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1. Bukti Submission melalui OJS (18 November 2018)

Midwife's Behavior in The Implementation of "Prevention of Mother to Child Transmission" Program in Yogyakarta's Primary Health Care

Perilaku Bidan dalam Pelaksanaan Program Pencegahan Penularan dari Ibu ke Anak di Puskesmas Yogyakarta

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ABSTRACT

HIV/AIDS is one of the global commitments in Sustainable Development Goals (SDGs). The incidence of HIV in the world is still high. Vertical transmission can be prevented by Prevention of Mother to Child Transmission (PMTCT) program. Midwives have a very important role. The aim of this study was to determine the factors associated with midwives' behavior in implementation of PMTCT. This research was cross sectional in design. The subjects of this research were 80 midwives in Puskesmas Kota Yogyakarta, Indonesia. The study was conducted from April to August 2017. Data was analyzed through univariate, bivariate and multivariate analysis. The results showed that 47.5% of midwives were in less category in the implementation of PMTCT. Information availability through socialization ($p=0.047$) and knowledge level ($p=0.016$) were found to be related to PMTCT implementation. There was no relationship between age, length of work, education level, marital status, availability of information, midwife attitudes, perception of the availability of facilities and institutional support with midwife behavior in PMTCT implementation. Multivariate analysis showed that level of knowledge was the most dominant factors affecting PMTCT Implementation (OR:6.2; CI=1.8-21.4).

Keywords: Knowledge; Midwives; PMTCT.

INTRODUCTION

Sustainable Development Goals (SDGs) is a global commitment in a larger framework of continuous development. Regarding prevention of HIV/AIDS, SDGs have more universal goals aimed to achieve health and wellbeing for everyone. Holistic development is also expected, including problems on HIV/AIDS prevention and various progressive diseases. SDGs are also targeting to decrease infectious diseases¹.

In the year 2015, there were 0.3 new cases of HIV (Human Immunodeficiency Virus) infection per 1,000 people recorded. Those numbers showed the increasing trend of HIV infection compared to the number of cases that happened in the year of 2000, from 45% to 71% in 2015. From this data, we know that HIV is a threat for the health that should persistently be addressed at least until 2030.¹

According to Indonesian AIDS Committee in 2015, in 1987, the number of people suffering from AIDS in Indonesia were just 5 cases. Ten (10) years later, there were only 44 additional new cases. But starting 2007, the cases of AIDS increased significantly up to eight fold up to 17,699 cases, of which 3,586 people died. Human Immunodeficiency Virus (HIV) causes Acquired Immunodeficiency Syndrome (AIDS). HIV attacks the immune system and damages the white blood cells called T lymphocyte or T cells, resulting in immunodeficiency, hence AIDS.^{2,3}

In 2014 there were 501,400 cases of HIV/AIDS in Indonesia. People suffering from HIV/AIDS were spread in 32 provinces and 300 sub-regions/cities. The majority of people suffering from HIV/AIDS were among the productive age 15-29 years old. Papua was not the province with the highest number of HIV/AIDS, however, by prevalence this is still the highest. The number of HIV/AIDS cases being reported in Indonesia is only a tip of the iceberg. The actual cases estimated were reaching 270,000 people and in Yogyakarta, the incidence of HIV continues to increase like in annually.^{2,4}

Vertical transmission was a major pathway for HIV infection in children through mother-to-child transmission. WHO declared that without prevention interventions, 40% of the babies born from mothers who are HIV positive, will be infected. The focus of prevention is divided into three phases; pregnancy, labour and breastfeeding process. These three phases underscores the important role midwives play in implementing of prevention of mother to child transmission

(PMTCT) of HIV/AIDS. Midwife's knowledge about HIV is important for it is the basic foundation that can influence someone's attitudes and behavior. However, there are still midwives who have negative attitude and perception towards HIV/AIDS, thus it is paramount that they become the part of their job to overcome HIV/AIDS with unique treatments. Knowledge, attitude, and perception among midwives towards HIV are important determinants in overcoming HIV.^{5,6}

Provider initiative test and counseling (PITC) is one strategy that has been used before to test HIV among pregnant women. Therefore, midwife hold an important role in the implementation of PMTCT.⁷ This study aims to describe how midwives in Mother and Children Health Clinic in the Primary Health Care/ Puskesmas implement PMTCT among pregnant women and determine factors that influence midwives' behavior in the implementation on PMTCT program.

METHOD

This quantitative survey used cross-sectional design. Conducted in 14 Puskesmas/ primary health care in Yogyakarta City from April to August 2017. This study assessed all midwives who work on Mother and Children Clinic in primary health care. Only primary health care already implementing the PMTCT programme were involved. The primary health care chosen was based on random sampling toward all primary healthcare in Yogyakarta City. To determine the sample size, we used the formula for sample size with calculation of proportion as per Lemeshow with minimum sample size obtained was 72.43 respondent which was rounded off to 80 wives. Using simple random sampling, we selected the midwives, and those who took part gave a written consent to participate.

This study used the theoretical framework approach of Precede-Procede model (Lawrence Green). Independent variables consists of socio-demographic characteristic of the midwives, midwives' knowledge about HIV and PMTCT and midwives' attitude toward the implementation of PMTCT - as predisposing factors - whereas midwives' perception about institution support in PMTCT program - as reinforcing factors - and facilities availability in implementing PMTCT - as enabling factors. The dependent variable was midwives' behavior in implementing the PMTCT.

A self-administered questionnaire was used in this study. Midwives' knowledge was measured through multiple choice questions. True statements were scored as 1 and false statements were scored as 0. We then classified the scores into three categories to characterize the level of knowledge: higher >70%; satisfactory (56%- 69%) and unsatisfactory (<56%). On the other hand, we used Likert scale to measure attitudes. The scoring was done as follows: positive statement agrees =2, disagree =1 and hesitant =0, and for negative statement agree =1, disagree =2 and hesitant =0. Attitude was mentioned as positive and negative (based on the mean). We used a visual analog scale form scored from 0-10 to assess the level of perception.

Descriptive statistics using frequencies and percentage was used to describe findings. Further, *Chi square* test or Fisher exact test to determine the relationship between the dependent and independent variables was applied. Logistic regression was done for all variables with *p* less than 0.25 and to explain independent variables which were strongly associated with the dependent variable.

Ethical clearance was obtained from Ethical Committee Poltekkes Kemenkes Yogyakarta Number: LB.01.01/KE-01/XII/326/2017. A formal letter of permission for respondents used informed consent and they were informed that the data will be treated with utmost confidentiality.

RESULT

This study conducted on 80 randomly selected midwives in 14 (fourteen) primary health care in Yogyakarta City that were implementing PMTCT programme. The characteristic of the respondent showed in table 1.

Table 1. Respondent's Characteristic

Characteristic	Amount (n=80)	Percentage (%)
Age		
> 28 y.o	37	46.2
≤ 28 y.o	43	53.8
Marriage Status		
Married	44	55
Unmarried	32	40
Widow	4	5
Education		
Midwifery Subject D1	4	5
Midwifery Subject D3	66	82.5
Midwifery Subject	10	12.5

D4/S1/S2		
Work experience		
> 7 years	36	45
≤ 7 years	44	55
Information Availability		
about HIV through lectures	58	72.5
Information availability		
about HIV through socialization in the workplace	4	5

Table 1 shows that the majority of midwives were aged ≤ 28 years old (53.8%), had D III education in midwifery subject (82.5%), married (55%), and worked for ≤ 7 years (55%). The main source of information among respondents was via college lectures (72.5%).

Independent variable in line with Procede Precede theory were midwives' knowledge level, attitude, perception, experience and behavior in implementing PMTCT. These are described in table 2 below:

Table 2. Midwives' Knowledge Level, Attitude, Perception and Behavior in implementing PMTCT

Characteristic	Number of midwives (n=80)	Percentage (%)
Knowledge level about HIV/AIDS, PMTCT, Transmission and Preventive Strategy		
Higher	8	10
Satisfactory	32	40
Unsatisfactory	40	50
Midwives' attitude toward PMTCT		
Positive	30	37.5
Negative	50	62.5
Perception about institutional support		
Supporting	36	45
Less supporting	44	55
Perception about facility availability		
Good	43	53.8
Poor	37	46.2
Midwives' attitude in implementing PMTCT		
Good	42	52.5
Poor	38	47.5

These results in Table 2 above depict that majority of midwives were not knowledgeable on HIV/AIDS (50%). Regarding attitudes, most respondents had negative attitudes towards PMTCT (62.5%) and majority perceived that their institutions where they work as being less supportive of their efforts in implementation of PMTCT (55%). Despite these, majority perceived that there were enough institutional facilities to implement PMTCT (53.8%) and majority (52.5%) had a positive attitude towards PMTCT implementation.

Bivariate analysis was used to analyze association between independent and dependent variables. The relationship between independent and dependent variables are showed in table 3.

Table 3. The relationship between midwives' characteristic, knowledge level, attitude, perception about HIV/AIDS with midwives' behavior in implementing PMTCT

Variable	Implementation of PMTCT						p-value
	Good		Poor		Total		
	n=42	%	n=38	%	n=80	%	
Age							
>28 y.o	18	48.6	19	51.4	37	100	0.678*
≤ 28 y.o	24	55.8	19	44.2	43	100	
Work experience							
> 7 years	18	50	18	50	36	100	0.857*
≤ 7 years	24	54.5	20	45.5	44	100	
Education Level							
D1 Midwifery	2	50	2	50	4	100	0.156*
D3 Midwifery	32	48.5	34	51.5	66	100	
D4/S1/S2	8	80	2	4.8	10	100	
Marriage Status							
Married	18	40.9	26	59.1	44	100	0.064*
Unmarried	21	65.6	11	34.4	32	100	
Widow	3	75	1	25	4	100	
Information availability through socialization							
Yes	0	0	4	100	4	100	0.047*
No	42	55.5	34	44.7	76	100	
Information availability through lectures							
Yes	29	50	29	50	22	100	0.634
No.	13	59.1	9	40.9	58	100	
Knowledge level							
Higher	3	37.5	5	62.5	8	100	0.016*
Satisfactory	23	71.9	9	28.1	32	100	

Unsatisfactory	16	40	24	60	40	100	
Attitude toward HIV AIDS							
Positive	16	53.3	14	46.7	30	100	1.000
Negative	26	52	24	48	50	100	
Perception about facility							
Good	26	60.5	17	39.4	43	100	0.189
Poor	16	43.2	21	56.8	37	100	
Perception about institutional support							
Good	19	52.8	17	47.2	36	100	1.000
Poor	23	52.3	21	47.7	44	100	

*used *Fisher exact test*

Table 3 shows that midwives aged >28 years old were mostly implement PMTCT with Poor category (51.4%) meanwhile midwives aged \leq 28 years old were mostly (55.8%) implement PMTCT in a good category. But statistically, this variable has No. significancy with only p-value 0.678. Midwives who worked >7 years have same proportion in category of PMTCT implementation that is 50%. Meanwhile midwives who worked \leq 7 years were mostly in unsatisfactory category. But this variable was also statistically insignificant with p=0.857.

Midwives who had one year midwifery education (Diploma 1) in miwifery subject have balanced proportion between those who implement PMTCT in good category and those who were not, that is 50%. Midwives who had three year midwifery education (Diploma 3) in midwifery subject some of them implement PMTCT in unsatisfactory category (51.5%). Meanwhile midwives who had undergraduate (Diploma 4) or more in midwifery subject were mostly implement PMTCT in a good category (80%). But statistically, this variable was not meaningful with p=0.156.

Married midwives were mostly implement PMTCT in unsatisfactory category (59.1%), while unmarried and widow midwives implement PMTCT in a good category (65.6% and 75%). But statistically this variable was not meaningful with p=0.064.

Most respondent claim that they never got information about PMTCT related to HIV AIDS that provided by socialization in the workplace. This variable stastically meaningful due to p=0.047. For the variable knowledge level, most respondent (71.9%) who had satisfactory knowledge level implement PMTCT in a good category, while respondent with unsatisfactory level of knowledge tend to implement PMTCT in below average category or not good enough (60%). This variable was statistically meaningful with p=0.016.

The variable attitude, both who had positive attitude and negative attitude implement PMTCT in a good category, and this variable was statistically not meaningful due to $p=1.000$. For variable perception about facility most respondent who had good perception (60.5%) tend to implement PMTCT in a good category, while those who had poor perception (56.8%) implement PMTCT in a bad category. This variable was statistically not meaningful with $p=0.189$.

Variable perception about institutional support known that both respondent who have perception that the institution was good and poor were implement PMTCT in good category. This variable was statistically not meaningful with $p=1.000$. From bivariate analysis, to conclude that independent variables which statistically related to midwives' behavior on implementing PMTCT were knowledge level and information availability through socialization in the workplace.

Multivariate analysis were done to independent variables that have $p < 0.250$ altogether. The result of multivariate analysis is shown in table 4

Table4. Multivariate Analysis Result

	B	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
				Lower	Upper
Education		.160			
Education(1)	-2.761	.094	.063	.002	1.600
Education(2)	-1.635	.086	.195	.030	1.264
Marital		.153			
Marital(1)	-2.054	.205	.128	.005	3.068
Marital(2)	-1.155	.494	.315	.012	8.615
Info.HIV.Socialization(1)	21.372	.999	1.913E9	.000	.
Knowledge level		.009			
Knowledge level(1)	.087	.922	1.091	.192	6.200
Knowledge level(2)	1.836	.003	6.272	1.836	21.431
tk_sar(1)	.901	.102	2.463	.837	7.244
Constant	-19.209	.999	.000		

Table 4 shows that the level of knowledge is the most significant factor influencing midwives' behavior on implementing PMTCT with $p=0.003$, OR=6.2 with CI=1.8-21.4.

DISCUSSION

HIV vertical transmission from mother to child could be prevented by PMTCT programme. Midwives were professional health provider who had important role in the

implementation of preventing the transmission of HIV/AIDS vertically. Midwives' behavior on the implementation of HIV/AIDS prevention programme that show a good category in this study were just 52.5%. This number shows that implementation of PMTCT have not done very well. Thus, also in consonance with research done in Africa where the implementation of PMTCT were only 56.9% and declared as very low.⁵

In this study known than in the implementation of PMTCT, most midwives were initiated to do the VCT to pregnant women. They also did the informed consent and did the counselling after the VCT. Most midwives on implementing PMTCT did not involve the husband and not using proper protection tools as said in the standard. Thus, also in consonance with research conducted in Medan City where midwives' actions in dealing with PMTCT patients were not in accordance with existing PMTCT guidelines and midwives should be able to provide psychological and social support to HIV positive patients.⁷

There were several things that affect the low midwives' behavior on implementing PMTCT. One of them was the low level of knowledge about HIV and PMTCT. More than 50% respondent claimed that they did not have idea of what CD4 indicator for healthy people and infected people. They also did not know about type of ARV that could be consumed by pregnant women, the transmission trajectory of HIV, and how was the labour assessment for pregnant women with HIV. Thus, also in consonance with research conducted in Medan City where Midwife knowledge about PMTCT low as midwife poorly informed about PMTCT.⁷ Research conducted by EL-Yakub Fatima Mohammed (2016) showed that midwife's knowledge of HIV PMTCT was low (65.7%).⁶

The primary source of information about HIV/AIDS for midwives in this study were from college lectures. Thus, shows that midwives have not get the up to date information regarding to prevention of HIV. Only 5% midwives who claimed they had attend socialization about PMTCT. Thus, also in consonance with research conducted in Medan City where on observations found only 1 midwife who trained in PMTC programs.⁷ Research conducted by Setiyawati and Meilani initiation of service providers to conduct HIV testing is the most influential factor on the behavior of HIV testing in pregnant women, so midwives need to understand what to do.⁸

Data analysis in this study show the same thing with demographic data that have been earned, where the major proportion about midwives' knowledge regarding to HIV and PMTCT

were in low category with score value <56. In the bivariate analysis also show that proportion of midwives who implement PMTCT in good category were those who had enough or good knowledge. While those who implement PMTCT in unsatisfactoru category were those who had low level of knowledge.

Knowledge was one of predisposing factor for someone in behaving as stated in PRECEDE thoery by L. Green.Knowledge was so important as said “*better practice is predicated on adequate knowledge*”.In line with those words, also in other research stated that health provider’s knowledge were affecting the implementation of PMTCT. But in this study highlighted that midwives’ knowledge were not affected by how much information they got but it affected by the experience of the midwives’ in implementing PMTCT itself. Knowledge was evidently be the strong indikator toward behavior on implementing PMTCT. Based on multivariate analysis in this sudy, obviously midwives’ who had good knowledge were having chace to implement PMTCT in a satisfactory way 4 times higher than those who had low knowledge.^{5,11,14}

This study also got the result that midwives’ behavior on implementing PMTCT were affected by availability of information source through socialization in the workplace. Information source availability was one of the enabling factor in PRECEDE theory by L. Green.In line with those words, many of the midwife had multiple sources of information on PMTCT.^{8,11}

Socialization in workplace usually would contain work steps, facility availability for implementation of PMTCT. Some research declared that PMTCT implementation was closely related with the facility availability. On that study explained that in the implementation of PMTCT need sufficient supply of latex gloves and clean water because it would decrease the fear to implement PMTCT.^{5,11}

Coherence with the explanation above, in this study there were sufficient supply of latex gloves and clean water. But what cause the implementation of PMTCT was not optimum were insufficiency of work period and other work responsibility of the midwives, also lack of information source about HIV and PMTCT that provided by the intuition where the midwives work.Unfortunately, multiple sources of information did not translate significantly to improved knowledge.⁶

Pursuant to several research, known there were factors that affecting midwives’ behavior on implementing PMTCT. Two of them were attitude toward PMTCT and perception about

institutional support. But in this study, these variables were statistically not meaningful. Midwives' perception toward implementation of PMTCT were mostly supportive, even there were still some of them feel insecure to implement PMTCT. Major problem that encountered in implementing PMTCT was the limited time. While for institutional support, most midwives' claimed that there were enough support.

CONCLUSION

Respondent joined this study were mostly aged ≤ 28 years old, had D III in midwifery subject, married, and worked at least for ≤ 7 years. Majority of the respondent claimed that there was not enough information about HIV AIDS. Major information source about HIV were gained in college lectures. Midwives' knowledge level about HIV AIDS and PMTCT were mostly below average. Most respondent had negative attitude toward implementation of PMTCT. Most respondent have perception toward institutional support claimed that the institution were less supporting in PMTCT implementation. Most respondent declared about their perception about facility availability were include in good category. Most respondent implement PMTCT in a good category. Knowledge level was the most affecting factor in the implementation of PMTCT.

REKOMENDATION

Need improvement in midwives' knowledge about HIV/AIDS and PMTCT. There also need a workshop or socialization for midwives about PMTCT and better regulation about burden of work for midwives so that they get more time to implement the PMTCT in a good way.

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2. Bukti Review melalui OJS (6 Februari 2019)

Midwife's Behavior in The Implementation of "Prevention of Mother to Child Transmission" Program in Yogyakarta's Primary Health Care

Perilaku Bidan dalam Pelaksanaan Program Pencegahan Penularan dari Ibu ke Anak di Puskesmas Yogyakarta

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ABSTRACT

HIV/AIDS is one of the global commitments in Sustainable Development Goals (SDGs). The incidence of HIV in the world is still high. Vertical transmission can be prevented by Prevention of Mother to Child Transmission (PMTCT) program. Midwives have a very important role. The aim of this study was to determine the factors associated with midwives' behavior in implementation of PMTCT. This research was cross sectional in design. The subjects of this research were 80 midwives in Puskesmas Kota Yogyakarta, Indonesia. The study was conducted from April to August 2017. Data was analyzed through univariate, bivariate and multivariate analysis. The results showed that 47.5% of midwives were in less category in the implementation of PMTCT. Information availability through socialization ($p=0.047$) and knowledge level ($p=0.016$) were found to be related to PMTCT implementation. There was no relationship between age, length of work, education level, marital status, availability of information, midwife attitudes, perception of the availability of facilities and institutional support with midwife behavior in PMTCT implementation. Multivariate analysis showed that level of knowledge was the most dominant factors affecting PMTCT Implementation (OR:6.2; CI=1.8-21.4).

Keywords: Knowledge; Midwives; PMTCT.

Commented [j1]: There is inconsistency strategy that has been used before to test HIV among pregnant women .
Such as:

-In Introduction used Provider initiative test and counseling (PITC) strategy before to test HIV among pregnant women.

-In Discussion explained, most midwives were initiated to do the VCT (Volunteer Counselling Test) strategy before to test HIV to pregnant women.

These two strategies PICT and VCT are difference.

INTRODUCTION

Sustainable Development Goals (SDGs) is a global commitment in a larger framework of continuous development. Regarding prevention of HIV/AIDS, SDGs have more universal goals aimed to achieve health and wellbeing for everyone. Holistic development is also expected, including problems on HIV/AIDS prevention and various progressive diseases. SDGs are also targeting to decrease infectious diseases¹.

Commented [j2]: Ditulis kepanjangannya terlebih dahulu

In the year 2015, there were 0.3 new cases of HIV (Human Immunodeficiency Virus) infection per 1,000 people recorded. Those numbers showed the increasing trend of HIV infection compared to the number of cases that happened in the year of 2000, from 45% to 71% in 2015. From this data, we know that HIV is a threat for the health that should persistently be addressed at least until 2030.¹

According to Indonesian AIDS Committee in 2015, in 1987, the number of people suffering from AIDS in Indonesia were just 5 cases. Ten (10) years later, there were only 44 additional new cases. But starting 2007, the cases of AIDS increased significantly up to eight fold up to 17,699 cases, of which 3,586 people died. Human Immunodeficiency Virus (HIV) causes Acquired Immunodeficiency Syndrome (AIDS). HIV attacks the immune system and damages the white blood cells called T lymphocyte or T cells, resulting in immunodeficiency, hence AIDS.^{2,3}

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Vertical transmission was a major pathway for HIV infection in children through mother-to-child transmission. WHO declared that without prevention interventions, 40% of the babies born from mothers who are HIV positive, will be infected. The focus of prevention is divided into three phases; pregnancy, labour and breastfeeding process. These three phases underscores the important role midwives play in implementing of prevention of mother to child transmission

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(PMTCT) of HIV/AIDS. Midwife's knowledge about HIV is important for it is the basic foundation that can influence someone's attitudes and behavior. However, there are still midwives who have negative attitude and perception towards HIV/AIDS, thus it is paramount that they become the part of their job to overcome HIV/AIDS with unique treatments. Knowledge, attitude, and perception among midwives towards HIV are important determinants in overcoming HIV.^{5,6}

Provider initiative test and counseling (PITC) is one strategy that has been used before to test HIV among pregnant women. Therefore, midwife hold an important role in the implementation of PMTCT.⁷ This study aims to describe how midwives in Mother and Children Health Clinic in the Primary Health Care/ Puskesmas implement PMTCT among pregnant women and determine factors that influence midwives' behavior in the implementation on PMTCT program.

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This quantitative survey used cross-sectional design. Conducted in 14 Puskesmas/ primary health care in Yogyakarta City from April to August 2017. This study assessed all midwives who work on Mother and Children Clinic in primary health care. Only primary health care already implementing the PMTCT programme were involved. The primary health care chosen was based on random sampling toward all primary healthcare in Yogyakarta City. To determine the sample size, we used the formula for sample size with calculation of proportion as per Lemeshow with minimum sample size obtained was 72.43 respondent which was rounded off to 80 wives. Using simple random sampling, we selected the midwives, and those who took part gave a written consent to participate.

This study used the theoretical framework approach of Precede-Procede model (Lawrence Green). Independent variables consists of socio-demographic characteristic of the midwives, midwives' knowledge about HIV and PMTCT and midwives' attitude toward the implementation of PMTCT - as predisposing factors - whereas midwives' perception about institution support in PMTCT program - as reinforcing factors - and facilities availability in implementing PMTCT - as enabling factors. The dependent variable was midwives' behavior in implementing the PMTCT.

A self-administered questionnaire was used in this study. Midwives' knowledge was measured through multiple choice questions. True statements were scored as 1 and false statements were scored as 0. We then classified the scores into three categories to characterize the level of knowledge: higher >70%; satisfactory (56%- 69%) and unsatisfactory (<56%). On the other hand, we used Likert scale to measure attitudes. The scoring was done as follows: positive statement agrees =2, disagree =1 and hesitant =0, and for negative statement agree =1, disagree =2 and hesitant =0. Attitude was mentioned as positive and negative (based on the mean). We used a visual analog scale form scored from 0-10 to assess the level of perception.

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RESULT

This study conducted on 80 randomly selected midwives in 14 (fourteen) primary health care in Yogyakarta City that were implementing PMTCT programme. The characteristic of the respondent showed in table 1.

Table 1. Respondent's Characteristic

Characteristic	Amount (n=80)	Percentage (%)
Age		
> 28 y.o	37	46.2
≤ 28 y.o	43	53.8
Marriage Status		
Married	44	55
Unmarried	32	40
Widow	4	5
Education		
Midwifery Subject D1	4	5
Midwifery Subject D3	66	82.5
Midwifery Subject	10	12.5

D4/S1/S2		
Work experience		
> 7 years	36	45
≤ 7 years	44	55
Information Availability about HIV through lectures		
	58	72.5
Information availability about HIV through socialization in the workplace		
	4	5

Table 1 shows that the majority of midwives were aged ≤28 years old (53.8%), had D III education in midwifery subject (82.5%), married (55%), and worked for ≤7 years (55%). The main source of information among respondents was via college lectures (72.5%).

Independent variable in line with Procede Precede theory were midwives' knowledge level, attitude, perception, experience and behavior in implementing PMTCT. These are described in table 2 below:

Table 2. Midwives' Knowledge Level, Attitude, Perception and Behavior in implementing PMTCT

Characteristic	Number of midwives (n=80)	Percentage (%)
Knowledge level about HIV/AIDS, PMTCT, Transmission and Preventive Strategy		
Higher	8	10
Satisfactory	32	40
Unsatisfactory	40	50
Midwives' attitude toward PMTCT		
Positive	30	37.5
Negative	50	62.5
Perception about institutional support		
Supporting	36	45
Less supporting	44	55
Perception about facility availability		
Good	43	53.8
Poor	37	46.2
Midwives' attitude in implementing PMTCT		
Good	42	52.5
Poor	38	47.5

These results in Table 2 above depict that majority of midwives were not knowledgeable on HIV/AIDS (50%). Regarding attitudes, most respondents had negative attitudes towards PMTCT (62.5%) and majority perceived that their institutions where they work as being less supportive of their efforts in implementation of PMTCT (55%). Despite these, majority perceived that there were enough institutional facilities to implement PMTCT (53.8%) and majority (52.5%) had a positive attitude towards PMTCT implementation.

Bivariate analysis was used to analyze association between independent and dependent variables. The relationship between independent and dependent variables are showed in table 3.

Table 3. The relationship between midwives' characteristic, knowledge level, attitude, perception about HIV/AIDS with midwives' behavior in implementing PMTCT

Variable	Implementation of PMTCT						p-value
	Good		Poor		Total		
	n=42	%	n=38	%	n=80	%	
Age							
>28 y.o	18	48.6	19	51.4	37	100	0.678*
≤ 28 y.o	24	55.8	19	44.2	43	100	
Work experience							
> 7 years	18	50	18	50	36	100	0.857*
≤ 7 years	24	54.5	20	45.5	44	100	
Education Level							
D1 Midwifery	2	50	2	50	4	100	0.156*
D3 Midwifery	32	48.5	34	51.5	66	100	
D4/S1/S2	8	80	2	4.8	10	100	
Marriage Status							
Married	18	40.9	26	59.1	44	100	0.064*
Unmarried	21	65.6	11	34.4	32	100	
Widow	3	75	1	25	4	100	
Information availability through socialization							
Yes	0	0	4	100	4	100	0.047*
No	42	55.5	34	44.7	76	100	
Information availability through lectures							
Yes	29	50	29	50	22	100	0.634
No.	13	59.1	9	40.9	58	100	
Knowledge level							
Higher	3	37.5	5	62.5	8	100	0.016*
Satisfactory	23	71.9	9	28.1	32	100	

Unsatisfactory	16	40	24	60	40	100	
Attitude toward HIV AIDS							
Positive	16	53.3	14	46.7	30	100	1.000
Negative	26	52	24	48	50	100	
Perception about facility							
Good	26	60.5	17	39.4	43	100	0.189
Poor	16	43.2	21	56.8	37	100	
Perception about institutional support							
Good	19	52.8	17	47.2	36	100	1.000
Poor	23	52.3	21	47.7	44	100	

*used Fisher exact test

Table 3 shows that midwives aged >28 years old were mostly implement PMTCT with Poor category (51.4%) meanwhile midwives aged \leq 28 years old were mostly (55.8%) implement PMTCT in a good category. But statistically, this variable has No. significance with only p-value 0.678. Midwives who worked >7 years have same proportion in category of PMTCT implementation that is 50%. Meanwhile midwives who worked \leq 7 years were mostly in unsatisfactory category. But this variable was also statistically insignificant with p=0.857.

Midwives who had one year midwifery education (Diploma 1) in miwifery subject have balanced proportion between those who implement PMTCT in good category and those who were not, that is 50%. Midwives who had three year midwifery education (Diploma 3) in midwifery subject some of them implement PMTCT in unsatisfactory category (51.5%). Meanwhile midwives who had undergraduate (Diploma 4) or more in midwifery subject were mostly implement PMTCT in a good category (80%). But statistically, this variable was not meaningful with p=0.156.

Married midwives were mostly implement PMTCT in unsatisfactory category (59.1%), while unmarried and widow midwives implement PMTCT in a good category (65.6% and 75%). But statistically this variable was not meaningful with p=0.064.

Most respondent claim that they never got information about PMTCT related to HIV AIDS that provided by socialization in the workplace. This variable stastically meaningful due to p=0.047. For the variable knowledge level, most respondent (71.9%) who had satisfactory knowledge level implement PMTCT in a good category, while respondent with unsatisfactory level of knowledge tend to implement PMTCT in below average category or not good enough (60%). This variable was statistically meaningful with p=0.016.

The variable attitude, both who had positive attitude and negative attitude implement PMTCT in a good category, and this variable was statistically not meaningful due to $p=1.000$. For variable perception about facility most respondent who had good perception (60.5%) tend to implement PMTCT in a good category, while those who had poor perception (56.8%) implement PMTCT in a bad category. This variable was statistically not meaningful with $p=0.189$.

Variable perception about institutional support known that both respondent who have perception that the institution was good and poor were implement PMTCT in good category. This variable was statistically not meaningful with $p=1.000$. From bivariate analysis, to conclude that independent variables which statistically related to midwives' behavior on implementing PMTCT were knowledge level and information availability through socialization in the workplace.

Multivariate analysis were done to independent variables that have $p < 0.250$ altogether. The result of multivariate analysis is shown in table 4

Table4. Multivariate Analysis Result

	B	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
				Lower	Upper
Education		.160			
Education(1)	-2.761	.094	.063	.002	1.600
Education(2)	-1.635	.086	.195	.030	1.264
Marital		.153			
Marital(1)	-2.054	.205	.128	.005	3.068
Marital(2)	-1.155	.494	.315	.012	8.615
Info.HIV.Socialization(1)	21.372	.999	1.913E9	.000	.
Knowledge level		.009			
Knowledge level(1)	.087	.922	1.091	.192	6.200
Knowledge level(2)	1.836	.003	6.272	1.836	21.431
tk_sar(1)	.901	.102	2.463	.837	7.244
Constant	-19.209	.999	.000		

Commented [j4]: Education 1, 2? explain

Table 4 shows that the level of knowledge is the most significant factor influencing midwives' behavior on implementing PMTCT with $p=0.003$, OR=6.2 with CI=1.8-21.4.

DISCUSSION

HIV vertical transmission from mother to child could be prevented by PMTCT programme. Midwives were professional health provider who had important role in the

implementation of preventing the transmission of HIV/AIDS vertically. Midwives' behavior on the implementation of HIV/AIDS prevention programme that show a good category in this study were just 52.5%. This number shows that implementation of PMTCT have not done very well. Thus, also in consonance with research done in Africa where the implementation of PMTCT were only 56.9% and declared as very low.⁵

In this study known than in the implementation of PMTCT, most midwives were initiated to do the VCT to pregnant women. They also did the informed consent and did the counselling after the VCT. Most midwives on implementing PMTCT did not involve the husband and not using proper protection tools as said in the standard. Thus, also in consonance with research conducted in Medan City where midwives' actions in dealing with PMTCT patients were not in accordance with existing PMTCT guidelines and midwives should be able to provide psychological and social support to HIV positive patients.⁷

There were several things that affect the low midwives' behavior on implementing PMTCT. One of them was the low level of knowledge about HIV and PMTCT. More than 50% respondent claimed that they did not have idea of what CD4 indicator for healthy people and infected people. They also did not know about type of ARV that could be consumed by pregnant women, the transmission trajectory of HIV, and how was the labour assessment for pregnant women with HIV. Thus, also in consonance with research conducted in Medan City where Midwife knowledge about PMTCT low as midwife poorly informed about PMTCT.⁷ Research conducted by EL-Yakub Fatima Mohammed (2016) showed that midwife's knowledge of HIV PMTCT was low (65.7%).⁶

The primary source of information about HIV/AIDS for midwives in this study were from college lectures. Thus, shows that midwives have not get the up to date information regarding to prevention of HIV. Only 5% midwives who claimed they had attend socialization about PMTCT. Thus, also in consonance with research conducted in Medan City where on observations found only 1 midwife who trained in PMTC programs.⁷ Research conducted by Setiyawati and Meilani initiation of service providers to conduct HIV testing is the most influential factor on the behavior of HIV testing in pregnant women, so midwives need to understand what to do.⁸

Data analysis in this study show the same thing with demographic data that have been earned, where the major proportion about midwives' knowledge regarding to HIV and PMTCT

were in low category with score value <56. In the bivariate analysis also show that proportion of midwives who implement PMTCT in good category were those who had enough or good knowledge. While those who implement PMTCT in unsatisfactoru category were those who had low level of knowledge.

Knowledge was one of predisposing factor for someone in behaving as stated in PRECEDE thoery by L. Green.Knowledge was so important as said “*better practice is predicated on adequate knowledge*”.In line with those words, also in other research stated that health provider’s knowledge were affecting the implementation of PMTCT. But in this study highlighted that midwives’ knowledge were not affected by how much information they got but it affected by the experience of the midwives’ in implementing PMTCT itself. Knowledge was evidently be the strong indikator toward behavior on implementing PMTCT. Based on multivariate analysis in this sudy, obviously midwives’ who had good knowledge were having chace to implement PMTCT in a satisfactory way 4 times higher than those who had low knowledge.^{5,11,14}

This study also got the result that midwives’ behavior on implementing PMTCT were affected by availability of information source through socialization in the workplace. Information source availability was one of the enabling factor in PRECEDE theory by L. Green.In line with those words, many of the midwife had multiple sources of information on PMTCT.^{8,11}

Socialization in workplace usually would contain work steps, facility availability for implementation of PMTCT. Some research declared that PMTCT implementation was closely related with the facility availability. On that study explained that in the implementation of PMTCT need sufficient supply of latex gloves and clean water because it would decrease the fear to implement PMTCT.^{5,11}

Coherence with the explanation above, in this study there were sufficient supply of latex gloves and clean water. But what cause the implementation of PMTCT was not optimum were insufficiency of work period and other work responsibility of the midwives, also lack of information source about HIV and PMTCT that provided by the intitution where the midwives work.Unfortunately, multiple sources of information did not translate significantly to improved knowledge.⁶

Pursuant to several research, known there were factors that affecting midwives’ behavior on implementing PMTCT. Two of them were attitude toward PMTCT and perception about

institutional support. But in this study, these variables were statistically not meaningful. Midwives' perception toward implementation of PMTCT were mostly supportive, even there were still some of them feel insecure to implement PMTCT. Major problem that encountered in implementing PMTCT was the limited time. While for institutional support, most midwives' claimed that there were enough support.

CONCLUSION

Respondent joined this study were mostly aged ≤ 28 years old, had D III in midwifery subject, married, and worked at least for ≤ 7 years. Majority of the respondent claimed that there was not enough information about HIV AIDS. Major information source about HIV were gained in college lectures. Midwives' knowledge level about HIV AIDS and PMTCT were mostly below average. Most respondent had negative attitude toward implementation of PMTCT. Most respondent have perception toward institutional support claimed that the institution were less supporting in PMTCT implementation. Most respondent declared about their perception about facility availability were include in good category. Most respondent implement PMTCT in a good category. Knowledge level was the most affecting factor in the implementation of PMTCT.

RECOMENDATION

Need improvement in midwives' knowledge about HIV/AIDS and PMTCT. There also need a workshop or socialization for midwives about PMTCT and better regulation about burden of work for midwives so that they get more time to implement the PMTCT in a good way.

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3. Bukti Review melalui OJS (14 Maret 2019)

Midwife's Behavior in The Implementation of "Prevention of Mother to Child Transmission" Program in Yogyakarta's Primary Health Care

Perilaku Bidan dalam Pelaksanaan Program Pencegahan Penularan dari Ibu ke Anak di Puskesmas Yogyakarta

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ABSTRACT

HIV/AIDS is one of the global commitments in Sustainable Development Goals (SDGs). The incidence of HIV in the world is still high. Vertical transmission can be prevented by Prevention of Mother to Child Transmission (PMTCT) program. Midwives have a very important role. The aim of this study was to determine the factors associated with midwives' behavior in implementation of PMTCT. This research was cross sectional in design. The subjects of this research were 80 midwives in Puskesmas Kota Yogyakarta, Indonesia. The study was conducted from April to August 2017. Data was analyzed through univariate, bivariate and multivariate analysis. The results showed that 47.5% of midwives were in less category in the implementation of PMTCT. Information availability through socialization ($p=0.047$) and knowledge level ($p=0.016$) were found to be related to PMTCT implementation. There was no relationship between age, length of work, education level, marital status, availability of information, midwife attitudes, perception of the availability of facilities and institutional support with midwife behavior in PMTCT implementation. Multivariate analysis showed that level of knowledge was the most dominant factors affecting PMTCT Implementation (OR:6.2; CI=1.8-21.4).

Keywords: Knowledge; Midwives; PMTCT.

Commented [MOU5]: Mohon tambahkan abstrak bahasa Indonesia

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of mother to child transmission (PMTCT) of HIV/AIDS. Midwife's knowledge about HIV is important for it is the basic foundation that can influence someone's attitudes and behavior. However, there are still midwives who have negative attitude and perception towards HIV/AIDS, thus it is paramount that they make it become the part of their job to overcome HIV/AIDS with unique treatments. Knowledge, attitude, and perception among midwives towards HIV are important determinants in overcoming HIV.^{5,6}

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Commented [MOU10]: Dijabarkan apa saja

Commented [MOU11]: Variabel belum dijelaskan di bagian method

Information Availability about HIV through lectures	58	72.5
Information availability about HIV through socialization in the workplace	4	5

Table 1 shows that the majority of midwives were aged ≤ 28 years old (53.8%), had D III education in midwifery subject (82.5%), married (55%), and worked for ≤ 7 years (55%). The main source of information among respondents was via college lectures (72.5%).

Independent variable in line with Procede Procede theory were midwives' knowledge level, attitude, perception, experience and behavior in implementing PMTCT. These are described in table 2 below:

Table 2. Midwives' Knowledge Level, Attitude, Perception and Behavior in implementing PMTCT

Characteristic	Number of midwives (n=80)	Percentage (%)
Knowledge level about HIV/AIDS, PMTCT, Transmission and Preventive Strategy		
Higher	8	10
Satisfactory	32	40
Unsatisfactory	40	50
Midwives' attitude toward PMTCT		
Positive	30	37.5
Negative	50	62.5
Perception about institutional support		
Supporting	36	45
Less supporting	44	55
Perception about facility availability		
Good	43	53.8
Poor	37	46.2
Midwives' attitude in implementing PMTCT		
Good	42	52.5
Poor	38	47.5

These results in Table 2 above depict that majority of midwives were not knowledgeable on HIV/AIDS (50%). Regarding attitudes, most respondents had negative attitudes towards PMTCT (62.5%) and majority perceived that their institutions where they work as being less

supportive of their efforts in implementation of PMTCT (55%). Despite these, majority perceived that there were enough institutional facilities to implement PMTCT (53.8%) and majority (52.5%) had a positive attitude towards PMTCT implementation.

Bivariate analysis was used to analyze association between independent and dependent variables. The relationship between independent and dependent variables are showed in table 3.

Table 3. The relationship between midwives' characteristic, knowledge level, attitude, perception about HIV/AIDS with midwives' behavior in implementing PMTCT

Variable	Implementation of PMTCT						p-value
	Good		Poor		Total		
	n=42	%	n=38	%	n=80	%	
Age							
>28 y.o	18	48.6	19	51.4	37	100	0.678*
≤ 28 y.o	24	55.8	19	44.2	43	100	
Work experience							
> 7 years	18	50	18	50	36	100	0.857*
≤ 7 years	24	54.5	20	45.5	44	100	
Education Level							
D1 Midwifery	2	50	2	50	4	100	0.156*
D3 Midwifery	32	48.5	34	51.5	66	100	
D4/S1/S2	8	80	2	4.8	10	100	
Marriage Status							
Married	18	40.9	26	59.1	44	100	0.064*
Unmarried	21	65.6	11	34.4	32	100	
Widow	3	75	1	25	4	100	
Information availability through socialization							
Yes	0	0	4	100	4	100	0.047*
No	42	55.5	34	44.7	76	100	
Information availability through lectures							
Yes	29	50	29	50	22	100	0.634
No.	13	59.1	9	40.9	58	100	
Knowledge level							
Higher	3	37.5	5	62.5	8	100	0.016*
Satisfactory	23	71.9	9	28.1	32	100	
Unsatisfactory	16	40	24	60	40	100	
Attitude toward HIV AIDS							
Positive	16	53.3	14	46.7	30	100	1.000
Negative	26	52	24	48	50	100	

Commented [j12]: Beberapa variable belum dijelaskan di method

Perception about facility							
Good	26	60.5	17	39.4	43	100	0.189
Poor	16	43.2	21	56.8	37	100	
Perception about institutional support							
Good	19	52.8	17	47.2	36	100	1.000
Poor	23	52.3	21	47.7	44	100	

*used Fisher exact test

Table 3 shows that midwives aged >28 years old were mostly implement PMTCT with Poor category (51.4%) meanwhile midwives aged \leq 28 years old were mostly (55.8%) implement PMTCT in a good category. But statistically, this variable has No. significancy with only p-value 0.678. Midwives who worked >7 years have same proportion in category of PMTCT implementation that is 50%. Meanwhile midwives who worked \leq 7 years were mostly in unsatisfactory category. But this variable was also statistically insignificant with p=0.857.

Midwives who had one year midwifery education (Diploma 1) in miwifery subject have balanced proportion between those who implement PMTCT in good category and those who were not, that is 50%. Midwives who had three year midwifery education (Diploma 3) in midwivery subject some of them implement PMTCT in unsatisfactory category (51.5%). Meanwhile midwives who had undergraduate (Diploma 4) or more in midwivery subject were mostly implement PMTCT in a good category (80%). But statistically, this variable was not meaningful with p=0.156.

Married midwives were mostly implement PMTCT in unsatisfactory category (59.1%), while unmarried and widow midwives implement PMTCT in a good category (65.6% and 75%). But statistically this variable was not meaningful with p=0.064.

Most respondent claim that they never got information about PMTCT related to HIV AIDS that provided by socialization in the workplace. This variable statisically meaningful due to p=0.047. For the variable knowledge level, most respondent (71.9%) who had satisfactory knowledge level implement PMTCT in a good category, while respondent with unsatisfactory level of knowledge tend to implement PMTCT in below average category or not good enough (60%). This variable was statistically meaningful with p=0.016.

The variable attitude, both who had positive attitude and negative attitude implement PMTCT in a good category, and this variable was statistically not meaningful due to p=1.000. For variable perception about facility most respondent who had good perception (60.5%) tend to

implement PMTCT in a good category, while those who had poor perception (56.8%) implement PMTCT in a bad category. This variable was statistically not meaningful with $p=0.189$.

Variable perception about institutional support known that both respondent who have perception that the institution was good and poor were implement PMTCT in good category. This variable was statistically not meaningful with $p=1.000$. From bivariate analysis, to conclude that independent variables which statistically related to midwives' behavior on implementing PMTCT were knowledge level and information availability through socialization in the workplace.

Multivariate analysis were done to independent variables that have $p < 0.250$ altogether. The result of multivariate analysis is shown in table 4

Table4. Multivariate Analysis Result

	B	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
				Lower	Upper
Knowledge level(2)	1.836	.003	6.272	1.836	21.431
Constant	-19.209	.999	.000		

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Table 4 shows that the level of knowledge is the most significant factor influencing midwives' behavior on implementing PMTCT with $p=0.003$, OR=6.2 with CI=1.8-21.4.

DISCUSSION

HIV vertical transmission from mother to child could be prevented by PMTCT programme. Midwives were professional health provider who had important role in the implementation of preventing the transmission of HIV/AIDS vertically. Midwives' behavior on the implementation of HIV/AIDS prevention programme that show a good category in this study were just 52.5%. This number shows that implementation of PMTCT have not done very well. Thus, also in consonance with research done in Africa where the implementation of PMTCT were only 56.9% and declared as very low.⁵

In this study known that in the implementation of PMTCT, most midwives were given counseling to pregnant women to do HIV test as a part of PMTCT. They also did the informed consent and did the counselling after HIV test. Most of midwives on implementing PMTCT did not involve the husband. The midwives also not using proper protection tools as said in the standard of universal precaution. Thus, also in consonants with research conducted in Medan City where midwives' actions in dealing with PMTCT patients were not in accordance with

existing PMTCT guidelines and midwives should be able to provide psychological and social support to HIV positive patients.⁷

There were several things that affect the low midwives' behavior on implementing PMTCT. One of them was the low level of knowledge about HIV and PMTCT. More than 50% respondent claimed that they did not know CD4 indicator for healthy people and infected people. They also did not know about type of ARV that could be consumed by pregnant women, the transmission trajectory of HIV, and how was the labour assesment for pregnant women with HIV. Thus, also in consonants with research conducted in Medan City where Midwife knowledge about PMTCT low as midwife poorly informed about PMTCT.⁷ Research conducted by EL-Yakub Fatima Mohammed (2016) showed that midwife's knowledge of HIV PMTCT was low (65.7%).⁶

The primary source of information about HIV/AIDS for midwives in this study were from college lectures. Thus, shows that midwives have not get the up to date information regarding to prevention of HIV. Only 5% midwives who claimed they had attend socialization about PMTCT. Thus, also in consonants with research conducted in Medan City where on observations found only 1 midwife who trained in PMTC programs.⁷ Research conducted by Setiyawati and Meilani initiation of service providers to conduct HIV testing is the most influential factor on the behavior of HIV testing in pregnant women, so midwives need to understand what to do.⁸

Data analysis in this study show the same thing with demographic data that have been earned, where the major proportion about midwives' knowledge regarding to HIV and PMTCT were in low category with score value <56. In the bivariate analysis also show that proportion of midwives who implement PMTCT in good category were those who had enough or good knowledge. While those who implement PMTCT in unsatisfactoru category were those who had low level of knowledge.

Knowledge was one of predisposing factor for someone in behaving as stated in PRECEDE thoery by L. Green. Knowledge was so important as said "*better practice is predicated on adequate knowledge*". In line with those words, also in other research stated that health provider's knowledge were affecting the implementation of PMTCT. But in this study highlighted that midwives' knowledge were not affected by how much information they got but it affected by the experience of the midwives' in implementing PMTCT itself. Knowledge was

evidently be the strong indicator toward behavior on implementing PMTCT. Based on multivariate analysis in this study, obviously midwives' who had good knowledge were having chance to implement PMTCT in a satisfactory way 4 times higher than those who had low knowledge.^{5,11,14}

This study also got the result that midwives' behavior on implementing PMTCT were affected by availability of information source through socialization in the workplace. Information source availability was one of the enabling factor in PRECEDE theory by L. Green. In line with those words, many of the midwife had multiple sources of information on PMTCT.^{8,11}

Socialization in workplace usually would contain work steps, facility availability for implementation of PMTCT. Some research declared that PMTCT implementation was closely related with the facility availability. On that study explained that in the implementation of PMTCT need sufficient supply of latex gloves and clean water because it would decrease the fear to implement PMTCT.^{5,11}

Coherence with the explanation above, in this study there were sufficient supply of latex gloves and clean water. But what cause the implementation of PMTCT was not optimum were insufficiency of work period and other work responsibility of the midwives, also lack of information source about HIV and PMTCT that provided by the institution where the midwives work. Unfortunately, multiple sources of information did not translate significantly to improved knowledge.⁶

Pursuant to several research, known there were factors that affecting midwives' behavior on implementing PMTCT. Two of them were attitude toward PMTCT and perception about institutional support. But in this study, these variables were statistically not meaningful. Midwives' perception toward implementation of PMTCT were mostly supportive, even there were still some of them feel insecure to implement PMTCT. Major problem that encountered in implementing PMTCT was the limited time. While for institutional support, most midwives' claimed that there were enough support.

CONCLUSION

Respondent joined this study were mostly aged ≤ 28 years old, had D III in midwifery subject, married, and worked at least for ≤ 7 years. Majority of the respondent claimed that there was not enough information about HIV AIDS. Major information source about HIV were gained

in college lectures. Midwives' knowledge level about HIV AIDS and PMTCT were mostly below average. Most respondent had negative attitude toward implementation of PMTCT. Most respondent have preception toward institutional support claimed that the institution were less supporting in PMTCT implementation. Most respondent declared about their perception about facility availability were include in good category. Most respondent implement PMTCT in a good category. Knowledge level was the most affecting factor in the implementation of PMTCT.

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REKOMENDATION

Need improvement in midwives' knowledge about HIV/AIDS and PMTCT. There also need a workshop or socialization for midwives about PMTCT and better regulation about burden of work for midwives so that they get more time to implement the PMTCT in a good way.

Commented [MOU16]: Who needs the improvement?

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4. Bukti Review melalui OJS (25 Maret 2019)

Midwife's Behavior in The Implementation of "Prevention of Mother to Child Transmission" Program in Yogyakarta's Primary Health Care

Perilaku Bidan dalam Pelaksanaan Program Pencegahan Penularan dari Ibu ke Anak di Puskesmas Yogyakarta

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ABSTRAK

Menekan kejadian HIV/AIDS merupakan salah satu komitmen global dalam *Sustainable Development Goals* (SDGs). Angka kejadian HIV di dunia masih terus meningkat. Penularan secara vertikal merupakan jalur utama bagi infeksi HIV pada anak-anak yaitu melalui transmisi dari ibu ke bayi dapat dicegah dengan pelaksanaan program pencegahan penularan HIV dari ibu ke bayi. Bidan memiliki peran yang sangat penting. Penelitian ini bertujuan untuk mengetahui faktor-faktor yang memengaruhi perilaku bidan dalam pelaksanaan *Prevention Mother to Child Transmission* (PMTCT). Jenis penelitian dengan pendekatan *cross sectional*. Subjek penelitian ini adalah bidan yang bekerja di Puskesmas di Kota Yogyakarta yang berjumlah 80 orang. Penelitian dilaksanakan pada Bulan April s.d. Agustus 2017. Analisis yang digunakan adalah analisis univariat, bivariat dan multivariat. Hasil penelitian menunjukkan bahwa masih ada 47.5% bidan memiliki kategori kurang baik dalam pelaksanaan PMTCT. Ada hubungan ketersediaan informasi melalui sosialisasi ($p=0.047$) dan tingkat pengetahuan ($p=0.016$) dengan perilaku bidan dalam pelaksanaan PMTCT. Tidak ada hubungan antara umur, lama bekerja, tingkat pendidikan, status perkawinan, ketersediaan informasi melalui perkuliahan, sikap bidan terhadap PMTCT, persepsi ketersediaan sarana dan prasarana, dan persepsi dukungan institusi dengan perilaku bidan dalam pelaksanaan PMTCT. Analisis multivariat menunjukkan tingkat pengetahuan (OR: 6.272 CI=1.8-21.4) berpengaruh terhadap perilaku bidan dalam pelaksanaan PMTCT.

Kata kunci: Pengetahuan, Bidan, PMTCT.

Commented [JKF19]: Kesimpulan belum ada

Commented [JKF20]: Lebih diperjelas lagi (detail)

Commented [JKF21]: Variable diukur dengan apa dan bagaimana cara mengukurnya?

Commented [JKF22]: Jangan ada singkatan

Keyword 2-3 kata

ABSTRACT

HIV/AIDS is one of the global commitments in Sustainable Development Goals (SDGs). The incidence of HIV in the world is still high. Vertical transmission can be prevented by Prevention of Mother to Child Transmission (PMTCT) program. Midwives have a very important role. The aim of this study was to determine the factors associated with midwives' behavior in implementation of PMTCT. This research was cross sectional in design. The subjects of this research were 80 midwives in Puskesmas Kota Yogyakarta, Indonesia. The study was conducted from April to August 2017. Data was analyzed through univariate, bivariate and multivariate analysis. The results showed that 47.5% of midwives were in less category in the implementation of PMTCT. Information availability through socialization ($p=0.047$) and knowledge level ($p=0.016$) were found to be related to PMTCT implementation. There was no relationship between age, length of work, education level, marital status, availability of information, midwife attitudes, perception of the availability of facilities and institutional support with midwife behavior in PMTCT implementation. Multivariate analysis showed that level of knowledge was the most dominant factors affecting PMTCT Implementation (OR:6.2; CI=1.8-21.4).

Keywords: Knowledge; Midwives; PMTCT.

INTRODUCTION

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Sustainable Development Goals (SDGs) is a global commitment in a larger framework of continuous development. Regarding prevention of Human Immunodeficiency Virus /Acquired Immunodeficiency Syndrome (HIV/AIDS), SDGs have more universal goals aimed to achieve health and wellbeing for everyone. Holistic development is also expected, including problems on HIV/AIDS prevention and various progressive diseases. SDGs are also targeting to decrease infectious diseases¹.

In the year 2015, there were 0.3 new cases of HIV infection per 1,000 people recorded. Those numbers showed the increasing trend of HIV infection compared to the number of cases that happened in the year of 2000, from 45% to 71% in 2015. From this data, we know that HIV is a threat for the health that should persistently be addressed at least until 2030.¹

According to Indonesian AIDS Committee in 2015, in 1987, the number of people suffering from AIDS in Indonesia were just 5 cases. Ten (10) years later, there were only 44 additional new cases. But starting 2007, the cases of AIDS increased significantly up to eight fold up to 17,699 cases, of which 3,586 people died. Human Immunodeficiency Virus (HIV) causes Acquired Immunodeficiency Syndrome (AIDS). HIV attacks the immune system and damages the white blood cells called T lymphocyte or T cells, resulting in immunodeficiency, hence AIDS.^{2,3}

In 2014 there were 501,400 cases of HIV/AIDS in Indonesia. People suffering from HIV/AIDS were spread in 32 provinces and 300 sub-regions/cities. The majority of people suffering from HIV/AIDS were among the productive age 15-29 years old. Papua was not the province with the highest number of HIV/AIDS, however, by prevalence this is still the highest. The number of HIV/AIDS cases being reported in Indonesia is only a tip of the iceberg. The actual cases estimated were reaching 270,000 people and in Yogyakarta, the incidence of HIV continues to increase like in annually.^{2,4}

Vertical transmission was a major pathway for HIV infection in children through mother-to-child transmission. World Health Organization (WHO) declared that without prevention interventions, 40% of the babies born from mothers who are HIV positive, will be infected. The focus of prevention is divided into three phases; pregnancy, labour and breastfeeding process. These three phases underscores the important role midwives play in implementing of prevention

of mother to child transmission (PMTCT) of HIV/AIDS. Midwife's knowledge about HIV is important for it is the basic foundation that can influence someone's attitudes and behavior. However, there are still midwives who have negative attitude and perception towards HIV/AIDS, thus it is paramount that they make it become the part of their job to overcome HIV/AIDS with unique treatments. Knowledge, attitude, and perception among midwives towards HIV are important determinants in overcoming HIV.^{5,6}

Midwife hold an important role in the implementation of PMTCT.⁷ This study aims to describe how midwives in Mother and Children Health Clinic in the Primary Health Care/ Puskesmas implement PMTCT among pregnant women and determine factors that influence midwives' behavior in the implementation on PMTCT program.

METHODS

This quantitative survey used cross-sectional design, conducted in 14 Puskesmas/ primary health care in Yogyakarta City from April to August 2017. This study assessed all midwives who work on Mother and Children Clinic in primary health care. Only primary health care already implementing the PMTCT programme were involved. The primary health care chosen was based on random sampling toward all primary healthcare in Yogyakarta City. To determine the sample size, the formula for sample size with calculation of proportion with minimum sample size obtained was 72.43 respondent which was rounded off to 80 midwives.¹³ Using simple random sampling, we selected the midwives, and those who took part gave a written consent to participate.

This study used the theoretical framework approach of Precede-Procede model (Lawrence Green).¹¹ Independent variables consists of socio-demographic characteristic of the midwives, midwives' knowledge about HIV and PMTCT and midwives' attitude toward the implementation of PMTCT - as predisposing factors - whereas midwives' perception about institution support in PMTCT program - as reinforcing factors - and facilities availability in implementing PMTCT - as enabling factors. The dependent variable was midwives' behavior in implementing the PMTCT.

A self-administered questionnaire was used in this study. Midwives' knowledge was measured through multiple choice questions. True statements were scored as 1 and false statements were scored as 0. We then classified the scores into three categories to characterize the

Commented [JKF24]: Sebutkan langkah simple random sampling

level of knowledge: higher >70%; satisfactory (56%- 69%) and unsatisfactory (<56%). On the other hand, we used Likert scale to measure attitudes. The scoring was done as follows: positive statement agrees =2, disagree =1 and hesitant =0, and for negative statement agree =1, disagree =2 and hesitant =0. Attitude was mentioned as positive and negative (based on the mean). We used a visual analog scale form scored from 0-10 to assess the level of perception.

Descriptive statistics using frequencies and percentage was used to describe findings. Further, *Chi square* test or Fisher exact test to determine the relationship between the dependent and independent variables was applied. Logistic regression was done for all variables with *p* less than 0.25 and to explain independent variables: socio-demographic characteristic of the midwives (age, marriage status, education, work experience, information Availability about HIV through lectures and information availability about HIV through socialization in the workplace), midwives' knowledge about HIV and PMTCT, midwives' attitude toward the implementation of PMTCT, midwives' perception about institution support in PMTCT program, facilities availability in implementing PMTCT which were strongly associated with the dependent variable: midwives' behavior in implementing the PMTCT.

Ethical clearance was obtained from Ethical Committee Poltekkes Kemenkes Yogyakarta Number: LB.01.01/KE-01/XII/326/2017. A formal letter of permission for respondents used informed consent and they were informed that the data will be treated with utmost confidentiality.

RESULT

This study conducted on 80 randomly selected midwives in 14 (fourteen) primary health care in Yogyakarta City that were implementing PMTCT programme. The characteristic of the respondent showed in table 1.

Table 1. Respondent's Characteristic

Characteristic	Amount (n=80)	Percentage (%)
Age		
> 28 y.o	37	46.2
≤ 28 y.o	43	53.8
Marriage Status		
Married	44	55
Unmarried	32	40
Widow	4	5
Education		

Midwifery Subject D1	4	5
Midwifery Subject D3	66	82.5
Midwifery Subject D4/S1/S2	10	12.5
Work experience		
> 7 years	36	45
≤ 7 years	44	55
Information Availability about HIV through lectures	58	72.5
Information availability about HIV through socialization in the workplace	4	5

Table 1 shows that the majority of midwives were aged ≤ 28 years old (53.8%), had D III education in midwifery subject (82.5%), married (55%), and worked for ≤ 7 years (55%). The main source of information among respondents was via college lectures (72.5%).

Independent variable in line with Procede Procede theory were midwives' knowledge level, attitude, perception, experience and behavior in implementing PMTCT. These are described in table 2 below:

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Perception about facility availability		
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Midwives' attitude in implementing PMTCT		
Good	42	52.5

Poor	38	47.5
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These results in Table 2 above depict that majority of midwives were not knowledgeable on HIV/AIDS (50%). Regarding attitudes, most respondents had negative attitudes towards PMTCT (62.5%) and majority perceived that their institutions where they work as being less supportive of their efforts in implementation of PMTCT (55%). Despite these, majority perceived that there were enough institutional facilities to implement PMTCT (53.8%) and majority (52.5%) had a positive attitude towards PMTCT implementation.

Bivariate analysis was used to analyze association between independent and dependent variables. The relationship between independent and dependent variables are showed in table 3.

Table 3. The relationship between midwives' characteristic, knowledge level, attitude, perception about HIV/AIDS with midwives' behavior in implementing PMTCT

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Yes	0	0	4	100	4	100	0.047*
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Yes	29	50	29	50	22	100	0.634
No.	13	59.1	9	40.9	58	100	
Knowledge level							

Higher	3	37.5	5	62.5	8	100	0.016*
Satisfactory	23	71.9	9	28.1	32	100	
Unsatisfactory	16	40	24	60	40	100	
Attitude toward HIV AIDS							
Positive	16	53.3	14	46.7	30	100	1.000
Negative	26	52	24	48	50	100	
Perception about facility							
Good	26	60.5	17	39.4	43	100	0.189
Poor	16	43.2	21	56.8	37	100	
Perception about institutional support							
Good	19	52.8	17	47.2	36	100	1.000
Poor	23	52.3	21	47.7	44	100	

*used Fisher exact test

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Table 3 shows that midwives aged >28 years old were mostly implement PMTCT with Poor category (51.4%) meanwhile midwives aged \leq 28 years old were mostly (55.8%) implement PMTCT in a good category. But statistically, this variable has No. significancy with only p-value 0.678. Midwives who worked >7 years have same propotion in category of PMTCT implementation that is 50%. Meanwhile midwives who worked \leq 7 years were mostly in unsatisfactory category. But this variable was also statistically insignificant with p=0.857.

Midwives who had one year midwifery education (Diploma 1) in miwifery subject have balanced proportion between those who implement PMTCT in good category and those who were not, that is 50%. Midwives who had three year midwifery education (Diploma 3) in midwivery subject some of them implement PMTCT in unsatisfactory category (51.5%). Meanwhile midwives who had undergraduate (Diploma 4) or more in midwivery subject were mostly implement PMTCT in a good category (80%). But statistically, this variable was not meaningful with p=0.156.

Married midwives were mostly implement PMTCT in unsatisfactory category (59.1%), while unmarried and widow midwives implement PMTCT in a good category (65.6% and 75%). But statistically this variable was not meaningful with p=0.064.

Most respondent claim that they never got information about PMTCT related to HIV AIDS that provided by socialization in the workplace. This variable statisically meaningful due to p=0.047. For the variable knowledge level, most respondent (71.9%) who had satisfactory

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Multivariate analysis were done to independent variables that have $p < 0.250$ altogether. The result of multivariate analysis is shown in table 4

Table4. Multivariate Analysis Result

	B	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
				Lower	Upper
Knowledge (baik)	1.836	.003	6.272	1.836	21.431
Constant	-19.209	.999	.000		

(Confident interval 95%)

Table 4 shows that the level of knowledge is the most significant factor influencing midwives' behavior on implementing PMTCT with $p=0.003$, OR=6.2 with CI=1.8-21.4.

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DISCUSSION

HIV vertical transmission from mother to child could be prevented by PMTCT programme. Midwives were professional health provider who had important role in the implementation of preventing the transmission of HIV/AIDS vertically. Midwives' behavior on the implementation of HIV/AIDS prevention programme that show a good category in this study were just 52.5%. This number shows that implementation of PMTCT have not done very well. Thus, also in consonance with research done in Africa where the implementation of PMTCT were only 56.9% and declared as very low.⁵

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In this study known that in the implementation of PMTCT, most midwives were given counseling to pregnant women to do HIV test as a part of PMTCT. They also did the informed consent and did the counselling after HIV test. Most of midwives on implementing PMTCT did not involve the husband. The midwives also not using proper protection tools as said in the standard of universal precaution. Thus, also in consonants with research conducted in Medan City where midwives' actions in dealing with PMTCT patients were not in accordance with existing PMTCT guidelines and midwives should be able to provide psychological and social support to HIV positive patients.⁷

There were several things that affect the low midwives' behavior on implementing PMTCT. One of them was the low level of knowledge about HIV and PMTCT. More than 50% respondent claimed that they did not know CD4 indicator for healthy people and infected people. They also did not know about type of ARV that could be consumed by pregnant women, the transmission trajectory of HIV, and how was the labour assesment for pregnant women with HIV. Thus, also in consonants with research conducted in Medan City where Midwife knowledge about PMTCT low as midwife poorly informed about PMTCT.⁷ Research conducted by EL-Yakub Fatima Mohammed (2016) showed that midwife's knowledge of HIV PMTCT was low (65.7%).⁶

The primary source of information about HIV/AIDS for midwives in this study were from college lectures. Thus, shows that midwives have not get the up to date information regarding to prevention of HIV. Only 5% midwives who claimed they had attend socialization about PMTCT. Thus, also in consonants with research conducted in Medan City where on observations found only 1 midwife who trained in PMTC programs.⁷ Research conducted by Setiyawati and Meilani initiation of service providers to conduct HIV testing is the most influential factor on the behavior of HIV testing in pregnant women, so midwives need to understand what to do.⁸

Data analysis in this study show the same thing with demographic data that have been earned, where the major proportion about midwives' knowledge regarding to HIV and PMTCT were in low category with score value <56. In the bivariate analysis also show that proportion of midwives who implement PMTCT in good category were those who had enough or good knowledge. While those who implement PMTCT in unsatisfactoru category were those who had low level of knowledge.

Knowledge was one of predisposing factor for someone in behaving as stated in PRECEDE theory by L. Green. Knowledge was so important as said “*better practice is predicated on adequate knowledge*”. In line with those words, also in other research stated that health provider’s knowledge were affecting the implementation of PMTCT. But in this study highlighted that midwives’ knowledge were not affected by how much information they got but it affected by the experience of the midwives’ in implementing PMTCT itself. Knowledge was evidently be the strong indicator toward behavior on implementing PMTCT. Based on multivariate analysis in this study, obviously midwives’ who had good knowledge were having chance to implement PMTCT in a satisfactory way 4 times higher than those who had low knowledge.^{5,11,14}

This study also got the result that midwives’ behavior on implementing PMTCT were affected by availability of information source through socialization in the workplace. Information source availability was one of the enabling factor in PRECEDE theory by L. Green. In line with those words, many of the midwife had multiple sources of information on PMTCT.^{8,11}

Socialization in workplace usually would contain work steps, facility availability for implementation of PMTCT. Some research declared that PMTCT implementation was closely related with the facility availability. On that study explained that in the implementation of PMTCT need sufficient supply of latex gloves and clean water because it would decrease the fear to implement PMTCT.^{5,11}

Coherence with the explanation above, in this study there were sufficient supply of latex gloves and clean water. But what cause the implementation of PMTCT was not optimum were insufficiency of work period and other work responsibility of the midwives, also lack of information source about HIV and PMTCT that provided by the institution where the midwives work. Unfortunately, multiple sources of information did not translate significantly to improved knowledge.⁶

Pursuant to several research, known there were factors that affecting midwives’ behavior on implementing PMTCT. Two of them were attitude toward PMTCT and perception about institutional support. But in this study, these variables were statistically not meaningful. Midwives’ perception toward implementation of PMTCT were mostly supportive, even there were still some of them feel insecure to implement PMTCT. Major problem that encountered in

implementing PMTCT was the limited time. While for institutional support, most midwives' claimed that there were enough support.

CONCLUSION

Respondent joined this study were mostly aged ≤ 28 years old, had D III in midwifery subject, married, and worked at least for ≤ 7 years. Majority of the respondent claimed that there was not enough information about HIV AIDS. Major information source about HIV were gained in college lectures. Midwives' knowledge level about HIV AIDS and PMTCT were mostly below average. Most respondent had negative attitude toward implementation of PMTCT. Most respondent have preception toward institutional support claimed that the institution were less supporting in PMTCT implementation. Most respondent declared about their perception about facility availability were include in good category. Most respondent implement PMTCT in a good category but the poor category was still high. Knowledge level was the most affecting factor in the implementation of PMTCT.

REKOMENDATION

To optimized PMTCT program need improvement in midwives' knowledge about HIV/AIDS and PMTCT. There also need a workshop or socialization for midwives about PMTCT and better regulation about burden of work for midwives so that they get more time to implement the PMTCT in a good way.

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6. Hasil Revisi (18 Februari 2018)

Midwife's Behavior in The Implementation of "Prevention of Mother to Child Transmission" Program in Yogyakarta's Primary Health Care

Perilaku Bidan dalam Pelaksanaan Program Pencegahan Penularan dari Ibu ke Anak di Puskesmas Yogyakarta

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ABSTRACT

HIV/AIDS is one of the global commitments in Sustainable Development Goals (SDGs). The incidence of HIV in the world is still high. Vertical transmission can be prevented by Prevention of Mother to Child Transmission (PMTCT) program. Midwives have a very important role. The aim of this study was to determine the factors associated with midwives' behavior in implementation of PMTCT. This research was cross sectional in design. The subjects of this research were 80 midwives in Puskesmas Kota Yogyakarta, Indonesia. The study was conducted from April to August 2017. Data was analyzed through univariate, bivariate and multivariate analysis. The results showed that 47.5% of midwives were in less category in the implementation of PMTCT. Information availability through socialization ($p=0.047$) and knowledge level ($p=0.016$) were found to be related to PMTCT implementation. There was no relationship between age, length of work, education level, marital status, availability of information, midwife attitudes, perception of the availability of facilities and institutional support with midwife behavior in PMTCT implementation. Multivariate analysis showed that level of knowledge was the most dominant factors affecting PMTCT Implementation (OR:6.2; CI=1.8-21.4).

Keywords: Knowledge; Midwives; PMTCT.

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Such as:

-In Introduction used Provider initiative test and counseling (PITC) strategy before to test HIV among pregnant women.
Done

-In Discussion explained, most midwives were initiated to do the VCT (Volunteer Counselling Test) strategy before to test HIV to pregnant women.

These two strategies PICT and VCT are difference.

INTRODUCTION

Sustainable Development Goals (SDGs) is a global commitment in a larger framework of continuous development. Regarding prevention of Human Immunodeficiency Virus /Acquired Immunodeficiency Syndrome (HIV/AIDS), SDGs have more universal goals aimed to achieve health and wellbeing for everyone. Holistic development is also expected, including problems on HIV/AIDS prevention and various progressive diseases. SDGs are also targeting to decrease infectious diseases¹.

In the year 2015, there were 0.3 new cases of HIV infection per 1,000 people recorded. Those numbers showed the increasing trend of HIV infection compared to the number of cases that happened in the year of 2000, from 45% to 71% in 2015. From this data, we know that HIV is a threat for the health that should persistently be addressed at least until 2030.¹

According to Indonesian AIDS Committee in 2015, in 1987, the number of people suffering from AIDS in Indonesia were just 5 cases. Ten (10) years later, there were only 44 additional new cases. But starting 2007, the cases of AIDS increased significantly up to eight fold up to 17,699 cases, of which 3,586 people died. Human Immunodeficiency Virus (HIV) causes Acquired Immunodeficiency Syndrome (AIDS). HIV attacks the immune system and damages the white blood cells called T lymphocyte or T cells, resulting in immunodeficiency, hence AIDS.^{2,3}

In 2014 there were 501,400 cases of HIV/AIDS in Indonesia. People suffering from HIV/AIDS were spread in 32 provinces and 300 sub-regions/cities. The majority of people suffering from HIV/AIDS were among the productive age 15-29 years old. Papua was not the province with the highest number of HIV/AIDS, however, by prevalence this is still the highest. The number of HIV/AIDS cases being reported in Indonesia is only a tip of the iceberg. The actual cases estimated were reaching 270,000 people and in Yogyakarta, the incidence of HIV continues to increase like in annually.^{2,4}

Vertical transmission was a major pathway for HIV infection in children through mother-to-child transmission. World Health Organization (WHO) declared that without prevention interventions, 40% of the babies born from mothers who are HIV positive, will be infected. The focus of prevention is divided into three phases; pregnancy, labour and breastfeeding process. These three phases underscores the important role midwives play in implementing of prevention

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of mother to child transmission (PMTCT) of HIV/AIDS. Midwife's knowledge about HIV is important for it is the basic foundation that can influence someone's attitudes and behavior. However, there are still midwives who have negative attitude and perception towards HIV/AIDS, thus it is paramount that they make it become the part of their job to overcome HIV/AIDS with unique treatments. Knowledge, attitude, and perception among midwives towards HIV are important determinants in overcoming HIV.^{5,6}

Midwife hold an important role in the implementation of PMTCT.⁷ This study aims to describe how midwives in Mother and Children Health Clinic in the Primary Health Care/ Puskesmas implement PMTCT among pregnant women and determine factors that influence midwives' behavior in the implementation on PMTCT program.

METHODS

This quantitative survey used cross-sectional design. Conducted in 14 Puskesmas/ primary health care in Yogyakarta City from April to August 2017. This study assessed all midwives who work on Mother and Children Clinic in primary health care. Only primary health care already implementing the PMTCT programme were involved. The primary health care chosen was based on random sampling toward all primary healthcare in Yogyakarta City. To determine the sample size, we used the formula for sample size with calculation of proportion as per Lemeshow with minimum sample size obtained was 72.43 respondent which was rounded off to 80 wives. Using simple random sampling, we selected the midwives, and those who took part gave a written consent to participate.

This study used the theoretical framework approach of Precede-Procede model (Lawrence Green). Independent variables consists of socio-demographic characteristic of the midwives, midwives' knowledge about HIV and PMTCT and midwives' attitude toward the implementation of PMTCT - as predisposing factors - whereas midwives' perception about institution support in PMTCT program - as reinforcing factors - and facilities availability in implementing PMTCT - as enabling factors. The dependent variable was midwives' behavior in implementing the PMTCT.

A self-administered questionnaire was used in this study. Midwives' knowledge was measured through multiple choice questions. True statements were scored as 1 and false statements were scored as 0. We then classified the scores into three categories to characterize the

level of knowledge: higher >70%; satisfactory (56%- 69%) and unsatisfactory (<56%). On the other hand, we used Likert scale to measure attitudes. The scoring was done as follows: positive statement agrees =2, disagree =1 and hesitant =0, and for negative statement agree =1, disagree =2 and hesitant =0. Attitude was mentioned as positive and negative (based on the mean). We used a visual analog scale form scored from 0-10 to assess the level of perception.

Descriptive statistics using frequencies and percentage was used to describe findings. Further, *Chi square* test or Fisher exact test to determine the relationship between the dependent and independent variables was applied. Logistic regression was done for all variables with *p* less than 0.25 and to explain independent variables which were strongly associated with the dependent variable.

Ethical clearance was obtained from Ethical Committee Poltekkes Kemenkes Yogyakarta Number: LB.01.01/KE-01/XII/326/2017. A formal letter of permission for respondents used informed consent and they were informed that the data will be treated with utmost confidentiality.

RESULT

This study conducted on 80 randomly selected midwives in 14 (fourteen) primary health care in Yogyakarta City that were implementing PMTCT programme. The characteristic of the respondent showed in table 1.

Table 1. Respondent's Characteristic

Characteristic	Amount (n=80)	Percentage (%)
Age		
> 28 y.o	37	46.2
≤ 28 y.o	43	53.8
Marriage Status		
Married	44	55
Unmarried	32	40
Widow	4	5
Education		
Midwifery Subject D1	4	5
Midwifery Subject D3	66	82.5
Midwifery Subject D4/S1/S2	10	12.5
Work experience		
> 7 years	36	45
≤ 7 years	44	55

Information Availability about HIV through lectures	58	72.5
Information availability about HIV through socialization in the workplace	4	5

Table 1 shows that the majority of midwives were aged ≤ 28 years old (53.8%), had D III education in midwifery subject (82.5%), married (55%), and worked for ≤ 7 years (55%). The main source of information among respondents was via college lectures (72.5%).

Independent variable in line with Procede Procede theory were midwives' knowledge level, attitude, perception, experience and behavior in implementing PMTCT. These are described in table 2 below:

Table 2. Midwives' Knowledge Level, Attitude, Perception and Behavior in implementing PMTCT

Characteristic	Number of midwives (n=80)	Percentage (%)
Knowledge level about HIV/AIDS, PMTCT, Transmission and Preventive Strategy		
Higher	8	10
Satisfactory	32	40
Unsatisfactory	40	50
Midwives' attitude toward PMTCT		
Positive	30	37.5
Negative	50	62.5
Perception about institutional support		
Supporting	36	45
Less supporting	44	55
Perception about facility availability		
Good	43	53.8
Poor	37	46.2
Midwives' attitude in implementing PMTCT		
Good	42	52.5
Poor	38	47.5

These results in Table 2 above depict that majority of midwives were not knowledgeable on HIV/AIDS (50%). Regarding attitudes, most respondents had negative attitudes towards PMTCT (62.5%) and majority perceived that their institutions where they work as being less

supportive of their efforts in implementation of PMTCT (55%). Despite these, majority perceived that there were enough institutional facilities to implement PMTCT (53.8%) and majority (52.5%) had a positive attitude towards PMTCT implementation.

Bivariate analysis was used to analyze association between independent and dependent variables. The relationship between independent and dependent variables are showed in table 3.

Table 3. The relationship between midwives' characteristic, knowledge level, attitude, perception about HIV/AIDS with midwives' behavior in implementing PMTCT

Variable	Implementation of PMTCT						p-value
	Good		Poor		Total		
	n=42	%	n=38	%	n=80	%	
Age							
>28 y.o	18	48.6	19	51.4	37	100	0.678*
≤ 28 y.o	24	55.8	19	44.2	43	100	
Work experience							
> 7 years	18	50	18	50	36	100	0.857*
≤ 7 years	24	54.5	20	45.5	44	100	
Education Level							
D1 Midwifery	2	50	2	50	4	100	0.156*
D3 Midwifery	32	48.5	34	51.5	66	100	
D4/S1/S2	8	80	2	4.8	10	100	
Marriage Status							
Married	18	40.9	26	59.1	44	100	0.064*
Unmarried	21	65.6	11	34.4	32	100	
Widow	3	75	1	25	4	100	
Information availability through socialization							
Yes	0	0	4	100	4	100	0.047*
No	42	55.5	34	44.7	76	100	
Information availability through lectures							
Yes	29	50	29	50	22	100	0.634
No.	13	59.1	9	40.9	58	100	
Knowledge level							
Higher	3	37.5	5	62.5	8	100	0.016*
Satisfactory	23	71.9	9	28.1	32	100	
Unsatisfactory	16	40	24	60	40	100	
Attitude toward HIV AIDS							
Positive	16	53.3	14	46.7	30	100	1.000
Negative	26	52	24	48	50	100	

Perception about facility							
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Constant	-19.209	.999	.000		

Table 4 shows that the level of knowledge is the most significant factor influencing midwives' behavior on implementing PMTCT with $p=0.003$, OR=6.2 with CI=1.8-21.4.

DISCUSSION

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This study also got the result that midwives' behavior on implementing PMTCT were affected by availability of information source through socialization in the workplace. Information source availability was one of the enabling factor in PRECEDE theory by L. Green. In line with those words, many of the midwife had multiple sources of information on PMTCT.^{8,11}

Socialization in workplace usually would contain work steps, facility availability for implementation of PMTCT. Some research declared that PMTCT implementation was closely related with the facility availability. On that study explained that in the implementation of PMTCT need sufficient supply of latex gloves and clean water because it would decrease the fear to implement PMTCT.^{5,11}

Coherence with the explanation above, in this study there were sufficient supply of latex gloves and clean water. But what cause the implementation of PMTCT was not optimum were insufficiency of work period and other work responsibility of the midwives, also lack of information source about HIV and PMTCT that provided by the intitution where the midwives work. Unfortunately, multiple sources of information did not translate significantly to improved knowledge.⁶

Pursuant to several research, known there were factors that affecting midwives' behavior on implementing PMTCT. Two of them were attitude toward PMTCT and perception about institutional support. But in this study, these variables were statistically not meaningful. Midwives' perception toward implementation of PMTCT were mostly supportive, even there were still some of them feel insecure to implement PMTCT. Major problem that encountered in implementing PMTCT was the limited time. While for intitutional support, most midwives' claimed that there were enough support.

CONCLUSION

Respondent joined this study were mostly aged ≤ 28 years old, had D III in midwifery subject, married, and worked at least for ≤ 7 years. Majority of the respondent claimed that there was not enough information about HIV AIDS. Major information source about HIV were gained

in college lectures. Midwives' knowledge level about HIV AIDS and PMTCT were mostly below average. Most respondent had negative attitude toward implementation of PMTCT. Most respondent have preception toward institutional support claimed that the institution were less supporting in PMTCT implementation. Most respondent declared about their perception about facility availability were include in good category. Most respondent implement PMTCT in a good category. Knowledge level was the most affecting factor in the implementation of PMTCT.

RECOMENDATION

Need improvement in midwives' knowledge about HIV/AIDS and PMTCT. There also need a workshop or socialization for midwives about PMTCT and better regulation about burden of work for midwives so that they get more time to implement the PMTCT in a good way.

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7. Hasil revisi (20 Maret 2019)

Midwife's Behavior in The Implementation of "Prevention of Mother to Child Transmission" Program in Yogyakarta's Primary Health Care

Perilaku Bidan dalam Pelaksanaan Program Pencegahan Penularan dari Ibu ke Anak di Puskesmas Yogyakarta

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ABSTRAK

Menekan kejadian HIV/AIDS merupakan salah satu komitmen global dalam *Sustainable Development Goals* (SDGs). Angka kejadian HIV di dunia masih terus meningkat. Penularan secara vertikal merupakan jalur utama bagi infeksi HIV pada anak-anak yaitu melalui transmisi dari ibu ke bayi. Bidan memiliki peran yang sangat penting. Penelitian ini bertujuan untuk mengetahui faktor-faktor yang memengaruhi perilaku bidan dalam pelaksanaan *Prevention Mother to Child Transmission* (PMTCT). Jenis penelitian dengan pendekatan *cross sectional*. Subjek penelitian ini adalah bidan yang bekerja di Puskesmas di Kota Yogyakarta yang berjumlah 80 orang. Penelitian dilaksanakan pada Bulan April s.d. Agustus 2017. Analisis yang digunakan adalah analisis univariat, bivariat dan multivariat. Hasil penelitian menunjukkan bahwa masih ada 47.5% bidan memiliki kategori kurang baik dalam pelaksanaan PMTCT. Ada hubungan ketersediaan informasi melalui sosialisasi ($p=0.047$) dan tingkat pengetahuan ($p=0.016$) dengan perilaku bidan dalam pelaksanaan PMTCT. Tidak ada hubungan antara umur, lama bekerja, tingkat pendidikan, status perkawinan, ketersediaan informasi melalui perkuliahan, sikap bidan terhadap PMTCT, persepsi ketersediaan sarana dan prasarana, dan persepsi dukungan institusi dengan perilaku bidan dalam pelaksanaan PMTCT. Analisis multivariat menunjukkan tingkat pengetahuan (OR: 6.272 CI=1.8-21.4) berpengaruh terhadap perilaku bidan dalam pelaksanaan PMTCT.

Kata kunci: Pengetahuan, Bidan, PMTCT.

ABSTRACT

HIV/AIDS is one of the global commitments in Sustainable Development Goals (SDGs). The incidence of HIV in the world is still high. Vertical transmission can be prevented by Prevention of Mother to Child Transmission (PMTCT) program. Midwives have a very important role. The aim of this study was to determine the factors associated with midwives' behavior in implementation of PMTCT. This research was cross sectional in design. The subjects of this research were 80 midwives in Puskesmas Kota Yogyakarta, Indonesia. The study was conducted from April to August 2017. Data was analyzed through univariate, bivariate and multivariate analysis. The results showed that 47.5% of midwives were in less category in the implementation of PMTCT. Information availability through socialization ($p=0.047$) and knowledge level ($p=0.016$) were found to be related to PMTCT implementation. There was no relationship between age, length of work, education level, marital status, availability of information, midwife attitudes, perception of the availability of facilities and institutional support with midwife behavior in PMTCT implementation. Multivariate analysis showed that level of knowledge was the most dominant factors affecting PMTCT Implementation (OR:6.2; CI=1.8-21.4).

Keywords: Knowledge; Midwives; PMTCT.

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INTRODUCTION

Sustainable Development Goals (SDGs) is a global commitment in a larger framework of continuous development. Regarding prevention of Human Immunodeficiency Virus /Acquired Immunodeficiency Syndrome (HIV/AIDS), SDGs have more universal goals aimed to achieve health and wellbeing for everyone. Holistic development is also expected, including problems on HIV/AIDS prevention and various progressive diseases. SDGs are also targeting to decrease infectious diseases¹.

In the year 2015, there were 0.3 new cases of HIV infection per 1,000 people recorded. Those numbers showed the increasing trend of HIV infection compared to the number of cases that happened in the year of 2000, from 45% to 71% in 2015. From this data, we know that HIV is a threat for the health that should persistently be addressed at least until 2030.¹

According to Indonesian AIDS Committee in 2015, in 1987, the number of people suffering from AIDS in Indonesia were just 5 cases. Ten (10) years later, there were only 44 additional new cases. But starting 2007, the cases of AIDS increased significantly up to eight fold up to 17,699 cases, of which 3,586 people died. Human Immunodeficiency Virus (HIV) causes Acquired Immunodeficiency Syndrome (AIDS). HIV attacks the immune system and damages the white blood cells called T lymphocyte or T cells, resulting in immunodeficiency, hence AIDS.^{2,3}

In 2014 there were 501,400 cases of HIV/AIDS in Indonesia. People suffering from HIV/AIDS were spread in 32 provinces and 300 sub-regions/cities. The majority of people suffering from HIV/AIDS were among the productive age 15-29 years old. Papua was not the province with the highest number of HIV/AIDS, however, by prevalence this is still the highest. The number of HIV/AIDS cases being reported in Indonesia is only a tip of the iceberg. The actual cases estimated were reaching 270,000 people and in Yogyakarta, the incidence of HIV continues to increase like in annually.^{2,4}

Vertical transmission was a major pathway for HIV infection in children through mother-to-child transmission. World Health Organization (WHO) declared that without prevention interventions, 40% of the babies born from mothers who are HIV positive, will be infected. The focus of prevention is divided into three phases; pregnancy, labour and breastfeeding process. These three phases underscores the important role midwives play in implementing of prevention

of mother to child transmission (PMTCT) of HIV/AIDS. Midwife's knowledge about HIV is important for it is the basic foundation that can influence someone's attitudes and behavior. However, there are still midwives who have negative attitude and perception towards HIV/AIDS, thus is paramount that they it become the part of their job to overcome HIV/AIDS with unique treatments. Knowledge, attitude, and perception among midwives towards HIV are important determinants in overcoming HIV.^{5,6}

Midwife hold an important role in the implementation of PMTCT.⁷ This study aims to describe how midwives in Mother and Children Health Clinic in the Primary Health Care/ Puskesmas implement PMTCT among pregnant women and determine factors that influence midwives' behavior in the implementation on PMTCT program.

METHODS

This quantitative survey used cross-sectional design, conducted in 14 Puskesmas/ primary health care in Yogyakarta City from April to August 2017. This study assessed all midwives who work on Mother and Children Clinic in primary health care. Only primary health care already implementing the PMTCT programme were involved. The primary health care chosen was based on random sampling toward all primary healthcare in Yogyakarta City. To determine the sample size, the formula for sample size with calculation of proportion with minimum sample size obtained was 72.43 respondent which was rounded off to 80 midwives.¹³ Using simple random sampling, we selected the midwives, and those who took part gave a written consent to participate.

This study used the theoretical framework approach of Precede-Procede model (Lawrence Green).¹¹ Independent variables consists of socio-demographic characteristic of the midwives, midwives' knowledge about HIV and PMTCT and midwives' attitude toward the implementation of PMTCT - as predisposing factors - whereas midwives' perception about institution support in PMTCT program - as reinforcing factors - and facilities availability in implementing PMTCT - as enabling factors. The dependent variable was midwives' behavior in implementing the PMTCT.

A self-administered questionnaire was used in this study. Midwives' knowledge was measured through multiple choice questions. True statements were scored as 1 and false statements were scored as 0. We then classified the scores into three categories to characterize the

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level of knowledge: higher >70%; satisfactory (56%- 69%) and unsatisfactory (<56%). On the other hand, we used Likert scale to measure attitudes. The scoring was done as follows: positive statement agrees =2, disagree =1 and hesitant =0, and for negative statement agree =1, disagree =2 and hesitant =0. Attitude was mentioned as positive and negative (based on the mean). We used a visual analog scale form scored from 0-10 to assess the level of perception.

Descriptive statistics using frequencies and percentage was used to describe findings. Further, *Chi square* test or Fisher exact test to determine the relationship between the dependent and independent variables was applied. Logistic regression was done for all variables with *p* less than 0.25 and to explain independent variables: socio-demographic characteristic of the midwives (age, marriage status, education, work experience, information Availability about HIV through lectures and information availability about HIV through socialization in the workplace), midwives' knowledge about HIV and PMTCT, midwives' attitude toward the implementation of PMTCT, midwives' perception about institution support in PMTCT program, facilities availability in implementing PMTCT which were strongly associated with the dependent variable: midwives' behavior in implementing the PMTCT.

Ethical clearance was obtained from Ethical Committee Poltekkes Kemenkes Yogyakarta Number: LB.01.01/KE-01/XII/326/2017. A formal letter of permission for respondents used informed consent and they were informed that the data will be treated with utmost confidentiality.

RESULT

This study conducted on 80 randomly selected midwives in 14 (fourteen) primary health care in Yogyakarta City that were implementing PMTCT programme. The characteristic of the respondent showed in table 1.

Characteristic	Amount (n=80)	Percentage (%)
Age		
> 28 y.o	37	46.2
≤ 28 y.o	43	53.8
Marriage Status		
Married	44	55
Unmarried	32	40
Widow	4	5
Education		

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Midwifery Subject D1	4	5
Midwifery Subject D3	66	82.5
Midwifery Subject D4/S1/S2	10	12.5
Work experience		
> 7 years	36	45
≤ 7 years	44	55
Information Availability about HIV through lectures	58	72.5
Information availability about HIV through socialization in the workplace	4	5

Table 1 shows that the majority of midwives were aged ≤ 28 years old (53.8%), had D III education in midwifery subject (82.5%), married (55%), and worked for ≤ 7 years (55%). The main source of information among respondents was via college lectures (72.5%).

Independent variable in line with Procede Procede theory were midwives' knowledge level, attitude, perception, experience and behavior in implementing PMTCT. These are described in table 2 below:

Table 2. Midwives' Knowledge Level, Attitude, Perception and Behavior in implementing PMTCT PMTCT

Characteristic	Number of midwives (n=80)	Percentage (%)
Knowledge level about HIV/AIDS, PMTCT, Transmission and Preventive Strategy		
Higher	8	10
Satisfactory	32	40
Unsatisfactory	40	50
Midwives' attitude toward PMTCT		
Positive	30	37.5
Negative	50	62.5
Perception about institutional support		
Supporting	36	45
Less supporting	44	55
Perception about facility availability		
Good	43	53.8
Poor	37	46.2
Midwives' attitude in implementing PMTCT		
Good	42	52.5

Poor	38	47.5
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These results in Table 2 above depict that majority of midwives were not knowledgeable on HIV/AIDS (50%). Regarding attitudes, most respondents had negative attitudes towards PMTCT (62.5%) and majority perceived that their institutions where they work as being less supportive of their efforts in implementation of PMTCT (55%). Despite these, majority perceived that there were enough institutional facilities to implement PMTCT (53.8%) and majority (52.5%) had a positive attitude towards PMTCT implementation.

Bivariate analysis was used to analyze association between independent and dependent variables. The relationship between independent and dependent variables are showed in table 3.

Table 3. The relationship between midwives' characteristic, knowledge level, attitude, perception about HIV/AIDS with midwives' behavior in implementing PMTCT

Variable	Implementation of PMTCT						p-value
	Good		Poor		Total		
	n=42	%	n=38	%	n=80	%	
Age							
>28 y.o	18	48.6	19	51.4	37	100	0.678*
≤ 28 y.o	24	55.8	19	44.2	43	100	
Work experience							
> 7 years	18	50	18	50	36	100	0.857*
≤ 7 years	24	54.5	20	45.5	44	100	
Education Level							
D1 Midwifery	2	50	2	50	4	100	0.156*
D3 Midwifery	32	48.5	34	51.5	66	100	
D4/S1/S2	8	80	2	4.8	10	100	
Marriage Status							
Married	18	40.9	26	59.1	44	100	0.064*
Unmarried	21	65.6	11	34.4	32	100	
Widow	3	75	1	25	4	100	
Information availability through socialization							
Yes	0	0	4	100	4	100	0.047*
No	42	55.5	34	44.7	76	100	
Information availability through lectures							
Yes	29	50	29	50	22	100	0.634
No.	13	59.1	9	40.9	58	100	
Knowledge level							

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Higher	3	37.5	5	62.5	8	100	0.016*
Satisfactory	23	71.9	9	28.1	32	100	
Unsatisfactory	16	40	24	60	40	100	
Attitude toward HIV AIDS							
Positive	16	53.3	14	46.7	30	100	1.000
Negative	26	52	24	48	50	100	
Perception about facility							
Good	26	60.5	17	39.4	43	100	0.189
Poor	16	43.2	21	56.8	37	100	
Perception about institutional support							
Good	19	52.8	17	47.2	36	100	1.000
Poor	23	52.3	21	47.7	44	100	

*used Fisher exact test

Table 3 shows that midwives aged >28 years old were mostly implement PMTCT with Poor category (51.4%) meanwhile midwives aged \leq 28 years old were mostly (55.8%) implement PMTCT in a good category. But statistically, this variable has No. significancy with only p-value 0.678. Midwives who worked >7 years have same proportion in category of PMTCT implementation that is 50%. Meanwhile midwives who worked \leq 7 years were mostly in unsatisfactory category. But this variable was also statistically insignificant with p=0.857.

Midwives who had one year midwifery education (Diploma 1) in miwifery subject have balanced proportion between those who implement PMTCT in good category and those who were not, that is 50%. Midwives who had three year midwifery education (Diploma 3) in midwifery subject some of them implement PMTCT in unsatisfactory category (51.5%). Meanwhile midwives who had undergraduate (Diploma 4) or more in midwifery subject were mostly implement PMTCT in a good category (80%). But statistically, this variable was not meaningful with p=0.156.

Married midwives were mostly implement PMTCT in unsatisfactory category (59.1%), while unmarried and widow midwives implement PMTCT in a good category (65.6% and 75%). But statistically this variable was not meaningful with p=0.064.

Most respondent claim that they never got information about PMTCT related to HIV AIDS that provided by socialization in the workplace. This variable statisically meaningful due to p=0.047. For the variable knowledge level, most respondent (71.9%) who had satisfactory knowledge level implement PMTCT in a good category, while respondent with unsatisfactory

level of knowledge tend to implement PMTCT in below average category or not good enough (60%). This variable was statistically meaningful with $p=0.016$.

The variable attitude, both who had positive attitude and negative attitude implement PMTCT in a good category, and this variable was statistically not meaningful due to $p=1.000$. For variable perception about facility most respondent who had good perception (60.5%) tend to implement PMTCT in a good category, while those who had poor perception (56.8%) implement PMTCT in a bad category. This variable was statistically not meaningful with $p=0.189$.

Variable perception about institutional support known that both respondent who have perception that the institution was good and poor were implement PMTCT in good category. This variable was statistically not meaningful with $p=1.000$. From bivariate analysis, to conclude that independent variables which statistically related to midwives' behavior on implementing PMTCT were knowledge level and information availability through socialization in the workplace.

Multivariate analysis were done to independent variables that have $p < 0.250$ altogether. The result of multivariate analysis is shown in table 4

Table4. Multivariate Analysis Result

	B	Sig.	Exp(B)	95.0% C.I.for EXP(B)	
				Lower	Upper
Knowledge (baik)	1.836	.003	6.272	1.836	21.431
Constant	-19.209	.999	.000		

(Confident interval 95%)

Table 4 shows that the level of knowledge is the most significant factor influencing midwives' behavior on implementing PMTCT with $p=0.003$, OR=6.2 with CI=1.8-21.4.

DISCUSSION

HIV vertical transmission from mother to child could be prevented by PMTCT programme. Midwives were professional health provider who had important role in the implementation of preventing the transmission of HIV/AIDS vertically. Midwives' behavior on the implementation of HIV/AIDS prevention programme that show a good category in this study were just 52.5%. This number shows that implementation of PMTCT have not done very well. Thus, also in consonance with research done in Africa where the implementation of PMTCT were only 56.9% and declared as very low.⁵

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In this study known that in the implementation of PMTCT, most midwives were given counseling to pregnant women to do HIV test as a part of PMTCT. They also did the informed consent and did the counselling after HIV test. Most of midwives on implementing PMTCT did not involve the husband. The midwives also not using proper protection tools as said in the standard of universal precaution. Thus, also in consonants with research conducted in Medan City where midwives' actions in dealing with PMTCT patients were not in accordance with existing PMTCT guidelines and midwives should be able to provide psychological and social support to HIV positive patients.⁷

There were several things that affect the low midwives' behavior on implementing PMTCT. One of them was the low level of knowledge about HIV and PMTCT. More than 50% respondent claimed that they did not know CD4 indicator for healthy people and infected people. They also did not know about type of ARV that could be consumed by pregnant women, the transmission trajectory of HIV, and how was the labour assesment for pregnant women with HIV. Thus, also in consonants with research conducted in Medan City where Midwife knowledge about PMTCT low as midwife poorly informed about PMTCT.⁷ Research conducted by EL-Yakub Fatima Mohammed (2016) showed that midwife's knowledge of HIV PMTCT was low (65.7%).⁶

The primary source of information about HIV/AIDS for midwives in this study were from college lectures. Thus, shows that midwives have not get the up to date information regarding to prevention of HIV. Only 5% midwives who claimed they had attend socialization about PMTCT. Thus, also in consonants with research conducted in Medan City where on observations found only 1 midwife who trained in PMTC programs.⁷ Research conducted by Setiyawati and Meilani initiation of service providers to conduct HIV testing is the most influential factor on the behavior of HIV testing in pregnant women, so midwives need to understand what to do.⁸

Data analysis in this study show the same thing with demographic data that have been earned, where the major proportion about midwives' knowledge regarding to HIV and PMTCT were in low category with score value <56. In the bivariate analysis also show that proportion of midwives who implement PMTCT in good category were those who had enough or good knowledge. While those who implement PMTCT in unsatisfactoru category were those who had low level of knowledge.

Knowledge was one of predisposing factor for someone in behaving as stated in PRECEDE theory by L. Green. Knowledge was so important as said “*better practice is predicated on adequate knowledge*”. In line with those words, also in other research stated that health provider’s knowledge were affecting the implementation of PMTCT. But in this study highlighted that midwives’ knowledge were not affected by how much information they got but it affected by the experience of the midwives’ in implementing PMTCT itself. Knowledge was evidently be the strong indicator toward behavior on implementing PMTCT. Based on multivariate analysis in this study, obviously midwives’ who had good knowledge were having chance to implement PMTCT in a satisfactory way 4 times higher than those who had low knowledge.^{5,11,14}

This study also got the result that midwives’ behavior on implementing PMTCT were affected by availability of information source through socialization in the workplace. Information source availability was one of the enabling factor in PRECEDE theory by L. Green. In line with those words, many of the midwife had multiple sources of information on PMTCT.^{8,11}

Socialization in workplace usually would contain work steps, facility availability for implementation of PMTCT. Some research declared that PMTCT implementation was closely related with the facility availability. On that study explained that in the implementation of PMTCT need sufficient supply of latex gloves and clean water because it would decrease the fear to implement PMTCT.^{5,11}

Coherence with the explanation above, in this study there were sufficient supply of latex gloves and clean water. But what cause the implementation of PMTCT was not optimum were insufficiency of work period and other work responsibility of the midwives, also lack of information source about HIV and PMTCT that provided by the institution where the midwives work. Unfortunately, multiple sources of information did not translate significantly to improved knowledge.⁶

Pursuant to several research, known there were factors that affecting midwives’ behavior on implementing PMTCT. Two of them were attitude toward PMTCT and perception about institutional support. But in this study, these variables were statistically not meaningful. Midwives’ perception toward implementation of PMTCT were mostly supportive, even there were still some of them feel insecure to implement PMTCT. Major problem that encountered in

implementing PMTCT was the limited time. While for institutional support, most midwives' claimed that there were enough support.

CONCLUSION

Respondent joined this study were mostly aged ≤ 28 years old, had D III in midwifery subject, married, and worked at least for ≤ 7 years. Majority of the respondent claimed that there was not enough information about HIV AIDS. Major information source about HIV were gained in college lectures. Midwives' knowledge level about HIV AIDS and PMTCT were mostly below average. Most respondent had negative attitude toward implementation of PMTCT. Most respondent have preception toward institutional support claimed that the institution were less supporting in PMTCT implementation. Most respondent declared about their perception about facility availability were include in good category. Most respondent implement PMTCT in a good category but the poor category was still high. Knowledge level was the most affecting factor in the implementation of PMTCT.

RECOMENDATION

To optimized PMTCT program need improvement in midwives' knowledge about HIV/AIDS and PMTCT. There also need a workshop or socialization for midwives about PMTCT and better regulation about burden of work for midwives so that they get more time to implement the PMTCT in a good way.

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8. Hasil revisi terakhir (27 September 2019)

Midwife Role in the Prevention of Mother-to-Child Transmission Program in Yogyakarta's Primary Health Care

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Abstract

Curing and eradicating Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS) is intrinsic to the core principles of the United Nations' Sustainable Development Goals (SDGs). The incidence of HIV in the world remains high. Vertical transmission can be prevented with the help of the Prevention of Mother-to-Child Transmission (PMTCT) program. Midwives play a key role. The aim of this study was to determine the factors associated with midwives' role in implementation of PMTCT. This research was cross-sectional in design. The subjects were 80 midwives at 14 Puskesmas/ primary health care in Kota Yogyakarta, Indonesia. The study was conducted from April to August, 2017. Data was analyzed through univariate, bivariate with Chi-square and Fisher's exact test, multivariate with logistic regression. The results showed that 47.5% of midwives were in the Poor category regarding implementation of PMTCT. Information availability through socialization ($p = 0.047$) and knowledge level ($p = 0.016$) were found to be related to PMTCT implementation. There was no relationship between age, length of work, education level, marital status, availability of information, midwife attitudes, perception of the availability of facilities and institutional support with midwife behavior in PMTCT implementation. Multivariate analysis showed that level of knowledge was the most dominant factor affecting PMTCT implementation (OR:6.2; CI = 1.8-21.4).

Keywords: Human immunodeficiency virus, midwives, pregnant, prevention

Introduction

Sustainable Development Goals (SDGs) is a United Nations global commitment within a larger framework of continuous development. Along with prevention of Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS), SDGs have more universal goals aimed at achieving universal health and well-being. Holistic development is integral, including prevention of HIV/AIDS and other progressive diseases.¹

In 2015, there were 0.3 new cases of HIV infection per 1,000 people. That number indicates the growing trend of HIV infection compared to the number of cases in 2000, from 45% to 71% in 2015. From this data, we know that HIV is a very serious health threat.¹

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According to the Indonesian AIDS Committee in 2015, in 1987, only five people were known to be suffering from AIDS in Indonesia. But in 2007, the number of AIDS cases had jumped significantly, up to 17,699 cases, and 3,586 died. HIV attacks the immune system and damages a subtype of white blood cells called T lymphocyte or T cells, resulting in immunodeficiency, hence AIDS.^{2,3}

In 2014 there were 501,400 cases of HIV/AIDS in Indonesia. People suffering from HIV/AIDS were spread throughout 32 provinces and 300 sub-regions/cities. The majority of people suffering from the disease were in the reproductive range of 15–29 years old. Today, the number of HIV/AIDS cases being reported in Indonesia is still just the tip of the iceberg. The estimated number of actual cases has reached 270,000 people and in Yogyakarta, the incidence of HIV continues to rise annually.^{2,4}

Vertical transmission (mother-to-child) is a major pathway for HIV infection in children. The World Health Organization has declared that without preventative interventions, 40% of babies born from infected mothers would themselves be infected. The focus of prevention is divided into three phases: pregnancy, labor, and breastfeeding. These three phases underscore the critical role midwives play in PMTCT. Midwife's knowledge about HIV lays the basic foundation that can influence people's attitudes and behavior. However, there are still midwives with negative attitudes and perceptions toward HIV/AIDS. Thus, it is paramount that it becomes part of their job to overcome HIV/AIDS with unique understanding and approach. Midwives' knowledge, attitude, and perception toward HIV are important determinants in overcoming the disease.^{5,6}

High coverage of HIV testing appears to be hampered by the failure of pregnant women to understand that testing is available. Good quality HIV pre-test information is central to ensuring that pregnant women know and accept the reasons for testing and return to collect their results, a prerequisite for those who test positive to complete the program.⁷

This study aimed to describe how midwives in Mother and Children Health Clinics in the Primary Health Care/Puskesmas implement the PMTCT program among pregnant women and factors that influence their role.

Method

This quantitative survey, conducted in 14 Puskesmas/primary health care in Yogyakarta City from April to August 2017, used cross-sectional design. We assessed all midwives working

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in primary health care in Mother and Children Clinics. Only clinics already implementing the PMTCT program were involved. The primary health care chosen was based on random sampling of all primary healthcare in Yogyakarta. The formula for the sample size was calculated of proportion with minimum sample size obtained was 72.43 respondent which was rounded off to 80 midwives, using simple random sampling. Selected respondents chose from a list of numbers and names of 14 primary health care midwives. Those who took part provided a written consent to participate.

This study used the theoretical framework approach of the [Precede-Proceed](#) Model.⁸ Independent variables consisted of the midwives' socio-demographic characteristics, such as age, marriage status, education level, work experience, HIV information available through lectures and socialization in the workplace, midwives' knowledge of HIV and PMTCT, plus their attitudes toward its implementation. These were predisposing factors, whereas midwives' perceptions about institutional support of the program were reinforcing factors and the facilities' availability to implement PMTCT was an enabling factor. The dependent variable was the midwives' role.

A self-administered questionnaire was used in this study. Midwives' knowledge was measured through multiple choice questions. True statements were scored as 1 and false statements were scored as 0. We then classified the scores into three categories so as to characterize the level of knowledge: higher (>70%); satisfactory (56%–69%) and unsatisfactory (<56%). On the other hand, we used a Likert scale to measure attitudes and categorized them as positive and negative based on the mean. The scoring was as follows: a positive statement Agree = 2, Disagree = 1, and Hesitant = 0. A negative statement Agree = 1, Disagree = 2 and Hesitant = 0. Level of perception used a visual analog scale scored from 0 to 10. Perception about institutional support was categorized as Supporting and Less Supporting. Perception about facility availability and PMTCT behavior was categorized as Good and Poor.

Descriptive statistics using frequencies and percentage was used to describe findings. Further, Chi-square test or Fisher's exact test was applied to determine the relationships between dependent and independent variables. Logistic regression was done for all variables with *p* less than 0.25 and to explain independent variables: midwives' socio-demographic characteristics (age, marital status, education, work experience, HIV information available through lectures and socialization in the workplace, midwives' knowledge about HIV and PMTCT, midwives' attitude

toward the implementation of PMTCT, midwives' perceptions of institutional support for the PMTCT program. The facilities' availability for implementing PMTCT was strongly associated with the dependent variable: the midwives' role in implementing the PMTCT.

Ethical clearance was obtained from the Ethical Committee Poltekkes Kemenkes Yogyakarta Number: LB.01.01/KE-01/XII/326/2017. A formal letter of permission for respondents included informed consent; they were informed that the data would be treated with utmost confidentiality.

Results

The study was conducted on 80 randomly selected midwives in 14 primary health care clinics in Yogyakarta City that were implementing the PMTCT program. The characteristics of the respondents are showed in Table 1.

Table 1. Respondents' Characteristics

Characteristic	Amount (n = 80)	Percentage (%)
Age		
> 28 y.o	37	46.2
≤ 28 y.o	43	53.8
Marriage Status		
Married	44	55
Unmarried	32	40
Widow	4	5
Education		
Midwifery subject D1	4	5
Midwifery subject D3	66	82.5
Midwifery subject D4/S1/S2	10	12.5
Work experience		
> 7 years	36	45
≤ 7 years	44	55
Information Availability about HIV through lectures	58	72.5
Information availability about HIV through socialization in the workplace	4	5

Table 1 shows that the majority of midwives were younger than 28 years old (53.8%), had D III education in midwifery (82.5%), were married (55%), and had worked for less than 7

years (55%). The main source of HIV information among respondents was via college lectures (72.5%).

Independent variables in line with the Precede-Proceed Model of health program planning and evaluation by L. W. Green were midwives' knowledge level, attitude, perception, experience and roles in implementing PMTCT. These are described in Table 2 below:

Table 2. Midwives' Knowledge Level, Attitude, Perception and Behavior in implementing PMTCT

Characteristic	Number of midwives (n = 80)	Percentage (%)
Knowledge level		
Higher	8	10
Satisfactory	32	40
Unsatisfactory	40	50
Midwives' attitudes toward PMTCT		
Positive	30	37.5
Negative	50	62.5
Perception of institutional support		
Supporting	36	45
Less supporting	44	55
Perception of facility availability		
Good	43	53.8
Poor	37	46.2
Midwives' role in implementing PMTCT		
Good	42	52.5
Poor	38	47.5

Note: PMTCT = Prevention Mother-to-Child Transmission

Table 2 showed that the majority of midwives' knowledge was categorized as unsatisfactory (50%). Most respondents had negative attitudes toward PMTCT (62.5%) and perceived that the institutions where they worked were unsupportive of their efforts to implement PMTCT (55%). The majority believed that there were enough institutional facilities to implement PMTCT (53.8%) and a similar majority (52.5%) held positive attitudes toward PMTCT.

Bivariate analysis was used to analyze association between independent and dependent variables. The relationship between independent and dependent variables is showed in Table 3.

Table 3. The relationship between midwife characteristics, knowledge level, attitude, perception about HIV/AIDS vs. their role in implementing PMTCT

Variable	Implementation of PMTCT						p-Value
	Good		Poor		Total		
	n = 42	%	n = 38	%	n = 80	%	
Age							
>28 y.o	18	48.6	19	51.4	37	100	0.678*
≤ 28 y.o	24	55.8	19	44.2	43	100	
Work experience							
> 7 years	18	50	18	50	36	100	0.857*
≤ 7 years	24	54.5	20	45.5	44	100	
Education Level							
D1 Midwifery	2	50	2	50	4	100	0.156*
D3 Midwifery	32	48.5	34	51.5	66	100	
D4/S1/S2	8	80	2	4.8	10	100	
Marriage Status							
Married	18	40.9	26	59.1	44	100	0.064*
Unmarried	21	65.6	11	34.4	32	100	
Widow	3	75	1	25	4	100	
Information available through socialization							
Yes	0	0	4	100	4	100	0.047*
No	42	55.5	34	44.7	76	100	
Information available through lectures							
Yes	29	50	29	50	22	100	0.634
No.	13	59.1	9	40.9	58	100	
Knowledge level							
Higher	3	37.5	5	62.5	8	100	0.016*
Satisfactory	23	71.9	9	28.1	32	100	
Unsatisfactory	16	40	24	60	40	100	
Attitude toward HIV/AIDS							
Positive	16	53.3	14	46.7	30	100	1.000
Negative	26	52	24	48	50	100	
Perception of facility							
Good	26	60.5	17	39.4	43	100	0.189
Poor	16	43.2	21	56.8	37	100	
Perception of institutional support							
Good	19	52.8	17	47.2	36	100	1.000

Poor	23	52.3	21	47.7	44	100
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*used Fisher's exact test

Note: PMTCT (Prevention Mother-to-Child Transmission)

Table 3 shows that midwives >28 years old mostly implemented PMTCT in the Poor category (51.4%), while those aged ≤28 mostly (55.8%) ranked as Good. Yet, statistically, this variable had no significance, with only a 0.678 p-value. Midwives who worked >7 years scored in the 50% category of PMTCT implementation, while those who worked ≤7 years were mostly “Unsatisfactory.” But this variable was also statistically insignificant, at p = 0.857.

Midwives with one year of midwifery education (Diploma 1) scored at 50%, midway between those who scored Good and Poor. Respondent with three years of midwifery education (Diploma 3) implemented PMTCT in the Unsatisfactory range (51.5%). Midwives with undergraduate midwifery degrees (Diploma 4), or more, mostly implemented PMTCT in a good category (80%). Still, statistically, this variable was insignificant, with p = 0.156.

Married midwives mostly implemented PMTCT in the Unsatisfactory category (59.1%), while unmarried and widowed midwives implemented PMTCT in a good category (65.6% and 75%). This variable, too, was not statistically meaningful, at p = 0.064. Most respondents claimed that they never received information about PMTCT provided by socialization in the workplace. This variable was statistically meaningful, with a score of p = 0.047. For the variable knowledge level, most respondents (71.9%) with satisfactory knowledge, implemented PMTCT in the Good category, while those with unsatisfactory knowledge levels tended to implement PMTCT in the below average or not good enough categories (60%). This variable was statistically meaningful, at p = 0.016.

The variable attitude included both those with positive and negative attitudes about implementing PMTCT, scored in the Good category, yet this variable was not statistically meaningful, due to p = 1.000. For variable perceptions about the most respondent facilities, those who had Good perception (60.5%) tended to implement PMTCT in the Good category, while those with poor perception (56.8%), implemented PMTCT in the Bad category. This variable was statistically not meaningful with p = 0.189.

Variable perceptions about institutional support showed that respondents who perceived institutions as good or poor implemented PMTCT in the Good category. This variable was not statistically meaningful with p = 1.000. From bivariate analysis, to conclude that the independent

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variables which statistically related to midwives' role in implementing PMTCT were knowledge level and information availability through socialization in the workplace.

Multivariate analyses were done to independent variables that totaled $p < 0.250$. The result of multivariate analysis is shown in Table 4.

Table 4. Multivariate Analysis Result

	B	Sig.	Exp(B)	95.0% C.I. for Exp(B)	
				Lower	Upper
Knowledge	1.836	.003	6.272	1.836	21.431
Constant	-19.209	.999	.000		

(Confidence interval 95%)

Table 4 shows that the level of knowledge is the most significant factor influencing midwives' roles in implementing PMTCT, with $p = 0.003$, OR = 6.2, and CI = 1.8–21.4.

Discussion

Vertical transmission of HIV from mother to child could be prevented by the PMTCT program. Midwives are professional health providers with important, direct roles to play in this regard. Yet, midwives' who implemented the HIV/AIDS prevention program that scored in the Good category in this study totaled just 52.5%. This number shows that implementation of PMTCT has not been very successful. Thus, it coincided with research done in Africa where implementation of PMTCT was just 56.9%, also very low.⁵

In the current study, as a part of PMTCT, most midwives counseled pregnant women to take the HIV test. They also performed the informed consent and the counseling after the test. Most midwives did not involve the husband. However, the midwives also did not use proper protection, e.g., gloves, as directed in the universal precaution standards. This coincided with research conducted in Medan City, where midwives' actions in dealing with PMTCT patients were not in accordance with existing PMTCT psychological and social support guidelines that midwives are expected to provide to HIV positive patients.⁹

There were several things that affected the midwives' ill-informed behavior. One was the low level of knowledge about HIV and PMTCT. More than 50% of respondents did not know that depleted counts of CD4 white blood cells (also known as T-lymphocytes) indicate immunodeficiency, a strong predictor of HIV infection. Likewise, studies conducted in Nigeria and Malawi revealed that pregnant women were frequently not given antiretroviral (ARV) drugs,

nor were their CD4 counts ascertained, resulting in high maternal mortality.¹⁰ The midwives also did not know about the type of ARV that could be consumed by pregnant women, the transmission trajectory of HIV, or how to properly conduct a labor assessment for HIV-infected pregnant women. Thus, it was likewise consistent with research conducted in Medan City, where midwife knowledge about PMTCT was rated Poor.⁹ Research conducted by El-Yakub Fatima Mohammed (2016) also showed low midwife knowledge of HIV PMTCT (65.7%).⁶

The primary source of information about HIV/AIDS for midwives in this study was college lectures. Midwives did not have up-to-date information regarding HIV prevention. Only 5% of midwives admitted having attended socialization about PMTCT. This, then, was also consistent with the Medan City research that found just one midwife who had been trained in PMTC programs.⁹ Research conducted by Setiyawati and Meilani on the initiation of service providers to conduct HIV testing demonstrated it to be the most influential factor on the behavior of HIV testing in pregnant women, so midwives need to understand these efforts.¹¹

Data analysis in this study shows the same thing as demographic data that have been earned, where the majority of midwives' knowledge regarding HIV and PMTCT were in the Low category with score values <56. The bivariate analysis also shows that the proportion of midwives who implemented PMTCT in the Good category were those who had enough or Good knowledge, while those who implemented PMTCT in the Unsatisfactory category were those who had low levels of knowledge.

Knowledge is one of the predisposing factors for an efficient health program, according to L. W. Green's Precede-Proceed Model. As stated Ogbanna K, Govender I, Tumbo J, "The high levels of knowledge of the PMTCT programme and generally satisfactory implementation" or *better practice is predicated on adequate knowledge.*" In line with those words, the health provider's knowledge affects the implementation of PMTCT. But as this study highlighted, midwives' knowledge was not affected by how much information they had but by their experience in implementing PMTCT itself. Knowledge was evidently the strong indicator of behavior in implementing PMTCT. Based on multivariate analysis in this study, midwives with Good knowledge implemented PMTCT in a satisfactory way four times more than those with Poor knowledge.^{5,12,13}

The study also found that midwives' behavior in implementing PMTCT was affected by the availability of information sources through socialization in the workplace. Information source

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availability was one of the enabling factors in the Precede Model. In line with those words, many of the midwives had multiple sources of information regarding PMTCT.^{8,12}

Socialization in the workplace usually would contain work steps, and facility availability for implementation of PMTCT. Some research declared that PMTCT implementation was closely related with facility availability. That study explained that in implementing PMTCT, a sufficient supply of latex gloves and clean water would decrease the fear to implement PMTCT.^{5,12,13}

Commensurate with the explanation above, in this study there were sufficient supplies of latex gloves and clean water. What caused the inadequate implementation of PMTCT, however, was the insufficient work periods and responsibilities of the midwives, as well as a lack of information sources about HIV and PMTCT provided by the institutions where the midwives worked. Nor did multiple sources of information translate into improved knowledge. In the future, standards of evaluation will be required to standardize the measures of service provision. Indicators should include funding, service providers, drugs, utilities, PMTCT activities, physical location, supervision, management, and training.^{6,14}

Pursuant to numerous studies, there were factors affecting midwife behavior toward the implementation of PMTCT. Two of them were attitudes toward PMTCT and perception of institutional support. In this study, however, these variables were not statistically meaningful. Midwives' perceptions toward implementation of PMTCT were mostly supportive, even if some of them still felt insecure about it. A major problem they encountered was the limited time available. While for institutional support, most midwives claimed that there was enough support, integrating interventions for prevention of mother-to-fetus HIV transmission, delivery, and breastfeeding, along with other healthcare services, required excess time commitment. Also needed was time spent improving midwife knowledge about the male partner in PMTCT.¹⁵⁻¹⁷

In previous studies, negative attitudes toward HIV/AIDS disturbed patients.¹⁸ Health workers' negative attitudes toward the disease made the patients, especially women, reluctant to do antenatal care.¹⁹ An overview of the effects of stigma on access to and utilization of care and prevention services is also felt by people living with HIV (PLWH).²⁰ But in this study, these variables were not statistically meaningful.

Conclusion

Midwives' knowledge levels about HIV/AIDS and PMTCT were mostly below average. They needed more information about PLWHA health indicators, and monitoring their status, antiretrovirals, the risk of mother-child transmission, and the childbirth process of HIV/AIDS mothers. Most respondents had negative attitudes toward implementation of PMTCT. They had preconceptions toward institutional support, claiming that the institutions were less supportive of PMTCT. They also declared their perceptions of facility availability were included in the Good category. They implemented PMTCT in the Good category but the Poor category was still high. Midwives with higher levels of knowledge about HIV/AIDS will be better equipped to apply PMTCT rather than midwives with less knowledge.

Recommendation

To optimize the PMTCT program, midwives need to improve their knowledge of HIV/AIDS and PMTCT. They also need workshops and socialization about the program and better regulation of the burden of work for midwives so that they get more time to implement the PMTCT in more effective ways.

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