



## EDUCATION BASED ON THE CONCEPT OF HEALTH BELIEF MODEL EFFECTIVELY INCREASES CERVICAL CANCER SCREENING RATES IN WOMEN OF FERTILIZING AGE

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### ABSTRACT

Cervical cancer cases in Indonesia are increasing, therefore it is necessary to pay attention to preventive measures and early detection of cervical cancer in women of fertilizing age. The low awareness of women of fertilizing age to carry out early detection through screening with IVA tests is one of the causes of increasing cases of cervical cancer in Indonesia. Therefore, researchers use an educational method based on the Health Belief Model (HBM) for women of fertilizing age. The aim of this research is to increase cervical cancer screening rates with IVA tests after providing education based on the Health Belief Model (HBM). The method in this research uses quantitative methodology. The sample in this study amounted to 37 respondents. This research was conducted in Karang Anyar Village, Sawah Besar. The results were obtained (p value <0.001), with the results of the X<sup>2</sup> continuity correction analysis showing that HBM-based education increased screening rates by 18 times. The conclusion is that the education method using the Health Belief Model for women of fertilizing age can increase cervical cancer screening rates.

Keywords: cervical cancer; health belief model; screening

### How to cite (in APA style)

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## INTRODUCTION

Cervical cancer is cancer that occurs in the cervix of the uterus, an area in the female reproductive organ that serves as the entrance to the uterus located between the uterus and the vaginal canal, (Prila Khairunnisa et al., 2022). Cervical cancer often occurs in women aged 30 to 45 years, but it can also occur in young women as early as 18 years old, (Nandar, 2021). Cervical cancer ranks second with an incidence rate of 17 per 100,000 women. New cases found 13% with a death rate of 10.3% per year from all cases of cancer in women in the world. In 2020, it is estimated that the number of cervical cancers 604,000 new cases and deaths 342,000 due to this disease, around 90% from 342,000 mortality rates occur in low- and middle-income countries, (WHO, 2020). The prevalence of cervical cancer in provinces in Indonesia is as follows: Bangka Belitung 30.24%, South Sumatra 25.16%, West Nusa Tenggara 23.22%, Bali 18.82%, Bengkulu 16.81%, Lampung 14.31%, DKI Jakarta 13.26%, Jambi 11.65%, East Nusa Tenggara 11.31%, South Sumatra 10.57%, (Dwi Anggraini, 2018). The incidence of cervical cancer increased from 1.4 per 1,000 population in 2013 to 1.79 per 1,000 population in 2018 (kemkes.go.id, 2018). According to a report from The Global Cancer Observatory, (The Global Cancer Observatory, 2021). The latest cases of cervical cancer in Indonesia amount to 17.2% or 36,633 individuals. Cervical cancer ranks second with a total of 36,633 cases or 9.2% of the total cancer cases in Indonesia, (Emre Yanikkerem et al., 2018).

The high prevalence of cancer in Indonesia needs to be addressed with preventive measures and early detection that have been carried out by healthcare providers. Cases of cancer found at an early stage and receiving prompt and appropriate treatment will provide recovery and longer life expectancy (World Health Organization (WHO), 2022). Cervical cancer can be anticipated by conducting early detection. Some early detection methods that can be used to determine the presence of cervical cancer are Pap Smear, Pap net, cervicography, visual inspection with acetic acid (IVA), high-risk type (HPV) tests, colposcopy, and liquid-based cytology. Of the various methods for early detection of cervical cancer, the IVA test has become the method that is currently a government program in all community health centers in Indonesia, namely through the movement for the prevention and early detection of cancer in Indonesian women. This activity is part of realizing a healthy and quality living society, in line with achieving the fifth Nawacita, which is to improve the quality of human life. The IVA examination is a program listed in the Decree of the Minister of Health of the Republic of Indonesia No. 796/MENKES/SK/VII/2010 concerning technical guidelines for the control of cervical and breast cancer. Screening and early detection of cervical cancer is a procedure to find any abnormalities in the cervix as early as possible, from initial changes (dysplastic cells or pre-cancer stages) to invasive cancer, (World Health Organization (WHO), 2022). It is very important for women who have ever had sexual intercourse to undergo IVA screening or Pap smear tests regularly. (Pakpahan & Sianturi, 2021).

The results of preliminary studies through interviews with the IVA program holders at the Sawah Besar Community Health Center indicate that it is one of the health centers with an early detection coverage rate for cervical cancer of 30-40%, this figure has not yet reached the national target which sets a target of 50% of women of childbearing age to undergo early detection of cervical cancer using the IVA method, in the Karang Anyar sub-district parts of Puskesmas Sawah Besar where the population is very dense, close to the capital city and nightlife, making it an area at risk for cervical cancer. In the Karang Anyar sub-district, data obtained from a questionnaire of 37 female respondents of childbearing age showed that only 6 had undergone cervical cancer screening with the IVA test. The still low coverage or rate of early detection of cervical cancer with the IVA test in the Karang Anyar sub-district requires serious intervention by professional health workers, one of which is community nurses with health education using theory-based education methods employing the Health Belief Model (HBM) in an effort to increase the rate of cervical cancer screening.

Based on previous research, education based on the Health Belief Model (HBM) showed results that 33.6% of women underwent cervical cancer screening after receiving education and 13.2% did not undergo the test (Pakpahan & Sianturi, 2021). The phenomenon above made the author interested in conducting research on education based on the Health Belief Model (HBM) to increase the rate of cervical cancer screening. The Health Belief Model (HBM) as a method for conducting education is because it is a cognitive model that means a person's cognitive process is influenced by information from the environment (Dwi Anggraini, 2018). The Health Belief Model (HBM) consists of several basic concepts, namely Perceived susceptibility (belief in vulnerability to a condition or disease), Perceived severity (seriousness of the risk of contracting or being affected by a disease), belief in the benefits/success of recommended actions to reduce the risk or severity of impacts, and belief in barriers when individuals act according to recommendations or potential negative aspects of certain health behaviors that can act as barriers to recommended behaviors, such as cost issues (Dwi Anggraini, 2018). The purpose of this research is to increase the rate of cervical cancer screening with the IVA test among women of childbearing age after being given education based on the Health Belief Model (HBM).

**METHOD**

The population in this study is women of childbearing age in the Karang Anyar sub-district, Sawah Besar District, Central Jakarta, who meet the inclusion criteria set by the students. From the calculation results using G Power version 3.1.9.7 with a T test, 34 respondents were obtained, plus 10% for dropout risk, totaling 37 respondents, namely women of childbearing age. Respondents were given a questionnaire consisting of identity data, age, education, occupation, marital status, income, number of children, and history of contraceptive use, and whether or not they had undergone cervical cancer screening. Respondents in this study were taken from those who met the inclusion criteria from the completed questionnaires by women of childbearing age.

The inclusion criteria in this study are women of childbearing age who have engaged in sexual activity, can communicate well, and have good hearing. The exclusion criteria in this study are women of childbearing age who are unmarried and women of childbearing age who have never engaged in sexual activity. Before the data collection and intervention process, women of childbearing age were provided with information about the intervention to be conducted, the benefits, and the potential impacts that may arise during the research process. If the women of childbearing age as prospective respondents agree, then followed by filling sheet consent to be respondent.

**RESULT**

Tabel 1.  
Demographic Frequency Distribution of Women with Cervical Cancer Risk (n=37)

Variables	f	%
<b>Uge</b>		
20 - 30 year	8	21,6
31 - 40 year	22	59,5
41 - 45 year	7	18,9
<b>Education</b>		
Junior	0	0
High scholl	17	45,9
Senior scholl	18	48,6
College	2	5,4
<b>Employment</b>		
Housewife	29	78,4
Employee	8	21,6
<b>Marital status</b>		
Married	33	89,2
Not married	4	10,8
<b>Income</b>		
< 1 million rupiah	14	37,8
1 - 2,7 million rupiah	20	54,1
2,7 - 5 million rupiah	3	8,1
<b>Number of children</b>		
1 - 2 children	23	62,2
3 - 4 children	4	10,8
> 4 children	3	8,1
Not having children	7	18,9
<b>Use of Contraceptives</b>		
Injection	9	24,3
IUD	19	51,4
PILL	6	16,2
Not birth control	3	8,1

Table 1 shows that most respondents are aged 31-40, namely 22 people (59.5%). Based on education, the majority of respondents graduated from high school, namely 18 people (48.6%). Based on occupation, the majority of respondents are housewives, namely 29 people (78.4%). Based on marital status, the majority of respondents are married, namely 23 people (89.2%). Frequency based on income shows that the majority have an income of 1 million – 2.7 million, namely 20 people (54.1%). Based on the number of children, the majority of respondents have 1-2 children, namely 23 people (62.2%). Based on contraceptive use, the majority use IUD, namely 19 people (51.4%).

Tabel 2  
Coverage of Screening Figures Before and After Providing Educational Interventions with HBM Theory (n=37)

Variabel	%		No		Total		X <sup>2</sup>
	f	%	f	%	f	%	
Before Intervention	6	16,2	31	83,8	37	100	<0,0001
After Intervention	26	70,3	11	29,7	37	100	

In Table 2, the IVA screening rate in women of childbearing age after receiving education significantly increased (p value <0.001). The analysis of the X<sup>2</sup> continuity correction shows that education increased the willingness of women of childbearing age to undergo screening by 18 times.

## DISCUSSION

The research conducted in the Karang Anyar village, Sawah Besar sub-district from April 15 – May 20, 2023, found that women of childbearing age who underwent cervical cancer screening with the IVA test after receiving HBM-based education increased from 6 people to 26 people. The distribution of respondents by age shows that 59.5%. According to literature, age is one of the risk factors that is considered to affect the prognosis of patients and influences the maturity of the immune system. At a young to adult age, immune capability reaches its peak and gradually declines, especially at an older age. The high incidence of cervical cancer in older age indicates a lack of desire and public attention to undergo cervical cancer screening. As age increases, it should be easier to adapt to the surrounding environment, thus better understanding the benefits of participating in early detection of cervical cancer.

The distribution of respondents by education level shows that some respondents have a good education level, namely at the high school level, which is 48.6%. Education level is related to the respondents' ability to understand the information they receive about risk factors and cervical cancer screening, both in terms of understanding and purpose. This conclusion is evident from the distribution of knowledge levels based on education, where the better the education level of the respondents, the higher their level of knowledge. This is as stated by Sadiman (2002), who stated that educational status affects the opportunity to obtain information regarding disease management. Education of respondents influences the ability of respondents to understand the benefits obtained from early detection of cervical cancer. Notoadmojo (2014) states that someone with a higher level of education will provide a more rational response and also in their work motivation will have more potential than those with lower or sufficient education; education also affects a person's knowledge.

Distribution of respondents by occupation. The majority of respondents are unemployed, which is 78.4%. Work is an activity that someone does regularly that generates money to meet their economic needs. Work greatly affects a person's economic level. According to Notoatmodjo (2003), having a job will cause someone to spend a lot of time and energy to

complete work that is considered important, thus tending to have a lot of time for exchanging opinions/experiences among friends at their workplace. (The work environment allows WUS to obtain information regarding early detection of cervical cancer with the IVA test. Work is also associated with purchasing power, so women who work will become more independent and find it easier to check their health.

Distribution of respondents by marital status. The majority of respondents are married, 89.2%. A husband who is part of a family that has a good understanding of healthy behavior will provide support to his wife. The support of a husband can provide emotional benefits, namely providing comfort and motivation for individuals to carry out health actions. Therefore, the role of the husband is very important for individual actions, especially in the early detection of cervical cancer. Distribution of respondents by income shows that the most common income is between 1 million – 2.7 million, which is 20 people (54.1%). Each person's ability to incur medical expenses varies, influenced by the income obtained by the family. Income is one of the factors that can hinder the husband's support in the participation of WUS in early detection of cervical cancer using the IVA method.

Distribution of respondents by the number of children shows that the majority have 1-2 children, which is 62.2%, and have more than 3 children, which is 18.9%. Women who give birth more than 3 times can increase the incidence of cancer by 3 times. Postpartum injuries can lead to the onset of cervical cancer if not addressed immediately. Not only postpartum injuries cause cervical cancer, but also the distance between births that is too close can also lead to cervical cancer (Tapan, E, 2010). This illustrates that the more children there are, the higher the risk of experiencing cervical cancer. Someone who has many children, especially those who give birth more than 3 times, will be at high risk of cervical cancer. This is because injuries after giving birth and the distance between births that are too close will allow the virus that causes cervical cancer to enter. According to the theory of Riksani and Rel Media Service (2016), women who give birth frequently have a greater risk of suffering from cervical cancer. In addition, women who give birth at a young age also have the same significant risk as women who give birth frequently. The results of this study are consistent with the theory that mothers with more than 3 births have a risk of developing cervical cancer. According to the researcher, the number of births is one of the factors causing cervical cancer because the more often a mother gives birth, it can lead to abnormal cell changes in the cervix, which can cause cervical cancer. Distribution of respondents by contraceptive use shows that the most common method is IUD, which is 19 people (51.4%). The use of IUD (Intrauterine Device) if previously infected with the HPV virus, the use of IUD can cause the infection to develop into cervical cancer or if there are signs of infection but not treated then the infection can develop into cervical cancer.

### **Early detection behavior of cervical cancer in women of childbearing age after HBM education**

Most of the respondents of early detection of cervical cancer were after educated, namely 26 respondents (70.2%). Health behavior is basically a person's response to stimuli related to illness and disease, in the health service system, food and the environment (Notoatmodjo, 2014). Behavior can be interpreted as the activities or activities of a person or the organization concerned. Early detection of cervical cancer in this study is a real action of respondents in an effort to prevent early cervical cancer.

## CONCLUSION

Based on the research results, it can be concluded that education based on the health belief model concept in the cervical cancer screening program has increased the cervical cancer screening rates in women of childbearing age in Karang Anyar Village, Sawah Besar District, Central Jakarta.

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