

Factors associated with adolescent girls' motivation for HPV vaccine in Wringinagung Village, Jember District

Nahdia Ratus Suhaimi ¹, Budi Utomo ^{2,*} and Brahmana Askandar Tjokoprawiro ³

¹ Midwifery Student, Midwifery Study Program, Faculty of Medicine, Airlangga University Surabaya, Indonesia.

² Department of Public Health Sciences, Faculty of Medicine, Airlangga University Surabaya, Indonesia.

³ Department of Obstetrics and Gynecology, Dr. Soetomo General Academic Hospital, Faculty of Medicine, Airlangga University Surabaya, Indonesia.

World Journal of Advanced Research and Reviews, 2024, 21(01), 920-928

Publication history: Received on 01 December 2023; revised on 07 January 2024; accepted on 10 January 2024

Article DOI: <https://doi.org/10.30574/wjarr.2024.21.1.0092>

Abstract

Cervical cancer is a disease caused by *Human Papilloma Virus* which can be transmitted through sexual intercourse. Prevention of cervical cancer can be done by early screening and HPV vaccination. HPV vaccination is recommended for women who have not had sexual contact so that in these circumstances a woman may not have been exposed to HPV. Motivation of adolescent girls is an important thing that can encourage the success of cervical cancer prevention efforts. Motivation of adolescent girls can be influenced by the level of knowledge, level of education, health promotion efforts, peer association, and socioeconomic status of parents owned by adolescents. This study used a *cross-sectional* approach, with a sampling method using *disproportionate stratified random sampling* technique of 280 adolescent girls aged 12-20 years in Wringinagung Village, Jember District. The results showed that there was no relationship between the level of knowledge and the motivation of adolescent girls towards the implementation of HPV vaccine in Wringinagung Village, Jember District; There was a relationship between the level of education and the motivation of adolescent girls towards the implementation of HPV vaccine in Wringinagung Village, Jember District; There was no relationship between health promotion efforts and the motivation of adolescent girls towards the implementation of HPV vaccine in Wringinagung Village, Jember District; There was no relationship between peer association and the motivation of adolescent girls towards the implementation of HPV vaccine in Wringinagung Village, Jember District.

Keywords: Cervical cancer; HPV vaccine; Knowledge; Education; Health promotion; Association; Socioeconomic status

1. Introduction

Cervical Cancer is the biggest threat to women caused by *Human Papilloma Viruses* (HPVs). *Human Papilloma Viruses* (HPVs) are pathogenic viruses that can be transmitted through sexual intercourse [14]. Handayani (2022) said that currently cervical cancer ranks second with 36,633 cases or 9.2% of the total cancer cases in Indonesia.

Adolescents in the age range of 15-26 years have a high risk of contracting sexually transmitted infections, both in terms of behavior, biology, and cultural influences. The most convincing strategy to overcome this problem is to conduct early screening for cervical cancer and schedule the implementation of HPV vaccination for cervical cancer prevention for unmarried adolescent girls [14].

* Corresponding author: Budi Utomo

HPV vaccination is usually recommended for boys and girls between 11 and 12 years of age. As the HPV vaccine is an ideal vaccine for adolescents [17]. The main target of the vaccine is women who have never had sexual contact. This is a situation where a woman may not have been exposed to HPV [5].

Motivation of adolescent girls is an important thing that can encourage the success of cervical cancer prevention efforts [5]. Knowledge about cervical cancer is information or facts that are already known by the public. The high incidence of cervical cancer is often caused by low knowledge and awareness of the risks of cervical cancer. Being informed about this cancer can help more women avoid one of the deadliest diseases [12].

The level of education can affect a person's actions in understanding what their body needs and can accept the concept of healthy living independently, creatively and sustainably. Highly educated people will more easily accept new ideas, so they will have rational thinking [3]. More intensive education or health promotion is needed so that young women have high motivation to take prevention so that they are willing to take the HPV vaccine [7].

Peer association has a very important effect in encouraging adolescent girls to follow what their friends do. This is due to the similarity of age and thinking and the ability of peers to influence other friends. When teenagers hang out with other teenagers who have broader thoughts, other teenagers will follow the behavior of their friends. This is because in association with peers there is social interaction between adolescents with each other when expressing their thoughts or opinions [6].

The motivation of adolescent girls to do the HPV vaccine can also be influenced by the socioeconomic status of their parents. Parents who have high insight and are able to provide the facilities needed by their children will encourage adolescent girls to fulfill their needs. The knowledge possessed by highly educated parents will generally be open and able to treat children positively. Parents will understand the needs of their children and pay attention to the physical and mental health conditions of their children [9].

In a study conducted by Dewi, *et al.*, (2021) conducted at SMA Negeri 1 Ubud showed that as many as 24 (24.7%) respondents had a poor level of knowledge of cervical cancer. The results of the study also showed that 71 (73.%) respondents had moderate motivation to vaccinate against HPV and 13 respondents had low motivation to vaccinate against HPV as an effort to prevent cervical cancer transmission.

Wringinagung Village is one of the villages included in Jombang Sub-district. Quoted on the official *website of the Central Bureau of Statistics of Jember Regency*, in 2021 the total population aged 15-24 years was 194,077 people who came from different backgrounds. This can affect the knowledge and motivation of adolescent girls to carry out HPV vaccination as a preventive effort. Based on this background, this study aims to examine the factors associated with the motivation of adolescent girls to the HPV vaccine as a prevention effort in Wringinagung Village, Jember District.

2. Materials and Method

This study was an *observational analytic* study with a *cross sectional* approach. The research was conducted in Wringinagung Village, Jember Regency in April-October 2023. The population of this study were adolescent girls aged 12-20 years. Sampling using *disproportionate stratified random sampling* technique as many as 280 teenagers in seven junior high schools / MTs and SMK / MA.

The independent variables in this study are the level of knowledge, level of knowledge, health promotion efforts, peer association, and socioeconomic status of parents owned by adolescent girls about cervical cancer and HPV vaccine. The dependent variable in this study is the motivation of adolescent girls to do the HPV vaccine.

The data analysis method used univariate and bivariate analysis with the *Chi Square* test to determine the relationship between each independent variable and the dependent variable, namely the relationship between the level of knowledge and the motivation of adolescent girls to the HPV vaccine; the relationship between the level of education and the motivation of adolescent girls to the HPV vaccine; the relationship between health promotion efforts and the motivation of adolescent girls to the HPV vaccine; the relationship between peer association and the motivation of adolescent girls to the HPV vaccine; and the relationship between parental socioeconomic status and the motivation of adolescent girls to the HPV vaccine.

3. Results

3.1. Relationship between knowledge level and motivation of adolescent girls' to do HPV vaccine

Table 1 Relationship between knowledge level and motivation of adolescent girls' to do HPV vaccine

Knowledge	Motivation				Total		p value
	Positive		Negative				
	F	%	F	%	F	%	
Good	107	38.2	35	12.5	142	50.7	0.408
Simply	90	32.1	25	8.9	115	41	
Less	15	5.4	8	2.9	43	8.3	
Total	212	75.7	68	24.3	280	100	

The table above shows the results of the *chi square* test with a *p value* of $0.408 > \alpha (0.05)$, meaning that statistically there is no relationship between the level of knowledge and the motivation of adolescent girls to do the HPV vaccine.

3.2. Relationship between education level and adolescent girls' motivation to take the HPV vaccine

Table 2 Relationship between education level and adolescent girls' motivation to take the HPV vaccine

Class	Motivation				Total		p value
	Positive		Negative				
	F	%	F	%	F	%	
VII	50	17.9	10	3.6	60	21.5	0.004
VIII	68	24.3	32	11.4	100	35.7	
IX	23	8.2	6	2.1	29	10.3	
X	19	6.8	14	5	33	11.8	
XI	43	15.4	5	1.8	48	17.2	
XII	9	3.2	1	0.4	10	3.6	
Total	212	75.7	68	24.3	280	100	

The table above shows the results of the *chi square* test with a *p value* of $0.004 < \alpha (0.05)$, which means that there is a statistical relationship between the level of education and the motivation of adolescent girls to do the HPV vaccine.

3.3. Relationship between health promotion efforts and adolescent girls' motivation to do HPV vaccine

Table 3 Relationship between health promotion efforts and adolescent girls' motivation to do HPV vaccine

Promkes	Motivation				Total		p value
	Positive		Negative				
	F	%	F	%	F	%	
Yes	107	38.2	35	12.5	142	50.7	0.271
No	90	32.1	25	8,9	115	41	
Total	212	75.7	68	24.3	280	100	

The table above shows that the results of the *chi square* test obtained a *p value* of $0.271 > \alpha (0.05)$ means that statistically there is no significant relationship between the existence of health promotion efforts carried out by local health facilities (puskesmas) to adolescent girls with the motivation of adolescent girls to do the HPV vaccine.

3.4. Relationship between peer association and adolescent girls’ motivation to get the HPV vaccine

Tabel 4 Relationship between peer association and adolescent girls’ motivation to get the HPV vaccine

Promkes	Motivation				Total		p value
	Positive		Negative				
	F	%	F	%	F	%	0.096
Yes	8	2.9	6	2.1	14	5.0	
No	204	72.8	62	22.2	266	95.0	
Total	212	75.7	68	24.3	280	100	

The table above shows that the results of the *chi square* test obtained a *p value* of $0.096 > \alpha (0.05)$ means that statistically there is no significant relationship between the influence of peer associations who have done the HPV vaccine and the motivation that adolescents have in doing the HPV vaccine.

3.5. Relationship between family socioeconomic status and adolescent girls’ motivation to get HPV vaccine

Table 5 Relationship between family socioeconomic status and adolescent girls’ motivation to get HPV vaccine

Promkes	Motivation				Total		p value
	Positive		Negative				
	F	%	F	%	F	%	0.251
Above	18	6.4	10	3.6	28	10.0	
Middle	96	34.3	32	11.4	128	45.7	
Bottom	98	35	26	9.3	134	44.3	
Total	212	75.7	68	24.3	280	100	

Table 5.12 above shows that the results of the *chi square* test showed a large *p value* of $0.251 > \alpha (0.05)$, meaning that statistically there is no significant relationship between the socioeconomic status of the family and the motivation of adolescent girls to do the HPV vaccine.

4. Discussion

4.1. Relationship between knowledge level and motivation of adolescent girls to do HPV vaccine

The results showed that the variable level of knowledge did not have a relationship with the motivation of adolescent girls towards the implementation of the HPV vaccine with a *p value* of $0.408 > \alpha (0.05)$. This is in line with research conducted by Wijaya (2021), that a person with good knowledge and negative motivation can be influenced by several factors, namely the level of education, physical factors and mental processes. The study revealed that someone who does not have the motivation to do something will not take this action even though they have good knowledge. Just as respondents with negative motivation to do the HPV vaccine will not vaccinate despite having high knowledge about cervical cancer and the HPV vaccine [24].

The level of education will affect adolescent girls’ knowledge of vaccines if accompanied by logical and critical thinking in receiving information about cervical cancer and the HPV vaccine. This is in line with research conducted by Safna and Wulandari (2022) which explains that through critical thinking skills students have the ability to process

various knowledge received so that they can draw a conclusion on that information and students will easily find solutions to problems appropriately and logically [21].

Knowledge is an impression of the mind possessed by humans as a result of using their senses. Human knowledge will continue to grow and develop variably according to previous experiences [5]. In this study, 35 respondents (12.5%) had good knowledge with negative motivation. There were also 15 respondents (5.4%) who had poor knowledge with positive motivation. This shows that motivation is not only influenced by knowledge, but also from the awareness or physical factors possessed by each human being after obtaining knowledge related to cervical cancer and the HPV vaccine.

This is in line with research conducted by Fitriani and Rinasih (2021) conducted in Purwodadi District which explains that low or weak motivation to participate in vaccination can be influenced by several factors, namely physical factors and mental processes such as lack of knowledge, environmental factors and age such as deviant news, situations and conditions, facilities and intrinsic factors such as awareness of each human being [8].

Adolescent girls who do not have their own salaries or wages and environmental factors where there is no free HPV vaccine program can underlie why adolescent girls do not have the motivation to do the vaccine even though they have good knowledge about cervical cancer and the HPV vaccine. This is because young women consider that the price of the HPV vaccine is very expensive if done independently and using personal funds. This is in line with research conducted by Damanik (2020), that extrinsic motivation is an encouragement or desire that arises from outside a person, such as; from teachers, from parents, from friends, from wages, the environment and others. In the motivation to do the HPV vaccine, the factors that influence are wages and the environment [4].

4.2. Relationship between education level and adolescent girls' motivation to get HPV vaccine

Education is a persuasive effort made to prepare adolescent girls to be able to develop their potential as a whole in entering life in the future [11]. Education can influence individual perceptions to do something. This will have an impact on the strength of the analysis so that individuals will always respond to problems with an integrated analysis that can have a good impact or output in solving problems. With this integrated review, it will build intrinsic motivation within the individual [22].

The results showed that the variable level of education had a relationship with the motivation of adolescent girls towards the implementation of the HPV vaccine with a *p value of* $0.004 < \alpha (0.05)$. This shows that the level of education affects the actions that a person will take. It was found that the level of education possessed by adolescent girls can affect the broader and more rational mindset of adolescent girls regarding the impact of cervical cancer if adolescent girls do not do the HPV vaccine. This is what makes young women encouraged or motivated to do the HPV vaccine as a prevention effort.

These results are in line with research conducted by Kristanto and Sari (2019) who examined the relationship between education level, knowledge, and motivation with the mother's compliance with BCG immunization for her child at the Karang Gading Village Posyandu, Tanon District. In this study, it was found that the level of education can influence behavior to use health care facilities and make mothers have a broader view in thinking and acting rationally so that later the educational background can influence mothers in using health services [14].

4.3. Relationship between health promotion efforts and adolescent girls' motivation to do HPV vaccine

Health promotion or health education is a series of efforts aimed at influencing others, starting from individuals, groups, families and communities to form healthy living behaviors. The expectation of health promotion is a change in health behavior or behavior to maintain and improve health that is conducive to the target of health promotion [16].

The results showed that the variable of health promotion efforts did not have a relationship with the motivation of adolescent girls towards the implementation of the HPV vaccine with a *p value of* $0.271 > \alpha (0.05)$. In this study, the majority of adolescent girls or as many as 226 adolescent girls (80.7%) have never received health promotion related to cervical cancer and HPV vaccine from the local health center or people around them. A total of 168 respondents who have not received health promotion related to cervical cancer and the HPV vaccine have positive motivation to do the HPV vaccine. In essence, the motivation of adolescent girls can be formed based on self-awareness or internal motivation from within adolescent girls in achieving health and a prosperous life by being free from the risk of exposure to the HPV virus which can cause cervical cancer.

This is in accordance with the explanation from Uno (2007) contained in research conducted by Mukhorotin and Effendi (2018), that motivation is an internal and external drive in a person which is indicated by the desire and interest to carry out activities, hopes, goals, appreciation and respect for self, a good environment, and interesting activities. The results obtained from research conducted by Mukhorotin and Effendi (2018) also explain that health promotion can affect the information obtained by respondents so that respondents feel interested in the stimulus, in this case motivating respondents to carry out HPV vaccination [16].

The results showed that health promotion efforts in Wringinagung village were still low regarding cervical cancer and the HPV vaccine. There are several factors that can underlie the low health promotion efforts, one of which is the lack of understanding from local health workers regarding the importance of providing health promotion regarding the HPV vaccine. This can occur when local health workers are wrong or inaccurate in assessing the problem of health promotion needs that are needed by the surrounding community, including adolescent girls.

This is in line with Susilowati's (2016) explanation in her book entitled Health Promotion. The book explains that nurses or health workers must be able to determine the priorities of client needs. In health promotion, health workers act as *self-care* facilitators so that the process of assessing health promotion needs is aimed at assessing clients, including individual clients, families or communities. The purpose of this assessment is to assist in providing direct interventions and identifying responses about the specific needs of communities or populations that need health promotion and to determine the risks of a community if promotion is given or not given [23].

The lack of health promotion related to the HPV vaccine can also be caused by the lack of policies in place in Jember district regarding the implementation of the HPV vaccine. Based on information spread in the mass media, the free HPV vaccine program is still targeted at children who are still in grades 5-6. In the official website of the PPID of the Jember Regency Government, it is explained that the socialization of the HPV vaccine will only be carried out in October 2022 in a routine immunization evaluation meeting conducted by the Jember District Health Office, this can be the basis why HPV vaccine health promotion in adolescent girls is still low.

The media used will give a good impression to teenagers if the media selection is right. Based on the characteristics of young women who quickly feel bored and the habits of adolescents who prefer to watch videos compared to reading texts, the effective media to use is audio-visual media. Audio visual media does not only contain sound elements but there are elements of moving images that can be seen such as animated videos, sound slides and so on. By using video media, young women will be more enthusiastic in understanding the contents of the video and focus on seeing the video until the end. This is because videos are more interesting and teenagers can listen and see the messages presented. This is in line with research conducted by Alini & Indrawati (2018) which says that counseling using audio visual media is more effective because audio visuals can be accessed by more than one human sense, especially hearing and vision. The more senses that play a role in the process of receiving messages, the easier the message will be received quickly through animation or other illustrations that can make it easier for adolescents to receive the message conveyed [1].

The use of *booklets* in health promotion can also be done so that what has been seen through videos can also be remembered through writing so that the messages conveyed can be remembered longer. The advantage of *booklets* is that they can be carried anywhere and can be placed anywhere because booklets have a small size. This is in line with research conducted by Murtiyarini, *et. al.* (2019) that *booklets are more effective than leaflets*. This is because *booklets are more varied, attractive and can display a lot of information compared to leaflets* [17].

To achieve the goal of health promotion in adolescent girls against the HPV vaccine, the *peer educator* method can be used. This method is a health education method conducted by, from, and for their peers with the aim of developing one's knowledge. With the *peer educator* method, adolescents will be more open and free to convey the problems they are experiencing with their peers. Similarity of age and good relationships can help counselors to influence their peers. In a study conducted by Sabriyanti, *et. al.* (2020) also showed the results that health promotion with the *peer educator* method was effective on the level of *HIV / AIDS* knowledge of SMAN 3 Parepare students [20].

4.4. Relationship between peer association and adolescent girls' motivation to get the HPV vaccine

Peer groups have an influence on the attitudes and self-image of individuals so that an attitude and view of the bar is formed which allows individuals to take action according to the de of their peers. Attitude and behavior adjustments can be formed based on the social environment around the individual. Adolescent girls usually have a sense of shame to discuss sex-related topics with other people who are older, so peers are the right group to provide socialization and education [13].

The results showed that the peer association variable did not have a relationship with the motivation of adolescent girls towards the implementation of the HPV vaccine with a p value of $0.096 > \alpha$ (0.05). According to researchers, peer association not only has a negative impact on the mindset of adolescent girls. The desire to imitate the behavior of peers around adolescent girls can result in motivation that is formed unconsciously. However, adolescent motivation is not only formed due to a sense of wanting to imitate but from information obtained when interacting with peers regarding certain matters, one of which is related to the importance of the HPV vaccine. This is confirmed by the data obtained that as many as 8 respondents (2.9%) have discussed cervical cancer and the HPV vaccine and have positive motivation in implementing the HPV vaccine.

This is in line with the explanation conveyed by Hamilton, *et. al.* (2021) that peer association can also be influenced by the social media they usually use to interact. Social media is one of the platforms for young women to communicate. Adolescent girls can also use social media to find out more about things they want to know, so that positive and negative emotional experiences will form in adolescent girls. Positive or negative peer interactions on social media may be influenced by certain features and characteristics that can have an impact on how interactions occur and the emotional experiences and perceptions of adolescents [10].

This can confirm the results of the study that the motivation of adolescent girls can not only be formed from a sense of wanting to imitate what peers do. Motivation can also be formed if there is interaction with peers in discussing cervical cancer and the HPV vaccine.

4.5. Relationship between family socioeconomic status and adolescent girls' motivation to do HPV vaccine

Socio-economic status is the role that a person has in certain groups of society related to the ability to meet the needs of daily life based on the level of achievement that the individual has. Socioeconomic status can be seen based on employment, education, health and fulfillment of life needs in the household [18].

The results showed that the variable of family socioeconomic status did not have a relationship with the motivation of adolescent girls towards the implementation of the HPV vaccine with a p value of $0.251 > \alpha$ (0.05). Family socioeconomic status only affects the mindset of adolescent girls. Adolescent girls who come from families with upper-class socioeconomic status will easily accept and adopt thoughts to meet their needs, including their reproductive health.

Basically, motivation is not only formed from intrinsic factors such as the mindset of adolescent girls but the environment also affects it. In this study, it was found that young women thought that the price to get the HPV vaccine was quite expensive, so most young women were not motivated to do the vaccine even though they came from families who had middle and upper class social status.

This explanation is in line with research conducted by Fitriani and Rinasih (2021) which explains that a person's motivation can be influenced by news spread about the issue. This will later form bad thoughts in the human subconscious which will cause the person not to have self-awareness in striving for the best in themselves to achieve the maximum level of health [8].

The facilities provided by parents will also underlie the mindset of adolescents so that positive motivation and negative motivation will be formed from adolescent girls. Facilities are related to the income earned by parents. This is in line with research conducted by Nurwati and Listari (2021) that families with relatively low income will result in lower fulfillment of children's rights. Another impact of relatively low parental income is the inhibition of child development due to the inability of parents to meet the needs of stimulation in children [18].

4.6. Research Barriers and Limitations

The obstacles that occur in this study are that there are several other factors that cannot be predicted in advance that can affect respondents in answering the questionnaire given. Another obstacle that occurred when collecting data on respondents in class XI and class XII of SMK Baiturrohman was due to the location of the class which was divided into two buildings so that it was difficult to collect these respondents in one room. The school provided a solution in the form of several representatives of young women who became research respondents.

The limitations in this study are:

- Adolescent girls from 4 schools who became respondents in this study were not evenly divided per grade level. Where in SMP Nurul Chotib and MTs Al-Qodiri 4 only taken from class VII and class VIII only, while in SMK Nurul Chotib and MA Al-Qodiri 4 only taken class XI and XII.
- This study did not use the variable of parents' closeness to their children, so this study cannot explain in detail the situation of parents' closeness to their children which is one of the forms of motivation for adolescent girls to do the HPV vaccine.

5. Conclusion

Based on the results of research and discussion of factors related to the motivation of adolescent girls towards HPV vaccine in Wringinagung Village, Jember Regency, it can be concluded that:

- There is no relationship between the level of knowledge and the motivation of adolescent girls to do HPV vaccine in Wringinagung Village, Jember Regency.
- There is a relationship between education level and motivation of adolescent girls to do HPV vaccine in Wringinagung Village, Jember Regency.
- There is no relationship between health promotion efforts and adolescent girls' motivation to do HPV vaccine in Wringinagung Village, Jember Regency.
- There is no relationship between peer association and adolescent girls' motivation to do HPV vaccine in Wringinagung Village, Jember Regency.
- There is no relationship between family socioeconomic status and adolescent girls' motivation to do HPV vaccine in Wringinagung Village, Jember Regency.

Compliance with Ethical Standards

Acknowledgements

Thank you to all respondents who have been willing to be the object of research. Thank you to everyone who participated in the research.

Disclosure of conflicts of interest

The author has no conflict of interest

Statement of informed consent

Before data collection, the researcher has explained to the respondent about the research that will be carried out. If the respondent agrees then directed to sign an informed consent sheet and the respondent is given the right to resign if they feel harmed.

References

- [1] Alini, & Indrawati. (2018). 'Effectiveness of health promotion through audio visual and leaflet about SADARI (Breast Self Examination) on increasing adolescent girls' knowledge about SADARI at SMAN 1 Kampar in 2018'. *Journal of nurses*, 2(23), 1-9.
- [2] Ani, F. (2021). 'The relationship between parenting and peer association on juvenile delinquency in SMA Negeri 5 Palopo'. *Doctoral dissertation, University of Muhammadiyah Palopo*.
- [3] Chandra, F., Junita, D., & Fatmawati, T. Y. (2019). Level of education and knowledge of pregnant women with anemia status. *Indonesian Nursing Science Scientific Journal*, 9(4).
- [4] Damanik, R. (2020). 'Factors that influence student achievement motivation'. *Serunai: Scientific Journal of Education Science*, 6(1), 29-34.
- [5] Dewi, P. I. S., Purnami, L. A., & Heri, M. (2021). Adolescent girls' attitudes about cervical cancer with adolescents' motivation to vaccinate against HPV. *Silampari Nursing Journal*, 5(1), 51-58.

- [6] Endarti, D. (2018). The influence of peer association and learning motivation on the creativity of sociology learning of XII social studies class students of SMA Negeri 1 Kartasura. *SOCIALITY; Scientific Journal of Educ. Sos Ant*, 6(2).
- [7] Faisal, M., Dhuha, A., Irawan, M. P., Juwita, S., & Wulandari. (2022). Cervical cancer education and the effectiveness of early HPV vaccine at SMAN 2 Pekanbaru. *Journal of Health Abdimas (JAK)*, 4(2), 329- 333.
- [8] Fitriani, F., & Riniasih, W. (2021). 'The effect of health education for the elderly about the covid-19 vaccine on the motivation of the elderly to participate in covid-19 vaccination in Ngablak Hamlet, Ngraji Village, Purwodadi District, Grobogan Regency'. *The shine light of the world of D-III nursing*, 6(2).
- [9] Gebrinna, A., Dahlan, S., & Andriyanto, R. E. (2019). The relationship between economic status and parents' education level with students' learning motivation. *ALIBKIN (Journal of Counseling Guidance)*, 7(1).
- [10] Hamilton, J. L., Do, Q. B., Choukas-Bradley, S., Ladouceur, C. D., & Silk, J. S. (2021). 'Where it hurts the most: Peer interactions on social media and in person are differentially associated with emotional reactivity and sustained affect among adolescent girls'. *Research on child and adolescent psychopathology*, 49, 155- 167.
- [11] Harahap, D. A., Aprilla, N., & Muliati, O. (2019). The relationship between hypertension patients' knowledge about hypertension and compliance with taking antihypertensive drugs in the working area of the Kampa health center in 2019. *Ners Journal*, 3(2), 97-102.
- [12] Herawati, A., Kusumawati, L., & Hidayat, A. (2018). The relationship between knowledge and motivation of sari mulia hospital employees to carry out HPV vaccination. *Health Dynamics: Journal of Midwifery and Nursing*, 9(1), 1-9.
- [13] Kholifatullah, A. I., & Notobroto, H. B. (2023). 'The relationship between social support and human papillomavirus immunization intention as cervical cancer prevention'. *Tambusai Health Journal*, 4(3), 3699-3707.
- [14] Kristanto, B., & Sari, EOP (2019). 'Relationship of knowledge, motivation and level of education factors with the presence of BCG immunization'. *KOSALA: Journal of Health Sciences*, 7(1), 37-46.
- [15] Kuntari, S., Widiyanto, A., Arradini, D., Ernawati, E., Handayani, R. T., & Atmojo, J. T. (2021). Community knowledge and behavior towards human papiloma virus and HPV vaccine. *Journal of Mental Nursing (JKJ): National Nurses Association of Indonesia*, 9(2), 311-322.
- [16] Mukhoirotin, M., & Effendi, D. T. W. (2018). 'Effect of health education on motivation to perform HPV vaccination at Man 1 Jombang'. *Journal of Holistic Nursing Science*, 5(1), 14-24.
- [17] Murtiyarini, I., Nurti, T., & Sari, L. A. (2019). 'Effectiveness of health promotion media on teenagers' knowledge about maturing marriage age at SMA N 9 Jambi City'. *Journal Health & Science: Gorontalo Journal Health and Science Community*, 3(2), 71-78.
- [18] Nurwati, R. N., & Listari, Z. P. (2021). 'The influence of family socioeconomic status on fulfilling children's educational needs'. *Share: Social Work Journal*, 11(1), 74-80.
- [19] Ortiz, R. R., Smith, A., & Coyne-Beasley, T. (2019). A systematic literature review to examine the potential for social media to impact HPV vaccine uptake and awareness, knowledge, and attitudes about HPV and HPV vaccination. *Human vaccines & immunotherapeutics*, 15(7-8), 1465-1475.
- [20] Sabriyanti, T. (2020). 'The effectiveness of health promotion with the peer educator method on the level of knowledge of hiv/aids among students of public high school 3 parepare'. *Scientific Journal of Human and Health*, 3(2), 175-185.
- [21] Safna, O. P., & Wulandari, S. S. (2022). 'The influence of motivation, learning discipline, and critical thinking skills on student learning outcomes'. *Scaffolding: Journal of Islamic Education and Multiculturalism*, 4(2), 140-154.
- [22] Siahann, M. S., Tanzil, A. M., Kusuma, A. R., Prasetyo, E., & Ardila, N. M. I. (2022). 'The relationship between community education level and motivation for dental care during the sars-cov-2 virus pandemic at the tegalombo health center, pacitan district'. *Journal of Synthesis: Science Research, Applied and Analysis*, 3(2), 99-111.
- [23] Susilowati, D. (2016). *Health promotion*. Kebayoran Baru South Jakarta: Health Human Resources Center.
- [24] Wijaya, N. I. S. (2021). 'The relationship between knowledge and motivation in preventing complications of diabetes mellitus in the Samata Health Center working area'. *Nursing Care and Health Technology Journal (NCHAT)*, 1(1), 11-15.