ARTÍCULO ORIGINAL

Gac Méd Caracas 2023;131(Supl 4):S566-S573
DOI: 10.47307/GMC.2023.131.s4.11

Factors Related to Parents' Intention in Vaccination of Human Papillomavirus for Their Daughter Aged 11-12 Years

Factores Relacionados con la Intención de los Padres en la Vacunación del Virus del Papiloma Humano para su Hija de 11-12 años

Rahayu Dwikanthi[1a], Mamat Mamat [2a*], Lia Komalasari [3a], Meti Lestari [4b], Sri Agustin[5b]

SUMMARY

Introduction: *The knowledge that persistent Human Papilloma Virus (HPV) infection is the main cause of cervical cancer has resulted in the development of prophylactic vaccines to prevent HPV infection and HPV assays that detect nucleic acids of the virus. Thus, effective protection is to provide HPV vaccination in young women (<12 years). Besides the child wanting to be vaccinated, the intention of the parents is also very important in deciding whether their girls are going to be vaccinated against HPV or not. The purpose of this study was to determine factors related to parents' intention to vaccinate Human Papilloma Virus (HPV) for their daughters aged 11-12 years.*

Methods: *Cross-sectional design, the sample was parents of girls aged 11-12 years (grades 5 – 6 Elementary school) whose schools are in urban and rural areas. The sample size was 169 parents with girls aged 11-12 years. The sampling technique for each class was proportional sampling and the determination of class samples was random.*

Results: *Out of 169 samples, 27.8 % did not intend in vaccinating their daughters with the reason that 14.3 % did not understand HPV vaccination. There was a statistically significant relationship between place of residence (p-value 0.001), the information obtained regarding the HPV vaccine (p-value 0.018), and work (p-value 0.03) on people's intention to vaccinate their daughters.*

Conclusion: *There is a need to intensify targeted information dissemination efforts, specifically towards parents with daughters, regarding the HPV vaccine program in village schools and community settings.*

Keywords: *Human papillomavirus vaccine, intention, human papilloma virus.*

DOI: https://doi.org/10.47307/GMC.2023.131.s4.11

ORCID: 0000-0001-9261-2546[1]
ORCID: 0000-0003-0572-2478[2]
ORCID: 0000-0002-0040-9389 [3]
ORCID: 0000-0002-0040-9389 [4]
ORCID: 0000-0001-2171-0306[5]

[a]Program Studi Kebidanan Karawang, Politeknik Kesehatan Kemenkes Bandung, Bandung, Indonesia.
[b]Program Studi Kebidanan Tasikmalaya, Politeknik Kesehatan Kemenkes Tasikmalaya, Tasikmalaya, Indonesia.

*Corresponding Author: Mamat mamat, E-mail: mamat.researcher@gmail.com

Recibido: 29 de junio 2023
Aceptado: 30 de julio 2023

RESUMEN

Introducción: *El conocimiento de que la infección persistente por el virus del papiloma humano (VPH) es la causa principal del cáncer de cuello uterino ha resultado en el desarrollo de vacunas profilácticas para prevenir la infección por VPH y ensayos de VPH que detectan los ácidos nucleicos del virus. Así, una*

protección eficaz es proporcionar la vacuna contra el VPH en mujeres jóvenes (<12 años). Además del deseo de la niña de ser vacunada, la intención de los padres también es muy importante para decidir si sus niñas van a ser vacunadas contra el VPH o no. El propósito de este estudio fue determinar los factores relacionados con la intención de los padres de vacunar contra el Virus del Papiloma Humano (VPH) a su hija de 11 a 12 años.

Métodos: *Diseño transversal, la muestra fueron padres de niñas de 11 a 12 años (grados 5 y 6 de primaria) cuyas escuelas se encuentran en áreas urbanas y rurales. El tamaño de la muestra fue de 169 padres con niñas de 11-12 años. La técnica de muestreo para cada clase fue el muestreo proporcional y la determinación de las muestras de clase es aleatoria.*

Resultados: *De 169 muestras, el 27,8 % no tenía intención de vacunar a sus hijas por lo que el 14,3 % no entendía la vacunación contra el VPH. Hubo una relación estadísticamente significativa entre el lugar de residencia (p-valor 0,001), la información obtenida sobre la vacuna contra el VPH (p-valor 0,018) yel trabajo (p-valor 0,03) sobre la intención de las personas de vacunarse a sus hijas.*

Conclusión: *Existe la necesidad de intensificar los esfuerzos de difusión de información específica, específicamente hacia los padres con hijas, con respecto al programa de vacunación contra el VPH en las escuelas de las aldeas y los entornos comunitarios.*

Palabras clave: *Vacuna contra el Virus del Papiloma Humano, Intención, Virus del Papiloma Humano*

INTRODUCTION

Globally cervical cancer ranks 4th of all cancers currently (1,2). In 2022 the government issued a Human Papilloma Virus (HPV) vaccine policy or cervical cancer vaccine which will start in 8 provinces, and it is hoped that by 2023 all provinces will have been exposed to the cervical cancer vaccination. So, with the HPV vaccine, this program is expected to reduce the incidence of cervical cancer and maternal mortality (3). The free vaccine is targeted at school-aged girls in grades 5-6 (aged 11-12 years). This policy was taken considering the effectiveness of the vaccine. The cervical cancer vaccine is more effective given to girls at a young age who have not had sexual activity (4). In the process of implementing this free vaccine, it requires a certain strategy and time because what is faced is children aged 11-12 years who do not necessarily want to even though it is free, including their parents. The role of parents is very important in supporting and making decisions whataboutery or not to participate in these free vaccine activities. There is a needs to develop education, information, and communication during the implementation of the HPV vaccine (5,6).

One strategy is education about cervical cancer or Human Papilloma Virus (HPV) vaccines which are packaged according to the characteristics and educational level of parents (3,7). Some of the possible low intentions toward vaccination are low knowledge of the HPV vaccine, inadequate provider communication, and negative perceptions about HPV and its vaccines (7,8). This is very important issue due to the high mortality rate of mothers or women caused by cancer, even though this disease is preventable through the early vaccine at the early age of 11-12 years. One of the decision-makers who are targeted for vaccines (children elementary schools 5-6) are parents, thus with the provision of education it is hoped that they support the vaccine program (9).

This research was expected to contribute with government programs and to problems that may arise due to a lack of understanding of cervical cancer vaccines in parents of children. With this it was expected a coverage of the HPV vaccine in 2023-2024 for all girls from grade 5 -6 elementary, and the long-term expectation of cases of morbidity and mortality from cervical cancer in Indonesia has decreased significantly. The purpose of this study was to determine factors related to parents' intention in the vaccination of Human Papillomavirus (HPV) in girls aged 11-12 years.

METHODS

Study Design

The design of this study was cross-sectional, in which all variables, both independent (factors thought to be related) and dependent variable (parents' intention in vaccinating against HPV in children aged 11-12 years), were collected simultaneously. This research has received approval from the ethical commission of the Bandung Ministry of Health Polytechnic.

Sampling technique

This study's population was male parents with female children aged 11-12 years who attend 6 elementary schools in urban areas and 6 elementary schools in villages: total169 samples. The sampling technique was carried out by proportional random sampling. As for the data collection technique in each class, a simple sampling technique was carried out by *systematic random sampling* based on the sequence of data in each class. The names of the selected children were used as samples of their parents.

Data Collections

The instrument used was a questionnaire consisting of demographic variables, information about cervical cancer and the HPV vaccine, and the intentions of parents who have daughters aged 11-12 years. Data was collected indirectly through the homeroom teacher in 6 classes in urban areas and 6 school classes in villages. Through the homeroom teacher the questionnaire was delivered to female students.

Data analysis

After the data was collected, data processing was carried out where all data or categorical data were analyzed by frequency distribution and to assess the factors that were related. The Chi-Square and Logistic Regression tests were used to determine the significance of the independent variable to the dependent with the degree of significance of α 0.05 and the level of confidence 95 %.

RESULTS

Socio-demographic Characteristics

Based on Table 1, the proportion of residence and age group was almost the same, some of the jobs are not permanent (47.2 %) with an education level of 44.4 % in Senior High Schools. Of the respondents who work, the majority earn 2 million – 4 million per month (43.2 %). 86.4 % of his wife had never had a Pap smear. Most (56.8 %) have never received information the HPV vaccine. Most of those who had received information about vaccines came from health workers (29.0 %). The media get the most information from magazines. The intention in giving vaccines to children is quite high, namely 17.2 %, where the most reason is so that their children avoid getting sick. As for those who were not intended in vaccinating their children, most of them did not understand cervical cancer.

Table 2 shows 3 demographic variables that have a statistical relationship between demographic characteristics and parents' intention in carrying out the HPV vaccination for their daughters, namely one residence characteristic which showed those who live in urban areas as much as 85 % have an intention in doing the HPV vaccine for their daughters, while those who live in rural areas were only 60.7 %. The results of the Odds Ratio analysis were obtained at 3.67 which showed that samples residing in urban areas were 3.67 times more intentioned to vaccinate their daughters. The results of the Chi-Square statistical test obtained a p-value of 0.001 (α=0.05) meaning that there is a relationship between place of residence and parents' intention to vaccinate their children. Both information regarding the HPV vaccine and cervical cancer, the results of the analysis showed that they had received as much information about the HPV vaccine 82.2 % had an intention of doing the HPV vaccine for their daughters, while those who had never received any information were 64.6 %. The results of the Odds Ratio analysis were 2.53, which showed that those who had received information about the HPV vaccine had 2.53 times the chance of being intentioned to vaccinate their daughters compared to those who had never received information on the HPV vaccine. The results of the Chi-Square statistical test obtained a p-value of 0.018 (α = 0.05) indicating that there is a relationship between information about vaccines and parents' intention to vaccinate their children. The third is the characteristics of the job, where those who work as much as 57.1 % had an intention of doing the HPV vaccine for their daughters, while 35.8 % did not work. The odds ratio obtained was 2.38 which showed that those who worked were 2.38 times more likely to be intentioned in vaccinating

Table 1. Distribution of respondents' socio-demography

Demographic variables (n=169)	Frequency	Percent (%)
Residence		
- City	80	47.3
- Village	89	52.7
Work		
- Laborer	42	24.9
- Farmer	4	2.4
-Self-employed	33	19.5
- Employee	33	19.5
- Government employees	7	4.1
- ABRI/Police	1	0.6
- Trader	2	1.2
- Doesn't work	47	27.8
Education		
- Elementary school	23	13.6
- Junior High School	45	26.6
- Senior High School	75	44.4
- University	26	15.4
Income		
- < 2 million	57	33.7
- 2 million – 4 million	73	43.2
-> 4 million	39	23.1
Pasmear experience his wife		
- < 3 years	7	4.1
-> 3 years	16	9.5
-Never had a pap smear	146	86.4
Vaccine information		
- Ever	73	43. 2
- Never	96	56.8
Information source		
- Health workers	59	29.0
- Teacher	11	6.5
- Friend	8	4.7
- Others information source	5	3.0
- Never receive information	86	56.8
Media information source		
- Newspaper	8	4.7
- Magazines	29	17.2
- Comic paper	10	5.9
- Other media information	26	15.4
- Never receive information	96	56.8
Vaccine Intention		
- Intention	122	72.2
- No Intention	47	27.8
Reasons of Intention (n=122)		
- Avoid disease	104	85.2
- None	18	14.8
- Follow the program	73	59.8
- None	49	40.2
- Follow parents	33	27.0
- None	89	73.0
Not Intention reason (n=47)		
- Afraid of getting sick	18	38.3
- Fear of complications	22	46.8
- Other reason	7	14.9

their daughters than those who did not work. The results of the Chi-Square statistical test obtained a p-value of 0.036 ($\alpha = 0.05$) indicating there was a relationship between work and parents' intention to vaccinate their children.

Table 2. Factors related to the intention of parents who have daughters aged 11-12 years.

Variable	Intention Intention	Not Intention	F (%)	Odds Ratio (OR) (95 % CI)	*p-value*
Residence		12 (15 %)			
- City	68 (85.0 %)	35(39.3) %)	80 (100)		
-Village	54 (60.7 %)		89 (100)	3.67	0.001
Income		16 (28.1%)		(1.74-7.750)	
- < 2 million	41 (71,9%)	21 (28.8 %)	57 (100)		
- 2 – 4 million	52 (71.2%)	10 (25.6 %)	73 (100)		
-> 4 million	29 (74.4%)		39 (100)	1.29(0.41-4.02)*	0.82
		3(42.9 6 %)		1.62(0.56-4.62)*	0.50
Pap smear experience		1 (6.3 %)			
- < 3 years	4 (57.1 %)	43 (29.5 %)	7 (100)		
- > = 3 years	15 (93.8 %)	13 (17.8 %)	16 (100)		
- Never been vaccinated	103(70.5 %)	34 (35.4 %)	146 (100)	1.32 (0.22-7.76)*	0.34
Information				0.16 (0.01-1.37)*	0.06
- Once	60 (82.2 %)	15 (42.9 %)	73 (100)		
- Never	62 (64.6 %)	86 (64.2 %)	96 (100)	2.53	0.018
Work				(1.21-2-52)	
- Work	20 (57.1%)	61 (60.4 %)	35 (100)		
- Doesn't work	48 (35.8%)	40 (58.8 %)	134 (100)	2,389	0.036
Education				(1.51-17.96)	
- Tall	40 (39.6%)		101 (100)		
- Low	28 (41.2%)		68 (100)	1.14	0.96
				(0.57-2.86)	

DISCUSSION

The results of this study indicate that the reason parents are intentioned to vaccinate was to avoid their child's cancer in the future and to participate in the school program, this is in line with the results of other researchers who found the most common reason reported by parents to vaccinate their children is to protect them from cancer-related to HPV and to get recommendations from healthcare providers (10). This reason is the most important thing for parents because they don't want their children to get cervical cancer in the future. It was found that only intention to vaccinate the HPV had a relationship with the COVID-19 vaccine (11), although the results of other analyzes were not significantly related to some previous studies (12,13). Thus, it can be concluded that intention in reasons of prevention of avoiding disease is very dominant as the reason they want to vaccinate their children.

In contrast to the case of low intention in HPV vaccination which can be detrimental to some students in Kuwait, it requires more intentional health promotion efforts (14). It is also shown that awareness of the HPV vaccine among university students is still relatively low in China compared to European countries (15). Vaccination among university students is an age-based target for HPV vaccination because they are a risk group. Several studies indicate that there has been an ongoing effort to address parental awareness, access, and attitudinal barriers to HPV vaccination (16). This is important to do to increase vaccination coverage.

HPV is a sexually transmitted infection common worldwide, which disrupts normal social life and has dire consequences. Despite some exceptions, the burden of HPV infection and related diseases remains high and factors explaining this high rate include poor living conditions in some developing countries. Genital infection is a risk factor that supports the development of high levels of HPV in developing countries (17). This is also the impact of low socioeconomic status in many cases in several developing countries, as research results show that death from HPV cancer is related to the socioeconomic status in America (18). The biggest factor in the occurrence of cervical cancer was infection with HPV (16,18) with an adjusted odds ratio (of 113.7, 95% CI: 40.8–316.9), meaning it was not due to sexual behaviour (19).

Vaccination programs are the right way to reduce HPV infection and related diseases. In the framework of the effectiveness of vaccines, the government has programmed the provision of free vaccines at the age of 11-12 years or for children in grades 5 and 6 of elementary school. This is in line with the conclusions of research results which state that the HPV vaccine effectively prevents cervical cancer at the population level in several girls under the age of 20 years (4). The results of the study suggest that at least 9 years to get the vaccine. HPV provides statistically significant protection for at least 6 years, with indications of continued effectiveness for up to 8 years (20)

Support for efforts to increase awareness and knowledge related to HPV vaccination as well as strengthening the budget for immunization is urgently needed (17). The results of the study show that there is a correlation between limited knowledge and awareness about HPV infection and willingness to do the HPV(21). The results of other studies also showed that some girls, parents, teachers, and leaders who received interventions showed there was a significant increase in the proportion of knowledge about HPV infection and the HPV vaccine. Communication is a process in which two or more people form or exchange information with each other which in turn will result in mutual understanding (22). Meanwhile, according to Indonesian Wikipedia, information is a message (speech or expression) or a collection of messages consisting of orders sequences of, or interpretable meanings of messages or sets of messages. Information can be recorded or transmitted and Understanding Education (Education) is the learning, and habits of a group of people passed down from one generation to the next through teaching, training, or research (23). The importance of the role of communication and information is closely related to coming to the vaccine, as the results of the study show that there is a strong correlation between the level of information or promotion with the arrival of women to the cervical cancer vaccine (HPV vaccine) (24), proven efforts to increase education, provide assurance and awareness HPV can improve screening outcomes in China (24). In certain circumstances, such as in rural areas, cultural and language approaches need to be considered, as is the conclusion from a study that culture and language are the right things to help newcomers to make decisions about vaccinating. Economic considerations are an important part of considering cancer vaccine programs because in substance they have beneficial effects economically and on public health (25). Involving parents in education is very important because research results show more positive perceptions about the HPV vaccine, which predicts acceptance of the HPV OR 1.90 vaccine (95%CI:1.40–2.57) (26). Based on research results, it is also known that children's knowledge is very low about HPV and HPV (27).

Several strategies can be used to increase the coverage of the HPV vaccine, including involving parents because parents decide whether or not their children may be vaccinated against HPV even though it's free. The role of parents is very important in making decisions for children to get immunity through vaccination. Decisions taken by parents of children in carrying out vaccinations affect the success of the government program for HPV (28).

CONCLUSION

The results of the study show that three characteristic demographic factors have a relationship with intention in the HPV vaccine of parents who have daughters aged 11-12 years, namely the place of residence, information obtained by parents regarding the HPV vaccine, and cervical cancer and occupation. Based on

the conclusion, as a further recommendation, it is necessary to disseminate information in household settings residing in rural areas and special community groups with better intensity and quality of information.

REFERENCES

1 . UICC.org. Targeted-commitments/cervical-cancer-elimination-strategy. UICC.org; 22AD. Available from: https://www.uicc.org/what-we-do/driving-global-impact/targeted-commitments/cervical-cancer-elimination-strategy? gclid=CjwKCAjwp6CkBhB_EiwAlQVyxZ0JKhhSDqMaQxuBrKeFjcIZeU0gFYldZ1fTfUTz8XrT2TlxmVpxoRoCz84QAvD_BwE#_ftn2

2. Tan LF, Rajagopal M, Selvaraja M. Review: An Overview on the Pathogenesis of Cervical Cancer. Curr Trends Biotechnol Pharm. 2023;17(1):717-734.

3. Wondimu A, Postma MJ, van Hulst M. Cost-effectiveness analysis of quadrivalent and nonavalent human papillomavirus vaccines in Ethiopia. Vaccine. 2022;40(14):2161-2167.

4. Kjaer SK, Dehlendorff C, Belmonte F, Baandrup L. Real-World Effectiveness of Human Papillomavirus Vaccination against Cervical Cancer. J Natl Cancer Inst. 2021;113(10):1329-1335.

5. Kinasih SE, Koesbardiati T, Mas'udah S. Women's reproductive rights under marriage contract. J Int Womens Stud. 2019;20(9):132-144.

6. Smith LW, Racey CS, Gondara L, Krajden M, Lee M, Martin RE, et al. Women's acceptability of and experience with primary human papillomavirus testing for cervix screening: HPV FOCAL trial cross-sectional online survey results. BMJ Open. 2021;11(10).

7. Laigle V, Postma MJ, Pavlovic M, Cadeddu C, Beck E, Kapusniak A, et al. Vaccine market access pathways in the EU27 and the United Kingdom – analysis and recommendations for improvements. Vaccine. 2021;39(39):5706.5718.

8. Garcia S, Hopfer S, Amaro H, Tanjasiri S. HPV vaccine delay and refusal among unvaccinated Mexican American young adult women: a qualitative investigation of Mexican-born and US-born HPV vaccine decision narratives. J Behav Med. 2023;46(1-2): 88-99.

9. Perdana RF, Simatupang M V, Herawati S, Yusuf M. Risk factors recurrent respiratory papilloma (RRP) on juvenile and adult type in tertiary hospital, Indonesia. J Glob Pharma Technol. 2020;12(6):409-415.

10. Gopalani SV, Janitz AE, Burkhart M, Campbell JE, Chen S, Martinez SA, et al. HPV vaccination coverage and factors among American Indians in Cherokee Nation. Cancer Causes Control. 2023;34(3):267-275.

11. Das AK, Islam J, Jahan S, Sultana A, Nowshin S. Does COVID-19 and oral, lung cancer have a connection? A insight to future investigation; A literature review. Bangladesh J Med Sci. 2023;22(1):15-21.

12. Harapan H, Sallam M, Fathima R, Kusuma HI, Anwar S, Nalapraya WY, et al. Willingness to Pay (WTP) for COVID-19 Vaccine Booster Dose and Its Determinants in Indonesia. Infect Dis Rep. 2022;14(6):1017-1032.

13. Manganello JA, Chiang SC, Cowlin H, Kearney MD, Massey PM. HPV and COVID-19 vaccines: Social media use, confidence, and intentions among parents living in different community types in the United States. J Behav Med. 2023;46(1-2):212–228.

14. Alsanafi M, Salim N, Sallam M. Willingness to get HPV vaccination among female university students in Kuwait and its relation to vaccine conspiracy beliefs. Hum Vaccin Immunother. 2023;19(1):2194772.

15. Yin G, Zhang Y, Chen C, Ren H, Guo B, Zhang M. Have you ever heard of Human Papillomavirus (HPV) vaccine? The awareness of HPV vaccine for college students in China based on meta-analysis. Hum Vaccines Immunother. 2021;17(8):2736-2747.

16. Zhu X, Jacobson RM, MacLaughlin KL, Sauver JS, Griffin JM, Finney Rutten LJ. Parent-reported Barriers and Parental Beliefs Associated with Intentions to Obtain HPV Vaccination for Children in a Primary care Patient Population in Minnesota, USA. J Community Health. 2023:1-9.

17. Kombe Kombe AJ, Li B, Zahid A, Mengist HM, Bounda GA, Zhou Y, et al. Epidemiology and Burden of Human Papillomavirus and Related Diseases, Molecular Pathogenesis, and Vaccine Evaluation. Front Public Heal. 2020;8:552028.

18. Priyadarshini M, Prabhu VS, Snedecor SJ, Corman S, Kuter BJ, Nwankwo C, et al. Economic Value of Lost Productivity Attributable to Human Papillomavirus Cancer Mortality in the United States. Front Public Heal. 2021;8:624092.

19. Yamaguchi M, Sekine M, Hanley SJB, Kudo R, Hara M, Adachi S, et al. Risk factors for HPV infection and high-grade cervical disease in sexually active Japanese women. Sci Rep. 2021;11(1).

20. Kjaer SK, Nygård M, Sundström K, Munk C, Berger S, Dzabic M, et al. Long-term effectiveness of the nine-valent human papillomavirus vaccine in Scandinavian women: Interim analysis after 8 years of follow-up. Hum Vaccines Immunother. 2021;17(4):943-949.

21. Alsous MM, Ali AA, Al-Azzam SI, Abdel Jalil MH, Al-Obaidi HJ, Al-abbadi EI, et al. Knowledge and awareness about human papillomavirus infection and its vaccination among women in Arab communities. Sci Rep. 2021;11(1):786.

22. Nur Intan Safitri Basalama. Definition of communication according to Everett M. Rogers. Gorontalo University. 2016.
23. Wikipedia. The Free Encyclopedia. Information, Education (education). Wikipedia Free Encyclopedia. 2021.
24. Robles C, Bruni L, Acera A, Riera JC, Prats L, Poljak M, et al. Determinants of Human Papillomavirus Vaccine Uptake by Adult Women Attending Cervical Cancer Screening in 9 European Countries. Am J Prev Med. 2021;60(4):478-487.
25. Cody P, Tobe K, Abe M, Elbasha EH. Public health impact and cost effectiveness of routine and catch-up vaccination of girls and women with a nine-valent HPV vaccine in Japan: A model-based study. BMC Infect Dis. 2021;21(1).
26. Sitaresmi MN, Rozanti NM, Simangunsong LB, Wahab A. Improvement of Parent's awareness, knowledge, perception, and acceptability of human papillomavirus vaccination after a structured-educational intervention. BMC Public Health. 2020;20(1).
27. Thanasas I, Lavranos G, Gkogkou P, Paraskevis D. Understanding of Young Adolescents About HPV Infection: How Health Education Can Improve Vaccination Rate. J Cancer Educ. 2020;35(5):850-859.
28. Fauzul Hayat, Nurjaman NK. The Effect of Parental Role on Giving COVID-19 Vaccination at MAN 1 Serang City. J Joubas. 2022:18-2