# The Influence of Husband Support and Information Sources on Cervical Cancer Screening Behavior

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**ABSTRACT**

**Introduction**: Cervical cancer is still the "cold-blooded killer" in the world because most cases develop without any real symptoms in the early stages. Globally, cervical cancer is the fourth most common cancer in women. Around 90% of the 342,000 deaths from cervical cancer occur in developing countries, including Indonesia. Cervical cancer is a disease that can be prevented through early detection. However, the number of women who undergo VIA examinations is still very small, so there are still many women who suffer from cervical cancer. This study aims to determine the direct and indirect influence of husband's support and sources of information on VIA examination behavior in an effort to detect cervical cancer early in women of childbearing age at the North Tondano District Health Center in 2023.

**Methods**: The research design used was cross-sectional. The population in this study was women of childbearing age who were registered at the Pasar Minggu District Health Center. The total sample was 53 respondents. The analytical method used is Structural Equation Modeling (SEM) using SmartPLS 2.0 and SPSS 23.

**Results:** The results of the study show that the behavior variable for VIA examinations in an effort to detect cervical cancer early in women of childbearing age (WUS) at the North Tondano District Health Center is directly influenced by husband's support (47.1%) and information sources (31.3%), while other factors that were not considered influenced the VIA examination behavior variable by 21.6%.

**Conclusion**: In conclusion, husband's support and effective information dissemination significantly enhance VIA examination participation, aiding in the early detection and prevention of cervical cancer among women of childbearing age. It is recommended to increase outreach in the community to promote early cancer detection.

## INTRODUCTION

Cervical cancer, also known as cervical carcinoma, is a type of malignant tumor that affects the epithelial lining of the cervix. This cancer can occur because the surface cells multiply and change properties unlike normal cells. The main cause of cervical cancer is HPV (Human Papilloma Virus) infection. More than 90% of squamous cervical cancers contain HPV viral DNA, and 50% of cervical cancers are associated with HPV type 16 (1).

According to the World Health Organization (WHO) in 2023, cervical cancer is the fourth most common cancer among women worldwide, with 604,000 new cases recorded in 2020. About 90% of the 342,000 deaths from cervical cancer occurred in low- and middle-income countries. The highest rates of incidence and mortality are in Sub-Saharan Africa, Central America, and Southeast Asia. These regional differences in the cervical cancer burden are attributed to varying access to vaccination, screening, and treatment services, as well as risk factors such as HIV prevalence and socioeconomic factors like gender bias and poverty. Women with HIV are six times more likely to

develop cervical cancer than the general population, with approximately 5% of all cervical cancer cases attributed to HIV. This impact is particularly significant for young women, leading to a situation where 20% of children who lose their mothers to cancer also die from cervical cancer (2).

According to the Indonesian Ministry of Health's Health Research and Development Agency (Balitbangkes), the proportion of cervical cancer in women reached 19.12% at Dharmais Cancer Hospital in 2018, second only to breast cancer (3). According to a report from GLOBOCAN (The Global Cancer Observatory) in 2021, new cases of cervical cancer in Indonesia accounted for 17.2% or 36,633 people, ranking second after breast cancer and third in cancer-related deaths. Nationally, only 8.3% of women aged 30-50 years undergo early screening for cervical cancer through the IVA test method and breast cancer with Sadanis (4).

The high number of cervical cancer patients in Indonesia is due to the disease not causing symptoms and low awareness among women to check their health. Often, there is a delay in treatment, resulting in many cervical cancer deaths, even though cervical cancer can be treated if detected early using methods like the IVA (Visual Inspection with Acetic Acid) (5).

Husband support plays a crucial role in reproductive health as men are partners in reproduction and sexuality, bear social and economic responsibilities, and participate in decision-making about reproductive health. Men's involvement is expected to change the perception that reproductive health is solely a woman's responsibility, reducing maternal mortality due to reproductive diseases (6).

Various sources of information, including family, friends, mass media, and the work environment, play a role in increasing one's knowledge about health. Mass media, both electronic and print, significantly contribute to one's insight. Friends also play a role in disseminating information (7). According to Sry Arina Manihur et al, the most dominant variable influencing behavior in VIA test implementation is information sources (8).

According to research by Sry Arina Manihur et al. (2019), the most dominant variable influencing behavior in the implementation of the VIA test is the source of information with a p-value of 0.000 and an Exp-B value of 548.939. This means that respondents who do not get access to information sources have a risk of influencing the level of behavior in the implementation of the VIA test by 548.939 times that of those who get access to information sources (8).

Research by Desi Aulia Umami (2019) revealed that the majority of women of childbearing age had never undergone an IVA examination. The study found that 34 women (59.6%) reported inadequate support from their husbands, 29 women (50.9%) had insufficient support from health workers, and 31 women (54.4%) lacked support from health workers overall. The study concluded that there is a significant relationship between husband support and IVA examination behavior, with a P-value of 0.016 (P < 0.05) (9).

North Sulawesi ranks 13th out of 33 provinces with cervical cancer. The achievement of the indicator of the number of districts/cities implementing cancer early detection in 2020 did not reach the predetermined target because cancer early detection activities carried out in 7 districts/cities (Kotamobagu City, Minahasa, Southeast Minahasa, Bolaang Mongondow, South Bolmong, North Bolmong, Talaud Regency) did not reach 80% of the female population aged 30-59 years or women who had a history of being sexually active (10).

In Minahasa District, health screening services for 15-59-year-olds are conducted at Puskesmas and its network (Posbindu PTM) as well as other health care facilities in collaboration with the local government. In 2020, service coverage was very low due to the COVID-19 pandemic, which limited services. Therefore, the results obtained from health screening at productive age are only 40.89% (11).

The non-achievement of the target in Minahasa Regency may be influenced by several factors, including the lack of socialization about VIA examination and early detection of cervical cancer, as well as the lack of support from husbands, families, and the surrounding environment. Most women refused to do VIA because they were embarrassed and not allowed by their husbands. The action of conducting an IVA method examination will be carried out well if it gets support from the family or people closest to it. Family social support can come from internal family social support, such as husband support. The husband, as the head of the household, can participate in maintaining women's reproductive health.

So far, socialization about VIA examination has been devoted to married women, but in reality, not many of them do it. In contrast, socialization about VIA is very rarely done for unmarried women. It can be seen from

modules, books, and magazines that convey information about reproductive health, almost nothing about VIA, so it is very natural that women's knowledge about the benefits of VIA is very low.

Given these issues, this study aims to examine the effects of husband support and information sources on VIA examination behavior for early detection of cervical cancer at Puskesmas Tonsea Lama, North Tondano Sub-District, in 2023. The objectives are to determine the direct and indirect effects and the magnitude of the influence of husband support and information sources on VIA examination behavior among women of childbearing age (WUS).

## METHOD

The research was conducted at the Tonsea Lama Health Center, North Tondano District, from August 2 to September 3, 2023. A cross-sectional research design using a quantitative approach was employed to study the dynamics of the correlation between exogenous (independent) variables and endogenous (dependent) variables observed simultaneously and momentarily.

## Population and Sample

According to Sugiyono, the population is a generalization area consisting of objects (12). The population in this study comprised all women of childbearing age (WUS) registered at the Tonsea Lama Health Center, North Tondano. The sample is a part of the number and characteristics possessed by the population. The sample size was determined using the rule of thumb for Structural Equation Modeling (SEM), where the number of indicators multiplied by 5 to 10 gives the sample size range. With 7 indicators in this study, the sample size ranged between 35-70, and the final sample size was set at 53 respondents (13).

## Sampling Procedure and Inclusion Criteria

Participants were selected using purposive sampling, focusing on women of childbearing age registered at the health center who met the following inclusion criteria: (1) aged 15-49 years, (2) willing to participate, and (3) able to provide informed consent. Exclusion criteria included women with a history of cervical cancer or other severe health conditions

## Data Collection

Data were collected using a closed questionnaire instrument. The questionnaire included items measuring behavioral variables, husband support, information sources, and midwife competence. A semantic differential scale (1-5) was used, with "very positive" answers rated as 5 and "very negative" as 1. For the midwife competency variable, respondents directly recorded their answers on the partograph sheet. For motivation variables, a Likert scale (1-5) was used, with "strongly agree" rated as 5 and "strongly disagree" as 1 (14).

## Validity and Reliability Testing

The validity and reliability of the questionnaire were tested using a computerized program. Validity was assessed by correlating the score of question items with the total score of the construct or variable, comparing the calculated r value with the r table value for df = n - k, where n is the number of samples and k is the number of constructs. An item was considered valid if the r count was greater than the r table and the value was positive. Reliability was measured using Cronbach's alpha, with a value of 0.70 or higher indicating acceptable reliability.

## Ethical Considerations

Ethical approval was obtained from the relevant ethics committee, and all participants provided informed consent. The study adhered to ethical principles, including confidentiality, voluntary participation, and the right to withdraw at any time.

## Data Analysis

Data analysis involved Univariate Analysis and Structural Equation Modeling (SEM) with Partial Least Square (PLS). Univariate analysis aimed to describe the characteristics of each variable, presented in frequency distribution tables. SEM analysis with PLS involved interpreting the Outer Model and Inner Model.

Outer Model: Assessed Convergent Validity, Discriminant Validity, Average Variance Extracted (AVE), and Composite Reliability. Convergent Validity was determined by a Loading Factor value of 0.50 to 0.60. Discriminant Validity was determined if the value of the latent variable was greater than its correlation with other latent variables. AVE values greater than 0.50 and Composite Reliability of at least 0.70 were required.

Inner Model: Evaluated the relationships between the latent variables and the influence of exogenous variables (husband support and information sources) on the endogenous variable (VIA examination behavior).

## Research Focus

The study focused on VIA examination behavior for early detection of cervical cancer in women of childbearing age. Variables included husband support (information, emotional, and instrumental support) and information sources (media, friends, and health workers). Data were presented using frequency tables and SEM analysis results from SmartPLS 2.0, including diagrams and tables to illustrate the findings.

## RESULTS

Research on the influence of husband support and information sources on VIA examination behavior in women of childbearing age at Puskesmas Tonsea Kec. North Tondano in 2023 uses primary data. The research data were collected through the distribution of 53 questionnaires to women of childbearing age registered at Tonsea Lama Health Center, North Tondano Sub-district

## Univariate Analysis

Descriptive analysis of respondents describes the characteristics of respondents in this study, namely age, education, and occupation of women of childbearing age. Of the 53 respondents studied, the age grouping was as follows: the largest group was respondents aged 20-30 years, with 26 respondents or 49.1%; the 30-40 years age category included 16 respondents (30.2%); the over 40 years age category included 9 respondents (17%); and the under 20 years age category included only 2 respondents (3.8%). Grouping respondents based on education, most respondents had an education level up to high school with 20 respondents or 47.2%, junior high school with 15 respondents or 28.3%, college education with 10 respondents or 18.9%, and elementary school with only 3 respondents or 5.7%. Grouping respondents based on occupation, most respondents worked as entrepreneurs with 20 respondents or 37.7%; the self-employed category included 16 respondents or 30.2%; the laborer category included 9 respondents or 17%; and only 8 respondents or 15.1% were in the PNS (Civil Servant) category.

Descriptive statistical analysis in this study provides details on the characteristics of the research variables, focusing on the range, mean, and standard deviation. The range, which is the difference between the highest and lowest values, was calculated using the Sturges Formula. For the husband support variable, respondents' answers ranged from 41 to 68, which is close to the theoretical range of 15 to 75, with a mean of 57.17 and a standard deviation of 7.328. This suggests that respondents generally perceive husband support as important at the Tonsea Lama Health Center. The information source variable had a range of responses from 51 to 71, also close to the theoretical range of 15 to 75, with a mean of 60.25 and a standard deviation of 5.087, indicating that respondents view information sources at the health center as important. The behavior variable had a range of 45 to 72, again close to the theoretical range of 15 to 75, with a mean of 59.36 and a standard deviation of 6.791. This indicates that respondents generally consider the behavior achievements at the Tonsea Lama Health Center to be good.

## Bivariate Analysis

To see the total variation of respondents' answers per variable against the characteristics, the Chi-Square test was conducted. The results of the Chi-Square test for the husband's support variable against the respondents'

characteristics show that the husband's support variable is not related to the respondents' characteristics. Based on the Chi-Square test with a significance level of α = 5%, the P-value (Asymp.Sig) > 0.05, indicating the variance of the respondents' age (0.448), education (0.858), and job (0.226) is not related to the husband's support variable.

The Chi-Square test results for the information source variables against the respondents' characteristics show that the information source variables are not related to the respondents' characteristics. The Chi-Square test with a significance level of α = 5% shows a P-value (Asymp.Sig) > 0.05, indicating the variance in the respondents' age (0.556), education (0.095), and job (0.328) is not related to the information source variables.

The Chi-Square test results for the behavior variable against the respondents' characteristics show that the behavior variable is not related to the respondents' characteristics. The Chi-Square test with a significance level of α = 5% shows a P-value (Asymp.Sig) > 0.05, indicating the variance of the respondents' age (0.097), education (0.611), and job (0.328) is not related to the behavior variable.

## Structural Equation Model (SEM) Analysis with Partial Least Square (PLS)
## Outer Model Evaluation

The outer model evaluation results are used to assess factor loading (Convergent Validity), Discriminant Validity from cross-loading, Average Variance Extracted (AVE), and Composite Reliability values.
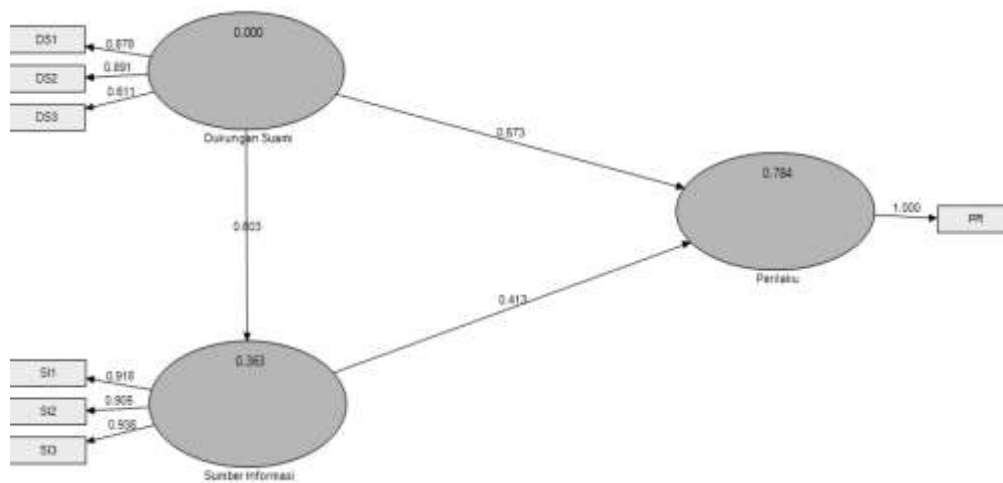


**Figure 1**. PLS Output (Loading Factors)

From Figure 1, it can be seen that the factor loading value (Convergent Validity) meets the requirement of being greater than 0.5. The Discriminant Validity analysis of cross-loading shows that the cross-loading value of the behavioral variables, husband support, and information sources has a greater value than the cross-loading value on other constructs, indicating that all indicators are valid. The cross-loading values for Support 1, Support 2, and Support 3 are higher for the Husband Support construct than other constructs, meaning the Support construct can predict the cross-loading value of Support 1 to Support 3 higher when compared to other constructs.

The cross-loading values for information source 1, information source 2, and information source 3 are higher for the information source construct than other constructs, indicating that the information source construct can predict the cross-loading value of information source 1 to information source 3 higher than other constructs. Similarly, the behavioral cross-loading is higher for the VIA examination behavior construct when compared to other constructs, indicating that the behavioral construct can predict a higher cross-loading value than other constructs.

## Evaluation of the Average Variance Extracted (AVE) Value

Model evaluation with the square of the average variance extracted is done by comparing the AVE root value with the correlation between constructs. From the PLS output, the root results of all constructs are greater than the correlation between constructs. The AVE value of husband support is 0.646507 < AVE root 0.804056, and AVE value

> 0.50, indicating that the husband support model has good discriminant validity. The AVE value of information sources is 0.847131 < AVE root 0.920397, and AVE value > 0.50, indicating that the information source model has good discriminant validity. The AVE value of behavior is 1.000000 < AVE root 1, and AVE value > 0.50, indicating that the midwife performance model has good discriminant validity. The AVE value of all constructs is greater than 0.5, so it can be concluded that the evaluation of model measurements has good discriminant validity.

The results of the outer model reliability evaluation are measured by evaluating the Cronbach's Alpha and Composite Reliability values. Cronbach's alpha and Composite Reliability values greater than 0.7 indicate that the construct has good reliability. The husband support variable has a Cronbach's alpha value of 0.731546 and a composite reliability of 0.842411, indicating good reliability. The information source variable has a Cronbach's alpha value of 0.910445 and a composite reliability of 0.943250, indicating good reliability. Similarly, the behavior variable has a Cronbach's alpha value of 1.000000 and a composite reliability of 1.000000, indicating good reliability.

## Inner Model Evaluation

Inner Model (Hypothesis Test) assesses R2 for endogenous latent variables and Parameter Coefficients and T-Statistics. The Q-Square relevance value serves to assess the amount of diversity or Chi-Square of the phenomenon research data being studied. The R Square value of behavior is 0.784237, meaning that 78.4% of the behavior variable can be explained by changes in the variables of husband support and information sources. The R Square value of information sources is 0.363079, meaning that 36.3% of the variance in information sources can be explained by changes in the husband support variable.
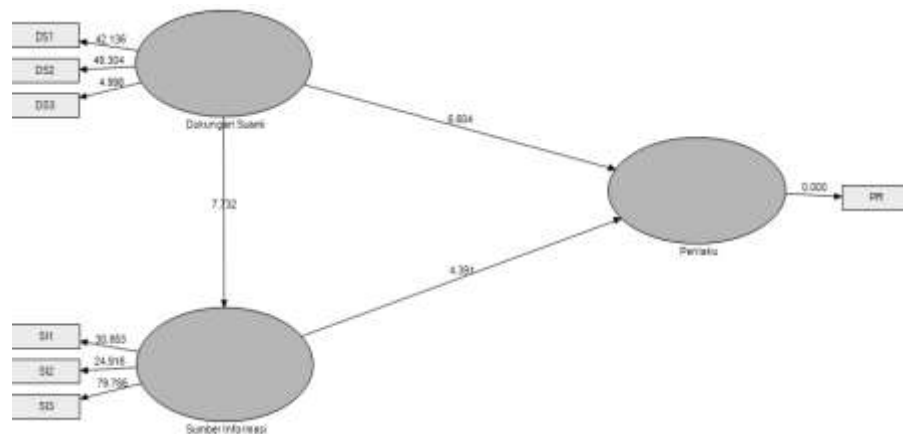


**Figure 2**. PLS Output T-Statistic Test

Thus, about 21.6% of the variance in behavior is influenced by factors other than husband's support and information sources. Similarly, most (63.7%) of the change in information sources is influenced by factors other than husband's support.

**Table 1**. Direct Path/Rho Value to Behavioral Variable with T-Statistic and Significance Relationship between variables in Structural Model

| Relationship between Variables | Original Sample (Rho) | T value (>1.96) | Ha | Conclusion |
|---|---|---|---|---|
| Husband's support for behavior | 0,572705 | 6,604 | Rejected | Positive and Significant Effect |
| Source of Information on behavior | 0,413418 | 4,391 | Rejected | Positive and Significant Effect |

The evaluation of the parameter coefficient and t-statistic indicates that husband's support positively influences behavior. The test results show a parameter coefficient of 0.572 between husband's support and behavior, with a T-Statistic value of 6.604, which is significant at the 5% alpha level. The T-Statistic value is well above the critical value of 1.96.

The information source variables positively affect behavior. The test results show a parameter coefficient of 0.413 between the information source and behavior, with a T-Statistic value of 4.391, which is significant at the 5% level. The T-Statistic value is significantly higher than the critical value of 1.96.

**Table 2**. Percentage of Influence between Variables on Behavior Variables in the Model

| Source | LV Correlation | Direct Rho | Indirect Rho | Total | Direct % | Indirect % | Total % |
|---|---|---|---|---|---|---|---|
| Husband Support | 0,821814 | 0,572705 | 0,062 | 0,634 | 47,06 | 5,09 | 52,15 |
| Source of Information | 0,758507 | 0,413418 | 0 | 0,413 | 31,35 | 0 | 31,35 |
| Total | | | | | 78,41 | 5,09 | |

The table indicates that husband's support has both a direct and indirect impact on behavior. The test results show a direct effect of 47.1% between husband's support and behavior. Similarly, the information source variable has a direct effect of 31.3% on behavior. The indirect effect of husband's support on behavior through information sources can be calculated by multiplying the path coefficient (husband's support → information sources) by the path coefficient (information sources → behavior), resulting in a value of 5.09%.

The T-Statistic values for the variables are mostly greater than 1.96, indicating that the indicator block has a positive and significant effect on reflecting the variables. The Predictive Relevance value, which measures the amount of diversity or variation in the research data concerning the studied phenomenon, shows an R Square value of 0.8784237 for behavior and 0.363079 for information sources. Based on the Q Square value, it can be concluded that the analysis model explains 86.26% of the data variability and is effective in studying the phenomenon in question, while the remaining 13.74% is due to factors not included in this study.

## DISCUSSION
### Effect of Husband's Support on VIA Testing Behavior
The test results of the parameter coefficient between husband's support and behavior show a positive influence of 0.572, while the T-Statistic value is 6.604 and significant at α = 5%. The T-Statistic value is far above the critical value (1.96). Thus, the results of this study indicate that there is an influence of husband's support both directly and indirectly through husband's support on the behavior of VIA (Visual Inspection with Acetic Acid) examination, making the husband's support parameter significant. This shows that husband's support significantly impacts VIA examination behavior.

Husband support is the encouragement, attention, and assistance provided by a life partner, in this case, the husband, in every effort for the good of the family. Husband's support is crucial for a wife in decision-making and health behavior because the husband is the head of the household and an important decision-maker in family life. Husband's support greatly influences the wife when she must choose the best action. Bailon and Maglaya in Sudiharto (2008) state that a family is two or more individuals joined by blood, marriage, or adoption. They live in one household, interact with each other according to their respective roles, and create and maintain a culture. A family is a group of two or more people who are bonded by blood, marriage, or adoption and live together.

According to Taylor (2009), the components of husband support are indicators of this study. These indicators include information support, which provides an explanation of the situation and everything related to the problems faced by individuals. This support includes providing advice, instructions, input, or explanations of how someone should behave. Emotional support is a form of support that includes expressions of empathy such as listening, being open, showing an attitude of trust in what is complained about, willing to understand expressions of affection and attention. Instrumental support is assistance provided directly, in the form of facilities or materials such as providing facilities, lending money, providing food, games, or other assistance (15).

The results of this study are supported by Kurniati's research (2019) on different samples and locations. Kurniati stated that there was a positive influence between husband support on VIA examination behavior with a statistical value of 4.298 and significant at α = 5%. Therefore, if the husband's support is increased, it can also increase the behavior of VIA examination (Visual Inspection with Acetic Acid) (16).

The author analyzes that increasing the behavior of VIA examination in an effort to detect early cervical cancer in women of childbearing age (WUS) is inseparable from the support and encouragement of the spouse (husband) to the wife. This influence includes both information support, emotional support, and instrumental support, which can increase the behavior of women of childbearing age in conducting VIA examinations both directly and indirectly.

## Effects of Work Motivation and Information Sources (Media, Friends, Health Workers) on IVA Screening Behavior

The test results of the parameter coefficient between the source of information and behavior show a value of 0.413, while the T-Statistic value is 4.391 and significant at $\alpha = 5\%$. The T-Statistic value is far above the critical value (1.96). Thus, the results of this study indicate that information sources have a significant and positive effect on the behavior of VIA examination in an effort to early detect cervical cancer.

A source is the origin, while information is data that has been formed into a useful form for humans. Murdick says information consists of data that has been obtained, processed, or otherwise used for explanatory purposes, descriptions, or as a basis for making predictions or decisions (16).

In this study, the source of information refers to where respondents obtained information about VIA examination behavior, covering three indicators: friends, media, and health workers. Friend are people we know and have a good relationship with. Friends can vary, whether they are playmates, school friends, work friends, or course friends. Friends can be a significant source of information, providing women with correct knowledge about early detection of cervical cancer, thus improving their behavior in preventing cervical cancer (17).

Media intended for the masses is another significant source. In journalism, media that broadcast news or information are called the press. The mass media consists of two types: print media such as magazines, newspapers, and tabloids, and electronic media consisting of television, radio, and the internet. Health promotion media are all means and efforts to display messages and information that the communicator wants to convey, whether through print media, electronics, or other media, so that the target audience can increase their knowledge, which in turn can change behavior towards a positive direction for health (18).

Providing information is necessary because it can shape the knowledge and behavior of the community towards health and disease. For this reason, effective communication from health workers is needed. Health workers are individuals who devote themselves to health and have knowledge and/or skills through education in the health sector, which for certain types requires authority to carry out health efforts. As communicators, officers should provide clear information to patients or the community, in this case, women of childbearing age, to increase their knowledge and understanding of early cervical cancer detection behavior using the IVA (Visual Inspection with Acetic Acid) method.

The author analyzes that increasing the behavior of VIA examination (Visual Inspection with Acetic Acid) cannot be separated from media factors, friends, and health workers who are sources of information. Thus, to increase the behavior of IVA examination in an effort to early detect cervical cancer, increasing the provision of information sources to women of childbearing age is essential.

Findings from other research, which emphasize the significant role of husband support and information sources in enhancing cervical cancer screening behaviors among women. For instance, a study conducted in Zambia highlighted that community interactions and support from social networks, including spouses, significantly influence women's participation in cervical cancer screening programs (19). Furthermore, research in India has shown that male partners' support, driven by their attitudes, knowledge, and health literacy, plays a crucial role in encouraging their wives to undergo cervical cancer screening (20).

Similarly, a study comparing various behavioral models in Karnataka, India, identified key psychosocial determinants such as perceived susceptibility, benefits, and subjective norms that significantly influence women's intentions to participate in cervical cancer screening (21). These findings underline the importance of targeted educational interventions that involve both women and their partners to increase awareness and support for cervical cancer prevention.

Moreover, the role of health workers and media as vital information sources cannot be overstated. A study conducted among health workers in rural Uganda found that the provision of comprehensive and accessible

information significantly improves cervical cancer prevention practices (22). This reinforces the need for robust community outreach programs and effective dissemination of information to ensure higher screening uptake.

## CONCLUSION

This research concludes that the behavior of VIA (Visual Inspection with Acetic Acid) examination for early detection of cervical cancer in women of childbearing age is significantly influenced by husband support and information sources. The analysis model explains 90.00% of the data diversity, indicating its robustness in examining the phenomena of this study, while 10.00% is explained by other factors not included in this research.

To improve public health practice, health facilities should enhance the provision of information about VIA through brochures and leaflets for women visiting these facilities. Additionally, efforts to disseminate VIA information should include married couples to foster positive attitudes and support for early cervical cancer detection using the VIA method. Implementing community outreach programs that involve both women and their partners is crucial for raising awareness and support for cervical cancer screening.

However, the study has some limitations. The relatively small sample size may affect the generalizability of the findings, suggesting the need for future research to include larger and more diverse populations. The cross-sectional design limits the ability to infer causality, and longitudinal studies are recommended to establish causal relationships. Additionally, unmeasured confounding factors such as socioeconomic status, education level, cultural beliefs, and accessibility of health services may have influenced the results.

## AUTHOR'S CONTRIBUTION STATEMENT

All authors contributed equally to the research and the development of the manuscript. Ilham Salam, Sudirham, and Tika Bela Sari were all involved in conceiving the study, designing the methodology, data collection, analysis, interpretation of the results, and manuscript preparation.

## CONFLICTS OF INTEREST

The authors explicitly declare that we have no financial or personal affiliations with entities that could compromise our objectivity.

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## BIBLIOGRAPHY

1.  Sarwono P. Kanker Serviks. In: Azis MF, Jono A, Saifuddin AB, editors. Buku Acuan Nasional Onkologi Ginekologi. 1st ed. Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo; 2006. p. 442–540.
2.  World Health Organization (WHO). https://www.who.int/news-room/fact-sheets/detail/cervical-cancer. 2023. Cervical Cancer.
3.  Pangribowo S. Beban Kanker di Indonesia. Jakarta; 2019.
4.  The Global Cancer Observatory. https://gco.iarc.fr/today/data/factsheets/populations/360-indonesia-fact-sheets.pdf. 2021. The Global Cancer Observatory.
5.  Nordianti ME, Wahyono B. Determinan Kunjungan Inspeksi Visual Asam Asetat di Puskesmas Kota Semarang. HIGEIA (Journal of Public Health Research and Development). 2018 Feb;2(1):33–44.
6.  Friedman MM. Keperawatan Keluarga:Teori dan Praktek. Jakarta: EGC; 2005.

7.    Putriani N. Faktor-faktor yang Mempengaruhi Pengetahuan Remaja Tentang Kanker Serviks di SMA 1 Mojogedang [Unpublished]. [Karanganyar]: Universitas Diponegoro; 2010.

8.    Manihuruk SA, Asriwati A, Sibero JT. Analisis Faktor yang Mempengaruhi Perilaku Ibu dalam Pelaksanaan Tes IVA di Wilayah Kerja Puskesmas Hutarakyat Kabupaten Dairi Tahun 2019. JKM (Jurnal Kesehatan Masyarakat) Cendekia Utama. 2021 Feb 28;8(2).

9.    Umami DA. Relationship of Husband Support and Support of Health Officers to Examination Behavior of IVA in Padang Serai Puskesmas. JM. 2019 Oct;7(2).

10.   Dinas Kesehatan Sulawesi Utara. Laporan Akuntabilitas Kinerja Instansi Pemerintah (Lakip) Program Pencegahan Dan Pengendalian Penyakit Satker Dekonsentrasi. 2020 May.

11.   Dinas Kesehatan Kabupaten Minahasa. Laporan Konerja Instansi Pemerintah Dinas Kesehatan Kabupaten Minahasa. Minahasa; 2021.

12.   Sugiyono. Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Bandung: Alphabet; 2019.

13.   Ghozali I, Latan H. Partial Least Squares : Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.0. 2nd ed. Semarang: Badan Penerbit Undip; 2015.

14.   Sudiharto. Asuhan Keperawatan Keluarga dengan Pendekatan Transtruktural. Jakarta: EGC; 2008. 78 p.

15.   Wiryanto. Pengantar Ilmu Komunikasi. Jakarta: Grasindo; 2004. 59 p.

16.   Kurniati PT. Dukungan Suami dan Dukungan Petugas Kesehatan Terhadap Perilaku Pemeriksaan IVA pada Wanita Usia Subur. Journal of Research in Public Health Sciences. 2019 Feb 8;1(1).

17.   Pinem S, Wijaya N. Kesehatan Reproduksi dan Kontrasepsi. Jakarta: Trans Info Media; 2014. 63 p.

18.   Syamsul. Pengantar Psikologi. Bandung: Publikasi PBB FIP; 2009.

19.   Obol JH, Lin S, Obwolo MJ, Harrison R, Richmond R. Knowledge, attitudes, and practice of cervical cancer prevention among health workers in rural health centres of Northern Uganda. BMC Cancer [Internet]. 2021;21(1):110. Available from: https://doi.org/10.1186/s12885-021-07847-z

20.   Dsouza JP, Van den Broucke S, Pattanshetty S, Dhoore W. Factors explaining men's intentions to support their partner's participation in cervical cancer screening. BMC Womens Health [Internet]. 2022;22(1):443. Available from: https://doi.org/10.1186/s12905-022-02019-y

21.   Dsouza JP, Broucke S Van den, Pattanshetty S, Dhoore W. A comparison of behavioral models explaining cervical cancer screening uptake. BMC Womens Health [Internet]. 2022;22(1):235. Available from: https://doi.org/10.1186/s12905-022-01801-2

22.   Zibako P, Tsikai N, Manyame S, Ginindza TG. Knowledge, attitude and practice towards cervical cancer prevention among mothers of girls aged between 9 and 14 years: a cross sectional survey in Zimbabwe. BMC Womens Health [Internet]. 2021;21(1):426. Available from: https://doi.org/10.1186/s12905-021-01575-