**Indonesian Journal of Global Health Research**
Volume 7 Number 4, August 2025
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

# EARLY DETECTION BEHAVIOR OF CERVICAL CANCER USING VISUAL INSPECTION OF ACETATE (VIA) METHOD

**Shinta Maya Sari*, Asnawi Abdullah, Maidar**
Master of Public Health, Universitas Muhammadiyah Aceh, Jl. Muhammadiyah No.91, Batoh, Lueng Bata, Banda Aceh, Aceh 23123, Indonesia
*mayaoshin10@gmail.com

**ABSTRACT**

The problem of early detection of cervical cancer using the Visual Inspection of Acetate (VIA) method in the Banda Aceh City Health Office work area is the low percentage of women aged 30-50 years who carry out early detection of cervical cancer using the VIA method. The purpose of this study was to analyze the behavioral factors of women aged 30-50 years who play the most crucial role in carrying out early detection of cervical cancer using the VIA method in the Banda Aceh City Health Office Work Area in 2021. This study is a quantitative study that is an analytical survey using the Case Control research method, a total sample of 360 women aged 30-50 years, namely: 180 Cases and 180 Controls (1: 1) by applying inclusion and exclusion criteria. The results of the multivariate analysis showed that there were factors that played the most crucial role in the behavior of carrying out early detection of cervical cancer using the VIA method in each variable model: Model 1 (predisposing factor) namely awareness P-value = 0.000, Model 2 (supporting factor) namely the availability of information P-value = 0.000, Model 3 (motivating factor) namely support from officers P-value = 0.000. The conclusion in the Final Model is that awareness is the main factor that plays the most crucial role with a P-value of 0.000 (OR: 54.1; 95% CI: 21.8–134.1), meaning that awareness behavior plays a 54 times greater role in women aged 30-50 years in carrying out early detection of cervical cancer using the VIA method in the Banda Aceh City Health Office Work Area in 2021.

Keywords: case control; cervical cancer; early detection behavior; via test method

**How to cite (in APA style)**
Sari, S. M., Abdullah, A., & Maidar, M. (2025). Early Detection Behavior of Cervical Cancer Using Visual Inspection of Acetate (VIA) Method. Indonesian Journal of Global Health Research, 7(4), 623-630. https://doi.org/10.37287/ijghr.v7i4.6384.

## INTRODUCTION

Cervical cancer contributes to 12% of all cancer deaths in women and accounts for 85% of the burden on health systems in developing countries. In Indonesia, the incidence of cervical cancer is 23.4 per 100,000 population, with an average mortality rate of 13.9 per 100,000 population (Arbyn et al., 2020). The case detection capability for cervical cancer was only around 604,000 cases in 2020, while the number of deaths reached 342,000 per year and is projected to continue to increase to 500,000 deaths in 2030 worldwide (Liu & Zheng, 2024). Almost all cases of cervical cancer (99%) are associated with high-risk Human Papillomavirus (HPV) infection, a widespread virus transmitted through sexual contact (Okunade, 2020)Cervical cancer control begins with exposure to risk factors and how to avoid them. Early detection of cervical cancer using the Visual Inspection of Acetate (VIA) method is an effective secondary prevention effort to contribute to reducing mortality and morbidity rates associated with early-stage detection of cervical cancer malignancy so that the possibility of healing can be increased (Wahyuni, 2023). According to WHO (World Health Organization) 2018, the priority for cervical cancer screening is for women aged 30-50 years because at that age they are considered to have high risk factors for cervical cancer (Bruni et al., 2022). In Indonesia, the cervical cancer screening program was launched on April 21, 2008, and is regulated in the Regulation of the Minister of Health of the Republic of Indonesia No. 34 of 2015 (Nuranna, 2022).

Factors that influence early detection of cervical cancer using the VIA method include education level, knowledge, behavior, attitude, risk factors, access to information, distance accessibility, health insurance participation, family support, the role of health cadres and the counseling process by health workers and the availability of supporting facilities and infrastructure. Behavioral factors play an essential role in influencing someone to do things that are useful for their health (Eyeberu et al., 2021)Health behavior is influenced by three factors that play a role, namely predisposition/predisposing factors, supporting/enabling factors, and reinforcing/reinforcing factors (Amirah et al., 2024). When behavior plays a role in someone carrying out health actions or activities that they want to be better, then the behavioral factor has maximally influenced someone to understand the best thing in an effort to improve health conditions for themselves and their environment (Marcus & Pekmezi, 2024).

The percentage of early detection of cervical cancer using the VIA method in women aged 30-50 years in Indonesia in 2018 was 7.34% (Thea et al., 2020). In Aceh Province, the percentage of early detection of cervical cancer only reached 2.9%, and Banda Aceh City only reached 1.1% in 2018. Of course, this percentage of early detection is still lacking when compared to Indonesia's overall achievements. The problem of early detection of cervical cancer using the Visual Inspection of Acetate (VIA) method in the Banda Aceh City Health Office's work area is the low percentage of women aged 30-50 years who carry out early detection of cervical cancer using the VIA method. In this regard, the author wants to examine further what factors play the most important role in early detection efforts when viewed from the perspective of behavioral factors of women aged 30-50 years in carrying out early detection of cervical cancer using the VIA method (Reuter, 2022). This study aims to determine the behavior of early detection of cervical cancer using the visual acetate inspection method.

## METHOD

This study is a quantitative study with an analytical survey nature using a questionnaire with a case-control research method. The population in this study were all women who had undergone early detection examinations using the VIA test method aged 30-50 years in 7 Integrated Service Units of the Health Centers in the Banda Aceh City Health Office Working Area totaling 226 women (1 Integrated Service Unit of the Health Center as the location for the Validity and Reliability test totaling 30 women and 6 Integrated Service Units of the Health Center as the location of the study totaling 196 women as samples in 2020). The sample was re-screened in the field using purposive sampling according to the inclusion criteria. 180 suitable samples were obtained, of which 13 people had passed the age limit of 50 years, and three people had moved to Aceh Besar.The sample in this study amounted to 360 women aged 30-50 years, namely a total sample of 180 women who had undergone the VIA Test as Cases and 180 women who had not undergone the VIA Test as Controls according to the 1:1 Case Control research method where both samples had received socialization and counseling about the VIA Test.

## RESULT

Table 1 shows that the average age of respondents was 39 years, with a time gap of about 4.4 months between receiving information or socialization about the VIA test and the implementation of the examination. Of all respondents, 4 cases were detected positive for VIA, where early treatment using cryotherapy had been carried out to prevent the development of cancer. The majority of respondents had a secondary education level (47.8%) and good psychological conditions (39.2%). In addition, most respondents showed a supportive level of awareness (51.7%), availability of adequate information (60.8%), time that allowed for examination (61.4%), and received family support (55.0%). VIA service

innovation was supported by 60.8% of respondents, while health workers who encouraged and socio-cultural encouragement were recorded at 60.6% and 50.0%, respectively.

Table 1.
Respondent characteristics

| Variables | Mean | Std ( Min-Max) | Categories | f | % |
|---|---|---|---|---|---|
| Age | 39.1 | 6.2 ( 30 – 50 ) | | | |
| Exposure time to VIA Test | 4.4 | 2.3 ( 1 - 9 ) | | | |
| Education | | | Basic | 40 | 11.1 |
| | | | Intermediate | 172 | 47.8 |
| | | | High | 148 | 41.1 |
| VIA Test | | | Not Doing | 180 | 50 |
| | | | Doing | 180 | 50 |
| VIA Case | | | Negative | 176 | 97.8 |
| | | | Positive | 4 | 2.2 |
| Knowledge | | | Not Enough | 211 | 58.6 |
| | | | Good | 149 | 41.4 |
| Psychology | | | Not Enough | 216 | 60 |
| | | | Good | 144 | 40.0 |
| Awareness | | | Does Not Support | 174 | 48.3 |
| | | | Support | 186 | 51.7 |
| Availability of Information | | | Does Not Support | 141 | 39.2 |
| | | | Support | 219 | 60.8 |
| Time | | | Does Not Support | 139 | 38.6 |
| | | | Support | 221 | 61.4 |
| Family Support | | | Does Not Support | 162 | 45.0 |
| | | | Support | 198 | 55.0 |
| VIA Innovation | | | Does Not Support | 141 | 39.2 |
| | | | Support | 219 | 60.8 |
| Officer Support | | | Does Not Support | 142 | 39.4 |
| | | | Support | 218 | 60.6 |
| Socio-cultural | | | Does Not Support | 180 | 50.0 |
| | | | Support | 180 | 50.0 |

Table 2.
Behavioral factors for early detection of cervical cancer VIA method

| Variables | VIA Test | | | | OR | (95% CI) | P Value |
|---|---|---|---|---|---|---|---|
| | Do not doing | | Doing | | | | |
| | f | % | f | % | | | |
| Knowledge | | | | | | | |
| Not Enough | 141 | 78.3 | 70 | 38.9 | 5.7 | (3.6 - 9.0) | 0.000 |
| Good | 39 | 21.7 | 110 | 61.1 | | | |
| Psychology | | | | | | | |
| Not Enough | 126 | 70.0 | 90 | 50.0 | 2.3 | (1.5 – 3.6) | 0.000 |
| Good | 54 | 30.0 | 90 | 50.0 | | | |
| Awarness | | | | | | | |
| Does Not Support | 149 | 82.8 | 25 | 13.9 | 29.8 | (16.8-52.8) | 0.000 |
| Support | 31 | 17.2 | 155 | 86.1 | | | |
| Availability of Information | | | | | | | |
| Does Not Support | 113 | 62.8 | 28 | 15.6 | 9.2 | (5.5 – 15.2) | 0.000 |
| Support | 67 | 37.2 | 152 | 84.4 | | | |
| Time | | | | | | | |
| Does Not Support | 86 | 47.8 | 53 | 29.4 | 2.2 | (1.4 – 3.4) | 0.000 |
| Support | 94 | 52.2 | 127 | 70.6 | | | |
| Family Support | | | | | | | |
| Does Not Support | 117 | 65.0 | 45 | 25.0 | 5.6 | (3.5 – 8.8) | 0.000 |
| Support | 63 | 35.0 | 135 | 75.0 | | | |
| VIA Innovation | | | | | | | |

| Variables | VIA Test | | | | OR | (95% CI) | P Value |
|---|---|---|---|---|---|---|---|
| | Do not doing | | Doing | | | | |
| | f | % | f | % | | | |
| Does Not Support | 74 | 41.1 | 67 | 37.2 | 1.2 | (0.8 – 1.8) | 0.000 |
| Support | 106 | 58.9 | 113 | 62.8 | | | |
| Officer Support | | | | | | | |
| Does Not Support | 100 | 55.6 | 42 | 23.3 | 4.1 | (2.6 – 6.) | 0.000 |
| Support | 80 | 44.4 | 138 | 76.7 | | | |
| Socio-cultural | | | | | | | |
| Does Not Support | 97 | 53.9 | 83 | 46.1 | 1.4 | (0.9 – 2.1) | 0.000 |
| Support | 83 | 46.1 | 97 | 53.9 | | | |
| Education | | | | | | | |
| Basic | 25 | 13.9 | 15 | 8.3 | | | |
| Intermediate | 100 | 55.6 | 72 | 40.0 | | 1.2 (0.6 – 2.4) | 0.614 |
| High | 55 | 30.6 | 93 | 51.7 | | 2.8 (1.4 – 5.8) | 0.005 |
| Age | | | | | 1.0 | (0.9 – 1.0) | 0.230 |

There is a significant relationship between several factors and women's behavior in conducting early detection of cervical cancer through VIA examination in Banda Aceh City. Women with good knowledge, favorable psychological conditions, high awareness, and support from family, information, and time tend to be more active in conducting VIA examinations. Support from health workers, VIA service innovations, and socio-cultural influences have also been shown to increase the likelihood of women conducting early detection. Women with higher education are 2.8 times more likely to conduct VIA tests than those with basic education. In contrast, secondary education and age do not have a significant relationship with early detection behavior. Although the respondents' age is in the cervical cancer-prone range (30–50 years), other psychological and social factors are more dominant in influencing examination decisions. Ignorance, fear, and the assumption that VIA tests are not necessary are the main obstacles. These findings emphasize the importance of comprehensive education and an approach that touches on psychological and social aspects to increase the coverage of VIA examinations as an effort to prevent cervical cancer (Table 2).

Table 3.
Results of the feasibility test of factors that play a role in early detection behavior of cervical cancer using the VIA method

| Variables | OR | 95% (Confident Interval) | | P-value |
|---|---|---|---|---|
| | | Lower | Upper | |
| Knowledge | 6.4 | 2.7 | 15.1 | 0.000 |
| Socio-Cultural | 0.1 | 0.1 | 0.4 | 0.000 |
| Psychology | 1.1 | 0.6 | 2.1 | 0.754 |
| Awareness | 54.1 | 21.8 | 134.1 | 0.000 |
| Availability of Information | 10.6 | 4.4 | 25.6 | 0.000 |
| Time Aspect | 1.9 | 0.9 | 4.5 | 0.106 |
| Family Support | 2.3 | 0.9 | 5.1 | 0.050 |
| VIA Innovation | 0.4 | 0.2 | 0.8 | 0.014 |
| Officer Support | 5.5 | 2.3 | 13.4 | 0.000 |

Table 3 shows that of the nine variables of early detection behavior factors, 8 variables are worthy of being included in the model, namely knowledge (P-value: 0.000), socio-cultural (P-value: 0.000), awareness (P-value: 0.000), availability of information (P-value: 0.000), time aspect (P-value: 0.106), family support (P-value: 0.050), VIA innovation (P-value: 0.014) and officer support (P-value: 0.000). While the psychological factor (P-value: 0.308), is not worthy of being included in the model because it is not significant (P-value) > 0.20.

Table 4.
Multivariate Analysis of Linear Regression Test Results with Model 1, Model 2 and Model 3

| Variabel | OR | (95% CI) | *P*-value |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Model 1 (Predisposing Factors) | | | |
| Knowledge | 5.7 | (2.9 – 11.1) | 0.000 |
| Awareness | 30.0 | (15.9 –56.5) | 0.000 |
| Model 2 (Supporting Factors) | | | |
| Availability of Information | 8.0 | (4.6 –13.9) | 0.000 |
| Time Aspect | 1.5 | (0.9 – 2.5) | 0.156 |
| Family support | 4.3 | (2.5 – 7.1) | 0.000 |
| VIA Innovation | 0,5 | (0.3 – 0.9) | 0.027 |
| Model 3 (Push Factors) | | | |
| Officer Support | 4.1 | (2.6 – 6.5) | 0.000 |
| Socio-cultural | 1.0 | (0.7 – 1.6) | 0.832 |

Table 4 shows that in model 1 (predisposing factors), awareness is the main factor originating from within the respondents in the early detection behavior of cervical cancer using the VIA test method, with a P-value of 0.000 (OR: 30.0; 95% CI: 15.9–56.5). In model 2 (supporting factors), the availability of information is the main factor playing a role in supporting the early detection behavior of cervical cancer using the VIA test method, with a P-value of 0.000 (OR: 8.0; 95% CI: 4.6–13.9). Furthermore, in model 3 (driving factors), the support of officers is the main factor playing a role in encouraging the early detection behavior of cervical cancer using the VIA test method, with a P-value of 0.000 (OR: 4.1; 95% CI: 2.6–6.5).

Tabel 5.
Hasil Uji Regresi Linear Final Model

| Variabel | OR | (95% CI) | *P*-value |
|---|---|---|---|
| Knowledge | 6.4 | (2.7– 15.1) | 0.000 |
| Awareness | 54.1 | (21.8 –134.1) | 0.000 |
| Availability of Information | 10.6 | (4.4 –25.6) | 0.000 |
| Time Aspect | 1.9 | (0.9 – 4.5) | 0.106 |
| Family support | 2.3 | (0.9 – 4.5) | 0.050 |
| VIA Innovation | 0.4 | (0.2 – 0.8) | 0.014 |
| Officer Support | 5.5 | (2.3 – 13.4) | 0.000 |
| Socio-cultural | 0.1 | (0.0 – 0.4) | 0.000 |

The final linear regression test results showed that of all the variables analyzed, the awareness factor was the primary determinant in influencing early detection behavior of cervical cancer through the VIA test method. With a P-value of 0.000 and an OR of 54.1 (95% CI: 21.8–134.1), it can be concluded that the higher a person's level of awareness, the chance of conducting an VIA examination as an early detection step increases significantly, even up to 54 times compared to individuals with low awareness (Table 5).

## DISCUSSION

Based on univariate analysis, it is known that out of 180 respondents who underwent the VIA test, 4 positive VIA cases (2.2%) were found during 2021. The average age of respondents was 39 years with an average time interval of 4.4 months between exposure to VIA information and undergoing the VIA test. This is illustrated by the results of the study where the description of respondents' answers describing the early detection behavior of the VIA method is as follows; the majority of respondents' education was at the secondary level, namely 172 (47.8%), good knowledge regarding the VIA test was 149 respondents (41.4%), and the good psychological condition of respondents was 144 (39.2%). Respondents' awareness that supported it was 186 (51.7%) with the availability of supporting information being 219 respondents (60.8%).

The time aspect of respondents who supported was 221 (61.4%), and family support was 198 (55.0%). Meanwhile, the VIA innovation that was supported was 219 (60.8%), with the support of officers who encouraged it, namely 218 (60.6%), and socio-cultural encouragement of 180 (50.0%). Women aged 30-50 years who carried out the VIA test method were expected

to exhibit early detection behavior. The purpose of early detection is to find early stage cases so that the possibility of healing can be increased, the discovery of VIA cases will not be known if there is no early detection behavior, namely conducting an VIA test immediately after a woman aged 30-50 years is exposed to information related to the VIA test. Based on this, it is essential to find cases early and very meaningful in determining what actions should be given to a woman in an effort to prevent and reduce morbidity and mortality rates in women, especially women aged 30-50 years, as a result of cervical cancer.Based on univariate analysis, it is known that the good psychological condition of respondents was 144 (39.2%). Women who took the VIA test who had good psychology were 90 women (50.0%), %), the results of the chi square statistical test obtained a P-value = 0.000 with OR 2.3 indicating a relationship between good female psychology and the behavior of early detection of cervical cancer in women aged 30-50 years in Banda Aceh City, where women who have good psychology are 2.3 times more likely to play a role in early detection behavior compared to women with poor psychology. The process of human psychic life is always followed by three psychological aspects, namely the cognitive aspect, the emotional or feeling aspect, and the aspect of will or interpersonal relationships (Babieva et al., 2019).

The cognitive aspect is related to perception, memory, learning, thinking, and problem solving, and the affective aspect is related to emotions or feelings and motives. At the same time, the cognitive element is associated with a person's behavior, which includes interpersonal and intrapersonal relationships. It can be understood that in the process of human life it is always related to what is thought (cognitive), what is felt (emotional) and what is done (interpersonal relationships). The psychological aspect concerns the mental health, intellectual ability, social, psychomotor, affective, and cognitive conditions of the individual (Bușu, 2020; Kowalczuk & Czubenko, 2023). Based on the description above, the researcher assumes that a woman must have good psychology as an effort to understand her condition and what is really needed for her to stay in a state of good health, especially the reproductive health of a woman.The cognitive aspect is related to perception, memory, learning, thinking, and problem solving, and the affective aspect is related to emotions or feelings and motives. At the same time, the cognitive element is associated with a person's behavior, which includes interpersonal and intrapersonal relationships. It can be understood that in the process of human life it is always related to what is thought (cognitive), what is felt (emotional) and what is done (interpersonal relationships). The psychological aspect concerns the mental health, intellectual ability, social, psychomotor, affective, and cognitive conditions of the individual (Naro et al., 2023; Ortony et al., 2022; Sari et al., 2020). Based on the description above, the researcher assumes that a woman must have good psychology as an effort to understand her condition and what is really needed for her to stay in a state of good health, especially the reproductive health of a woman.

Based on univariate analysis, it is known that the Awareness of respondents who support is 186 (51.7%). Women who do VIA tests who have supportive Awareness are 155 women (86.1%), the results of the chi square statistical test obtained P-value = 0.000 with OR 29.8 indicating a relationship between supportive Awareness and the behavior of early detection of cervical cancer in women aged 30-50 years in Banda Aceh City, where women who have supportive Awareness are 29.8 times more likely to play a role in early detection behavior compared to women who have non-supportive Awareness. Self-awareness is the basis of emotional intelligence, and the ability to monitor emotions from time to time is essential for psychological insight and self-understanding. Someone who has emotional intelligence will try to be aware of their feelings they control them. Stein explains that this self-awareness does not mean that the flow of their feelings carries away someone, so the mood does not prevent them entirely. On the contrary, self-awareness is a state when someone can be aware of the

situation including the emotions that are haunting their mind due to the problems they face so that they can then control them (Carden et al., 2022; Hadi & Gharaibeh, 2023; Li et al., 2021).

Based on the description above, it can be assumed that a woman's self-awareness of her health condition, especially reproductive health, will arise if women understand what benefits will be obtained by the VIA test for her nature as a woman, especially her obligations as a wife who has the mandate always to maintain her reproductive health. As we know, a woman's self-awareness is often not the focus of attention by officers in conveying information related to the VIA test, where the focus is only on the material and the process of information being conveyed but not on efforts to build, touch a woman's conscience to realize how important it is to carry out an VIA test as part of spiritual values that play a role in the presence of good self-awareness naturally possessed by a woman. The role of awareness as a dominant factor needs to be built and attempted in every woman aged 30-50 years by including material that can touch the side of a woman's religious understanding, so that self-awareness can be formed naturally. So that women have a strong desire full of awareness to carry out an VIA test as an early detection effort so that health is maintained, especially reproductive health as a mandate that maintaining reproductive health is also part of worship in the family and religion for a woman that must always be maintained properly.

## CONCLUSION

Early detection behavior of cervical cancer through the VIA method among women aged 30–50 years in the Integrated Service Unit of the Banda Aceh City Health Center is greatly influenced by awareness factors (self-awareness), availability of information, and encouragement from health workers. These three factors have been shown to have a significant relationship with the VIA test, with self-awareness being the most dominant factor.

## REFERENCES

Amirah, A., Suharto, T., Renowening, Y., Noviati, T. D., Ridha, A., & Ulaa, M. (2024). Dynamic System Model Using the Combi (Communication for Behavioral Impact) Method Approach to Early Detection of Stunting Neonates in Pregnant Women North Sumatra. Poltekita: Jurnal Ilmu Kesehatan, 17(4), 1397–1404.

Arbyn, M., Weiderpass, E., Bruni, L., de Sanjosé, S., Saraiya, M., Ferlay, J., & Bray, F. (2020). Estimates of Incidence and Mortality of Cervical Cancer in 2018: a Worldwide Analysis. The Lancet Global Health, 8(2), e191–e203.

Babieva, N. S., Grinenko, A. V, Shulga, T. I., Tkhugo, M. M., Zotova, L. E., Shukshina, L. V, & Ishkov, A. D. (2019). A Psychological Resource of Personality as an Integral Eco-Psychological Characteristic (The Interrelationship of Personal Development and Quality of Human Life). Ekoloji Dergisi, 107.

Bruni, L., Serrano, B., Roura, E., Alemany, L., Cowan, M., Herrero, R., Poljak, M., Murillo, R., Broutet, N., & Riley, L. M. (2022). Cervical Cancer Screening Programmes and Age-Specific Coverage Estimates for 202 Countries and Territories Worldwide: a Review and Synthetic Analysis. The Lancet Global Health, 10(8), e1115–e1127.

Bușu, A.-F. (2020). Emotional Intelligence as a Type of Cognitive Ability. Revista de Științe Politice. Revue Des Sciences Politiques, 66, 204–215.

Carden, J., Jones, R. J., & Passmore, J. (2022). Defining Self-Awareness in the Context of Adult Development: A Systematic Literature Review. Journal of Management Education, 46(1), 140–177.

Eyeberu, A., Mengistu, D. A., Negash, B., Alemu, A., Abate, D., Raru, T. B., Wayessa, A. D., Debela, A., Bahiru, N., & Heluf, H. (2021). Community Risk Perception and Health-Seeking Behavior in the Era of COVID-19 among Adult Residents of Harari Regional State, Eastern Ethiopia. SAGE Open Medicine, 9, 20503121211036132.

Hadi, S. A. A., & Gharaibeh, M. (2023). The Role of Self-Awareness in Predicting the Level of Emotional Regulation Difficulties among Faculty Members. Emerging Science Journal, 7(4), 1274–1293.

Kowalczuk, Z., & Czubenko, M. (2023). Cognitive Motivations and Foundations for Building Intelligent Decision-Making Systems. Artificial Intelligence Review, 56(4), 3445–3472.

Li, J., Ma, W., Zhang, M., Wang, P., Liu, Y., & Ma, S. (2021). Know Yourself: Physical and Psychological Self-Awareness with Lifelog. Frontiers in Digital Health, 3, 676824.

Liu, Y., & Zheng, W. (2024). Cervical Cancer Development, Screening, and Prevention. In Gynecologic and Obstetric Pathology (pp. 1–16). Springer.

Marcus, B. H., & Pekmezi, D. (2024). Motivating People to be Physically Active. Human Kinetics.

Naro, W., Mirnawati, M., Suarni, S., & Gani, S. M. (2023). How Aspects of Characteristic-Based Learner Development: Cognitive, Affective, and Psychomotor Aspects. Didaktika: Jurnal Kependidikan, 12(1), 1–14.

Nuranna, L. (2022). See and Treat: Cervical Cancer Prevention Strategy in Indonesia with VIA-DoVIA Screening and Prompt Treatment. The Indonesian Journal of Cancer Control, 2(1), 32–38.

Okunade, K. S. (2020). Human Papillomavirus and Cervical Cancer. Journal of Obstetrics and Gynaecology, 40(5), 602–608.

Ortony, A., Clore, G. L., & Collins, A. (2022). The Cognitive Structure of Emotions. Cambridge university press.

Reuter, A. M. (2022). Essays on Health and Development: Evidence from Indonesia and South Africa.

Sari, L. S., Sulistiono, A. A., & Winingsih, L. H. (2020). Effect of Psychomotor Development on Physical Health, Mental Health and Student Achievement. International Journal of Educational Policy Research and Review.

Thea, F., Sudiarti, T., & Djokosujono, K. (2020). Dominant Factors in the Occurrence of Functional Constipation in Adolescents in Jakarta. Jurnal Gizi Klinik Indonesia, 16(4), 129.

Wahyuni, C. (2023). Health Education about the Importance of Visual Inspection of Acetate (VIA) as an Effort to Early Detect Cervical Cancer in Women of Childbearing Age. Journal of Community Engagement in Health, 6(2), 272–279.