

Parental Trust Determination in Consenting to Human Papillomavirus (HPV) Vaccination for Children: Quantitative Study at Primary Schools

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ABSTRACT

Background: Human Papillomavirus (HPV) is virus causing cervical cancer, which is on the second rank case after breast cancer. Cervical cancer can be prevented by giving HPV vaccine which has been proved to be effective around 90%. The government makes a program of HPV vaccination to students of class 5 and 6 through a program of School Children's Immunization Month. Parents' role is very crucial in determining children decision. Aspect decision influencing vaccination consists of four domains include thought and feelings, social process, motivation, and practical issues.

Methods: A cross-sectional study with 46 respondents of elementary school parents (11 and 12 years old students). Using a vaccine benefits beliefs questionnaire, vaccine safety, providers and service quality.

Results: The benefits of the vaccine (p -value=0.001) and the quality of service (p -value=0.001) significantly influence parents in allowing their children to receive the HPV vaccine.

Conclusion: An education campaign on the benefits of vaccines can provide clear information followed by certainty of service quality by health care facilities can increase parents' confidence.

Keywords: Consent; Vaccination; Human Papillomavirus (HPV)

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INTRODUCTION

Human Papillomavirus (HPV) is a virus that causes malignant tumors that develop in the cervix or is often called cervical cancer (1). Based on data from the Global Cancer Observatory in 2020, there were 36,633 cases of cervical cancer in Indonesia or the equivalent of 9.2% and was ranked second after breast cancer (2). The government created a program to prevent the increase in cervical cancer sufferers with HPV vaccination which is implemented through the School Children's Immunization Month (BIAS) program. This HPV vaccination program has started in 2022 targeting primary school or Madrasah Ibtidaiyah students in class 5 and 6 or equivalent of 11-12 years old. The government targets cervical cancer-free by 2030 with a national HPV vaccination target of 90% (3). Banyumas Regency in Indonesia has achieved the target of 94.34% with a class 5 (11 years old) vaccination achievement of 91.52% and class 6 (12 years old) of 97.00%. However, there are still several areas in the Banyumas Regency that are still below the target, such as the Kebasen Health Center (88.68%) with class 5 achievement of 79.75% and class 6 achievement of 98.59%, Sumbang 1 Health Center (88.74%) with class achievement 5 100% while class 6 was only 78.17%, and West Purwokerto Health Center (89.11%) with class 5 achievement of 82.70% and class 6 of 94.47% (4).

There are three types of HPV vaccines that have been proven effective in preventing infection with the HPV virus, namely the bivalent vaccine which is useful for preventing cervical cancer caused by HPV types 16 and 18, the quadrivalent vaccine which prevents cervical cancer and genital warts caused by HPV infections types 6, 11, 16, and 18, the nonvalent vaccine, which is useful in providing additional protection against HPV types 31, 33, 45, 52, and 58 (5).

There are four important aspects of consideration that influence vaccination, namely thoughts and feelings, social process, motivation, and practical issues (6). Thoughts and feelings or a person's thoughts and understanding about vaccines which results in a positive or negative attitude towards a vaccine. Social processes influence vaccination rates because humans live socially and are in direct contact with other people, so the influence of the people around them is very important to increase vaccination rates. The

presence of strong motivation will produce a desire to obtain information about vaccines. Practical issues are problems that may arise due to hesitancy (6).

The group of people who received vaccinations was differentiated between people who accepted the vaccine without hesitation, accepted the vaccine but were not sure about doing it, refused some vaccines but agreed to others, and the group of people who refused without doubt. Vaccine hesitancy does not completely affect vaccine demand. A person may fully accept vaccination without hesitation but may not need another vaccine (7). Parents' beliefs and attitudes regarding vaccines are related to vaccination implementation (8). The crisis of confidence in vaccination from parents is one of the factors influencing the low coverage of HPV vaccination with a p value of 0.11 (9). Highly negative perceptions about the effectiveness and safety of vaccines make people hesitant to vaccinate against HPV (10). This low level of trust determines parents' attitudes in making the decision to allow their child to receive the HPV vaccination. The aim of this research is to determine the factors that influence parents to allow their children to receive human papillomavirus vaccination.

METHODS

Quantitative correlation research with a cross-sectional design in which the independent and dependent variables are measured or collected together at one time. This research was conducted at two primary schools in Indonesia in April and May 2024, involving with 46 parents of female students in class 5 and 6 as respondents. The instrument used in this study was a structured questionnaire consisting of 4 parts there are belief of vaccine benefits, vaccine safety, providers and quality of service. This instrument has been tested for its validity and reliability to ensure the quality and consistency of measurements. The validity test was carried out using Pearson's product moment with table of value 0.889 for belief vaccine benefits, 0.859 for vaccine safety, 0.846 for providers and 0.852 for service quality. The reliability test shows that the instruments used have good consistency; 0.889 vaccine benefits, vaccine safety 0.859, providers 0.846 and service quality 0.852.

RESULTS

The number of respondents was 46 parents from 2 levels. **Table 1** shows that the parents in this study were on average 39 years old with the

youngest being 31 years old and the oldest being 54 years old. The majority of the respondents were parents with senior high schools background (45.7%) and work as housewives (65.2%).

Table 1: Characteristics of Respondents

Characteristics of Respondents	<i>f</i>	%	Mean	Min-Max
Age			39.39	31-54
26-35	15	32.6		
36-45	23	50.0		
46-55	8	17.4		
Education				
Primary School	10	21.7		
Junior High School	10	21.7		
Senior High School	21	45.7		
Diploma	3	6.5		
Bachelor	2	4.3		
Work				
Housewife	30	65.2		
Trader	3	6.5		
Farmer	5	10.9		
Laborer	2	4.3		
Self-employed	2	4.3		
Private sector employed	3	6.5		
Teacher	1	2.2		
Class (age)				
5 (11 years old)	22	47.8		
6 (12 years old)	24	52.2		

Based on **Table 2**, the chi-square test, a value of $p=0.000$ (<0.05) there are relationship between belief in vaccines benefits and service quality with vaccination action. Relationship between belief in

provider with vaccination action value of $p=0.004$ (<0.05) and belief in vaccine safety with vaccination action value of $p=0.010$ (<0.05).

Table 2: Relationship Between Belief in Vaccine Benefits, Vaccine Safety, Provider, Service Quality and Vaccination Action

Variable	Vaccination				Total		Chi-square
	Not allow		Allow				<i>p</i>
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	
Belief in vaccines benefits							0.001*
Low	11	23.9	2	4.3	13	28.3	
Moderate	11	23.9	2	4.3	13	28.3	
High	2	4.3	18	39.1	20	43.5	
Belief in vaccines safety							0.010*
Low	5	10.9	1	2.2	6	13.0	
Moderate	14	30.4	7	15.2	21	45.7	
High	5	10.9	14	30.4	19	41.3	
Belief in provider							0.004*
Low	4	8.7	2	4.3	6	13.0	
Moderate	17	37.0	7	15.2	24	52.2	
High	3	6.5	13	28.3	16	34.8	
Service quality							0.001*
Low	8	17.4	1	2.2	9	19.6	
Moderate	14	30.4	7	15.2	21	45.7	
High	2	4.3	14	30.4	16	34.8	

Significant value <0.05

DISCUSSION

Based on the results of research that has been carried out, the p -value is 0.001, which means there is a relationship between the belief that there are benefits to vaccines and permission to receive HPV vaccination. This is also in line with research conducted by (11) which states that there is a relationship between perceived benefits and willingness to vaccinate against HPV with a p -value of 0.040. Judging from the belief in the benefits of vaccines, there are 18 people in the high trust category and allowing vaccination, while the medium and low trust categories do not allow vaccination, 11 people each, which means that some parents already know the importance of vaccination and understand that vaccination can increase the body's immunity, but there are still some parents do not allow their children to receive vaccinations. Having high parental perception of the benefits of vaccines will increase acceptance of HPV vaccination (10). The benefit of HPV vaccination is to provide protection against HPV which causes cervical cancer. If one day they are infected with HPV, the body's immune system can fight it and the effects of the disease can be avoided (12).

Apart from that, confidence in vaccine safety is also an important factor in the decision to grant permission for HPV vaccination. The results of the chi-square test showed a p -value of 0.010, which means that there is an influence between the belief factor in vaccine safety and permission to receive HPV vaccination. Similar research results also showed that parents' consideration for allowing their children to receive HPV vaccination was vaccine safety (81.1%) (13). From the research results, data was obtained that the most parents who did not allow their children to receive vaccines were in the moderate trust category, namely 14 people, while in the high trust category there were 14 people who allowed them to receive vaccines. This is in line with research conducted by (14) which explains that belief in the benefits of vaccines does not have a significant relationship in accepting HPV vaccination, but there is still a relationship between the two with a p -value of 0.047. Parents are very worried about vaccine safety factors because they believe that vaccines are unsafe and focus on the side effects of vaccines (10).

Furthermore, the role of health workers was also found to have a significant relationship to the decision to grant permission for HPV vaccination. Based on the results of research that has been carried out, a p -value of 0.004 was obtained

between providers with permission to carry out HPV vaccination. This is in line with research conducted by (15) which said that there was a relationship between health workers and the intention to vaccinate against HPV with a p -value of 0.007. Health workers are trusted providers of recommendations, in other words getting recommendations from health workers can be linked to initiation or the intention to receive vaccination (9). If health workers can answer the concerns felt by parents and have good abilities, parents will have a sense of trust in health workers. Communication does not determine the success of vaccination but can have a negative impact on vaccination coverage (16). Communication carried out by health workers can have an impact on increasing awareness of issues or problems that are not understood by individuals, so health workers must be able to provide understanding that is easy to understand in order to create a sense of trust in the health workers themselves (17).

The quality of health services also contributes to the approval of HPV vaccination. The results also showed that the p -value was 0.001 between service quality and permission to receive HPV vaccination. This is in line with research conducted by (18) regarding the relationship between service quality and completeness of basic immunization provision, with a p -value of 0.002, which means there is a significant relationship. The role of health workers is the biggest factor in influencing someone's decision making. Apart from that, the role of health workers also provides information, education and knowledge regarding efforts to prevent cervical cancer by vaccinating (19). The challenge for health workers regarding the rapid use of this technology is providing the correct perception of information because more and more information circulating has unclear sources and lacks credibility, which can cause the public to be influenced. Good quality service must be able to provide information according to community needs (10).

CONCLUSION

The perceived benefits of vaccines, such as protection from various dangerous diseases, as well as the quality of health services provided by medical personnel, such as friendliness, clarity of information, and adequate facilities, are important factors that influence parents' decisions to give permission for their children to receive vaccines. vaccination.

Future researchers are expected to be able to

compare the implementation of HPV vaccination with diphtheria, tetanus and measles and rubella (MR) vaccinations which are included in the School Child Immunization. In addition, it is important to examine the effectiveness of education provided by community health centers in increasing confidence and acceptance of HPV vaccination by parents, as well as the role of schools and education offices in providing knowledge to teachers and school staff about vaccination procedures and their impact on parents through outreach. Research can also explore the influence of communication and collaboration between community health centers, schools and education offices in supporting the success of the HPV vaccination program, including the effectiveness of the information delivery mechanisms used.

CONFLICT OF INTEREST

The author has no conflict of interest in this study.

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AUTHOR CONTRIBUTIONS

KNK: Drafted the manuscript and contributed to the concept development and design of the article through data collection, analysis,

DP: Critically revised with intellectual content and the final version of the article.

REFERENCES

- Pratiwi L, Nawangsari H. KANKER SERVIKS (Sudut Pandang Teori dan Penelitian). Cetakan Pe. Jakarta: CV Jejak, anggota IKAPI; 2022. 100 p.
- Globocan World Health Organization. Estimated number of new cases in 2020, Indonesia, both sexes, all ages. World Health Organization. 2020;524:2018.
- Kementerian Kesehatan Republik Indonesia. Keputusan Menteri Kesehatan Republik Indonesia Nomor Hk.01.07/Menkes/6779/2021 Tentang Program Introduksi Imunisasi Human Papillomavirus Vaccine (Hpv) Tahun 2022-2024. 2021;5.
- P2P Dinas Kesehatan Kab. Banyumas. Profil Kesehatan Kabupaten Banyumas. Purwokerto; 2023.
- Fitriyayadi K, Suryoadji KA, Ridwan AS. Vaksin HPV Sebagai Strategi Pencegahan Kanker Serviks Di Indonesia. Jurnal Ilmiah Mahasiswa Kedokteran Indonesia. 2022;10(1):hal 114-120.
- Brewer NT, Chapman GB, Rothman AJ, Leask J, Kempe A. Increasing Vaccination: Putting Psychological Science Into Action. Psychological Science in the Public Interest. 2017;18(3):149-207.
- MacDonald NE, Eskola J, Liang X, Chaudhuri M, Dube E, Gellin B, et al. Vaccine hesitancy: Definition, scope and determinants. Vaccine. 2015;33(34):4161-4.
- Shapiro GK, Kaufman J, Brewer NT, Wiley K, Menning L, Leask J, et al. A critical review of measures of childhood vaccine confidence. Current Opinion in Immunology. 2021;71:34-45.
- Fatimah P. Analisis Faktor-Faktor Yang Berhubungan Dengan Perilaku Orang Tua Anak Usia Sekolah Dasar Dalam Pemberian Imunisasi Human Papiloma Virus (HPV) di wilayah Kerja Puskesmas Kelurahan Petamburan Kecamatan Tanah Abang Kota Administrasi Jakarta Pusat. Universitas Muhammadiyah Jakarta. 2020;
- Ayumaruti D, Dien Anshari. Tinjauan Sistematis terhadap Pengetahuan, Persepsi, Motivasi Masyarakat Tentang Vaksinasi HPV bagi Remaja Putri dan Wanita Usia Subur: Literature Review. Media Publikasi Promosi Kesehatan Indonesia (MPPKI). 2023;6(4):568-81.
- Ayu IG, Krisnadewani A, Cintya P, Yuliyatni D, Citra W, Sucipta W, et al. Hubungan Pengetahuan dan persepsi terhadapp Kesediaan Melakukan Vaksinasi Human Papillomavirus pada Mahasiswi Fakultas Kedokteran Universitas Udayana. JMU (Jurnal Medika Udayana). 2021;10(12):63-8.
- Saragih NL, Purwarini J, Prabawati FD. Hubungan Pengetahuan Dengan Sikap Orang Tua Dalam Pemberian Vaksinasi Human Papilloma Virus (HPV) Pada Remaja Putri SMP X Jakarta. Jurnal Keperawatan Cikini. 2023;4(1):24-31.
- Wantini NA, Indrayani N. Rendahnya

- Kesediaan Vaksinasi HPV pada Remaja Putri. Jurnal Kebidanan Indonesia. 2020;11(1):69-78.
14. Zulfa A, Lismidiati W, Kustanti A. Gambaran Pengetahuan, Sikap, dan Penerimaan Orang Tua terhadap Vaksinasi HPV di SMP Kota Yogyakarta. Jurnal Keperawatan Klinis dan Komunitas (Clinical and Community Nursing Journal). 2023;7(2):69.
 15. Kholifatullah AI, Notobroto HB. Hubungan Dukungan Sosial Dengan Niat Imunisasi Human Papillomavirus Sebagai Pencegahan Kanker Serviks. Jurnal Kesehatan Tambusai. 2023;4(3):3699-707.
 16. Purwito D. From global to local action: rise from the pandemic, an efforts to increase routine immunization coverage. Medisains. 2022;20(1):1.
 17. Sutjipto AM, Pinariya JM. Pengenalan Vaksinasi Hpv Oleh Koalisi Indonesia Cegah Kanker Serviks Dengan Pendekatan Teori Difusi Inovasi. WACANA: Jurnal Ilmiah Ilmu Komunikasi. 2019;18(2).
 18. Nenida R. Hubungan Kualitas Pelayanan dengan Pemberian Imunisasi Dasar Selama Pandemi di Wilayah Kerja PUSKESMAS Sidomulyo Samarinda. Jurnal Kesehatan. 2022;2:145-52.
 19. Warsini, Septiawan C. Faktor - Faktor yang Berpengaruh terhadap Pengambilan Keputusan Vaksinasi HPV. Jurnal Ilmiah Kebidanan Indonesia. 2021;11(2):97-107.