

# The Voluntary Counseling and Testing (VCT) in the Roles of National HIV Reporting

Dian Afif Arifah<sup>1</sup>, Ratih Andhika Akbar Rahma<sup>1</sup>, Iklilul Faiz<sup>1</sup>, Ragil Retnaningsih<sup>1</sup>

{ dianafif@unida.gontor.ac.id }

<sup>1</sup>Occupational Safety and Health Departement of Health faculty, Universitas Darussalam Gontor

**Abstract.** The primary problem in HIV risk assessment is underreporting. The World Health Organization (WHO) and UNAIDS believe that the number of reported cases does not describe the actual number of HIV and AIDS cases in Indonesia. In 2016, based on the number of drug and prostitution users, the Ministry of Health estimated the number of PLWHA (people living with HIV / AIDS) in Indonesia is about 640.443 while the revealed case in the end of 2017 was only 280.623 (SIHA, 2017). The high gap between the estimated number of PLWHA and those who have reached HIV services caused many people with HIV/AIDS didn't get the ARV treatment early. This study tried to systematically explore how VCT facilities play a role in the reporting new HIV cases in Indonesia. This study using secondary data involves 497 districts/cities obtained from the 2017 HIV and AIDS Situation October - December 2017. The HIV as dependent or response variable is the number of HIV new cases reported in October – December 2017. The VCT variable is the total number of VCT facilities in the districts/cities. Data were analyzed using simple linear regression modelled using the R program version 3.2.3. This finding proves the role of VCT facilities in increasing the discovery of new HIV cases in Indonesia where an increase in the number of VCT services can increase the number of diagnoses of HIV cases by as much as 7.4 times. The influence of VCT variable on HIV variable was 67.6% (R Square 0.676).

**Keywords:** Voluntary Counseling and Test (VCT), HIV, Self-report

## 1. Introduction

Indonesia becomes the 5th most HIV-AIDS risk country in Asia. the number of HIV cases reported from 2005 to 2017 has increased every year. The cumulative number of HIV infections reported up to December 2017 was 280,623 cases. Since it was first discovered in 1987 until December 2017, HIV-AIDS has been 81.9% reported by 514 districts /cities in all provinces in Indonesia.

The primary problem in HIV risk assessment is underreporting ((Locke *et al.*, 1990). The amount of revealed case is like an iceberg phenomenon, where only a small portion (10%) of the actual number is visible. The World Health Organization (WHO) and UNAIDS believe

that the number of reported cases does not describe the actual number of HIV and AIDS cases in Indonesia. For example, in 1999, the number of HIV positive reported by the Indonesian Ministry of Health was only about 1000 cases, but WHO and UNAIDS estimate the actual cases is more than 26,000. In 2016, based on the number of drug and prostitution users, the Ministry of Health estimated the number of PLWHA (people living with HIV / AIDS) in Indonesia is about 640.443 while the revealed case in the end of 2017 was only 280.623 (SIHA, 2017).

AIDS is often associated with a variety of negative stigma. Forms of social punishment or stigma against AIDS include isolation, rejection, and discrimination to the HIV suspects. Violence or fear of discrimination, has prevented many people from taking an HIV test, checking how the test results are, or trying to seek a treatment. Early diagnosis allows persons to receive care and treatment to reduce viral load, increase immune function, and thereby reduce risk for transmission, morbidity, and mortality (Bradly et.al, 2014).

Recent findings show the significantly better health benefits for persons who start antiretroviral therapy (ART) earlier (Part, 2012). All persons diagnosed with HIV should receive medical care and be offered ART as soon as possible after diagnosis with HIV infection, regardless of CD4+ count or HIV viral load to prevent deterioration of immune function, prolong life, and decrease transmission risk (US Department, 2014). The use of antiretroviral will also increase the quality of life of PLWHA and decrease HIV transmission. Effective treatment will reduce up to 96% of HIV transmission (CDC, 2014).

The high gap between the estimated number of PLWHA and those who have reached HIV services caused many people with HIV/AIDS are undetected and only diagnosed when symptoms get worse. That's why it is difficult to estimate the actual number of HIV case Djauzi (2009).

Indonesian Ministry of Health in recent years has made strategy that focus on finding new cases of HIV by increasing the number of health care facilities providing HIV testing. There are some type of HIV testing service in Indonesia. Voluntary HIV counselling and testing (VCT) is a passive HIV testing service facilities that providing Health education, counselling and HIV Testing. At these facility, clients come to ask for an HIV test for various reasons based on their HIV-transmitted risk. This service emphasizes the assessment of the risk of HIV infection from a client. The counsellor and client discussing about the client's desire to undergo HIV testing and strategies to reduce the risk of contracting HIV. VCT is implemented in a variety of settings such as health service facilities, independent VCT services outside health facilities, community, etc.

VCT continues to play a critical role in HIV prevention, care and diagnose (Matovu, 2006). It is become an integral component of HIV prevention and care strategies worldwide (Denison, 2007). This study tried to systematically explore how VCT service patterns play a role in increasing reporting of HIV cases in 497 districts / cities in Indonesia.

## **2. Method**

There are 497 districts/cities in 33 provinces that periodically report new cases of HIV in Indonesia up to December 2017. This study involves all districts recorded in the HIV and AIDS Information System (SIHA).

HIV/AIDS is reported periodically every 3 months by the Disease Control and Environmental Health (P2PL) department, Indonesian Ministry of Health. This study uses secondary data obtained from the 2017 HIV and AIDS Situation October - December 2017.

HIV is the dependent or response variable, the number of HIV new cases reported in October - December 2017. The VCT variable is the total number of VCT facilities in the district.

Data were analyzed using simple linear regression modelled using the R program version 3.2.3.

## **2 result**

These results represent HIV cases of 497 districts in 33 provinces in Indonesia. As described in the following figure, the number of VCT facilities and HIV cases in each province are described shortly in the graphic from the smallest case to the highest.

**Figure 1. HIV/AIDS reported and VCT facilities at the end of 2017**

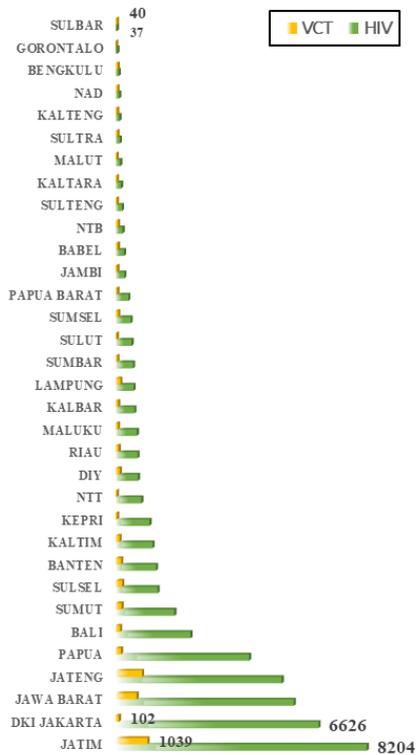
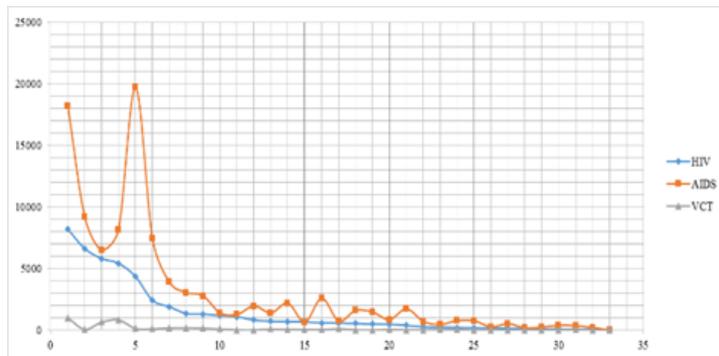


Figure 1 shows that East Java was the province with the highest HIV case with total case 8,204. The highest number of VCT facilities was also found in East Java (1039 facilities).

The discovery of new cases of HIV is an important step in diagnose PLWA status so that they get the right treatment or improving their quality of life.

In the following figure, we will see that the highest HIV new cases, PLWA and VCT facilities are in the same area.

**Figure 2. The number of HIV, PLWA and VCT facilities by district**



From the figure 2 known that the discovery of the highest number of VCT found in the district with the highest case of HIV of PLWA.

In addition, to describe the role of the VCT facilities in the reporting HIV cases, we do the cross-tabulation to compare the number of HIV / AIDS cases based on extincence of VCT facilities in the district.

**Table 1. Cross-tabulation of case based on extincence of VCT facilities in the district**

Case	the existence of VCT facilities in the district		Total case
	VCT +	No-VCT	
HIV	47.728 100%	0 0%	47.728
AIDS	90.621 89%	11.379 11%	102.000

Table 1 shows that there is huge difference in the number of HIV / AIDS between district with VCT facilities (VCT +) and rdistrict with no VCT at all (no-VCT). we can even see that there is no HIV cases reported in the district where there are no VCT facilities.

Linearity test results using simple linear regression showed that there was a significant linear model (Sig. <0.05) involving VCT variables and HIV as response variable with the following summary :

**Table 1. Coefficient (s) and summary of HIV-VCT Model**

Model	R square	95 % CI		
		Variable	B	Sig.
1	0.676	(Constant)	303.3	0.68
		VCT	7.420	0.00

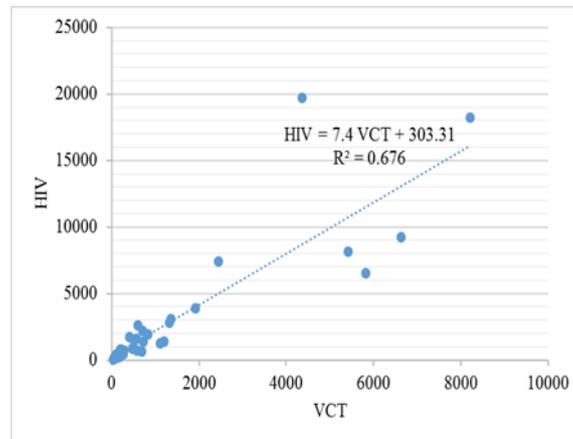
a. Dependent Variable: HIV

Based on model summary in the table 1., we can predict the number of HIV case reptred based on the number of VCT Facilities with the following equation:

$$HIV = 303.3 + 7.4 VCT \dots\dots\dots (1)$$

Equation 1 indicates that the increasing of VCT number would increase the number of HIV cases by 7.4 times.

The linear relationship between the number of VCT facilities and the number of HIV cases reported illustrated in the following figure.



**Figure 3 : Linear relationship between HIV and VCT variables**

Figure 3 shows the linear line formed by 2 variables showing a positive direction, that indicates an increase in the number of VCT facilities will increase the number of reported HIV cases.

R Square value 0.676 as shown in table 1 shows that the effect of the VCT variable on the HIV variable was 67.6% categorized to strong. It is mean the other factor excluded in this study contributed 32.4% in the HIV case reported.

### 3. Discussion

In developing countries, the essential point in HIV case situation is finding new case so it represented the actual data. In Indonesia, there are still high gap between the number of reported HIV cases and the estimated number of case.

Though the increase of reported HIV cases is an indicator of high incidence, but on the other hand, detecting new case is essential entry point to prevent transmission and improve an ARV treatment.

At this study we prove that the increasing number in reporting of HIV cases is an indicator that the better system report in Indonesia. It proved by a significant linear relationship between number of VCT facilities and the number of reported HIV cases. Based on the result of this study, it can also known that the district with no VCT service facilities report no HIV case.

In Indonesia, VCT is not the only model of HIV service facilities. There are some type of HIV service provided by health care facilities, including *provider-initiated HIV testing and counselling* (PITC). This study only involved VCT variables because many studies that prove the model Self-report is typically the only acceptable method of assessment (Napper 2010, Usitalo 2014, Tassiopoulos, 2010). [Uzochukwu](#) (2013) in his study revealed that 76.6% of respondents believe VCT can provide useful information on [HIV/AIDS](#) and VCT is obtainable mainly in teaching hospitals.

One of the weakness of this study is that we did not consider other HIV service facility type to be compared with VCT.

VCT model is more efficient because it relies on participant initiatives. But this method raises the passivity of health workers and facilities because they only have to wait. In culture-oriented country, like Indonesia, VCT may less effective because fear of stigma and discrimination might prevent to seek service and consultation. An active role of health workers is needed. so that high-risk participants want to have a check-up because the community's motivation to seek services may be low given the continued fear of stigma and discrimination.

Sustainable strategy or methods to increase participation and initiation of participants are needed to take advantage of this VCT facility. Another approaches may needed in order to achieve universal access to HIV prevention, care, support and treatment.

#### **4. Conclusion**

This finding proves that there is significant role of VCT facilities to increase number reported new cases of HIV in Indonesia. The increase in the number of VCT services could impact on the increase number of HIV cases reported by 7.4 times.

The influence of VCT variable on HIV variable was 67.6% (R Square 0.676), while 33 % is effected by other variables.

Sustainable strategy or methods to increase participation and initiation of participants are needed to take advantage of this VCT facility. Another approaches may needed in order to achieve universal access to HIV prevention, care, support and treatment.

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