

# Feasibility of HPV vaccination program implementation: A qualitative study

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**ABSTRACT** The implementation of the Human Papillomavirus (HPV) vaccination program is still experiencing obstacles in several developing countries. This setback is related to the lack of knowledge and the high cost of the vaccine so that it affects people's behavior about the HPV vaccine. HPV vaccination in adolescents itself as primary prevention has not been widely conducted by adolescents in Indonesia. The results of previous studies showed that not many teenagers had vaccinated against HPV by using self-financing guarantees such as health savings. The obstacles faced in implementing HPV vaccination are that the vaccine is still expensive and there is lack of knowledge of parents and adolescents about the importance of HPV immunization. This formative research using qualitative methods was conducted to analyze the implementation plan of the HPV vaccination program. Data were collected through focus group discussions (FGD) and in-depth interviews. At the end of each FGD activity or interview, transcription and thematic analysis based on content were done. The FGD participants were ten teachers, while the in-depth interview participants were one school committee. This study found two main themes, namely the scheme of implementing the HPV vaccination program and obstacles to the implementation of HPV vaccination. Schools generally supported the program implementation. However, parents still question the importance of the HPV vaccination for their daughters and consider the vaccine costs expensive. Implementation of the HPV vaccination program must consider the existing program schemes in schools and possible obstacles. The results suggested that for the next HPV vaccination program, the facilitators should provide intense and relevant education to parents about the importance and side effects of HPV immunization, and are expected to build a willingness of parents to vaccinate their daughters and seek vaccination costs, one of which can be through a savings program.

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## 1. Introduction

Human Papilloma Virus (HPV) is one of the most common causes of sexually transmitted infections (STIs) in the world with an incidence of around 5.5 million. Nearly 75% of men and women who have sexual intercourse have been exposed to HPV in their lifetime.<sup>1,2</sup> National data stated that the age group that is highly susceptible to STI infection is adolescents.<sup>3</sup> In the Special Region of Yogyakarta,

HIV sufferers in the 20-24 year age group are around 19.79% and syphilis are around 28%, while data on HPV infection do not yet exist.<sup>4</sup> Although statistically, the data regarding HPV infection have not been recorded, the data for the Integrated Surveillance of Hospital-Based Diseases in Yogyakarta in 2014-2016 showed 4 cases of cervical malignant neoplasms of 328 (1.2%) at the age of 15-24 years.<sup>4</sup> This finding shows the importance of HPV prevention efforts in society.

Research shows that giving the HPV vaccine can provide 89% protection.<sup>5</sup> The World Health Organization (WHO) stated that the prophylactic HPV vaccine has high efficacy in adolescent girls

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aged 9-14 years, when most have not started sexual activity.<sup>6</sup> The most effective HPV vaccination is given to girls aged 9-13 years and young women aged 14-26 years who have not been vaccinated, before they start having sex. This is because HPV is transmitted through sexual contact and is usually acquired for the first time several years after sexual activity.<sup>7</sup>

The main keys in preventing HPV infection are education and immunization at a young age.<sup>8</sup> In Indonesia, the HPV vaccine is available and is one of the immunizations of choice recommended by the Indonesian Pediatrician Association.<sup>9,10</sup> The provision of HPV vaccination in developing countries is still constrained by several factors. These constraints include socio-cultural factors, lack of knowledge, lack of infrastructure, and financing. These obstacles are further exacerbated by the lack of political commitment in dealing with new technologies in the health sector.<sup>7</sup> Other issues, such as the high price of the HPV vaccine<sup>11</sup> and the uncertainty of the existence of local government subsidies, require community participation so that the vaccination program can be sustainable and cover more targets.

The school environment is a very important target in providing information support about the HPV vaccine in adolescents.<sup>12</sup> Providing information or school-based education can increase awareness and knowledge about HPV prevention, improve preventive behavior for sexually transmitted infections in general and reduce sexual risk.

This study is a follow-up to the results of research conducted by Lismidiati in 2019 regarding the Takespro (Reproductive Health) HPV intervention model which has been shown to have an effect on knowledge, self-efficacy, and intention for HPV vaccination on parents and junior high school students (SMP).<sup>13</sup> Prior to the Takespro HPV program, the researchers tried to explore the needs of the target junior high schools regarding cervical cancer information and prevention regarding the possibility of implementing the Takespro HPV program which includes education, parental empowerment, and HPV vaccination savings.

## 2. Methods

This formative research using qualitative methods

was conducted to analyze the needs of the junior high school community in the city of Yogyakarta regarding the HPV vaccination program. The research was conducted by two research teams with doctoral qualifications in nursing and doctorate in public health. The interviews and focus group discussions (FGDs) were conducted by VN (2nd author), whereas the data analysis was by WL (1st author) and VN (2nd author). Most of the informants were women, so the research team involved was of the same gender, where previously there had been no contact with the informants. Totally, 11 participants (10 teachers and one committee member) of a public junior high school in Yogyakarta city were selected using a purposive sampling technique with the following inclusion criteria: were from the state junior high school and willing to be a research respondent. The researcher involved one school committee member, who was the chairman to re-examine and evaluate the program from the students' parents' point of view. In addition, during meetings with teachers, they suggested involving the school committee in the program.

Data collection was conducted in July 2020, using the FGD method in groups of teachers, while the school committee was through interviews. There were five different questions asked to both teachers and the school committee. The average time for each data collection was 45-60 minutes, using instruments that have been tested in previous studies. The FGDs were conducted in Indonesian and recorded using a recorder. Content analysis was used in this research to identify and understand the challenges of the implementation plan of the HPV vaccination program. The interview scripts were read several times by the researcher (WL and VN) to reach an overall understanding in four times of meetings (each meeting  $\pm$  45 minutes).

The parts related to the participants' experiences regarding the challenges of the implementation plan of the HPV vaccination program were extracted from the interviews and FGDs then placed in a separate text. Next, words, sentences, and paragraphs relevant in terms of both content and context were merged and coded. Codes and meaning units were interpreted in the study context and compared in terms of similarities and differences. Finally, abstract sub-classes were made based on the semantic lines.

**Table 1.** Participant characteristics

No	Initial	Gender	Status
1.	Fy	Female	Teacher
2.	Fr	Female	Teacher
3.	Si	Female	Teacher
4.	Is	Female	Teacher
5.	Ar	Female	Teacher
6.	Mu	Female	Teacher
7.	Rd	Female	Teacher
8.	Wd	Female	Teacher
9.	Aa	Female	Teacher
10.	Mu	Female	Teacher
11.	Spr	Male	School committee

Re-thinking about the codes and the subclasses resulted in the extraction of categories and theme.

### 3. Results

#### 3.1 Participant Characteristics

The participants in the qualitative research were ten teachers and one school committee of junior high school in the city of Yogyakarta. The details of participant characteristics are described in the Table 1.

#### 3.2 The results of qualitative research

After analyzing the qualitative data, two main categories were obtained, namely: the scheme of implementing the HPV vaccination program, and the obstacles to the implementation of the HPV vaccination which can be seen in Table 2.

##### 3.2.1 The barriers to the implementation of HPV vaccination

###### *Worried about the formation of a new COVID-19 cluster*

Participants expressed concerns of parents and schools if face-to-face socialization and HPV vaccination activities would cause new COVID-19 clusters.

"First, we are boisterous about the dynamics of this COVID, in relation to regions that allow face-to-face learning. The pros and cons have taken up the discussion space. We are guarding because there is a case in SMP... we hope that there will be no new clusters" (Interview with school committee).

"So, the teacher can face to face directly and at any

time (for the HPV vaccination education) if students have to go online" (Teacher's FGD).

###### *The assumption that HPV vaccination is not necessary*

One of the problems that underlie the need for HPV vaccination is the issue of cost.

"It's just that in the last few years there are some groups among them who are sensitive/sensitive to costs, so they protest for small fees" (Interview with school committee).

"If the administration of vaccines is a necessity... for students themselves, (for funding) go directly to their parents" (Teacher's FGD).

In addition, based on participant information, parents of students still do not pay much attention to the risks that are in front of their eyes (the threat of COVID-19), let alone the risks that are still far away (cervical cancer).

"I'm sorry. Let alone the risks that are still far away, the risks in front of our eyes are sometimes ignored. For example, during a protocol like this, you have to wear a mask everywhere, but the fact is that when you speak, the mask is still open. So, the conclusion is that far-reaching risks are still being ignored, but it's just not that important for them to do it" (Interview with school committee).

###### *The previous socialization of the HPV vaccine has not been maximized*

Based on the participants' information, socialization activities about cervical cancer and its prevention were felt to be not optimal due to three aspects, namely: not all parents understand the use of information technology, parents and schools are still busy with academic activities, as well as busy handling cases of COVID-19 at school.

"Yesterday's activity could not be maximized because I identified that firstly, not all parents understand about Google Meet or Zoom. The second is because at the same time as curriculum strengthening activities, parents are more focused on these activities. The third one looks unresponsive and school conditions are not conducive (several school staff are exposed

**Table 2.** The results of qualitative research

No	Category	Quotations
<i>Theme: The barriers to the implementation of HPV vaccination</i>		
1	Worried about the formation of a new COVID cluster	<p>"First, we are boisterous about the dynamics of this COVID, in relation to regions that allow face-to-face learning. The pros and cons have taken up the discussion space. We are guarding because there is a case in SMP (junior high school) ... we hope that there will be no new clusters" (School committee's interview).</p> <p>"So, the teacher can face to face directly and at any time (for the HPV vaccination education) if students have to go online" (Teacher's FGD).</p>
2	The assumption that HPV vaccination is not necessary	<p>"It's just that in the last few years there are some groups among them who are sensitive/ sensitive to costs, so they protest for small fees" (School committee's interview).</p> <p>"I'm sorry. Let alone the risks that are still far away, the risks in front of our eyes are sometimes ignored. For example, during a protocol like this, you have to wear a mask everywhere, but the fact is that when you speak, the mask is still open. So the conclusion is that far-reaching risks are still being ignored, but it's just not that important for them to do it" (School committee's interview).</p> <p>"If the administration of vaccines is a necessity... for students themselves, go directly to their parents" (Teacher's FGD).</p>
3	The previous socialization of the HPV vaccine has not been maximized	<p>"Yesterday's activity could not be maximized because I identified that firstly, not all parents understand about Google Meet or Zoom. The second is because at the same time as curriculum strengthening activities, parents are more focused on these activities. The third one looks unresponsive and school conditions are not conducive (several school staff are exposed to COVID-19)" (School committee's interview).</p> <p>"In reality, in the field, people often wonder whether it is important or whether costs and procedures and related costs are still confusing" (School committee interview).</p>
<i>Theme: Scheme of the implementation of the HPV vaccination program</i>		
5	There needs to be subsidies for vaccine costs	<p>"So it is emphasized whether there is a cross subsidy because it is quite expensive, if the subsidy is not able to be given, the one that can be given independently without subsidies is my suggestion. So let the upper class get the same too" (School committee's interview).</p> <p>"...there is a subsidy (for realizing HPV vaccination)..." (Teacher FGD).</p>
6	Vaccine costs in the form of term savings	<p>"There are savings and there are subsidies. We are also prepared to save... It doesn't go directly to cash because the characteristics of parents are different" (Teacher FGD).</p> <p>"If the savings I agree, there will be a meeting with the student's guardian" (School committee's interview).</p>
7	Parental responsibility for vaccine financing	<p>"Schools do not allow levies, there must be approval from the directly related Office. I'm afraid, the perception of parents is that the school program is mandatory. When it comes to paying like that, don't dare. So far, only direct parental approval" (Teacher FGD).</p> <p>"Their parents also intervened because it was related to savings financing. Teenagers still depend on their parents for financing" (School committee's interview).</p>

to COVID-19)" (School committee interview).

In addition, based on participant observations of students' parents after online socialization activities, it was found that parents still often question the importance of HPV vaccination.

"In reality, in the field, people often wonder whether it is important or whether costs and procedures and related costs are still confusing" (School committee interview).

### 3.2.2 Scheme of the implementation of the HPV vaccination program

#### *Supporting HPV vaccination.*

In general, teacher and school committee provided support for the HPV vaccination program.

"Support. Moreover, HPV is given to children in grades 5-6. So we want to be an experiment at the beginning. It has not been given nationally for reproductive health" (Teacher's FGD).

"When with this, parents may know how terrible the impact of cervical cancer is. I support this program at school" (School committee's interview).

#### *There needs to be subsidies for vaccine costs.*

Both the teacher participants and the committee who, in this case as representatives of parents, stated that there was a need for subsidies for vaccination costs because the price was still relatively expensive for parents.

"So it is emphasized whether there is a cross subsidy because it is quite expensive, if the subsidy is not able to be given, the one that can be given independently without subsidies is my suggestion. So, let the upper class get the same too" (School committee interview).

"...there is a subsidy (for realizing HPV vaccination)..." (Teacher FGD).

#### *Vaccine costs in the form of term savings.*

In addition to subsidies, participants also expect a term payment scheme such as savings.

"There are savings and there are subsidies. We are also prepared to save...It doesn't go directly to cash because the characteristics of parents are different" (Teachers FGD).

"If the savings I agree, there will be a meeting with the student's guardian" (School committee's interview).

#### *Parental responsibility for vaccine financing.*

Regarding HPV vaccination activities, schools do not dare to charge students on behalf of the school, the cost of the vaccine is the direct responsibility of the parents.

"Schools do not allow levies, there must be approval from the directly related Office. I'm afraid, the perception of parents is that the school program is mandatory. When it comes to paying like that, we don't dare. So far, only direct parental approval" (Teacher FGD).

"Their parents also intervened because it was related to savings financing. Teenagers still depend on their parents for financing" (School committee's interview).

## 4. Discussion

The results of this study found two important themes that must be considered in the planning and implementation of the HPV vaccination program, namely: barriers and schemes for implementing the HPV vaccination program. Several obstacles in the implementation of HPV vaccination were identified, namely: 1) concerns about the formation of a new COVID cluster if the activity is done face-to-face, 2) the HPV vaccine is not yet needed due to the problem of still expensive costs, and 3) the previous HPV vaccine socialization is still not optimal.

The concern about the formation of a new COVID-19 cluster is based on the positive cases of COVID-19 experienced by several staff at the school, in addition to the pros and cons regarding the implementation of face-to-face activities at schools. Regarding social distancing as the impact of COVID-19, almost all learning in school uses online models. Based on research conducted by

Dong, Cao, and Li in 2020, only a few percentages of parents believed that online learning has better learning content (18.4%), better learning outcomes (11.0%), and is more efficient (12.6%) than the traditional approach.<sup>14</sup> It also happened when there was the socialization about cervical cancer and HPV vaccination in junior high schools. Only a few parents presented online (30%), which shows that there is still a lack of parental interest in online education.

The results of Sabiq's research stated that the implementation of face-to-face learning is very supportive for some students because students' abilities are limited to the online system. However, some parents do not agree with face-to-face learning because there are still COVID-19 clusters.<sup>15</sup> The reason for the parents' opinion is that the children have not been able to fully comply with and act in accordance with the health protocols. Parents are worried that when they are at school, students cannot maintain social distancing or keep their distance from their friends, do not fully wear masks, and cannot fully maintain personal hygiene from the surrounding environment. It is undeniable that the spread of COVID-19 is still quite high and has become our collective vigilance, so that the implementation of face-to-face learning activities is still prone to be conducted in the midst of the COVID-19 pandemic.

The next obstacle is the HPV vaccine, which is considered too expensive so that it is not needed at this time. This finding is also supported by the results of a systematic review study which reported that in several countries in Southeast Asia, the cost of vaccines is a barrier in vaccination programs.<sup>16</sup> Parents believe that the HPV vaccine is important to be given as an early prevention of cervical cancer and is safe for their children,<sup>17,18</sup> but they will be even more willing if the HPV vaccine program is included in the government's national program that is evenly distributed for all ages recommended by the WHO.<sup>18</sup> In addition, the previous HPV vaccine socialization activity was felt to be still not optimal, and this is because not all parents understand the use of information technology, while the parents and schools are still busy with academic activities, as well as busy handling COVID-19 cases at school. The researchers conducted the socialization activities for HPV vaccination online due to the COVID-19

pandemic using lecture and discussion methods. This is in line with the research of Putra and Kasmiarno<sup>19</sup> which stated that the establishment of schools through online causes many pros and cons in it. For students from middle to lower economic class, the need to fulfill online learning facilities is very heavy, starting from Internet quota to supported devices. The unpreparedness of schools/madrasas and parents in implementing online learning is the main factor in this obstacle. Not all parents are able to operate gadgets because there are some parents whose circumstances are still not technologically literate.<sup>20</sup>

Actually, the HPV vaccination activity received positive support from the participants. The desired HPV vaccination activity scheme is the need for subsidies for vaccine costs, vaccine costs in the form of term savings, and parental responsibility for vaccine financing. However, the various obstacles found by the researchers made the realization of implementation of HPV vaccination impossible, one of which was the cost barrier. This obstacle was also found in previous research, namely that there were various obstacles in the implementation of health savings, including the student's pocket money was not enough to be used for saving, there were still many school needs from students, and economic factors from parents so that student motivation in saving was still lacking.<sup>21</sup>

## 5. Conclusions

The implementation of the HPV vaccination program must take into consideration the various possible obstacles in the implementation of the program. There is support from teachers and school committees in the HPV vaccination program, as well as a vaccination program scheme that participants expect is the need for subsidies for vaccine costs, vaccine costs in the form of term savings, and parental responsibility for vaccine financing. The results suggested that for the next HPV vaccination program, the facilitators should provide intense and relevant education to parents about the importance and side effects of HPV immunization, and are expected to build a willingness of parents to vaccinate their daughters and seek vaccination costs,

one of which can be through a savings program.

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## Conflict of interests

There is no conflict of interests, such as any financial, professional, or personal relationships that are relevant to the submitted work.

## References

- Martín-Hernán, F. et al. Oral cancer, HPV infection and evidence of sexual transmission. *Med Oral Patol Oral Cir.* 2013;18(3):pp. e439-44.
- Shannon CL, Klausner JD. The growing epidemic of sexually transmitted infections in adolescents: neglected population. *Curr Opin Pediatr.* 2018; 30(1): 137-143.
- Badan Pusat Statistik. *Survei Demografi dan Kesehatan 2017.* Jakarta; 2017.
- Direktorat Pencegahan dan Pengendalian Penyakit (P2P) Kementerian Kesehatan Republik Indonesia. *Program pengendalian HIV AIDS dan PIMA (Fasilitaskesehatantingkatpertama).* Jakarta: Indonesia; 2017.
- Cunningham MS, Skrastins E, Fitzpatrick R, et al. Cervical cancer screening and human papillomavirus vaccine acceptability among rural and urban women in Kilimanjaro Region, Tanzania. *BMJ Open.* 2015;5:1–10.
- World Health Organization. *Cervical Cancer* [internet]. Available from: <https://www.who.int/news-room/fact-sheets/detail/cervical-cancer#:~:text=HPV%20vaccines%20work%20best%20if,in%20males%20as%20well%20as>. Accessed on March 20, 2022.
- Wigle J, Coast E, and Watson-Jones, D. Human papillomavirus (HPV) vaccine implementation in low and middle-income countries (LMICs): health system experiences and prospects, *Vaccine.* Elsevier Ltd. 2013; 31(37): 3811–3817.
- Napolitano F, Napolitano P, Liguori G, Angelillo IF. Human papillomavirus infection and vaccination: knowledge and attitudes among young males in Italy. *Hum Vaccine Immunother.* 2016; 12(6): 1504-1510.
- Ayuningtyas D, Sutrisnawati NND. Indonesia's readiness to implement the HPV vaccine mandatory for school age. *Health Sci J Indones.* 2018; 9(2): 108-18.
- Kementerian Kesehatan RI. *Infodatin Reproduksi Remaja-Ed. Pdf,* pp. 1–8; 2015.
- Karneli NK, Suwiyoga K, Sudibya A. Parental willingness to pay the cervical cancer vaccination cost of senior high school aged students in Badung Regency. *Public Health and Preventive Medicine Archive.* 2013;1:70–77.
- Middleman A. School-located vaccination for adolescents: Past, present, and future and implications for HPV vaccine delivery. *Hum Vaccines Immunother.* 2016;12: 1-7.
- Lismidiati W, Emilia O, Widyawati. *Model intervensi takespro HPV untuk peningkatan perilaku vaksinasi HPV di sekolah.* Disertasi. Universitas Gadjah Mada. 2019.
- Dong C, Cao S, Li H. Young children's online learning during COVID-19 pandemic: Chinese parents' beliefs and attitudes. *Child Youth Serv Rev;* 2020;118: 105440.
- Sabiq AF. Persepsi orang tua siswa tentang kegiatan belajar di rumah sebagai dampak penyebaran COVID-19. *Civic-Culture: Jurnal Ilmu Pendidikan Pkn dan Sosial Budaya,* 2020;4 (1Extra): 1-7.
- Santhanes D, Wong CP, Yap YY, San SP, Chaiyakunapruk N, Khan TM. Factors involved in human papillomavirus (HPV) vaccine hesitancy among women in the South-East Asian Region (SEAR) and Western Pacific Region (WPR): a scoping review. *Hum Vaccin Immunother.* 2018; 14(1): 124-133.
- Staras SA, Vadaparampil ST, Patel RP, Shenkman EA. Parent perceptions important for HPV vaccine initiation among low-income adolescent girls. *Vaccine.* 2014; 32(46): 6163-6169.
- Jaspers L, Budiningsih S, Wolterbeek R, Henderson FC, Peters AA. Parental acceptance of human papillomavirus (HPV) vaccination in Indonesia: a cross-sectional study. *Vaccine.*

- 2011; 29(44): 7785-7793.
19. Putra WP, Kasmiarno KS. (2020). Pengaruh Covid-19 terhadap kehidupan masyarakat Indonesia: Sektor Pendidikan, Ekonomi dan Spiritual Keagamaan. *POROS ONIM: Jurnal Sosial Keagamaan*, 1(2), pp. 144-159.
  20. Lestari A, Gunawan. The impact of COVID-19 pandemic on learning implementation of primary and secondary school levels. *Indonesian Journal of Elementary and Childhood Education*; 2020;1 (2):58-63.
  21. Lismidiati W, Emilia O, Widyawati. Need vs financing capability: Human papillomavirus vaccination among adolescents. *Asian Pac J Cancer Prev*. 2019;20 (10):2959-64.