
RESEARCH ARTICLE

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Knowledge, Perception, and Acceptance of HPV Vaccination and Screening for Cervical Cancer among Women in Yogyakarta Province, Indonesia

Dwi Endarti^{1*}, Satibi¹, Susi Ari Kristina¹, Muhaya Almira Farida², Yuni Rahmawanti¹, Tika Andriani¹

Abstract

Objective: To determine knowledge, perception, and acceptance related to cervical cancer, HPV vaccination and screening for cervical cancer among Indonesian women, particularly in Yogyakarta province. **Methods:** A convenience sample of 392 women consists of 192 young women, 100 mothers of girls aged 12 – 15 years, and 100 adult women in Yogyakarta province, Indonesia was participated in this study. A self-administered paper-based questionnaire was used to determine demographics characteristics of respondents, as well as their knowledge – perception – acceptance related to cervical cancer, HPV vaccination, and screening for cervical cancer. Data collection were conducted during December 2013 to March 2014. Descriptive statistics was used to analyze description of demographics characteristics, knowledge, perception, and acceptance; while crosstab analysis using Chi-Square was used to analyze the relationship between demographics characteristics versus knowledge, perception, and acceptance. **Results:** This study found that knowledge and perception regarding cervical cancer, HPV vaccination, and screening for cervical cancer among women in Indonesia, particularly in Yogyakarta Province were still insufficient, however the acceptance was good. Among female young women, 64% had good knowledge, 62% had positive perception of cervical cancer and HPV vaccination, and 92% tended to accept HPV vaccination. Among mothers of girls aged 12 – 15 years, 44% had good knowledge, 46% had positive perception of cervical cancer and HPV vaccination, and 91% tended to accept HPV vaccination for their daughters. Among adult women, 68% had good knowledge, 57% had positive perception of cervical cancer and screening for cervical cancer, and 90% tended to accept cervical cancer screening. In general, demographics characteristics of having experience and exposure to information had significant relationship with knowledge, perception, and acceptance of HPV vaccination and screening for cervical cancer. **Conclusions:** Either knowledge or perception of cervical cancer and strategies toward it among Indonesian women particularly in Yogyakarta province were still unsatisfied. Efforts should be improved for supporting cervical cancer prevention and control in Indonesia through such as education on cervical cancer disease and strategies toward it.

Keywords: Knowledge- perception- acceptance- cervical cancer- HPV vaccination- screening of cervical cancer

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Introduction

Cervical cancer is one of disease that causes high burden worldwide with the majority of the cases occurred in developing countries. It is the third most prevalent cancer in the world, while in South-east Asia region it is the second most prevalent cancer after breast cancer (Moore et al., 2010; Torre et al., 2015). The partial cancer registry in Indonesia reported the same trend that cervical cancer is the second most common cancer among women (Wahidin et al., 2012). In Indonesia, the incidence and mortality rate are 17 per 100,000 populations and 7.7 per 100,000 populations, respectively (Torre et al., 2015).

Health burden of cervical cancer in Indonesia in 2008, measured with disability-adjusted life years (DALYs) was estimated about 233,205, consisted of 210,411 years of life losts (YLLs) and 22,794 years of life with disability (YLDs). This number is about 34% and 2.67% of DALYs due to cervical cancer in South-Eastern Asia and world, respectively (Bruni et al., 2014). Meanwhile, in term of quality of life, cervical cancer noteworthy reduced quality of life of patients in Indonesia particularly affecting the pain/discomfort and anxiety/depression domains (Endarti et al., 2015). With regards to economic burden, the total economic impact of premature death and disability from cancer worldwide was \$895 billion in 2008, excluding

¹Department of Pharmaceutics, Faculty of Pharmacy, Universitas Gadjah Mada, ²BPJS Kesehatan Health Insurance, Indonesia.

*For Correspondence: endarti_apt@ugm.ac.id

direct costs of treating cancer, represents 1.5 percent of the world's GDP (Rijo and Ross, 2010). In the absence of any intervention, cervical cancer diseases would require about \$4 billions as was estimated in 2014 value based on cohort simulation of 10 millions girls in Indonesia (Setiawan et al., 2016).

The strategies for prevention and control of cervical cancer include the modalities of primary prevention strategies (vaccination program), secondary prevention strategies (screening), and tertiary prevention strategies (treatment with standard-of-care). The implementation of those strategies might differ between settings hence the modalities should be selected for the most appropriate for the local conditions and patients (WHO, 2014; Reeler et al., 2009; Zarchi et al., 2009). Regardless of what strategies would be implemented, education is important factor for an effective cervical cancer prevention and control programme to achieve high target of the program (WHO, 2014), furthermore it is one of prevention procedures that have been known to be useful for controlling cervical cancer at population level (Torre et al., 2015).

Acceptance of such program of cervical cancer prevention and control is the main factor for the success of program implementation. Knowledge and perception regarding cervical cancer and screening for cervical cancer are known to have association with acceptance to take HPV vaccine and screening for cervical cancer (Jaspers et al., 2011). Therefore, to facilitate the development of a proper program of HPV vaccination and screening for cervical cancer through education approach, it is important to understand the knowledge, perception, and acceptance among women as target population of the program. At the moment, there is very little information about these issues in Indonesia (Jaspers et al., 2011). Similar studies have been conducted in many other settings in the world to support program for cervical cancer prevention and control in their countries, for instance in Iran (Ghojzadeh et al., 2012), South Africa (Hoque et al., 2013), India (Shekhar et al., 2013), Malaysia (Ezat et al., 2013), Turkey (Coskun et al., 2013; Kose et al., 2014; Borlu et al., 2016), Thailand (Kruiroongroj et al., 2013; Srisuwan et al., 2015; Mongsawaeng et al., 2016), Sudan (Almobarak et al., 2016), United Emirat Arab (Ortashi et al., 2014), Maldives (Basu et al., 2013), and Nepal (Ranabhat et al., 2014). The studies used different groups of respondents, including student (Ghojzadeh et al., 2012; Hoque et al., 2013; Borlu et al., 2016); healthcare staff (Coskun et al., 2013; Shekhar et al., 2013; Srisuwan et al., 2015), mother (Ezat et al., 2013; Kruiroongroj et al., 2013; Kose et al., 2014), and women (Basu et al., 2013; Ortashi et al., 2014; Ranabhat et al., 2014; Almobarak et al., 2016; Mongsawaeng et al., 2016).

This study aims to evaluate knowledge, perception, and acceptance related to cervical cancer, HPV vaccination and screening for cervical cancer among Indonesian women, particularly in Yogyakarta province. Furthermore, the respondents included women as representative of different group of target population of HPV vaccination and screening for cervical cancer, which are female young women, female parents, and adult women.

Materials and Methods

A convenience sample of 392 women consists of 192 female young women, 100 female parents, and 100 adult women in Yogyakarta province, Indonesia was participated in this study. Yogyakarta province is located in Java island, it covers 4 district and 1 municipality. Sample of young women was chosen from students of Gadjah Mada University which is located at the boarder of Yogyakarta municipality and Sleman district. Sample of mothers of girls aged 12-15 years old (parents) was recruited using school-based survey from one junior high school in Yogyakarta municipality and one junior high school in Bantul district. Sample of adult women was recruited using community-based survey from one sub-district in Yogyakarta Municipality and one sub-district in Gunung Kidul District. Data collection were conducted during December 2013 to March 2014.

A self-administered paper-based questionnaire was developed to achieve the study goal. The questionnaire for this study was adapted from validated questionnaire from similar studies conducted previously in other settings and translated into Bahasa Indonesian (Philips et al., 2003; Rosenthal et al., 2008; Abotchie and Shokar, 2009; Mehu-Parant et al., 2010; Juntasopeepun et al., 2012; Kruiroongroj et al., 2013). The questionnaire in Bahasa Indonesia was test for validation again in similar population with study sample. The final validated questionnaire was used in the study. The questionnaires consisted of four parts as follows: Part 1 included information regarding socio-demographic characteristics and cancer-related characteristics; Part 2 examined knowledge regarding cervical cancer, HPV vaccination, and screening for cervical cancer; Part 3 examined perception about cervical cancer, HPV vaccination, and screening for cervical cancer; and Part 4 examined acceptance towards HPV vaccination and screening for cervical cancer.

Characteristics of sample were presented descriptively based on the common group classification. Descriptive statistics was used to analyze description of demographics characteristics. Knowledge, perception, and acceptance were also presented descriptively based on the distribution of answer of each question. Furthermore, knowledge was categorized as high and lack knowledge level using the cut-off point of median score in each group; meanwhile perception was categorized as positive and negative perception using the cut-off point of median score in each group. Lastly crosstab analysis using Chi-Square was used to analyze the relationship between demographics characteristics versus knowledge, perception, and acceptance in each group of respondents.

Results

Characteristics of respondents

Characteristics of respondents including socio-demographic and cancer-related characteristics are displayed in Table 1 and Table 2. The number of respondents as representative of health/non-health faculty of students and urban/rural community of adult women and parents was equal. Most of students were aged

Table 1. Socio- Demographic of Respondents, N (%)

Socio-demographic Characteristics	Students	Adult women	Parents
Cluster	192	100	100
Health-related faculty / Urban community	96 (50)	50 (50)	50 (50)
Non health-related faculty / Rural community	96 (50)	50 (50)	50 (50)
Age (year)	191	91	100
16 – 20	105 (55)	n.a	n.a
21 – 25	83 (43)	n.a	n.a
>26	3 (2)	n.a	n.a
< 41	n.a	23 (25)	47 (47)
41 – 45	n.a	19 (21)	32 (32)
> 45	n.a	49 (54)	21 (21)
Marital status	191	96	100
single	187 (98)	17 (8)	3 (3)
married	4 (2)	79 (82)	97 (97)
Education	192	97	100
No formal education	n.a	2 (2)	2 (2)
Elementary school	n.a	14 (14)	21 (21)
Junior high school	n.a	24 (24)	11 (11)
Senior high school	163 (85)	37 (38)	26 (26)
Bachelor degree	27 (14)	19 (19)	40 (40)
postgraduate degree	2 (1)	1 (1)	0 (0)
Family income (in IDR)	183	91	100
< 2,000,000	33 (18)	64 (70)	50 (50)
2,000,000 - 5,000,000	96 (52)	21 (23)	34 (34)
> 5,000,000	54 (30)	6 (7)	16 (16)
Occupation		90	100
Health professional	n.a	1 (1)	4 (4)
Non-health professional	n.a	21 (26)	38 (38)
House wife	n.a	46 (51)	58 (58)

between 16-20 years old, most adult women were aged above 45 years old, and most parents were aged below 41 years old. Almost all students were single, while most adult women and parents were married. In general, more than 50% of respondents had good education (senior high school and above). Most respondents had relatively low family income. Among adult women and parent, most of them were house wife.

As for characteristic related to cancer, about 7.4 – 18.4% of respondents had the history of cancer in the family. More than 60% of respondents have heard about cervical cancer. More than 60% of students have heard about HPV vaccination, but only 44% of parents have heard about it. More than 50% of respondents never heard about screening for cervical cancer. Very few of students have been vaccinated with HPV (7.8%). About 26-27% of adult women and parents have been screened for cervical cancer. There was few of respondents (15-28%) had family who have been screened for cervical cancer and very few of respondents (1-4%) had family who have been vaccinated with HPV.

Knowledge, perception, and acceptance

Knowledge of respondents regarding cervical cancer,

Table 2. Cancer- Related Characteristics of Respondents, N (%)

Cancer-related Characteristics	Students	Adult women	Parents
History of cancer in family	190	95	100
Yes	35 (18)	7 (7)	10 (10)
No	155 (82)	88 (93)	90 (90)
Having heard about cervical cancer	192	98	100
Yes	189 (98)	60 (61)	65 (65)
No	3 (2)	38 (39)	35 (35)
Having heard about HPV vaccination	192	n.a	100
Yes	126 (66)	n.a	44 (44)
No	66 (34)	n.a	56 (56)
Having heard about screening	192	94	100
Yes	84 (44)	43 (46)	38 (38)
No	108 (56)	51 (54)	62 (62)
Having been vaccinated	192	n.a	n.a
Yes	15 (8)	n.a	n.a
No	177 (92)	n.a	n.a
Having been screened	192	95	100
Yes	3 (2)	26 (27)	26 (26)
No	189 (98)	69 (73)	74 (74)
Having family who have been screened	192	93	n.a
Yes	29 (15)	26 (28)	n.a
No	163 (85)	67 (72)	n.a
Having family who have been vaccinated	192	n.a	100
Yes	29 (15)	n.a	4 (4)
No	163 (85)	n.a	96 (96)

n.a, not applicable

HPV vaccination, and screening for cervical cancer is shown in Table 3. Regarding knowledge about cervical cancer, most of respondents knew that cervical cancer is caused by virus (84-90%), but only few respondents knew that the symptoms of cervical cancer could not be recognized at early stage (18-23%). More than 60% of respondents knew that cervical cancer is transmitted by sexual activity and that the risks increase in women who sexually active. More than 50% of adult women and parents did not know about the prevalence of HPV infection that one third of women might have HPV infection, and that the disease could not be prevented and treated using antibiotic. Regarding knowledge about HPV vaccination and screening for cervical cancer, young female students also had better knowledge than adult women and parents; except in the question that screening using VIA could be conducted in primary health care, 50% of students knew about it while 74% of adult women knew about it. In general, about 56-77% of adult women and parents knew about efficacy/effectiveness of HPV vaccine and screening for cervical cancer.

Table 4 shows the distribution of respondents' perception about cervical cancer, HPV vaccination, and screening for cervical cancer. In general, it can be said that most of respondents indicated that cervical cancer is a serious disease that causes physical problems, stress, unhappy life, and burden to other family member (>50%). Most of respondents indicated that HPV vaccination needs

Table 3. Knowledge Regarding Cervical Cancer, HPV Vaccination, and Screening for Cervical Cancer

Statements	Students		Adult women		Parents	
	% correct	N	% correct	N	% correct	N
Knowledge regarding cervical cancer						
Symptoms of cervical cancer could not be recognized at early stage	33	192	18	100	26	100
Cervical cancer is caused by virus infection	90	191	84	100	86	100
Women who sexually active have more risk on cervical cancer than women who sexually active	74	190	53	100	56	100
Presence of cancer in family increase the risk on cervical cancer	85	191	68	100	65	100
HPV infection could not be prevented using antibiotic	64	191	29	100	35	100
HPV infection could not be treated using antibiotic	74	190	30	100	50	100
One of 3 women having HPV infection	67	189	36	100	29	100
HPV infection is transmitted by sexual activity	60	189	75	100	63	100
Knowledge regarding HPV vaccination and screening for cervical cancer						
Screening using VIA could be conducted in primary health center	50	186	74	100	n.a	n.a
A women need not only once in lifetime for cervical cancer screening	87	190	77	100	n.a	n.a
one type of any vaccination could not protect from all kinds of infections	88	192	56	100	70	100
A women who have been vaccinated by HPV needs any screening	82	189	68	100	76	100
HPV vaccination does not give life-long protection towards cervical cancer	79	191	61	100	n.a	n.a

n.a, not applicable

high cost but not for screening of cervical cancer. Most of respondents also had plan to take HPV vaccination or screening of cervical cancer; students had plan to take HPV vaccination either they have risks to get the disease or not, meanwhile almost all adult women and parents (>90%) planned to take screening of cervical cancer because of the risks to get cervical cancer.

Table 5 presents the detail description of acceptance along with the factors enhancing and barriers to uptake the program. Our study identified that most of respondents accepted the program due to factor of efficacy of vaccine or screening, meanwhile the barrier was the belief of do not have risks to get cervical cancer.

Table 6 summarizes comparison of knowledge, perception, and acceptance among different group of respondents. Overall, young female students had better knowledge regarding cervical cancer, HPV vaccination,

and screening for cervical cancer than adult women and parents; indicated from highest percentage of median knowledge score to total knowledge score were belonged to students (69% of total score) compared to those of parents (60% of total score) and women (54% of total score). Based on the categories of perception, most of students and adult women had positive perception which scores were 62% and 57%, respectively. In contrast, most parents had negative perception (52%). The acceptance of respondents to take HPV vaccine or screening of cervical cancer was similar in the three groups of young female students, adult women, and parents, which were 92%, 91%, and 90%, respectively.

Association between characteristics of respondents versus knowledge, perception, and acceptance

Characteristics of young female students which had

Table 4. Perception of Students, Adult Women, and Parents about Cervical Cancer, HPV Vaccination, and Screening for Cervical Cancer

Statements	Students (%)					Adult women (%)					Parents (%)				
	N	4	3	2	1	N	4	3	2	1	N	4	3	2	1
1. Cervical cancer is a serious disease	192	61	38	0	1	100	32	52	12	4	100	72	27	1	0
2. Cervical cancer causes physical problems	192	28	64	7	1	100	16	51	27	6	100	36	59	4	1
3. Cervical cancer causes stress	191	40	55	4	1	100	18	54	25	3	100	42	47	11	0
4. Cervical cancer causes unhappy life	191	37	47	13	3	100	30	50	16	4	100	40	47	8	5
5. Cervical cancer gives burden to family member	191	30	62	8	0	100	21	48	26	5	100	23	50	22	5
6. Being afraid of suffering cervical cancer	192	71	28	0	1	100	43	47	7	3	100	75	20	3	2
7. Willing to do HPV vaccination/screening due to risks of cervical cancer	189	4	44	46	6	100	36	54	3	7	100	43	50	5	2
8. Preventing of cervical cancer is better than treating it	192	79	19	1	1	100	62	34	3	1	100	68	32	0	0
9. HPV vaccination/screening needs high cost	190	18	63	18	1	100	4	26	54	16	100	30	32	28	10
10. Having plan to do HPV vaccination/screening	191	17	73	9	1	100	19	65	11	5	n.a	n.a	n.a	n.a	n.a
11. Screening for cervical cancer is very important to be taken by woman	n.a	n.a	n.a	n.a	n.a	100	37	59	0	4	n.a	n.a	n.a	n.a	n.a
12. Encourage daughter/relatives to take HPV vaccine	n.a	n.a	n.a	n.a	n.a	100	23	69	5	3	100	34	61	3	2

1, strongly disagree; 2, disagree; 3, agree; 4, strongly agree; n.a, not applicable

Table 5. Acceptance of Students, Adult Women, and Parents Towards HPV Vaccination and Screening for Cervical Cancer

Statements	Students		Adult women		Parents	
	n (%)	N	n (%)	N	n (%)	N
Accepts to take HPV vaccine/screening	176 (92)	192	90 (90)	100	91 (91)	100
Factors enhancing to uptake of HPV vaccine		192		100		100
Efficacy of HPV vaccine/screening	162 (84)		77 (77)		80 (80)	
Safety of HPV vaccine	16 (8)		54 (54)		18 (18)	
Having risk of cervical cancer	0		17 (17)			
Others	8 (4)		7 (7)		0	
Barriers to uptake of HPV vaccine		192		100		100
Do not have risk of cervical cancer	8 (4.2)		4 (4)		4 (4)	
Afraid of side effect of vaccine	6 (3.1)		2 (2)		4 (4)	
Doubt of effectiveness of vaccine	1 (0.5)		0		3 (3)	
High cost of HPV vaccine	0 (0)		1 (1)		1 (3)	
Others	1 (0.5)		2 (2)		0	

Table 6. Scores of Knowledge, Perception, and Acceptance

	Students		Adult women		Parents	
	Score	N (%)	Score	N (%)	Score	N (%)
Knowledge score						
Median of score	9		7		6	
Good knowledge	≥ 9	123 (64)	≥ 7	68 (68)	≥ 6	44 (44)
Lack of knowledge	< 9	69 (36)	< 7	32 (32)	< 6	56 (56)
Perception						
Median of score	33		36		35	
Positive perception	≥ 33	118 (61)	≥ 36	57 (57)	≥ 35	48 (48)
Negative perception	< 33	74 (39)	< 36	43 (43)	< 35	52 (52)
Acceptance						
Accepts to take HPV vaccine		176 (92)		90 (90)		91 (91)

significant association with knowledge were cluster ($p=0.000$) and exposure of information/having heard about screening for cervical cancer ($p=0.000$); with perception were cluster ($p=0.008$), experience/history of cancer in family ($p=0.036$), and exposure of information/having heard about HPV vaccination ($p=0.003$) and having heard about screening for cervical cancer ($p=0.002$); and with acceptance was family income ($p=0.021$). Mean while, characteristics of adult women which had significant association with knowledge and perception was none; with acceptance was exposure of information/ having heard about screening for cervical cancer ($p=0.016$). In addition, characteristics of female parents which had significant association with knowledge was exposure of information/ having heard about screening for cervical cancer ($p=0.009$); with perception and acceptance was none. There was significant association between knowledge and acceptance in adult women ($p=0.045$) but

not in students and female parents, as well as significant association between perception and acceptance in young female students ($p=0.002$) but not in adult women and female parents.

Discussion

This study examined the knowledge, perception, and acceptance of HPV vaccination and screening for cervical cancer among women in Indonesia with the sample of Yogyakarta Province. Previous study had been conducted in Indonesia to examine parental acceptance of HPV vaccination in several other provinces (Jaspers et al., 2011). This study also differed in more complete respondents to represent women which were young female women, adult women, and female parents. The respondents of young female women were university students from health-related and non health-related faculty selected in equal number, thus the education background will not influence the study results. As for the respondents of adult women and female parents were selected by convenience sampling from municipality and district citizen to represent the urban and rural community, hence the characteristics of urban and rural community will not influence the study results.

This study identified that knowledge about cervical cancer, and HPV vaccination/screening was not quite high. Our finding regarding the level of knowledge was consistent with previous study in Indonesia (Jaspers et al., 2011). Furthermore knowledge of some aspects were very low, such as symptoms of cervical cancer could not be recognized at early stage and cervical cancer could not be prevented or treated with antibiotic. On the other hand, most of respondents knew that cervical cancer is caused by virus. Insufficient knowledge regarding cervical cancer, HPV, and screening for cervical cancer was also occurred in other settings. For instance, inadequate knowledge was found among university students in Iran was at moderate level (Ghojazadeh et al., 2012), as well as among South African female university students (Hoque et al., 2013),

and among university students in Turkey (Borlu et al., 2016). Inadequate knowledge regarding cervical cancer screening was also occurred among healthcare workers (Shekhar et al., 2013). Same result was as also occurred when measuring knowledge regarding cervical cancer among women in Sudan (Almobarak et al., 2016), in Abu Dabhi (Ortashi et al., 2014), and in Maldives (Basu et al., 2013). It can then be said that literacy regarding cervical cancer disease and program for cervical cancer prevention and control was globally low and different in which aspects they were lack. Increasing literacy by focusing the aspects of knowledge with low level should be emphasized in the education material related to cervical cancer. A universal literacy program conducted in Maldives has helped to improve the knowledge of cervical cancer prevention and to reduce the exposure to various risk factors in the younger population (Basu et al., 2013).

In this study, positive perception of respondents about cervical cancer and HPV vaccination/screening was also not high. The high cost of HPV vaccine and willingness to take HPV vaccination/screening if having the risks to get cervical cancer were the main issues to contribute to negative perception of respondents. Since HPV vaccine is quite expensive and is not covered in most health insurance in Indonesia, the program will be burden for target population for spending out-of-pocket to the healthcare. Further study about willingness to pay for HPV vaccination might be important to be conducted. In contrast, screening with VIA are available in almost all primary health center in Indonesia with no cost or very cheap cost to take the healthcare.

In contrast with knowledge and perception, the acceptance of HPV vaccination and screening for cervical cancer examined from this study was very high (>90%). This finding was in line with previous study conducted in Indonesia in which the acceptance of HPV vaccination was 96% (Jaspers et al., 2011). The main factor enhancing the acceptance to take the program identified from our respondents was efficacy of HPV vaccine and screening, meanwhile the main factor as barrier the acceptance to take the program was belief of not having the risks to get cervical cancer. The reason of vaccine safety and recommendation by a doctor were the factors for women would enhance the uptake of the HPV vaccination in Abu Dabhi (Ortashi et al., 2014).

As for the association between respondents' characteristics versus knowledge, perception, and acceptance of cervical cancer and HPV vaccination/screening showed that most of characteristics were not significantly associated. Only characteristics of experience related to cancer and exposure to information had significant relationship with knowledge, perception, and acceptance of HPV vaccination and screening for cervical cancer. The association between characteristics versus knowledge and acceptance in other studies were also varied (Songthap et al., 2009; Ortashi et al., 2014). Educational level, age, and smoking were predicted to effect knowledge about HPV of university student in Iran (Ghojazadeh et al., 2012). Previous studies also found that students in health faculty or senior students gained higher knowledge level compared to non-health faculty or junior

students (Ghojazadeh et al., 2012; Borlu et al., 2016). Other study mentioned that knowledge and attitudes toward cervical cancer screening did not correlate with the cervical screening coverage rates (Srisuwan et al., 2015).

Lastly, it is important to note some limitations of this study. For instance, the sample of our study only reflects young female students, adult women, and female parents in some areas in Yogyakarta Province. The sampling technique of convenience sampling also might not the most appropriate method to select the respondents. Future study should enlarge the population coverage as study respondents and use random sampling technique for better study results to represent situation in Indonesia and to provide generalizable results.

In conclusion, this study findings inform that the level of knowledge and perception regarding cervical disease, HPV vaccination and screening for cervical cancer among women in Indonesia, particularly in Yogyakarta Province were still not satisfied. In addition, this study might give insight regarding situation of knowledge, perception, and acceptance among women in Indonesia. This study also provide information about specific aspects of knowledge, perception, and acceptance related to cervical cancer that need to be emphasized in health promotion program to prevent and control cervical cancer. The study findings are expected to give information regarding the development of educational program related to cervical cancer, as well as support the implementation of program for cervical cancer prevention and control in Indonesia.

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Statement conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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