TAF
Journal of Advances in Health and Medical Sciences
JAHMS
2024, **10**: 14-19

Meta-analysis: Predisposing factors and husband's support on achievement of Visual Inspection of Acetic Acid (VIA)

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Keywords
Predisposition
Husband's support
IVA

Received: 21 January 2024
Accepted: 19 May 2024
Published: 20 June 2024

Abstract

The low achievement of the VIA (Visual Inspection of Acetic Acid) as a primary detection of cervical cancer shows that the cervical cancer primary detection program has not run optimally. In Indonesia, the coverage of primary detection of cancer incidence is less than 5%, still far from the national target of 10% of the number of women of childbearing age. The less coverage of primary detection is one of the reasons for the increase in cervical cancer. The lower the IVA test achievement, the higher the number of cervical cancer numbers found in the future. More than 50% of women who have been diagnosed with cervical cancer have never had a primary detection. This study aims to analyze the factors related to the achievement of the Acetic Acid Visual Inspection (VIA) examination. This study used a meta-analysis method with cross-sectional designs on Google Scholar and PubMed databases. The 11 relevant articles according to the inclusion criteria using Review Manager 5.3. Results of the study showed age was not associated with the achievement of VIA examination with p = 0.10 and pOR = 1.75; 95% CI 0.89-3.41. Education level is related to the achievement of the VIA examination with p-value = 0.002 and pOR value = 3.63; 95% CI 1.61-8.18. Occupation is not related to the achievement of VIA examination with p-value = 0.45 and pOR value = 0.45; 95% CI = 0.06-3.56. The husband's support is related to the achievement of the VIA examination with p-value = 0.01 and pOR = 7.32; 95% CI 1.55-34.60. Age and occupation are not related to the achievement of the VIA examination, while the level of education and husband's support are related to the achievement of the VIA examination.

I. INTRODUCTION

In 2018, the Global Burden of Cancer (Globacon) [1] reported as many as 348,809 new cancer cases in Indonesia and an estimated 207,219 deaths. Breast cancer, with an incidence of 42.1 per 100,000 population, is the most common cancer. The second is neck cancer, with an incidence of 23.4/100,000 population. As many as 24 out of 100,000 women have cervical cancer [1]. In 2020, the Global Burden of Cancer (Globacon) .[2] reported that the number of new cases was 36,633, or 9.2% of the total cancer cases. Cervical cancer with an incidence of 24.4 per 100,000 population with death of 14.4 per 100,000 population [2].

As many as 65% of cervical cancer cases are found in the elderly, 18.5% are found at the age of 25-34 years, and the highest incidence is at the age of 45-54 years [3, 4]. The incidence of cancer in Indonesia is ranked eighth in Southeast Asia and 23rd in Asia. Nationally, as many as 38,835,530 people have been screened and found as many as 84,185 VIA positive. In 2020, there was a decrease in WCA participation in the VIA examination. 8.3% of women aged 30-50 had a VIA test and found 50,171 VIA positive [5, 6].

According to the World Health Organization (WHO), in 2018, the high cervical cancer mortality rate can be suppressed through prevention in the form of early detection,

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screening, and treatment programs. Screening is done at least once for 30-49 years old [7].

However, the low achievement of the VIA examination indicates that the program has not run optimally. In Indonesia, the achievement of early detection is less than 5%, still far from the national target of 10% of the number of women of childbearing age. The incidence of cervical cancer is a collection of various risk factors, but these are not known as signs and symptoms of cervical cancer. Many cases have entered an advanced stage and are challenging to treat [8, 9].

The low achievement of early detection makes cervical cancer increase. The lower the VIA test achievement, the higher the number of cervical cancer numbers found in the future. More than 50% of women diagnosed with cervical cancer have never had an early detection before. Early detection can be done through pap smears, acetic acid inspection (VIA), colposcopy, serology, and thin prep. VIA is most suitable for conditions in Indonesia because the examination technique is easy, cheap, fast, high sensitivity, and accurate [10, 11].

II. METHODS

This study uses a meta-analysis study. A literature search using Google Scholar and PubMed with keywords in Indonesian, the relationship between age, education level, and husband's support work with VIA examination, and in English association correlation between age and education level and occupation and husband support or visual inspection with acetic acid VIA test.

The inclusion criteria used articles of the last 5 years, indexed by SINTA 1-4 and Scopus, cross-sectional type, p values, OR, and 95% CI. From a total of 1233 articles, 684 articles with relevant titles were obtained, and the remaining 298 were included after checking for duplication.

There are 39 articles left after checking the SINTA 1-4 and Scopus indexes, and the remaining 11 articles that meet all inclusion requirements consist of 6 national articles and 5 international articles.

III. RESULT

A. Forest plot age relationship with examination achievement via

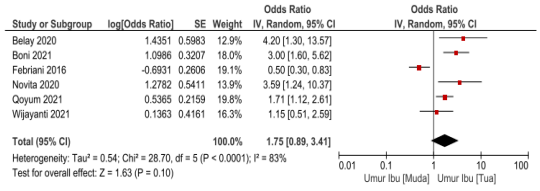

Fig. 1. Forest plot relationship between age and achievement of VIA examination

The heterogeneity test results showed that the variation between studies (I2) of 83% is very highly heterogeneous and analyzed using a random effect model with a value of p<0.0001. Results of data analysis based on forest plot show no relationship between age and the achievement of the VIA examination with p=0,1 and value pooled odds ratio/pOR= 1.75; CI 95%= 0.89 until 3.41. Thus, it was concluded that older women of childbearing age (WCA) had the opportunity to have their VIA checked as much as 1.75 times compared to women of childbearing age (WCA) who were categorized as young to have their VIA checked with statistically low significance.

B. Funnel plot relationship of age with achievement via examination

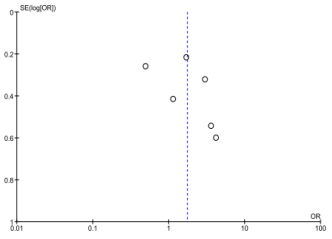

Fig. 2. Funnel plot relationship of age with achievement of VIA examination

ISSN: 2517-9616
DOI: 10.20474/jahms-10.2

C. Forest plot employment relationship with via examination achievement

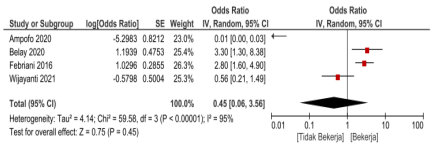

Fig. 3. Funnel plot relationship of age with achievement of VIA examination

The results of the heterogeneity test showed that the variation between studies (I2) of 95% is very highly heterogeneous and analyzed using a random effect model with a value p<0.00001. The results of data analysis based on forest plots show no relationship between education level and achievement VIA examination with value p=0.45, pooled odds ratio/pOR= 0.45; CI 95%= 0.06 until 3.56. Thus, it was concluded that WCA, which did not work, had a 0.06 times chance compared to WCA, which had a job carrying out a VIA examination with statistically low significance.

D. Funnel plot employment relationship via examination achievement

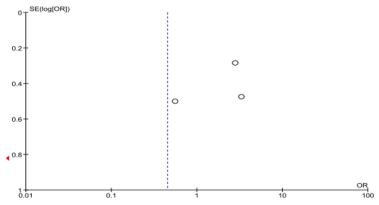

Fig. 4. Funnel plot employment relationship with VIA examination achievement

Funnel plot there is an asymmetric publication bias marked by the asymmetry of the plots on the right and left of the vertical line, the right quadrant has 3 plots while the left quadrant with 1 plot is very far from the vertical line and the plots on the left and bottom right are not distributed symmetrically because of the small sample one.

E. Forest plot Relationship between Husband's Support and Achievement of VIA Examination

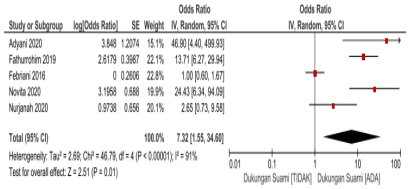

Fig. 5. Forest plot relationship between husband's support and achievement of via examination

The results of the heterogeneity test indicate that the study (I2) variation of 91% is very highly heterogeneous and analyzed using a random effect model with a value of p=<0.00001. The results of data analysis based on forest plots show a relationship between the husband's support and the achievement of VIA examination with the result value p=0.01, more diminutive than 0.05, pooled odds ratio/pOR= 7.32; CI 95%= 1.55 until 34.60. Thus, WCA who receive support from their husbands has a 7.32 times chance of carrying out a VIA examination than WCA who do not receive support from their husbands.

F. Funnel Plot Relationship between Husband's Support and Achievement of VIA Examination

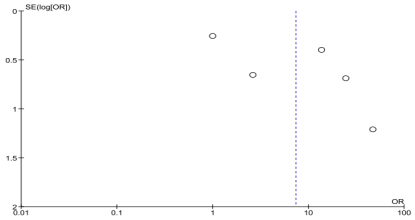

Fig. 6. Funnel plot relationship between husband's support and achievement of VIA examination

The funnel plot shows an asymmetric publication bias characterized by asymmetrical plots on the right and left of the vertical line. Each quadrant has a different number of plots, and the plots below are not symmetrically distributed because of the small sample.

IV. DISCUSSION

A. Relationship of Age With Achievement Of VIA Examination

Analysis of 6 research articles showed no relationship between age (old age) and the achievement of VIA examination with p=0,1 and value pooled odds ratio/pOR= 1.75; CI 95%= 0.89 until 3.41. It can be seen that the largest

ISSN: 2517-9616
DOI: 10.20474/jahms-10.2

POR number is owned by Novita (2020) with a value of 3,590, which means that respondents in the old age category have a 3.59 times chance to carry out a VIA examination at a health facility. While the smallest POR value which states that there is a relationship between WCA age and the achievement of the VIA examination is Febriani's8 research with value 0,5 which means that respondents who are in the old category have a 0.5 times greater chance of conducting a VIA examination. However, after merging in the meta-analysis test, the value of *p*=0,10 and value pOR= 1.75; CI 95%= 0.89-3.41 shows no relationship between WCA and the achievement of the VIA examination.

Age makes the mindset more mature and the ability to think, so the more mature the ability to determine attitudes and behavior [12]. [13] Research states that adults should be wise in deciding to carry out early detection. However, this can be reversed if the older age has thoughts of refusing to realize and not wanting to do early detection.

B. Relationship Between Education Level And VIA Examination Achievement

The analysis of 5 research articles shows a relationship between the level of education and the achievement of the VIA examination. The combined effect results conclude that there is a relationship between the level of education and the achievement of the VIA examination *p*=0,002 and pOR 3,63; CI 95%= 1.6-8.18. WCA with a high level of education has the opportunity to take a VIA test compared to WCA with a low level of education. The range of pOR strength is below the number 4, meaning it has a weak relationship level.

Febriani's8 research said that education is related to physical development, health, skills, thoughts, feelings, will, and social to the development of faith. Highly educated WCA performs early detection because women tend to pay more attention to themselves and their families. Education influences in making the best decisions for him. Meanwhile, women with low education who carry out early detection gain knowledge through formal and informal channels such as posyandu, recitation, and PKK meetings.

The low level of education makes the perspective narrower and it is difficult to accept ideas and suggestions so respondents choose not to do early detection. Education level can be a decisive factor in a person's knowledge and perception of the importance of early detection. Highly educated WCA will get a broad view and be more receptive to new things. Therefore, it can be concluded that highly educated people will perform early detection of cervical cancer [14].

Education is a predisposing factor that influences behavior. This meta-analysis follows the behavioral theory of factors related to the utilization of health care facilities according to Ronald Max Andersen (1968), Individual behavior in using health services together is influenced by 3 factors, namely predisposing factors (demographic characteristics, social structure which includes education, attitudes and beliefs), enabling factors (economic status, access or distance and responsibility), and need factors (factors for individual needs). family and illness) [15].

C. Employment Relationship With VIA Examination Achievement

The results of the analysis of 3 research articles show that there is no relationship between the employment status of women of childbearing age and the achievement of the VIA examination with the value of pOR= 0.45; CI 95%= 0.06-3.56. [16, 17] Research of 3.3, which means that respondents in the category of having a job tend to have a 3.3 times greater opportunity to carry out a VIA examination at a health facility. While the smallest pOR value in the [18] study of 0.005, which means that respondents in the category of having a job only have 0.005 times the opportunity to carry out a VIA examination at a health facility compared to WCA who do not work. However, after merging in the meta-analysis test, the value of *p*= 0.45 was greater than 0.05. This means there is no relationship between WCA employment status and the achievement of the VIA examination.

Wijayanti's [19] research results said that WCA who work would get more information because a lot of information is received in the workplace. WCA spends much time at work, so it cannot do the VIA test. Women who do not work have a greater chance of getting a VIA test.

D. Relationship Between Husband's Support And Achievement Of VIA Examination

The results of the analysis of 5 research articles showed the relationship of the husband's support with the achievement of the VIA examination. The results of the combined effect concluded that there was a relationship between the husband's support and the achievement of the VIA examination with a value of pOR= 7.32; CI 95%= 1.55-34.60.

[20] said that individuals who need social support come from the family. Working family members cause low family support, so they pay less attention to the importance of health checks in disease prevention. The husband is a motivator for the wife to do the VIA test. The wife's health is maintained if the husband can provide time to accompany, accompany or remind his wife for the VIA test. The presence

ISSN: 2517-9616
DOI: 10.20474/jahms-10.2

of family members plays an important role in preventing or at least delaying people from getting sick.

Support from the husband can be in the form of providing information related to cervical cancer and VIA. A positive response is given if the wife invites a discussion about women's health problems. The husband who supports it can be in the form of fees for the VIA test and the husband states that he does not mind if the wife asks to be taken to the place of the VIA examination [10].

V. CONCLUSION

VIA test is primary prevention with good accuracy, ease and practicality. The achievement of the VIA examination can be determined by predisposing factors, namely the level of education and the husband's support. The results show that the value of the education level is p=0,002 with value pooled odds ratio/pOR= 3.63; CI 95%= 1.61-8.18. Women of childbearing age (WCA) with a higher education level have a 3.63 times chance of carrying out a VIA examination than WCA with low education. Husband's support shows value p=0.01 with value pooled odds ratio/pOR= 7.32; CI 95%= 1.55-34.60. Wives who received their husband's support 7,32 times did the VIA test compared to women who did not receive their husband's support.

Suggestions are made that there need to be activities to increase knowledge and motivation given to husbands as a driving force for achieving VIA examinations. Husbands must be open to information, encourage and accompany their partners, and participate in maintaining reproductive health.

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ISSN: 2517-9616
DOI: 10.20474/jahms-10.2