Nursing Current: Jurnal Keperawatan

Journal Homepage: https://ojs.uph.edu/index.php/NCJK/

Original Research

Differences In the Intention to Receive the Human Papillomavirus (HPV) Vaccine For Cervical Cancer Prevention Among Women with Different Types of Decision-Making Roles

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A R T I C L E I N F O

Keywords:

HPV

Intention

Decision Making

Vaccination

A B S T R A C T

Despite the availability of cervical cancer prevention programs through Human Papillomavirus (HPV) vaccination in Indonesia, the overall immunization coverage remains limited. One of the main contributing factors is the low intention among the community to receive the HPV vaccine. Low intention may lead to limited vaccination uptake. This study aims to compare differences in intention to get HPV vaccination among three groups of female decision makers, namely, adult women who take their own vaccine decisions, adolescent girls who rely on their parents to decide on vaccination, and parents who help make decisions regarding HPV vaccination for their daughters. This study employed a quantitative approach with a cross-sectional design. Each group of decision makers consisted of 147 people, with a total of 441 respondents. The data collected were analyzed using Kruskal-Wallis test. The statistical analysis confirmed significant differences in intention among the three groups ($p<0.001$). The highest mean intention rank was in the adult women group (mean-rank=273.55), followed by parents (mean-rank=214.37), and the lowest in adolescent girls (mean-rank=175.09). Women's intention to receive the HPV vaccine is influenced by their level of independence in decision-making. Adult women with full decision-making autonomy demonstrated the highest intention. These findings highlight the need for tailored approaches in promoting HPV vaccination based on decision-making roles to improve vaccination uptake.

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Received 7 May 2025;
Received in revised form 18 October 2025;
Accepted 11 November 2025

https://doi.org/10.19166/nc.v13i2.9788

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INTRODUCTION

Cervical cancer remains a major reproductive health problem in Indonesian women. Data indicate that cervical cancer ranks as the second leading cause of cancer-related death in women after breast cancer, with 36,633 new cases and 21,003 deaths each year (World Health Organization, 2022). The predominant etiology of this cancer is persistent

infection by Human Papillomavirus (HPV), particularly types 16 and 18, which are responsible for up to 70% of cervical cancer case (World Health Organization, 2020). With the identification of HPV as the cause of Cervical Cancer, preventive efforts can be made through a vaccination program that has been implemented nationally in Indonesia. HPV vaccination is recommended by the World Health Organization (WHO) and has been proven safe and effective in preventing viral infection. (World Health Organization, 2020). This immunization is particularly recommended for women who have never engaged in sexual intercourse to achieve optimal effectiveness.

Indonesia's national HPV vaccination program has been implemented since 2021 for fifth- and sixth-grade elementary school students and is included in the School Children Immunization Month (BIAS) program, where the vaccine is provided free of charge. First-dose HPV vaccination coverage among girls in grades 5–6 in 2022 reached 91% due to mandatory administration in schools, whereas coverage among women over 15 years old was only 6% (World Health Organization, 2023). Outside school age, women may obtain the HPV vaccine at their own expense in healthcare facilities such as hospitals, community health centers, or reproductive clinics. The HPV vaccination initiative is one of the key preventive strategies supporting Indonesia's national cervical cancer elimination program for 2023–2030 (Kementerian Kesehatan Republik Indonesia, 2023).

Although cervical cancer prevention programs through HPV vaccination are available in Indonesia, overall immunization coverage remains limited. One major contributing factor is the low intention or willingness among the community to receive HPV vaccination, which serves as a key theoretical construct in predicting health behavior, despite its crucial role as a preventive measure before risk-related behaviors occur (Ajzen, 1991; Elgzar et al., 2022). Intentions to perform various behaviors can be predicted with high accuracy from attitudes toward the behavior, subjective norms, and perceived behavioral control; these intentions, together with perceived behavioral control, explain substantial variance in actual behavior (Ajzen, 1991). Intention reflects a person's readiness or desire to perform a particular action in the near future. Low intention to receive the HPV vaccine consequently results in low vaccination uptake.

The active HPV vaccination measure is influenced by the decision-making process to receive the vaccine, which in practice, is not always determined by the individual woman herself (Sisson & Wilkinson, 2019). Among adult women, decisions regarding vaccination are typically made independently because they possess the competence and autonomy to make health decision (Osamor & Grady, 2016; Watson et al., 2023). In contrast, adolescent girls often rely on others, particularly parents, to decide whether they should receive the vaccine (Dempsey et al., 2006; Lam et al., 2023; Zimet et al., 2021).

This issue highlights the dynamics of vaccination decision-making across several groups of women, involving different roles and levels of intention and motivation to get vaccinated (Samaria et al., 2025). Given this complexity, it is important to understand how intentions to vaccinate against HPV may differ across different types of decision-making groups, such as: (1) adult women who decide to vaccinate themselves, (2) adolescent girls who are assisted in deciding to receive vaccination, and (3) parents of adolescent girls who make vaccination decisions on behalf of their children (Samaria et al., 2025). Information regarding these differences in decision-making roles is valuable for formulating targeted, evidence-based health promotion policies, particularly to increase HPV vaccine uptake in urban settings such as Jakarta.

Theory of Planned Behavior (TBP) was implemented in this study. TPB explains that an individual's intention to perform an action is the primary predictor of actual behavior (Ajzen, 1991). Intention itself is influenced by three main components, namely: first, attitude towards behavior (which reflects the perception of the results and value of the behavior); second, subjective norms which include social pressure from the environment or people closest to them; and third, perceived behavioral control, including confidence in one's ability to perform an action. In the context of HPV vaccination, attitudes relate to perceptions of vaccine effectiveness and safety, subjective norms involve social support from parents or peers, and perceived control relates to vaccine access and confidence in making health decisions. Differences in these three components may occur among groups with different roles in vaccination decision-making.

This study is important because it provides empirical insights into differences in vaccination intention based on decision-making roles, a research area that remains limited in Indonesia. The results of this study can be used as a foundation in designing health promotion strategies that are more specific to the characteristics and needs of each target group. The practical contribution of this study lies in strengthening risk communication and family-based interventions to increase HPV vaccine uptake. The theoretical contribution relates to the application of TPB across social groups with varying roles in health decision-making. Therefore, the research questions in this study are: (1) Are there differences in the intention to receive the HPV vaccine in adult women, adolescent girls, and parents of adolescent girls? (2) Which decision-making group has the highest intention to implement HPV vaccination? and (3) How can different roles in decision-making influence the intention to vaccinate?

METHOD

This study was conducted using a comparative quantitative approach with a cross-sectional design. This approach was selected because it is suitable for comparing vaccination intentions across three groups representing different decision-making roles. Data collection was carried out in

Jakarta during May–June 2023.

This study involved adult women, adolescent girls, and parents of adolescent girls in the Jakarta area, with each group consisting of 147 individuals. Thus, the total number of respondents was 441. The inclusion criteria were: adolescent girls aged 9–17 years, young adult women aged 18–26 years (in accordance with HPV vaccine eligibility criteria), and parents of adolescent girls who played an active role in vaccination decision-making for their daughters. Prospective respondents were selected using a consecutive sampling method through health facilities and schools in the Jakarta area.

The intention variable in this study was measured using an intention questionnaire created by Stout et al. (Stout et al., 2020). This questionnaire consisted of 5 favorable questions measured using a 7-point Likert scale with answer choices of very unlikely, unlikely, somewhat unlikely, undecided, somewhat likely, and very likely. The questionnaire had been tested for validity and reliability on 30 people with the results of the validity test: *r* count (0.836-0.962) > *r* table (0.361), hence the instrument was valid. Reliability testing showed a Cronbach's alpha value greater than 0.6 (0.950 > 0.6), demonstrating good reliability (Samaria et al., 2024).

This study adhered to ethical research principles, including confidentiality, voluntariness, and ensuring no harm to participants. All respondents participated voluntarily after receiving a complete explanation of the study procedures and signing informed consent forms. This research protocol also received ethical clearance from the Ethics Committee of Universitas Pembangunan Nasional Veteran Jakarta under approval number 205/V/2023/KEPK.

Respondents' demographic data were analyzed using descriptive statistics. Bivariate analysis was then conducted using the Kruskal–Walli's test because the data were not normally distributed. Subsequent analyses compared intention scores across the three groups to determine whether significant differences existed.

RESULT

Table 1 shows that most respondents had a junior high school educational background (195 respondents; 44.2%), followed by high school (159 respondents; 36.1%), higher education (79 respondents; 17.9%), and only a small proportion completed elementary school (8 respondents; 1.8%). These data indicate that the majority of respondents had a medium level of education. Of the 441 women, approximately half were employed (224 respondents; 50.8%), while the remaining respondents were unemployed (217 respondents; 49.2%). This proportion was nearly balanced, reflecting a relatively even distribution of employment status among respondents. However, differences emerged in monthly income, with most respondents earning below Jakarta's Regional Minimum Wage (UMR) in 2023 (247 respondents; 56%).

The Kruskal-Wallis test was applied to examine the data and the results were in accordance with Table 2 below. Table 2 reveals that there was a significant difference in the intention to get HPV vaccination among the three groups, namely adult women, adolescent girls and parents of adolescent girls (*p value* <0.01). In addition, The adult women group had the highest intention to get vaccinated, followed by parents, and then adolescent girls. This pattern reflects the role of independence and health literacy among adults, which may contribute to their higher intention to receive the HPV vaccine. Based on the mean ranks, it can be inferred that adult women, who make their own decisions regarding HPV vaccination, showed the highest intention compared to the other two groups. Meanwhile, parents who assisted their daughters in making vaccination decisions demonstrated a moderate level of intention, and adolescent girls had the lowest intention.

Table 1. Demographic Characteristics (n=441)

Variables	Group			Total (%)
	Adult Females n(%)	Adolescent Girls n(%)	Parents n(%)	
Education Level				
Elementary School	1(0,2)	4(0.9)	3(0.7)	8(1.8)
Junior High School	2(0.5)	142(32.2)	51(11.6)	195(44.2)
Senior High School	81(18.04)	1(0,2)	77(17.5)	159(36.1)
Higher Education	63(14.3)	0(0)	16(3,6)	79(17.9)
Working Status				
Not Working	10(2,3)	147(33.3)	60(13.6)	217(49.2)
Working	137(31.1)	0(0)	87(19.7)	224(50.8)

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Senior High School	81(18.04)	1(0,2)	77(17.5)	159(36.1)
Higher Education	63(14.3)	0(0)	16(3,6)	79(17.9)
Monthly Income				
Low (<Regional Minimum Wage)	75(17)	79(17.9)	93(21.1)	247(56)
Height (>Regional Minimum Wage)	72(16.3)	68(15.4)	54(12.2)	194(44)
HPV Vaccine Intention				
Low (1-11)	0(0)	6(1,4)	3(0.7)	9(2)
Medium (12-24)	21(4.8)	87(19.7)	71(16.1)	179(40.6)
High (25-35)	126(28.6)	54(12.2)	73(16.6)	253(57.4)

Table 2. Kruskal-Wallis Test Results (n=441)

Dependent Variable	Decision Maker Type	Mean Ranks	Mean ±SD	CI 95%	P-Value
Intention to get HPV Vaccine	Adult female	273.55	26.33 ±5.65	0.000-0.007	<0.001
	Teenage Girls	175.09			
	Parent	214.37			

DISCUSSION

The results of this study indicated a strong relationship between decision-making control for HPV vaccination and the intention to undergo immunization. Adult women who have full autonomy in making vaccination decisions for themselves demonstrated a significantly higher willingness to be vaccinated. This can be explained using the TBP framework (Ajzen, 1991), which states that intention is influenced by perceived behavioral control. The greater a person's perceived ability to act independently, the stronger their intention to perform the action.

On the other hand, parents who make vaccination decisions for their children showed lower intentions compared to adult women. This may be influenced by factors such as uncertainty about vaccine benefits, concerns about possible side effects, and cultural or religious considerations when making decisions for their children (Myhre et al., 2020). Although parents have the authority to decide on behalf of their children, their doubts or limited information can reduce their intention to vaccinate (Samaria et al., 2025).

Adolescent girls who do not have full control over their own vaccination decisions showed the lowest intentions. This may be because their role in the decision-making process is more passive, and they are highly dependent on parental approval (Balogun & Omotade, 2022; Leite e Sousa et al., 2018). In addition, adolescent girls often have limited understanding of cervical cancer risks and the benefits of HPV vaccination, which aligns with common concerns about vaccination procedures, such as injections (Beyen et al., 2022; Lismidiati et al., 2022). These findings highlight the need for education-based approaches that empower adolescents to understand and communicate their own health needs.

The findings of this study are consistent with previous research showing that adult women tend to have higher intentions to receive HPV vaccination when they feel they have full control over their health-related decisions (Waller et al., 2006, 2023). Other studies have also highlighted the importance of parents and the need for family-targeted educational interventions to increase HPV vaccination coverage in adolescent girls (Balogun & Omotade, 2022; Baumann et al., 2019; López et al., 2022; Thanasas et al., 2022). These findings indicate the need for educational interventions with tailored content according to the decision-making role of each group.

The results of this study have important implications for HPV vaccination promotion policies and strategies in Indonesia. Programs aimed at the needs of adolescents and parents need to focus on improving health literacy, empowering decision-making, and providing research-based information to increase perceived benefits and reduce concerns related to vaccination. Meanwhile, for adult women, their need to get affordable access to vaccination needs to be facilitated because their intention to get vaccinated is already quite high (Samaria et al., 2025).

Although the findings of this study were significant, several limitations should be noted. First, the sample was limited to the Jakarta area, which poses challenges to generalizing the results to

regions with different socio-cultural and economic characteristics. Second, this study did not include other variables that may influence individual's intention to receive vaccination, such as knowledge, perceptions, or access to vaccination services. Therefore, future studies are recommended to address these limitations by including and controlling for potential confounding variables that may influence the vaccination decision-making process.

CONCLUSION

This study provides new evidence that there are significant differences in HPV vaccination intentions among adult women who make their own vaccination decisions, adolescent girls who rely on their parents for their decision-making, and parents who assist their children in making vaccination decisions. The study also found that adult women had the highest intentions among the three groups, followed by parents with moderate intentions and adolescent girls with the lowest intentions.

Regarding the findings of this study, several recommendations can serve as valuable input for stakeholders. First, our recommendation would be addressed to nurses and other professional healthcare related to health promotion. The delivery of health promotion related to HPV vaccination needs to be differentiated based on the target group because each group has different demographic characteristics and levels of intention. For adult women, promotional content should focus on improving access to vaccination. In contrast, for parents and adolescent girls, educational content should prioritize enhancing health literacy and empowering individuals in health decision-making. In addition, healthcare workers involved in HPV vaccination programs should receive training to deliver informative and communicative education, enabling them to build confidence among parents and adolescent girls regarding the benefits and importance of HPV vaccination. Furthermore, future research with a longitudinal design is recommended, as it may provide a clearer understanding of the causal relationship between decision-making control and actual vaccination behavior.

ACKNOWLEDGEMENT

The authors express their sincere gratitude to all groups of women who participated in this research.

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