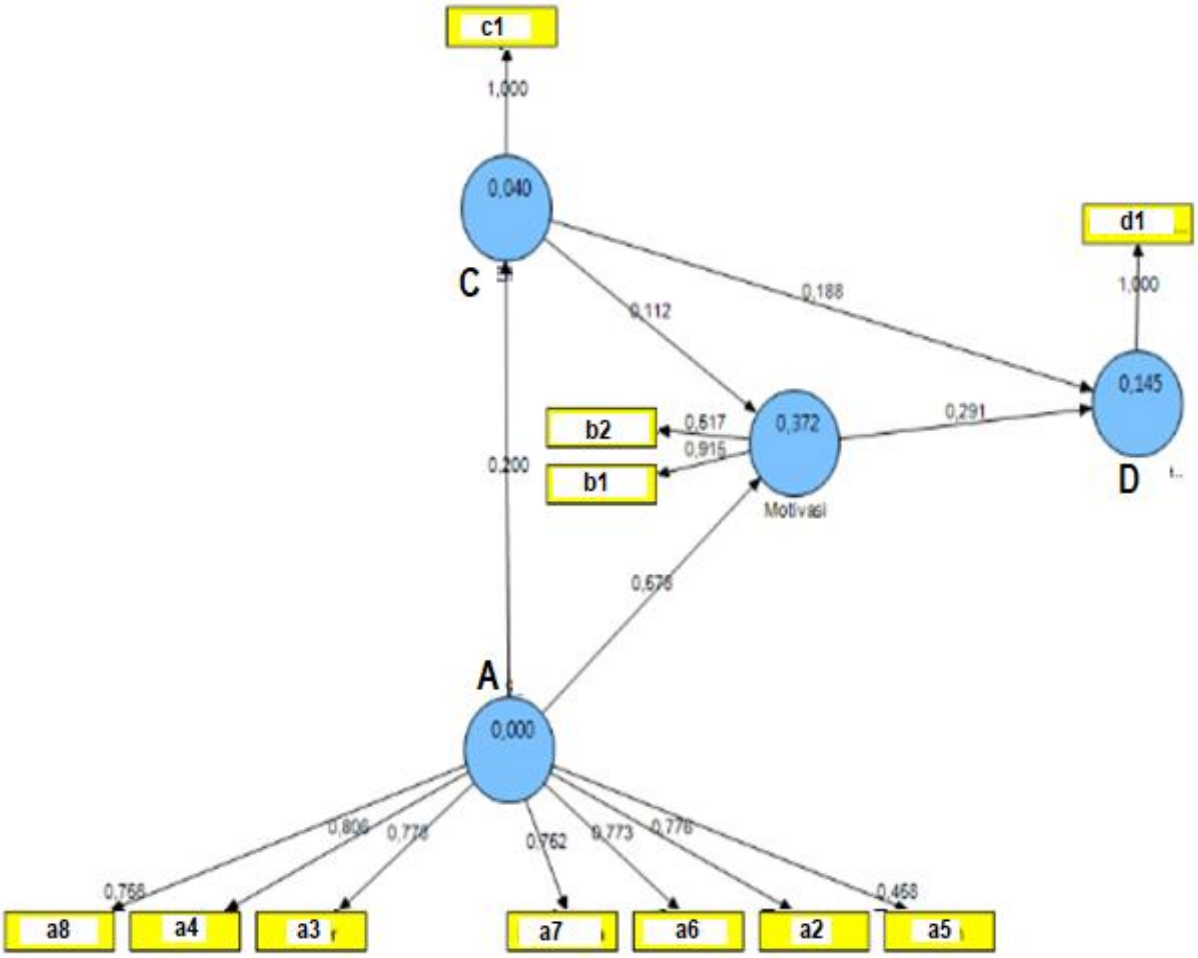

Figure 2. The last Model Analysis

The analysis of structural model was showed in Figure 1 and in table 2. In the figure 1, there was one path that was not statistically significant from trigger to VIA examination, so in the next analysis the path must be discarded. The analysis of the final model line was showed in Figure 2. Based on the figure 2, it could be concluded that the dominantly motivation variable was influenced by the variable trigger compared to female self efficacy. This could be seen from the coefficient value of the trigger variable path (0.58) that was greater than the coefficient of self efficacy (0.11). Then, the most influential motivation variable to the implementation of early detection of cervical cancer VIA method compared with self efficacy and trigger variables. The results were indicated by considering the value of the coefficient of variable path of motivation (0.29) and self efficacy (0.19) while trigger indirectly influence on the implementation of early detection of cervical cancer method VIA. Therefore, it was very important for the program holders of VIA to pay attention to triggers given that could increase motivation. Thus, it could encouraged the implementation of early detection of cervical cancer VIA method.

DISCUSSION

The result of the research shows that there is a positive influence of trigger variable to self efficacy variable. The coefficient of the trigger path to self efficacy is positive 0.20. The first hypothesis is that trigger positively effect to self efficacy supported in this research. Self efficacy is a woman's confidence in her ability to perform early detection of cervical cancer VIA method[13]. These results are consistent with previous studies. Cues to action or triggers will improve self efficacy and encourage people to perform early breast cancer detection with breast self-examination. Individuals who have good self efficacy will have good nutritional behavior[14].

The result of the research shows that there is positive influence of trigger variable to motivation variable. The coefficient of trigger path to motivation is positive 0.58. The second hypothesis is that trigger positively effect to motivation supported in this research. The result of the research shows that there is positive influence of trigger variable to motivation variable. The coefficient of trigger path to motivation is positive 0.58. The second hypothesis is that trigger positively effect to motivation supported in this research. This is in accordance with the study of Gorin, et al., Medical triggers are more effective than other trigger in weight loss. Kinds of medical triggers are advice from doctors or stories of patients who have been sick due to excess weight. Medical triggers will increase health threats and will further increase motivation. The result of the research shows that there is a positive influence of the variable of motivation toward the implementation variable of early detection of cervical cancer VIA method. Pathway coefficient of motivation to variable implementation of early detection of cervical cancer method VIA positive is 0.29.

The result of the research shows that there is no direct influence of trigger variable toward variable of implementation of early detection of cervical cancer method VIA but trigger indirectly influence to implementation of early detection of cervical cancer through motivation and self efficacy. This is in accordance with previous research[13] that has identified various triggers in cancer screening in women. This includes doctors' recommendations, health caregivers, written materials, and media. Doctors' recommendations are one of the most important triggers for early cancer detection. Doctors play a key role in informing women about the benefits of screening. In this research, Trigger has the most dominant increasing self efficacy that is information obtained from midwife. Research[15] suggests that cues to act or trigger is associated with adherence to take antihypertensive drugs. Reading about disease information, knowing about services, and consulting with others about illness can trigger a person against compliance. Triggers are needed to encourage individual involvement in health behaviors. Trigger can come from internal or external. Internal triggers such as physiological cues as feeling like pain. External triggers such as illness comes from family members, media reports[16]. The existence of clues, education, symptoms or media information can affect a person about the dangers of illness so that they feel the need to take action[17].

The result of the research shows that there is positive influence of self efficacy variable to motivation variable. The coefficient of self efficacy path to motivation is positive 0.11. The results of next research indicate the existence of positive influence of self efficacy variable to variable implementation of early detection of cervical cancer method VIA. The coefficient of self efficacy path to the implementation variable of early detection of cervical cancer VIA method is positive 0.19. This is in accordance with previous research[18] which mentions three main predictors that affect one's intentions. They are risk perceptions, outcome expectations and coping self efficacy. Self efficacy intent and coping affects low-fat and high-fiber diets. Individuals who have good self efficacy will have good nutritional behavior. Self efficacy is a major predictor of behavior change.

CONCLUSSION

There is a positive influence of trigger to self efficacy and motivation. Furthermore there is positive influence of self efficacy to motivation and implementation of early detection of cervical cancer method VIA. Next, there is s positive influence of self efficacy and motivation toward implementation of early detection of cervical cancer method VIA.

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