European Journal of Molecular & Clinical Medicine
ISSN 2515-8260 Volume 07, Issue 03, 2020

Factors Related To HIV/AIDS Knowledge of Eligible Women

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Abstract: Data from Indonesia Demographic and Health Survey (IDHS) 2017 show the increase on the knowledge of prevention for HIV/AIDS among Women (49%) and married Men (55%). However, the factors that influence the increase of knowledge in the community, especially among eligible women (EW) are still unknown. On the other side, to increase the number of HIV voluntary counselling and testing (VCT) requires a good knowledge from community, so it is important to identify what factors that are related to HIV/AIDS knowledge. Therefore, this study aims to determine the factors associated with HIV/AIDS knowledge among EW.

This is a cross-sectional study using secondary data from IDHS 2017 (data couples record). Data were analyzed using the Structural Equation Modelling (SEM). This study analyses the relationship between predisposing, enabling and reinforcing factors with the HIV/AIDS knowledge of EW.

The results show that more than 75% of 8.838 EW had less knowledge about HIV/AIDS. There are 73.1% of respondents who have mobile phones, but only 4.9% of respondent access information about HIV / AIDS via the internet. In addition, there are 32.2% of respondents who have an elementary school education level or have no education attainment. From the results of PLS-SEM analysis, it is known that the education level and wealth index of EW are predisposing factors that influence EW's HIV/AIDS knowledge (p-value = 0,000). The frequency of reading the newspaper and the possession of mobile phone are the enabling factors that influence EW's HIV/AIDS knowledge (p-value = 0.025). Meanwhile, the factors of health workers and community meetings are the reinforcing factors related to EW's HIV/AIDS. Therefore, health promotion is needed to increase the number of women in continuing education, completing secondary education to higher education, and the innovation to use information technology to disseminate information about women's reproductive health to the community.

Keywords: HIV/AIDS, SEM, Eligible Women

1. INTRODUCTION

The World Health Organization (WHO) state that HIV continues to be a major global public health issue and having claimed more than 32 million lives so far. The case of people living with HIV were approximately 37.9 million at the end of 2018. Meanwhile, 1.7 million people were newly infected and 770.000 people died from HIV-related causes (WHO 2019). In 2018, The Asia and Pacific region was home to an estimated 5.9 million people living with HIV, while Indonesia is one of the country in this region. China, India and Indonesia even account for almost three-quarters of the total number of people living with HIV in the region (UNAIDS 2018). The online database of HIV/AIDS and sexual transmitted infection of Indonesia which managed by The Ministry of Health of Indonesia known as SIHA, show the

reported case of HIV infection in Indonesia until June 2019 counts 349.882 cases, while the reported case of AIDS from 2005-2019 counts 117.064 cases. The majority of this case found in group aged 25-49 years (71,1%). The most highest rate of AIDS found in non-professional staff (Employees) (17.887) and the second one is among housewife (16.854) (Ministry of Health, 2019).

The epidemiology study conducted in India found that most of the females were likely to get the infection from their spouse. Females also tend to seek and get medical attention at the latest stage of disease compared to men (Padyana et al. 2013). In the other side, there is still a stigma that affect women decision. The thought of death often occurred in women especially after contracting HIV. This thought disturbed their minds, making them accepting their deaths without doing anything (Wisotowardono et al., 2017).

WHO stated that the increased of HIV vulnerability is often associated with legal and social factors, which increases exposure to risk situations and creates barriers to accessing effective, quality and affordable HIV prevention, testing and treatment (WHO, 2019). In the other hand, it is require the well knowledge of HIV to make people participates in Voluntary Counseling and Testing (VCT).

Data from Ministry of Health of Indonesia in 2017 indicates the increase numbers of HIV cases that have been reported annually. While the numbers of AIDS are relatively stable. Then, the numbers of cumulative AIDS HIV infection up to December 2017 was reported as 280.623 cases, while accumulative numbers of AIDS from 1987 to December 2017 were recorded as 102.667. It shows that more ODHAs are found on HIV status before being categorized in AIDS phase. Yet, there are several new findings for unknown HIV occurrences. Hence, the escalation number of HIV findings should be initiated to decrease the existing gap, particularly by applying voluntarily HIV test. For that purpose, it takes community's proper knowledge on HIV/AIDS and HIV test. If the community has adequate information on HIV/AIDS and HIV test, it could raise the HIV test practices. It becomes important due to the existing stigma among peoples about HIV/AIDS that highly related to lack of knowledge.

Voluntary Counselling and Testing (VCT) program is one of the health strategies in community to suppress the spread of HIV/AIDS, the purpose is to alter the habits to healthier and safer one (Ministry of Health, 2015). This VCT program is expected to involve community actively and voluntarily in performing HIV test. VCT program is part of early detection program towards HIV virus that stated in Regulation of Health Ministry No. 52 article 7 about elimination of HIV spreading. Besides, VCT is one of 9 strategic recommendations to prevent and control HIV globally (Apanga, Akparibo, & Awoonor-williams, 2015). In its implementation, there are many factors that could influence or motivate a person in performing HIV test, one among others is knowledge. The research performed by Apanga, Akparibo, & Awoonor-williams (2015), indicated that some of respondents intend to perform the HIV test due to their curiosity in checking the HIV status, due to the reference of health workers, nearly-wed participants and proper formal education. On the contrary, the reasons for ignoring the test are lack of knowledge on locations for conducting the test, the worries on bad stigma and the beliefs that HIV cannot be cured. Another research was conducted by Wong (2013), demonstrated that once a person is considered himself has low risk of infection, will be the biggest obstacle to run the HIV test. Ethnic factor also involves in influencing low risk perception for experiencing HIV, then married man and living in the urban area are considered as other predictors that related with understanding of having low risk. Therefore, health promotion program is required to enhance the knowledge about HIV/AIDS and its infection, as well as the importance of HIV test.

Result data of SDKI in 2017 indicates the proper escalation on knowledge about HIV/AIDS prevention to women (49%) and to married men (55%). Hence, it is still unknown the factors that influence the community's knowledge increasing, specifically on eligible women (EW). Therefore, based on the background, it is important to conduct a research about "Factors that Influence the Knowledge about HIV/AIDS towards Eligible Women", hence it could be developed the policy that could improve the knowledge of eligible women about HIV/AIDS, and eventually could increase their participation in Voluntary Counselling and Testing For HIV.

2. LITTERATURE REVIEW

HIV (Human Immunodeficiency Virus) is defined as virus that attacks human body's immune system, hence body is no longer protected from the diseases. While AIDS (Acquired Immunodeficiency Syndrome) is defined as certain of symptoms that emerged due to the decreasing of body's immunity caused by HIV (Ministry of Health , 2017). An individual that suffers from HIV/AIDS is called as ODHA (People who live with HIV/AIDS).

Symptoms of HIV vary depending on the stage of infection. People infected with HIV initially do not experience symptoms such as fever, headache, rash or sore throat. But the longer the symptoms can develop other symptoms that weaken the immune system such as swollen lymph nodes, weight loss, fever, diarrhea and coughing. If without proper treatment, it can develop into severe diseases such as tuberculosis, cryptococcal meningitis, severe bacterial infections, and cancers such as lymphoma and Kaposi's sarcoma. HIV can be transmitted through bodily fluids from infected people, such as blood, breast milk, semen, and vaginal fluids. HIV can also be transmitted from a mother to her child during pregnancy and childbirth. In addition, receiving unsafe injections, blood transfusions and tissue transplants and medical procedures that involve unsterile cutting or piercing are a greater risk of contracting HIV. Individuals cannot be infected through daily contact such as kissing, hugging, shaking hands, or sharing personal objects, food, or water (WHO, 2016).

Knowledge and attitudes towards HIV / AIDS are the main factors that can influence risk perception, risk behavior, the use of prevention methods, HIV testing, behavior seeking treatment and care after diagnosis, and a supportive environment for people with HIV / AIDS (Mumtaz et al., 2019). The higher one's education can affect the mindset and reasoning power of a person and will be more rational and creative and open in accepting various efforts to improve health and be able to adjust to renewal (Wahyuningtias et al., 2018). However, inaccurate knowledge can also be a major barrier in preventing the spread of HIV / AIDS, so knowledge alone is not enough in preventing and limiting HIV infection among women of reproductive age because it must be balanced with attitudes involved in healthy behavior. Research in Canada found that among the socio-demographic characteristics, age, education, and religion are three things that are strongly related to comprehensive knowledge of HIV in women in Post-Soviet countries in Eastern Europe and Central Asia (Zainiddinov et al., 2018).

Characteristics of people who have good knowledge of HIV / AIDS:

1. Gender
   Mumtaz's shows that knowledge of women in Iran is higher than knowledge of men in various populations such as students in high schools, youth, teachers and even prisoners. Whereas teenage girls in Pakistan also have comprehensive knowledge that is far better than men (Mumtaz et al., 2019).

2. Education Level
   Higher incomes and especially higher education are associated with the possibility of having higher comprehensive knowledge about HIV compared to lower income and education (Zarei et al., 2018)

3. Social Economy
   Women in Lebanon who have high socioeconomic status also show better knowledge about HIV prevention and transmission when compared to women with lower socioeconomic status (Mumtaz et al., 2019).

4. Marital status
   Married women are more likely to have comprehensive knowledge about HIV / AIDS than unmarried women because the potential for married exposure is higher for HIV / AIDS infections (Zarei et al., 2018)

5. Educational institutions
   A small number of educational institutions can be the main source in gaining knowledge of HIV / AIDS as observed in different studies. Only 24% of high school students in Iran report getting HIV / AIDS knowledge from formal education and 15% from school book records. Meanwhile, 29% of students in Yemen heard about HIV / AIDS from teachers and 11.6% from religious teachers. While adolescents in obtaining HIV, information obtained from parents by 27%.

6. Television
   Information on HIV / AIDS is found most commonly through mass media or educational programs. In the Middle East and North Africa, television is reported as the preferred media, especially among young people, but it has also proven to be effective in disseminating information on birth control as part of a family planning campaign. Although television can be a tool that can reach a number of people at a low cost, it is not enough to spread knowledge comprehensively about HIV / AIDS including the different ways of transmission of infection and clinical manifestations of the disease (Mumtaz et al., 2019).

7. Internet
   Women who had access to mass media, compared to those who did not, did not differ significantly in terms of knowledge about HIV. However, the use of computers and the internet shows a statistically significant relationship with comprehensive knowledge about HIV. However, conditions in the mass media or electronic media in Iran have reportedly not been effective in educating people about HIV and other sexually transmitted infections. This is because the topic of HIV is considered socially taboo and too embarrassing to be discussed in the mass media (Zarei et al., 2018).

Adolescent girls and young women aged 15-24 years have a very high risk of HIV infection and accounted for 20% of new HIV infections among adults globally in 2015, while contributing 11% of the general adult population (WHO, 2016). Housewives can also be an HIV vulnerable group. In India, housewives have a higher rank than female sex workers, this is because housewives in India have excessive dependence on their husbands economically and this is the reason for wives to choose to remain silent even though they get unfavorable treatment from their husbands (Mohite et al., 2015). Based on the Ministry of Health 2017, the number of AIDS is more experienced by housewives than female sex workers (Ministry of Health, 2017).

Risk factors for HIV / AIDS transmission to housewives in the Asian region are more due to the behavior of husbands who have premarital sexual relations and / or sexual relations outside of marriage after they are married. Housewives who are in a condition of lack of knowledge and awareness about HIV / AIDS will tend to be silent because they consider HIV / AIDS to be taboo and sensitive for them to be discussed and the wife is worried that it will be a problem when talking to her husband (Hidayati *et al*., 2019)

3. MATERIAL AND METHOD

This research is an analytic research with cross-sectional approach, to identify characteristics and other variables on productive couples with HIV test behavior at the same time. This research employs the data from Indonesian Demographic and Health Survey/SDKI in 2017, that were issued by National Population and Family Planning Board/BKKBN. The population is couples record that documented by SDKI in 2017. The samples involve all samples that are logged in raw data couples record by SKDI in 2017, who are productive couples with ranged age of 15-49 years old.

This research employs data analysis with SEM model (Structural Equation Model) using Partial Least Square (PLS) model with Software Smart PLS version 3. SEM is defined as multivariate analysis that combines factor analysis with path analysis, which enables the relation test among variables simultaneously. The SEM model is an analysis that integrates empirical data analysis with theoretical construction of data analysis. It becomes the next stage of research after data acquiring.

Table 1. Demographic characteristics of the respondents

Characteristics of Respondents	**Frequency (n=8838)**	**%**
Age		
15-19 years old	163	1,8
20-24 years old	778	8,8
25-29 years old	1379	15,6
30-34 years old	1776	20,1
35-39 years old	1902	21,5
40-44 years old	1611	18,2
45-49 years old	1229	13,9
Recent Education		
Not going to school	180	2,0
Elementary School	2670	30,2
Middle School	4706	53,2
High School	1282	14,
Area of Living		
City	4418	50
Village	4420	50
Welfare Index		
Very Poor	1960	22,2
Poor	1761	19,9
Middle Class	1758	19,9
Rich	1691	19,1
Very Rich	1668	18,9

History of IMS		
No	8781	99,4
Yes	17	0,2
Do not know	9	0,1
Frequency of Reading the Newspaper		
None		
< 1x a week	5152	58,3
1x a week	2838	32,1
Everyday	837	9,5
Frequency of Listening to the Radio		
None		
< 1x a week	5264	59,6
1x a week	2532	28,6
Almost Everyday	1038	11,7
Frequency of Watching the Television		
None		
< 1x a week	360	4,1
1x a week	1006	11,
Almost Everyday	7464	84,5
Information Media of Poster		
No	8287	93,8
Yes	549	6,2
Do not Know		
The possession of Mobile phone		
No	2364	26,7
Yes	6463	73,1
The Utilization of Internet		
Never		
The last of 12 months	5516	62,4
Before the last of 12 months	3184	36,0
Do not Remember	138	1,6
The Information Source (Health Worker)		
No	3482	93,8
Yes	5354	6,2%
The information Source (Religious Institutions)		
No	7857	88,9
Yes	979	11,1
The Information Source (School/teacher)		
No	8403	95,1
Yes	433	4,9
The information Source (community meeting)		
No	7667	86,8
Yes	1169	13,2

The Information Source (friend)		
No	8773	99,3
Yes	63	0,7
The Information Source (workplace)		
No	8303	93,9
Yes	533	6,0
The Information Source (Internet)		
No	8400	95
Yes	436	4,9
Knowledge		
Less (<56% right answers)	6788	76,8
Adequate (56%-75% right answers)	1918	21,7
Good (>75% right answers)	132	1,5

Above data show that less than 75% out of 8838 EWs have less knowledge about HIV/AIDS. There are 73,1% respondents have mobile phone, yet only 4,9% of respondents use them to access the information about HIV/AIDS by internet, besides there are 32,2% respondents with elementary level of education or with no experience with formal education at all.

4. RESULTS

1. Factors that related with knowledge of eligible women on HIV/AIDS

The factors‟ analysis for the knowledge of HIV/AIDS towards pregnant women is conducted by using PLS-SEM WrapPLS 3.0 analysis, with two steps of analysis, which are measurement model analysis and structural model analysis.

a. Evaluation on Model of Outer Measurement

Validity evaluation uses cross-loading factor in which this validity is evaluated by identifying the correlation between score of indicator and constructs (loading factors) with the criteria of loading factor value that is bigger than 0,7 to be acknowledged as valid. Based on the calculation using WrapPLS 3.0, it is recognised only several factors that have outer loading > 0,7, which are level of education and welfare index that reflect predisposing factor. Variable of frequency in reading the newspapers and the possession of mobile phone reflect the enabling factor. While, variable of health workers and community meeting reflect reinforcing factor. Besides those 6 variables that represent each indicator, the cross-loading factor has the value <0,7. To maintain data validity and reliability, later, latent variable that has cross-loading factor < 0,7 will be expelled/eliminated. Convergent validity is performed by figuring out the value of Average Variance Extracted (AVE), with the criteria of AVE value that are bigger that 0,5. The result of construct in this research model is bigger than 0,5. It indicates good convergent validity.

Reliability test on each construct results high value, in which all values of composite reliability on entire construct is bigger than 0,7. Final model of PLS-SEM analysis for this research could be seen on below figure:

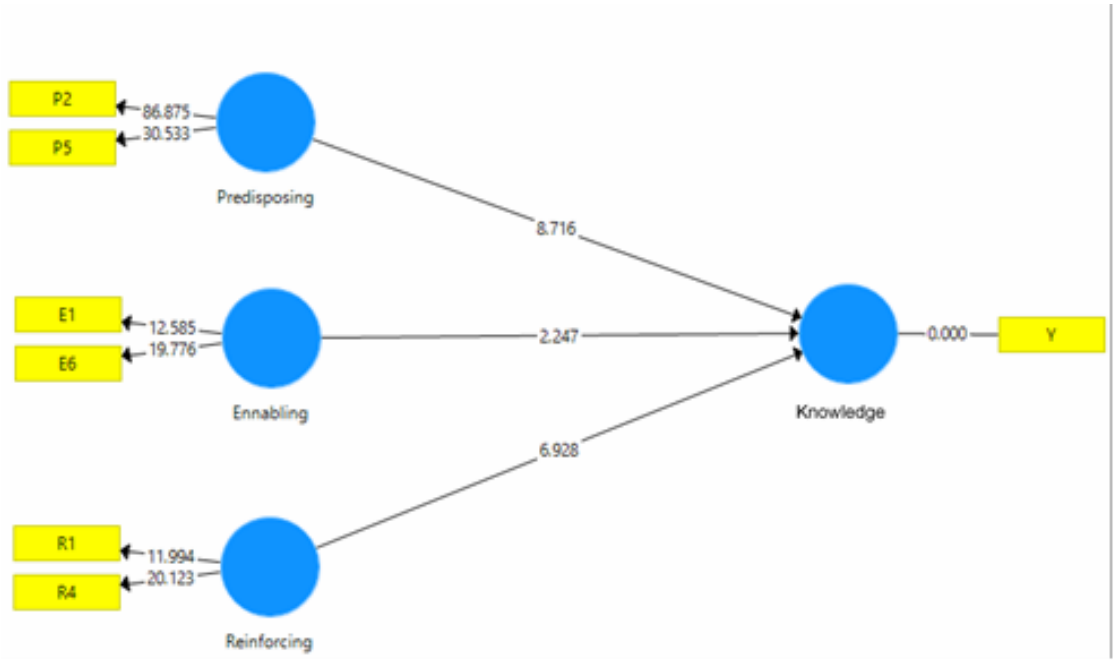

Figure 1. SEM Model

Description:
P2 = Level of Education
P5= Welfare Index
E1= Frequency of Reading the Newspaper
E6 = The possession of mobile phone
R1 = The source of Information about HIV/AIDS (Health Workers)
R4 = The Source of Information (Community Meeting)

From above figure, it could be resumed that the level of education and welfare are reflective indicator of latent variables, which is predisposing factor. The frequency in reading the newspaper and the possession of MOBILE PHONE are the reflective indicator of enabling factor, while health workers and community meeting are reflective indicators of intensified factors. Three of those factors influence the level of knowledge about HIV/AIDS towards EW.

b. Structural Evaluation

From the result of PLS-SEM analysis, it is notified the value of P <0,5 that indicates the correlation among predisposing, enabling and reinforcing factors with the knowledge of pregnant women about HIV/AIDS, as shown by below table:

Table 2. Structural Evaluation

Correlation	T statistic	*P Value*	Decision
Predisposing➔Knowledge	8,716	0,000	Significant
Enabling➔ Knowledge	2,247	0,025	Significant
Reinforcing➔knowledge	6,928	0,000	Significant

Based on above table, it can be seen the correlations among factors of predisposing, enabling and reinforcing with knowledge, by the value of T statistics >1,96 and p value <0,05. It showcases the existence of significance relationship among those three factors with

knowledge of HIV/AIDS towards EW that have positive correlation, with predisposing factor as the most influenced factor for knowledge.

5. DISCUSSION

Based on the results of the research, it is identified that majority of eligible women have less knowledge about HIV/AIDS. This could be seen from the percentage of eligible women who have less knowledge that calculated in the range of 76,8% and only 1,5% out of 8833 respondents who have proper knowledge on HIV/AIDS. It definitely influences low value of VCT towards eligible women. Whereas, according to Apanga, Akparibo, & Awoonor-williams (2015), VCT is one way to prevent and control HIV infection globally.

The result of analysis by considering the frequency distribution, indeed identifies that majority of eligible women have already owned mobile phone (73,1%) and 36% of eligible women use internet in the last 12 months, yet only 4,9% uses the device to access the information about HIV/AIDS from the internet as one of the information media. According to Ismangoen and Muchlis (2015), the utilization of internet could be appropriate media or facility to search the information about healthy reproduction, mostly for young people. The previous researches also suggest the existence of correlation between frequency of internet utilization with reproduction knowledge.

Based on source of information in obtaining the information about HIV, more than 90% respondents claimed to have inadequate information about HIV from health workers. More than 90% respondents also said for having no information related to HIV by posters. It reveals the weakness of health promotion attempts, as we realize that health promotion is the important basic effort to enhance community‟s health level. The most accessed information media is television. 84,5% respondents admit watching the television at least once a week, yet it is irrelated with the level of knowledge about HIV/AIDS.

1. Factor of Predisposing that Related with the Knowledge of Eligible women towards HIV/AIDS

Based on the result of SEM analysis, it is notified that predisposing factors influence the knowledge of EW about HIV/AIDS. Yet, only two factors that could explain predisposing factors validly and reliably, which are variables of education level and welfare index. Predisposing factor influences the knowledge of eligible women about HIV/AIDS with p value = 0,000, with positive correlation that stated better education will lead to better knowledge on HIV for eligible women. As stated by a theory revealed by Padila (2014), generally, the higher education someone has, the better knowledge level he will get.

In this research, respondents are distributed evenly at every level of welfare. No significance differences were found between one category to another. Nevertheless, the amount of poor and very poor respondents is calculated as more than 40%. It indicates that the welfare index is still low. In this research, welfare index has positive influence towards knowledge of eligible women about HIV/AIDS. The research was conducted by Parkhust (2010) revealed that HIV prevalence with stronger welfare index experienced by women, since biologically women are more vulnerable than men. Yet, it is not directly stated that welfare index influences HIV prevalence towards women.

Other factors, such as age, living location and IMS history are not considered as entirely insignificant toward productive woman‟s knowledge about HIV, but based on the result of PLS-SEM analysis, those variables have validity <0,7. It is considered as not valid and reliable enough to explain the construct variable, in this term, predisposing factor.

2. Enabling Factors that Related to The Knowledge of Eligible women towards HIV/AIDS

Based on PLS-SEM analysis result, it is notified that enabling factors have significance influence towards respondents‟ knowledge on HIV/AIDS (*p value* =0,025) with variable of newspaper‟s reading frequency and the possession of mobile phone, as its reflective indicators. In this research, it is stated that majority of respondents, 73,1% already had mobile phone, while only 9,5% respondents admitted reading newspaper once a week.

The ownership of mobile phone in this research, has proven able to explain the influence of enabling factors to the knowledge of EW about HIV. In line with statement of Sunarsi dan Dirgahayu (2015), explained that one of the purposes of IT utilization is to educate the nation, hence the positive impact of mobile phone utilization is the enhancement of knowledge. As one of the communication tools and electronic information media, the possession of mobile phone definitely correlated with the knowledge about HIV, although this research indicates that the access of internet has just being conducted in the last 12 months, with the value of 36,0%. This could explain the low value of knowledge of eligible women towards HIV, which is the internet utilization to access the information about health programs, particularly HIV/AIDS only reaches 4,9%.

The frequency of respondents who read newspapers once a week also considered as low, which is 9,5%. This impacted to the knowledge of eligible women towards HIV/AIDS. This correlates to the low level of exposure towards information source. The research conducted by Wisyastuti (2013) demonstrated that respondents‟ exposure to mass media will be related to the level of knowledge on HIV/AIDS.

Meanwhile, other information media still have influences toward knowledge on HIV/AIDS as stated previously by Wisyastuti (2013) concerning with the exposure to information media. Yet, from the result of analysis, other enabling variables might not valid and reliable enough to explain the influence of enabling factors towards the knowledge of HIV/AIDS on eligible women.

3. Reinforcing Factors that Related to The Knowledge of Eligible women Towards HIV/AIDS

Based on the results of this research, it is identified that the reinforcing factors have significant influence towards the knowledge of eligible women about HIV/AIDS (*p value* = 0,000), with the variables of health workers and community meeting as the reflective indicators, which are considered as valid and reliable. In this research, it is revealed that the frequency of respondents who have information about HIV/AIDS from health workers only calculated as 6,2%, while, the community meeting has become the source of information about HIV/AIDS for respondents almost twice as much from the information derived from health workers, which is 13,2%.

The insufficient information about HIV/AIDS from health workers could be the answer on the lack of knowledge on majority of respondents. Whereas, according to Soetji (2015), health workers have big influence in persuading the community to participate in health service. According to Wahyunita (2013), health workers are important component in executing the health services. They should be a motivator, communicator and counsellor. Therefore, they should play their role as a good counsellor to improve community‟s health, including to provide counselling to persons who require deeper information about HIV/AIDS. While, community meeting or group meeting could assist community‟s groups in implementing safe health actions by convincing the community‟s leaders to influence other people to have adequate knowledge, including the knowledge on HIV/AIDS. Other variables that included in this factor are not considered as completely insignificant in influencing the level of knowledge about HIV/AIDS. But based on the result of PLS-SEM, those variables

are considered as not valid and not reliable enough to explain the relationship between this factor and the knowledge of HIV/AIDS towards eligible women.
The previous research performed by Allender (2014) showed that peer-intervention is one of the accurate ways to be used as the primary prevention steps on juvenile problems. It is supported by the research conducted by Nies (2011) revealed that juvenile tends to cover their health issues due to privacy reason. Hence, it takes an activity that involves other juveniles to escort their peers in distributing the proper information about HIV/AIDS.

6. CONCLUSION AND SUGGESTION

Level of education and welfare index (Predisposing factor), frequency of reading the newspaper and the possession of mobile phone (Enabling factors), health workers and community meeting (reinforcing factors), are factors that correlate with the knowledge about HIV/AIDS towards EW. Hence, it takes promotive efforts to enhance the numbers of women who continue their studies to the higher level, information technology utilization, in this case, the utilization of mobile phone in distributing the health information. Besides, it needs the role enhancement from health workers to perform healthy reproduction promotions through education about HIV/AIDS, including by performing the counselling to people‟s group or community, such as group of Qur‟an recitation, social gathering, youth organization and others.

Conflict of Interest

No conflict of interest to be reported.

Acknowledgement

The researcher would like to acknowledge National Population and Family Planning Board of Indonesia that support this research and Institute of Research and Community Service of ‘Aisyiyah University Yogyakarta. This project supported by No Grant: 790/LB.201/H3/2019.

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