



## The Effectiveness of Health Education in improving HIV/AIDS Knowledge among Low Income People in Pondong Baru Village

Annita Viesta Nirmala Dewi<sup>1</sup>, Nurul Jannatul Wahidah<sup>1</sup>, Muzayyaroh<sup>2</sup>

<sup>1</sup>Midwifery Department, Faculty of Medicine, Universitas Sebelas Maret Ir. Sutami St. 36 A, Kentingan Surakarta 57126 telp. (0271) 662622, Indonesia

<sup>2</sup>Faculty of Health Sciences, Universitas Pesantren Tinggi Darul 'Ulum (UNIPDU), JKH As'ad Umar St No., Kampus Unipdu, Peterongan District, Jombang, Indonesia

\* Corresponding author

E-mail: [contact.anitaviee@gmail.com](mailto:contact.anitaviee@gmail.com)

### ABSTRACT

**Background:** The number of new HIV/AIDS infection has been increasing around the world. A way to decrease this problem is by increasing people awareness through giving health education. Based on some preliminary research, communities in Pondong Baru Village have not enough knowledge about HIV/AIDS.

**Objective:** This study aims to know the effectiveness of health education improving HIV/AIDS knowledge among low income people in Pondong Baru Village.

**Methods:** This research was quasy experimental with pre post-test one group only, conducted in Pondong Baru Village, Paser, East Kalimantan, on 13<sup>th</sup> December 2021. The population of this research were people in Pondong Baru Village with low income. The sample were as many as 31 peoples selected by purposive sampling. Data collect using questionnaires and the analysis used Wilcoxon signed rank test with SPSS IBM 25 version.

**Result:** Respondents' classified based on age groups is undefined (9,7 %), 20-40 years old (35,5 %), and >40 years old (54,8 %). Then, respondents' education levels is no education (16,1 %), primary school (74,2 %), and junior high school (9,7%). Lastly, respondents' parity is primipara (4,85 %), multipara (90,3 %), nullipara (4,85%). Before intervention, respondents had under average knowledge (93,5) and upper average knowledge (6,5%). After intervention, all respondents' had upper average knowledge. Knowledge level after intervention (Mean:12.32; SD: 1.05) was higher than before intervention (Mean: 0.32; SD: 1.27) and it was statistically significant ( $P < 0.001$ ).

**Conclusion:** It can be concluded that health education is effective in improving HIV/AIDS knowledge among low income people in Pondong Baru Village.

**Keywords:** *AIDS, Education, HIV, Knowledge*

---

## INTRODUCTION

---

AIDS (acquired immunodeficiency syndrome) is a symptom of some disease due to the suppression of the immune system by HIV infection<sup>1</sup>. Human immunodeficiency virus (HIV) is a global health problem that has not been addressed until now<sup>2</sup>.

People diagnosed with HIV should be given antiretroviral treatment (ARV) as soon as possible after the diagnosis and periodic monitors use clinical parameters and laboratories, including, measuring the number of viruses (viral load) in the blood via tests, if antiretroviral (ARV) are used it can be used to prevent HIV transmission to others<sup>3</sup>.

Southeast Asia is the second-highest HIV case after America<sup>2</sup>. The number of HIV infections is increasing in years<sup>4</sup>. Data from The World Health Organization (WHO) 2021 indicates that more than 38,4 million people worldwide diagnosed with HIV and 650.000 people have died from AIDS, but, only 75% of HIV sufferers have accepted the antiretroviral (ARV), so 25% have not received the antiretroviral (ARV)<sup>5</sup>.

Data from The Ministry of Health Data and Information Centre (2020) revealed that the number of HIV cases in Indonesia was high during the last 11 years in 2019, which was 50,282 cases<sup>6</sup>. However, in 2021 the number of HIV positive cases is the lowest in the last four years, with 36,902 reported<sup>7</sup>. On the other hand, compared with the previous average of 8 years, the number of new cases of AIDS tended to decline by 2021 it was reported at 5,750<sup>7</sup>.

The government has tried to lower the HIV/AIDS rate in Indonesia through Law No 21 of 2013 on HIV/AIDS management. KTHIV (counseling and HIV test) applications throughout health facilities including HIV tests in standard

medical care, as with the 2012 Law of Ministry of Health no. 37 on the introduction of the public health center laboratory, the spread of HIV tests in areas with epidemic rates on all patients who visit faskes as part of the standard of service<sup>8</sup>.

Governments also offer HIV tests on areas with epidemic levels of focused HIV tests on all pregnant mothers, those with TB, tests approved by patients are orally (no need not be written) and denied for them. If the patient refuses, however the patient is asked to sign the test rejection letter in writing<sup>8</sup>.

Governments have developed strategies to cope with HIV/AIDS in Indonesia in several ways, including improving the early availability of HIV/AIDS cases, increasing the coverage of Anti Retroviral Virus (ARV), expanding CD4 test and viral load (VL) test, asking local governments to reduce the cost of tests and treatment of HIV/AIDS<sup>8</sup>.

However, the number of HIV sufferers in Indonesia is still high<sup>9</sup>. The 10 provinces with the most new cases of HIV/AIDS in quarter II/2021 or from April - June 2021 are Central Java, East Java, West Java, DKI Jakarta, Bali, Papua, North Sumatra, Banten, East Kalimantan and South Sulawesi<sup>7</sup>. 90% of HIV infections come from sexual transmission<sup>4</sup>.

East Kalimantan ranks 9th with the largest number of HIV/AIDS sufferers in Indonesia<sup>10</sup>. The number of HIV AIDS sufferers in the Paser is 117 with HIV/AIDS from January until September 2020 and 16 deaths<sup>11</sup>. The number had been raised significantly by 2019 to 43 patients<sup>11</sup>. So, the Paser districts' government continues to seek to give understanding to the HIV/AIDS hazard community.

Previous studies claimed that while governments have been trying to lower the HIV/AIDS rate, it is still hampered by acceptance of HIV-related

societies<sup>12</sup>. Accepting a society can be influenced by knowledge, proving that public knowledge has poorly to do with HIV/AIDS<sup>13,14</sup>.

Person's level of knowledge is one of the keys to optimum health, and in this context, knowledge about HIV/AIDS is the acquisition of facts and scientific information about symptoms, how if we get contact, bad consequences and HIV/AIDS disease prevention strategies<sup>15</sup>.

Health workers who have a role in informing the public, one of which is midwife, in accordance with The Law 2019 No.4 Article 46, section 1 arranged that a midwife could provide an obstetrics service on female reproductive health<sup>9</sup>. Article 51 of the same laws also stated that a midwife has the right to conduct education, communication, information, and counseling according to the rules<sup>9</sup>.

According to a quick survey of low income people in the Pondong Baru Village, 90% of the people who has minimum wage do not know HIV/AIDS related information. In fact, very few communities have received health education on HIV/AIDS. Furthermore, the level of public education still allows them to receive only information via direct lecture methods. So, researchers feel that health education about HIV/AIDS still needs to be implemented in Pondong Baru Village. Thus, researchers are doing health education in the Pondong Baru Village in partnership with doctors, midwife, and Paser's social services to provide HIV/AIDS information to low income people in this village.

## METHODS

This was Quasy experimental with pre test and the post test design, conducted in Pondong Baru Village, Paser, East Kalimantan, on 13 December 2021. Health Education with lecture methods were given by doctor and

midwife only one day for 2 hours using power point media. The materials include definition of HIV/AIDS, symtoms of people who had HIV/AIDS, the risk factor, how to prevent HIV/AIDS, and how to treat people with HIV/AIDS.

The population of this research is the people in Pondong Baru Village. A total of 31 respondents that having low income (minimum wage) in Pondong Baru Village and selected by purposive sampling were become the samples in the studies.

The dependent variable is health education. The independent variable is knowledge about HIV/AIDS. The Data collected via questionnaire. The knowledge questionnaires of HIV/AIDS are composed of information related to how the causes, infections and risk factors are involved. The Chrobach's alpha for this questionnaire was 0,779 The consent form for participation in the survey is stated in the questionnaire that is distributed.

First, the data must be coding in Microsoft Excel 2019, then analysis using univariate and bivariate. In univariate analysis, respondent classified as age group, educational level, and pregnancy. Bivariate analysis respondent knowledge classified as under average and upper average knowledge. Respondent classified as upper average knowledge if respondents score is higher than mean at the pre-test and post-test. Then, the data were analized used Wilcoxon sign rank test because distribution data is abnormal on SPSS IBM version 25.

## RESULT

### 1. Respondents' Characteristics

**Table 1.** The Characteristics Respondents

Characteristics	Frequency Percentage	
	(n)	(%)
<b>Age Group</b>		
Undefined	3	9,7%
20-40	11	35,5%

>40	17	54,8%
<b>Educational Level</b>		
No Education	5	16,1 %
Primary		
School	23	74,2%
Junior High		
School	3	9,7%
<b>Parity</b>		
Primipara	1	4,85%
Multipara	28	90,3%
Nullipara	1	4,85%

Based on Table.1, a total of 31 respondents' classified individuals based on age groups, education levels, and parity. The most respondents were >40 years of age, coming from primary education, and multipara parity.

**2. Knowledge Before Intervention**

**Table 2.** Frequency Distribution of Respondents' Knowledge before intervention

Knowledge before Intervention	Frequency (n)	Percentage (%)
Under Avarage	29	93,5%
Upper Average	2	6,5%

Total 31 respondents are divided into two categories, those are under average and upper knowledge. Based on the baseline measurements (before intervention), 29 respondents had under average knowledge and 2 people had upper average knowledge.

**3. Respondents' Knowledge after Intervention**

**Table 3.** Frequency Distribution of Respondents' Knowledge after Intervention

Knowledge after Intervention	Frequency (n)	Percentage (%)
Under Average	0	0%
Upper Average	31	100%

The result was all respondents had upper average knowledge, without under average knowledge.

**4. Respondents' Knowledge Difference Before and After Intervention**

**Table 4.** Respondent knowledge difference before and after intervention

Knowledge	Mean	SD	P value
Before intervention	2,46	1,27	<0,001
After Intervention	94,77	1,05	

Based on table 4, the mean baseline knowledge (before intervention) 0,32 and increased once a health education was made 12,32. The result of Wilcoxon sign rank test is  $p < 0,001$ .

**DISCUSSION**

Based on the baseline measurements (before intervention), 54,8% respondents' age >40, 93,5% respondents' had under average knowledge. Understandably, age >40 has a curiosity about something as it enters the productive age, while it also affects one's capture and mindset 16. As it grows older, so will the perception and the mindset, so that the acquired knowledge increases, but as it turns out in this study, 90.3% have less knowledge, so it needs to be increased knowledge.

Knowledge plays a key role in determining intact behavior because it forms trust, providing the basis for decision-making and specifying behavior on specific objects so that knowledge will influence one's behavior <sup>17</sup>. The study is supported by the results of the study Prihantana (2016) that knowledge has a close relationship to the decision he will making as with knowledge a person has a basis for deciding his choices <sup>18</sup>.

The factors that affect knowledge are education, age, employment <sup>9,10</sup>.

Increased age has affected how to think and how to capture<sup>11</sup>. The higher the age then the more the capture grows but will decrease in the old age<sup>12</sup>. According to the study, more than 50% of respondents are under the age of >40.

Education is a process of changing attitudes, behavior through individual teaching and good education or group<sup>11,13</sup>. Education influences knowledge, the higher a person receives information the easier it is. With a higher education, a person is more likely to receive information both from others and from the media<sup>19</sup>. According to this study, 74.2% of those who graduated from elementary school and 16.1% of those who did not receive education caused 94.5% had under average knowledge.

Based on Table. 3, all respondents' had upper average knowledge after given health education (after intervention). This result reveal with Notoadmodjo's Theory, change in knowledge especially increase can be demonstrated by changes in individual behavior, family and community as principal objects of enlightenment<sup>10</sup>.

This theory is supported by studies that the prevention of HIV/AIDS is effective and efficient enough to increase public knowledge, as more and more people are getting information the better one's knowledge<sup>15</sup>.

People who have access to hiv-related information can take precautions, raise awareness about and have access to health insurance, lower risk of HIV infection, transmitting HIV, and, if needed, effectively working on their HIV virus load<sup>16</sup>.

Based on the table. 4, all respondents had high knowledge after receiving health education. One's knowledge can also be influenced and gained through information from TV, radio newspapers and health personnel, for example, by providing health education<sup>19</sup>. Health education is one of

the efforts to increase knowledge in communities<sup>20</sup>. Health education can be done in various media, including audiovisual media<sup>21</sup>. Such health education can be done by various methods, including the lecture method, information obtained by the method. It had never been done by local health, when the method of speaking according to studies such as the study done by flora al (2017) was found to be that teaching methods can improve knowledge<sup>20</sup>. So, this health education uses lecture methods with media power point. Selection of these methods and media was adapted to a community in new pondong who was more likely to receive talks from senior health workers in there.

The results of this study on table. 4., suggest that there has been an increase in the scores of knowledge before and after being given health education. Before intervention, the average knowledge score was 0.32. Based on the results of the study it may be known that prior to training, the respondents did not understand HIV and AIDS, the cause, the factor risk and transmitting HIV.

The study is in line with Walriyah (2018) that obtained a knowledge score before intervention was 61.37 and after interventions were 84.54<sup>17</sup>. This proves that health education can increase knowledge in communities<sup>18</sup>. Previous studies also reveal that there is an influence in health education in knowledge of HIV/AIDS, as there is in health education a learning process that can change attitudes from low to better attitudes<sup>22</sup>.

This study and other studies have consistently shown that health education using a lecture could improve respondents' knowledge<sup>21</sup>. The purpose of health education is to achieve changes in the behavior of individuals, families and communities in fostering and maintaining healthy behavior and a healthy environment, and to play an

active role in bringing about optimum degrees of health<sup>21</sup>.

The study is supported by the Notoatmodjo Theory that changes in knowledge in particular increase can be explained by changes in individual, family and community behavior as principal objects of health education<sup>10</sup>. Knowledge can be acquired from the senses as well as from the learning and stimulation of health information that either brings a response or a reaction to the learning process<sup>10</sup>.

Knowledge is a solid basis for determining one's actions that is influenced by information from the media as well as by family or friends and health professionals who constantly provide health information<sup>10</sup>. It was one of the efforts to educate nonformal people in order to increase their knowledge particularly about HIV/AIDS<sup>23</sup>.

The limitations of the study is low income people in Pondong Baru Village is the majority had low educational levels and could not read or write, so in the study it needed the help of researchers to read and write answers in the provided questionnaire.

We measure the health education immediately after the last session of interventions, so we cannot determine whether the improvement of knowledge is durable or sustainable. So, for the next study can measure knowledge within a few days following theoretical interventions.

---

### CONCLUSION

This study has found is that health education can turn out to be one way to increase in knowledge of HIV/AIDS in income - based groups low income people or those with low levels of education.

---

### ACKNOWLEDGEMENT

Authors thanks for Ministry of Social Services as donature, Paser's

Social Services, doctors and midwife at Pondong Baru's Public Health Center as speaker, Chief of Pondong Baru Village and all staf. Then, authors say thanks to all people that contribute during this research.

---

### REFERENCES

- 1 Sarwono Prawirohardjo. Ilmu Kebidanan. Jakarta: PT. Bina Pustaka Sarwono Prawirohardjo; 2020.
- 2 Unaidis GH, Statistics A. 2018 Fact Sheet 2019.
- 3 World Health Organization (WHO). HIV/AIDS 2022.
- 4 Chinese Center for Disease Control and Prevention. Number of HIV infections, number of cases, deaths and routes of transmission in China 2018.
- 5 World Health Organization (WHO). HIV data and statistics 2021.
- 6 Kementerian Kesehatan Republik Indonesia. Pusat Data dan Informasi Kementerian Kesehatan Republik Indonesia Profil Kesehatan Indonesia 2020 2021.
- 7 Kementerian Kesehatan Republik Indonesia. Profil Kesehatan Indonesia. 2022.
- 8 Kementerian Kesehatan. Program Pengendalian HIV AIDS dan PIMS. 2017.
- 9 Pemerintah Indonesia. Undang-Undang No. 4 Tahun 2019 Tentang Kebidanan. Pemerintah Pusat; 2019.
- 10 Kementerian Kesehatan Republik Indonesia. Pusat Data dan Informasi Kementerian Kesehatan Republik Indonesia Profil Kesehatan Indonesia 2020 2021.
- 11 Media Center Kabupaten Paser. 117 PENDERITA HIV AIDS DI PASER, 16 MENINGGAL DUNIA. Paser: 2020.
- 12 Susilowati T, Sofro MA, Bina Sari A, Permata Indonesia P, dr Karyadi

- Semarang R, Tinggi Analis Bakti Asih Bandung S. FAKTOR RISIKO Yang Mempengaruhi Kejadian Hiv/Aids Di Magelang. Prosiding: Seminar Nasional Rekam Medis & Informasi Kesehatan Standar Akreditasi Rumah Sakit (SNARS) Edisi 1 Terkait Rekam Medis 2018.
- 13 Titisari Nawangwulan A, Ilmu Kesehatan Masyarakat J, Ilmu Keolahragaan F, Negeri Semarang U. Stigma Anak dengan HIV/AIDS pada Masyarakat. *Higeia Journal Of Public Health Research And Development* 2020;4. <https://doi.org/10.15294/higeia/v4i4/34615>.
- 14 Situmeang B, Syahrizal Syarif, Renti Mahkota. Hubungan Pengetahuan HIV/AIDS dengan Stigma terhadap Orang dengan HIV/AIDS di Kalangan Remaja 15-19 Tahun di Indonesia (Analisis DataSDKI Tahun 2012). *Jurnal Epidemiologi Kesehatan Indoensia* 2017;1:35–43.
- 15 Gameda TT, Gandile AU, Bikamo DS. HIV/AIDS knowledge, attitude university students, Ethiopia and practice among dilla. *Afr J Reprod Health* 2017;21:49–61.
- 16 Badri PRA, Rosita Y, Peratiwi D. Analisis Faktor-Faktor Yang Mempengaruhi Pengetahuan Masyarakat Tentang Faktor Risiko Hiperurisemia. *Syifa' MEDIKA* 2020;10:141–8.
- 17 Novita. Tingkat Pengetahuan Tentang TB Paru Mempengaruhi Penggunaan Masker Di Ruang Paru Rumkital Dr. Ramelan Surabaya. *Jurnal Ilmiah Kesehatan* 2014;7.
- 18 Prihantana. Hubungan Pengetahuan Dengan Tingkat Kepatuhan Pengobatan Pada Pasien Tuberkolosis Di RSUD Dr. Soehadi Prijonegoro Sragen. *Jurnal Farmasi Sains Dan Praktis Poltekkes Bhakti Mulia* 2016;2.
- 19 Notoadmodjo S. Promosi Kesehatan dan Ilmu Perilaku. Jakarta: Rineka Cipta; 2014.
- 20 Flora H, Kolibu KF, Maramis RRF. Pengaruh Pemberian Penyuluhan terhadap Pengetahuan, Sikap dan Tindakan Pencegahan HIV/AIDS di SMK Negeri 1 Likupang Barat. *Jurnal IKMAS* 2019;4.
- 21 Ramadhani A, Ramadani ML. Pengaruh Pendidikan Kesehatan Dengan Metode Ceramah Dan Media Audiovisual Terhadap Pengetahuan Tentang Infeksi Menular Seksual Pada Remaja. *Jurnal Keperawatan Muhammadiyah* 2020:346–52.
- 22 Akbar Asfar, Wa Ode Sri Asnaniar. Pengaruh Penyuluhan Kesehatan Terhadap Tingkat Pengetahuan Dan Sikap Tentang Penyakit HIV/AIDS di SMP Baznas Provinsi Sulawesi Selatan. *Journal of Islamic Nursing* 2018;3.
- 23 Sufrianto, Ellyani Abadi, Jenny Qlifianti Demmawela. Penyuluhan Metode Ceramah dapat Meningkatkan Pengetahuan Tentang HIV-AIDS di Desa Kondowa Kabupaten Buton. *Jurnal Kesehatan Masyarakat Celebes* 2020;1.