ISSN : 2443-4019 | eISSN : 2502-2083
ADI HUSADA Nursing Journal
Jurnal Keperawatan - Sekolah Tinggi Ilmu Kesehatan Adi Husada Surabaya

Mother's Perception of Implementing Cervical Cancer Prevention Behaviour Through HPV (Human Papilloma Virus) Vaccination

Ni Komang Tri Agustini[1]*, Putu Noviana Sagitarini[1], Ida Ayu Ningrat Pangruating Diyu[1], Jintana Artsanthia[2]

[1)]Bachelor of Nursing Program Institut Teknologi dan Kesehatan Bali, Indonesia

[2)] Saint Louis College, Bangkok, Thailand

Correspondent Author:
Ni Komang Tri Agustini

Email :
agustini.komang90@gmail.com

Keywords :
Cervical Cancer, Early Prevention Behavior, HPV Vaccination

Abstract

The high number of cervical cancer cases is still a big problem in Indonesia. Preventive measures that can be taken are early detection and vaccination against HPV (Human Papilloma Virus). However, the behavior of taking HPV vaccination is still low and is still influenced by several factors, according to the Health Belief Model theory, namely perception. This research is to identify and analyze perceptions using the Health Belief Model approach of HPV vaccination. The design used in this research is descriptive-analytical cross-sectional. The research was conducted in July-September 2023 at the Blahbatuh I Public Health Centre. The instrument used was a questionnaire about the mother's perception of the Health Belief Model with results reliability test 0.8614. Data were analyzed using SPSS with univariate and bivariate tests with Chi-Square. The components of the healing belief model that have a relationship with cervical cancer prevention behavior through HPV vaccination are perceived seriousness with p-value = 0.001 ($p<0.05$), perceived vulnerability with p-value = 0.001 ($p<0.05$), perceived benefits with p-value = 0.001 ($p<0.05$), perceived obstacles with p-value = 0.001 ($p<0.05$), and action to act with p-value = 0.001 ($p<0.05$). Maternal perceptions about the seriousness, susceptibility, benefits, barriers, and actions have a significant relationship with mother's prevention behavior regarding HPV vaccination.

INTRODUCTION

Cervical cancer is the most common cause of death, especially in women (Zhang et al., 2020). Cervical cancer does not cause early symptoms for sufferers, therefore most women do not know about cervical cancer, especially early examination for cervical cancer (Bedell et al., 2020). Early examination and prevention include initial action to avoid delays in treating cervical cancer, especially recommended for groups who are vulnerable to cervical cancer (Cheng et al., 2020). People who are vulnerable to cervical cancer are teenagers, women with low education or living in developing countries, mothers who have given birth and have had sexual relations(Smolarz et al., 2022). According to the Global Burden of Cancer Study (Globucan) (2020 quoted in World Health Organization (WHO), 2020) cervical cancer cases reached 604,127 cases with a total of 341,831 deaths. In 2020, Indonesia had 36,633 cases of cervical cancer and 21,003 deaths. West Java Province is the highest region in Indonesia where cervical cancer is suspected using the IVA method, with 814 cases. Bali Province is in 6th place with WUS suspected of cervical cancer using the IVA method with 118 cases. Tabanan Regency is the district with the highest positive IVA in Bali Province in 2021 with a total of 81 cases from 1,648 women aged 30-50 years. Gianyar Regency followed in second place in contributing to positive VIA with a total of 56 cases out of 3,411 women aged 30-50 years suspected of cervical cancer with 3 cases (Kementrian Kesehatan RI, 2021).

The high number of cervical cancer cases from year to year means that this disease must be prevented. The Indonesian Ministry of Health (2020) explained that the government is trying to prevent and control cervical cancer in Indonesia by early screening for cervical cancer in women aged 30-50 years, including undergoing an IVA test or pap smear, having healthy and

regular sex, not smoking, consuming healthy food, regular exercise, and HPV vaccination (Kashyap et al., 2019). The HPV vaccine is a vaccine to prevent infection with HPV types 16 and 18 which cause cervical cancer (Markowitz & Schiller, 2021). Efforts to prevent cervical cancer with HPV vaccination are still low. Preliminary studies conducted almost 80% of mothers had not carried out HPV vaccination as a preventive behavior for cervical cancer (Kamolratanakul & Pitisuttithum, 2021).

The behavior of preventing cervical cancer through HPV vaccination, which is still low, is influenced by several factors including attitude, knowledge, husband or family support, access to information, support from health cadres, and the role of health workers (Bedell et al., 2020). Another factor that influences a woman's behavior in carrying out early cervical cancer screening according to the Health Belief Model theory is a perception (Kim et al., 2022). The Health Belief Model (HBM) is a theory that can be widely used to understand a person's health behavior (Anuar et al., 2020). This theory can be used to understand the behavior of reluctance to prevent cervical cancer by getting HPV vaccination through analysis of six components, namely perceived vulnerability, perceived severity, perceived benefits, perceived barriers, cues to action, and self-confidence to take action (Alligood, 2014). Based on this, this research was conducted to identify and analyze perceptions using the Health Belief Model approach of HPV vaccination.

RESEARCH METHODS

The research design used was descriptive analytic with a cross-sectional approach. This research was carried out in July-September 2023. The research location was Blahbatuh I Community Health Center. The population in this study were reproductive-age women, married and willing to take part in the research and sign the research consent formula. The sample used was 340 respondents. Respondents who agree to participate in this research are required to express their willingness voluntarily by signing an informed consent sheet. The instruments used are a respondent characteristics questionnaire and a cervical cancer perception questionnaire developed by the researcher. The questionnaires were based on Health Belief Models by Rosenstock in 1996. The items to be measured are perceived seriousness, perceived susceptibility, perceived benefits perceived barrier, and clues to action to see perceptions of preventing cervical cancer through HPV vaccination by Health Belief Models. Data on each variable will be analyzed using the SPSS for Windows version 22.0 program which includes: a univariate descriptive test (frequency and percentage) and a Chi-Square test to determine the relationship between each variable. This research has received ethical approval number 04.0339/KEPITEKES-BALI/VI/2023.

RESULT

Table 1 shows that for the 340 reproductive health woman respondents, data was obtained based on the most dominant age characteristics of WUS in this study 36-45 years with 229 (67.4%) reproductive women. The most dominant occupation of reproductive women in this study was working as a housewife 96 (28.2%). The most dominant characteristic of the reproductive woman education level in this study was the Senior High School 97 (28.5%). **The most dominant characteristic of HPV vaccination history in reproductive women was that 270 (79.5%) did not receive HPV vaccination**.

Table 1.

Characteristic of Respondents

Variable	n	%
Age		
30-35 years	50	14.7
36-45 years	229	67.4
46-50 years	61	17.9
Occupation		
Civil servants	48	14.1
Private employees	35	10.3
Businesswoman	63	18.5
Farmer	47	13.8
Laborer	51	15.0
Housewive	96	28.2
Education Level		
No graduate from school	21	6.2
Elementary school	46	13.5
Junior High School	93	27.4
Senior High School	97	28.5
Diploma degree	61	17.9
Bachelor degree	22	6.5
HPV Vaccination history		
Yes	70	20.5
No	270	79.5

Table 2

The relationship between perception of Health Belief Model with Prevention Behavior of Cervical Cancer (n=270)

Variables	Prevention Behaviour			Total	p-value
	Good	Average	Poor		
Perception of Seriousness					0.001
Positive	122 (61.9)	69 (35)	6 (3)	197 (100)	
Negative	29 (39.7)	28 (38,4)	16 (21,9)	73 (100)	
Perception of Vulnerability					0.001
Positive	122 (61.6)	70 (35.4)	6 (3)	198 (100)	
Negative	29 (40.3)	27 (37.5)	16 (22.2)	72 (100)	
Perception of Benefits					0.001
Positive	122 (60.7)	73 (36.3)	6 (3)	201 (100)	
Negative	29 (42)	24 (34.8)	16 (23.2)	69 (100)	

Perception of Barriers					0.001
Positive	122 (61.9)	69 (35)	6 (3)	19 (100)	
Negative	29 (39.7)	28 (38.4)	16 (21.9)	73 (100)	
Action to Act					0.001
Positive	122 (61.3)	71 (35.7)	6 (3)	199 (100)	
Negative	29 (40.8)	26 (36.6)	16 (22.5)	71 (100)	
Total	151 (55.9)	97 (35.9)	22 (8.1)	270 (100)	

Table 2 shows bivariate test of knowledge about HPV is displayed with perceptions based on the Health Belief Model approach which states perceptions of seriousness with p-value = 0.001 ($p<0.05$), perceptions of susceptibility with p-value = 0.001 ($p<0.05$), perceived benefits with p-value = 0.001 ($p<0.05$), perceived barriers with p-value = 0.001 ($p<0.05$), and actions to act with p-value = 0.001 ($p<0.05$) has a significant relationship**.**

DISCUSSION

Perception of Seriousness

A higher perception of seriousness had a significant relationship with the prevention behavior of HPV vaccination by respondents in this study (p=0.001). The results of this research are relevant to the health belief model theory. The perceived severity or seriousness determines whether there is disease prevention or not (Azriful et al., 2021). The perceived seriousness is determined if there is action to prevent the disease, in this case, cervical cancer (Markowitz & Schiller, 2021), which makes the individual have the desire to seek information and use the HPV vaccine to prevent cervical cancer (Mahmood Beg et al., 2022). This research found that the majority of mothers responded positively to the seriousness of the disease that would result if they did not take action such as HPV vaccination. Perception of seriousness is a perception that concerns the feeling of the seriousness of an illness which, if someone ignores it or does not treat it, will result in medical, psychological, and social consequences (Anuar et al., 2020). The more consequences that are believed to occur, the greater the perception that the problem is a threat so that action is needed (Sonmezer et al., 2022). If a person feels vulnerable to a disease that is considered serious, he will take action to prevent or treat it (Subedi et al., 2021). Actions taken to treat or prevent depend on the perceived benefits. The benefits of taking preventive action are more important than the obstacles found in carrying out these actions (Quinn & Goldman, 2015).

Perception of Susceptibility

The results of the analysis show that there is a significant relationship between respondents' high perception of susceptibility and prevention behavior of the HPV vaccine (p=0.01). These results are in line with research conducted by Azriful et al which found that respondents with higher perceived susceptibility were more likely to carry out HPV vaccination compared to those with lower perceived susceptibility (Azriful et al., 2021). Perceived susceptibility describes the assumption that there is a vulnerability to disease that could befall a person (Nguyen et al., 2021). A person's belief about being susceptible or not being susceptible to disease will influence a person's attitude and ability to take action. People who have felt vulnerable about the possibility of being affected by a disease will influence their behavior primarily to prevent the disease or seek help early (Goncu Ayhan et al., 2021). The results of this study reveal that mothers have a high perception of vulnerability. This perception arises because the mother knows the dangers that might occur (Adane et al., 2022). The feeling of fear of being infected with HPV increases the psychological pressure experienced by mothers during pregnancy (Al-Zalfawi et al., 2021). Perception of vulnerability is the perceived perception of the risk that will arise from the disease (Karafillakis et al., 2021). Each assesses this possibility even though their conditions are the

same. The higher the perceived vulnerability, the greater the perceived threat and the greater the individual's likelihood of taking action to overcome problems that may arise (Zhang et al., 2020). Pregnant women know that HPV is a serious disease, which increases feelings of anxiety and worry if they are infected with the HPV virus. The risk of transmission to children also increases maternal anxiety. Confusion and misinformation about HPV transmission increase mothers' willingness to vaccinate (Januszek et al., 2021). The research results revealed that almost all respondents had the desire to vaccinate. When someone takes action to prevent or treat an illness, they must feel vulnerable to the condition or disease (Stuckelberger et al., 2021).

Perception of Benefits

Perceived benefits are something that a person believes is the result of an action taken(Azriful et al., 2021). The results of the analysis show that there is a significant relationship between respondents' high perception of the benefits of prevention behavior of the HPV vaccine (p=0.01). Based on the health belief model theory, states that individuals will carry out a behavior if they believe that their behavior is beneficial for themselves and the environment, but if the benefits are not appropriate, they will not carry out the behavior. Actions taken to treat or prevent a disease depend on a person's perceived benefits (Kashyap et al., 2019). The benefits of action in carrying out prevention will play a greater role than the obstacles that may be encountered. 60,7% of women have a positive perception of the benefit of taking HPV vaccination is one prevention that can be done to increase immunity to the HPV virus. Having sufficient information will increase the mother's willingness to vaccinate against HPV (Zhang et al., 2020). The research results stated that mothers who received sufficient information about vaccines, their use, and safety had received HPV vaccination. Therefore, it is important to be informed about the safety and effectiveness of the HPV vaccine (Sonmezer et al., 2022).

Perception of Barriers

Perceived barriers are negative things that a person believes are the result of preventive actions (Zewdie et al., 2022). This perception of obstacles can originate from within the individual or from factors outside the individual. Concerns about vaccine safety are a major obstacle to vaccination, especially for newly developed vaccines (Nguyen et al., 2021). Perceived barriers, namely consideration of the obstacles that may be encountered in deciding on an action or making a change in behavior. In this study, there was a significant relationship between high perceived barriers to the prevention behavior of HPV vaccination among respondents (p=0.001). Research by Sari et al the majority of students at SMP Negeri 1 Denpasar were due to the absence of a free HPV vaccination program, high costs, and fear of pain during the vaccine (Sari et al., 2022). The Health Belief Model also explains that a person's judgment is also influenced by signals to action or incentives (cues to action). This study shows that a higher signal to act is significantly related to the acceptance of the HPV vaccine among respondents (p=0.001) the research from Nugraini also described similar results, namely that respondents with higher cues to action were 5.9 times more likely to be vaccinated against HPV(Nugraini et al., 2017). Pregnant women are willing to be vaccinated if it is recommended for pregnant women. The reason for rejection is the lack of data about the safety of the HPV vaccine and the possibility that it could harm the unborn fetus (Goncu Ayhan et al., 2021). Research by Jayagobi et al shows that pregnant women do not have the desire to take the vaccine because they are worried about vaccine safety, while breastfeeding mothers are worried about the long-term negative impact on their children (Jayagobi et al., 2021). Respondents' limited access to information about HPV, and limited information about the long-term protective function of the HPV vaccine, are also obstacles to administering the vaccine (Agustini, 2023)

Action to Act

The act of taking action is one of the consequences of carrying out actions that can prevent or treat a disease (Baldolli et al., 2020). This action is carried out based on a person's perception of the seriousness of an illness and the benefits received. Mothers who state that cervical cancer is serious will increase their confidence to take action, namely by getting the HPV vaccination. This research is in line with research by Fares et al., (2021) The majority of reasons for accepting the vaccine are the risk of

HPV, safety and effectiveness of the HPV vaccine (Fares et al., 2021). In this study, women's cues to take action in using the HPV vaccine to prevent cervical cancer could come from themselves or outside (Sari et al., 2022). Self-encouragement can be in the form of the intention to use the HPV vaccine to anticipate cervical cancer in women, while external encouragement comes from a family history of cervical cancer, friends, and health education about the HPV vaccine (Markowitz & Schiller, 2021). Perception of high confidence is significantly related to prevention behavior through HPV vaccination (p=0.001) with the majority of respondents in the study.

CONCLUSION

From the results of the research and discussions that have been described, it can be concluded that mothers' perception of getting HPV vaccinated is very high, but there is still information about vaccines that is not evenly distributed so there are still mothers who do not vaccinate. There needs to be cross-sector collaboration in facilitating information and implementation of vaccine activities. A suggestion for further research is exploring the acceptance of HPV vaccine acceptance.

BIBLIOGRAPHY

Adane, M., Ademas, A., & Kloos, H. (2022). Knowledge, attitudes, and perceptions of COVID-19 vaccine and refusal to receive COVID-19 vaccine among healthcare workers in northeastern Ethiopia. *BMC Public Health*, *22*(1), 1–14. https://doi.org/10.1186/s12889-021-12362-8

Agustini, N. K. T. W. L. G. N. S. (2023). Analisis Persepsi Vaksinasi COVID-19 Dengan Pendekatan Health Belief Model pada Ibu Hamil dan Ibu Nifas di Bali. *Malahayati Nursing Journal*, *5*.

Al-Zalfawi, S. M., Rabbani, S. I., Asdaq, S. M. B., Alamri, A. S., Alsanie, W. F., Alhomrani, M., Mohzari, Y., Alrashed, A. A., Alrifdah, A. H., & Almagrabe, T. (2021). Public knowledge, attitude, and perception towards COVID-19 vaccination in Saudi Arabia. *International Journal of Environmental Research and Public Health*, *18*(19). https://doi.org/10.3390/ijerph181910081

Alligood, M. R. (2014). Nursing Theorists and Their Work (8th edn). In *Nursing Theorists and Their Work (8th edn)*. https://doi.org/10.5172/conu.2007.24.1.106a

Anuar, H., Shah, S. A., Gafor, H., Mahmood, M. I., & Ghazi, H. F. (2020). Usage of Health Belief Model (HBM) in health behavior: A systematic review. *Malaysian Journal of Medicine and Health Sciences*, *16*(November), 201–209.

Azriful, Bujawati, E., Nildawati, Ramdan, R., Mallapiang, F., & Suyuti, S. (2021). Health Belief Model on women's cancer recovery (a phenomenological study on cancer survivors). *Gaceta Sanitaria*, *35*, S9–S11. https://doi.org/10.1016/j.gaceta.2020.12.003

Baldolli, A., Michon, J., Verdon, R., & Fournier, A. (2020). Vaccination perception and coverage among healthcare students in France in 2019. *BMC Medical Education*, *20*(1), 1–10. https://doi.org/10.1186/s12909-020-02426-5

Bedell, S. L., Goldstein, L. S., Goldstein, A. R., & Goldstein, A. T. (2020). Cervical Cancer Screening: Past, Present, and Future. *Sexual Medicine Reviews*, *8*(1), 28–37. https://doi.org/10.1016/j.sxmr.2019.09.005

Cheng, L., Wang, Y., & Du, J. (2020). Human papillomavirus vaccines: An updated review. *Vaccines*, *8*(3), 1–15. https://doi.org/10.3390/vaccines8030391

Fares, S., Elmnyer, M. M., Mohamed, S. S., & Elsayed, R. (2021). COVID-19 Vaccination Perception and Attitude among Healthcare Workers in Egypt. *Journal of Primary Care*

and Community Health, *12*. https://doi.org/10.1177/21501327211013303

Goncu Ayhan, S., Oluklu, D., Atalay, A., Menekse Beser, D., Tanacan, A., Moraloglu Tekin, O., & Sahin, D. (2021). COVID-19 vaccine acceptance in pregnant women. *International Journal of Gynecology and Obstetrics*, *154*(2), 291–296. https://doi.org/10.1002/ijgo.13713

Januszek, S. M., Faryniak-Zuzak, A., Barnaś, E., Łoziński, T., Góra, T., Siwiec, N., Szczerba, P., Januszek, R., & Kluz, T. (2021). The approach of pregnant women to vaccination based on a covid-19 systematic review. *Medicina (Lithuania)*, *57*(9), 1–11. https://doi.org/10.3390/medicina57090977

Jayagobi, P. A., Ong, C., Thai, Y. K., Lim, C. C. W., Jiun, S. M., Koon, K. L., Wai, K. C., Chan, J. K. Y., Mathur, M., & Chien, C. M. (2021). Perceptions and acceptance of COVID-19 vaccine among pregnant and lactating women in Singapore: A cross-sectional study. *MedRxiv*, *19*, 2021.06.29.21259741.

Kamolratanakul, S., & Pitisuttithum, P. (2021). Human papillomavirus vaccine efficacy and effectiveness against cancer. *Vaccines*, *9*(12), 1–21. https://doi.org/10.3390/vaccines9121413

Karafillakis, E., Francis, M. R., Paterson, P., & Larson, H. J. (2021). Trust, emotions and risks: Pregnant women's perceptions, confidence and decision-making practices around maternal vaccination in France. *Vaccine*, *39*(30), 4117–4125. https://doi.org/10.1016/j.vaccine.2021.05.096

Kashyap, N., Krishnan, N., Kaur, S., & Ghai, S. (2019). Risk Factors of Cervical Cancer: A Case-Control Study. *Asia-Pacific Journal of Oncology Nursing*, *6*(3), 308–314. https://doi.org/10.4103/apjon.apjon_73_18

Kementrian Kesehatan RI. (2021). Profil Kesehatan Indonesia 2020. In *Profil Kesehatan Indonesia 2020* (Vol. 48, Issue 1). https://doi.org/10.1524/itit.2006.48.1.6

Kim, H. W., Kang, S. Y., & Kim, J. (2022). Factors influencing adolescents' healthy pregnancy preparation behavior: a cross-sectional gender comparison applying the health belief model. *Reproductive Health*, *19*(1), 1–10. https://doi.org/10.1186/s12978-022-01392-z

Mahmood Beg, B., Hussain, T., Ahmad, M., Areej, S., Majeed, A., Rasheed, M. A., Ahmad, M. M., Shoaib, Q. ul A., & Aroosa, S. (2022). Perceived risk and perceptions of COVID-19 vaccine: A survey among general public in Pakistan. *PLoS ONE*, *17*(3 March), 1–17. https://doi.org/10.1371/journal.pone.0266028

Markowitz, L. E., & Schiller, J. T. (2021). Human Papillomavirus Vaccines. *Journal of Infectious Diseases*, *224*(Suppl 4), S367–S378. https://doi.org/10.1093/infdis/jiaa621

Nguyen, K. H., Srivastav, A., Razzaghi, H., Williams, W., Lindley, M. C., Jorgensen, C., Abad, N., & Singleton, J. A. (2021). COVID-19 vaccination intent, perceptions, and reasons for not vaccinating among groups prioritized for early vaccination — United States, September and December 2020. *American Journal of Transplantation*, *21*(4), 1650–1656. https://doi.org/10.1111/ajt.16560

Nugrahani, R. R., Budihastuti, U. R., & Pamungakasari, E. P. (2017). Health Belief Model on the Factors Associated with the Use of HPV Vaccine for the Prevention of Cervical Cancer among Women in Kediri, East Java. *Journal of Epidemiology and Public Health*, *02*(01), 70–81. https://doi.org/10.26911/jepublichealth.2017.02.01.07

Quinn, S., & Goldman, R. D. (2015). Human papillomavirus vaccination for boys. *Canadian Family Physician*, *61*(1), 43–46.

Sari, D. A. W. P. I., Ariastuti, L. P., Sari, K. A. K., & Putri, W. C. W. S. (2022). Penerapan Health Belief Model Terhadap Penerimaan Vaksin HPV Dalam Upaya Pencegahan Kanker Serviks Pada Siswi SMP Negeri 1 Denpasar. *Jurnal Medika Udayana*, *11*(7), 2022.

Smolarz, B., Zadrożna Nowak, A., & Romanowicz, H. (2022). Breast Cancer—Epidemiology, Classification, Pathogenesis and Treatment (Review of Literature). *Cancers*, *14*(10), 1–27. https://doi.org/10.3390/cancers14102569

Sonmezer, M. C., Sahin, T. K., Erul, E., Ceylan, F. S., Hamurcu, M. Y., Morova, N., Al, I. R., & Unal, S. (2022). Knowledge, Attitudes, and Perception towards COVID-19 Vaccination among the Adult Population: A Cross-Sectional Study in Turkey. *Vaccines*, *10*(2), 1–12. https://doi.org/10.3390/vaccines10020278

Stuckelberger, S., Favre, G., Ceulemans, M., Nordeng, H., Gerbier, E., Lambelet, V., Stojanov, M., Winterfeld, U., Baud, D., Panchaud, A., & Pomar, L. (2021). Sars-cov-2 vaccine willingness among pregnant and breastfeeding women during the first pandemic wave: A cross-sectional study in Switzerland. *Viruses*, *13*(7), 1–13. https://doi.org/10.3390/v13071199

Subedi, D., Pantha, S., Subedi, S., Gautam, A., Gaire, A., Sapkota, D., Sapkota, S., Kandel, M., Parajuli, A., Ghimire, H., Ghimire, S., Devkota, J., & Dhakal, S. (2021). Perceptions towards covid-19 vaccines and willingness to vaccinate in Nepal. *Vaccines*, *9*(12), 1–10. https://doi.org/10.3390/vaccines9121448

Zewdie, A., Mose, A., Sahle, T., Bedewi, J., Gashu, M., Kebede, N., & Yimer, A. (2022). The health belief model's ability to predict COVID-19 preventive behavior: A systematic review. *SAGE Open Medicine*, *10*. https://doi.org/10.1177/20503121221113668

Zhang, S., Xu, H., Zhang, L., & Qiao, Y. (2020). Cervical cancer: Epidemiology, risk factors and screening. *Chinese Journal of Cancer Research*, *32*(6), 720–728. https://doi.org/10.21147/j.issn.1000-9604.2020.06.05