



## UTILIZATION OF VOLUNTARY COUNSELING AND TESTING FOR ACCESSING ANTIRETROVIRAL BY WOMEN OF CHILDBEARING AGE IN WEST PAPUA

### *Pemanfaatan Voluntary Counseling and Testing untuk Mengakses Antiretroviral oleh Wanita Usia Subur di Papua Barat*

Mirna Widiyanti<sup>1</sup>, Setyo Adiningsih<sup>1</sup>, Evi Iriani Natalia<sup>1</sup>, Dedi Ananta Purba<sup>1</sup>, Eva Fitriana<sup>1</sup>  
Balai Penelitian dan Pengembangan Kesehatan Papua

E-mail: ninawidhy@gmail.com

Naskah masuk 29 Maret 2021; review 31 Agustus 2021; disetujui terbit 31 Desember 2021

#### Abstrak

**Latar belakang:** Wanita Usia Subur (WUS) dengan status Human Immunodeficiency Virus (HIV) memiliki berbagai masalah yang kompleks terkait dengan penyakit dan statusnya. Kebutuhan pengobatan antiretroviral untuk mengoptimalkan kesehatan dan meningkatkan kualitas hidup dapat mereka peroleh dengan mengakses pelayanan kesehatan. Salah satu layanan untuk mengakses antiretroviral tersebut adalah Voluntary Counseling and Testing (VCT).

**Tujuan:** Tujuan penelitian adalah untuk menganalisis faktor yang menjadi penentu pemanfaatan pelayanan VCT pada wanita usia subur dengan status HIV di Papua Barat.

**Metode:** Jenis penelitian adalah observasional dengan rancangan potong lintang. Unit observasi adalah wanita usia subur yaitu usia 15 -49 tahun, sedang pengobatan antiretroviral di VCT Rumah Sakit Manokwari, Sorong, dan Fakfak. Besar sampel 140 responden wanita usia subur. Pengumpulan data dilakukan dengan wawancara menggunakan kuesioner. Data diolah statistik secara univariat dan bivariat dengan uji chi square.

**Hasil:** Sebagian besar responden dengan intensitas tinggi dalam pemanfaatan pelayanan VCT adalah berusia 15-35 tahun, pendidikan menengah atas-perguruan tinggi, tidak bekerja dan status menikah. Variabel demografi dan predisposisi tidak berhubungan secara statistik dengan pemanfaatan VCT untuk pengobatan antiretroviral, namun ada hubungan antara faktor pemungkin (jarak) dengan nilai  $p=0,00$  dan faktor penguat (dukungan sosial) dengan nilai  $p=0,03$  terhadap pemanfaatan layanan VCT oleh wanita usia subur di Papua Barat.

**Kesimpulan:** Jarak dan dukungan sosial berhubungan secara statistik dengan peningkatan pemanfaatan layanan VCT pada wanita usia subur di Papua Barat. Jarak yang bisa diakses dengan mudah meningkatkan kunjungan pada layanan kesehatan serta dukungan sosial yang diterima wanita yang terinfeksi HIV akan meningkatkan pemanfaatan pelayanan VCT sehingga dapat meningkatkan kualitas hidup.

**Kata kunci:** Wanita Usia Subur, HIV, antiretroviral, VCT, Papua Barat

#### Abstract

**Background:** Women of childbearing age living with Human Immunodeficiency Virus (HIV) have many complex problems regarding to their disease and status. They need receiving antiretroviral treatment to optimize health and improve their quality of life by accessing health services. Voluntary Counseling and Testing (VCT) is a health service where antiretroviral treatment can be accessed.

**Objective:** The study aims to analyze the factors which determine the utilization of VCT for accessing antiretroviral treatment by women of childbearing age living with HIV in West Papua.

**Method:** This was an observational, cross-sectional study. The subject was women of childbearing age whose aged 15-49 years old, receiving antiretroviral treatment at VCT of Hospitals in Manokwari, Sorong, and Fakfak. Total were 140 respondents. Data collection was carried out by interview using questionnaire. The data were analyzed statistically by univariate and bivariate using the chi square test.

**Result:** Most of respondents with high intensity in utilization of VCT services were aged 15-35 years, senior high school-university education, unemployment and married status. Demographic and predisposing variables were not significantly associated, but there were associations between enabling factors (distance) with  $p$  value=0.00 and reinforcing factor (social support) with  $p$  value=0.03 in utilization of VCT services by women of childbearing age in West Papua.

**Conclusion:** Distance and social support are significantly associated with utilization of VCT services by women of childbearing age in West Papua. The easily accessible distance increases their visitation to VCT. In addition, the social support given to them had impact on increasing the utilization of VCT services, and finally these may improve their quality of life.

**Keywords:** women of childbearing age, HIV, antiretroviral, VCT, West Papua

## INTRODUCTION

Human Immunodeficiency Virus (HIV) is infectious disease which attacks the human body immune system. The HIV viruses are found in body fluids of infected people, especially in the blood, sperm, vaginal fluids and breast milk.<sup>1</sup> Time to time, the number of HIV infected people are increasing, not only in big cities but also remote villages.

The cumulative number of HIV case in Indonesia till 2020 are 409,857 people and 127,823 people already suffering from Acquired Immune Deficiency Syndrome (AIDS). Since 1987, the first time HIV is found in Bali, until December 2020 the HIV and AIDS cases have spread to 484 (90.07%) of 514 regencies and cities from all over provinces in Indonesia. The highest case percentage of AIDS is reported among group of productive ages 25-49 years old as 69%. Besides, the high HIV risk factors are found within group of unsafely heterosexual activities (48.8%), unsterile syringes usage (0.4%), homosexual and transgender activities (26.5%), unknown (17.3%), and others (7.5%).<sup>2</sup>

The HIV case reported based on gender are men as 67% and women as 33%, with ratio of men to women is 2:1. Although the case on men are higher than women, but the infection case on women always increase every year.

Based on the reported data, there are 2,286 people suffering from AIDS. The five provinces whose the highest number of AIDS, sequently, are West Papua, Bali, Central Java, West Java, and South Sumatra. The cumulative number of HIV and AIDS in West Papua are 4,434 and 1,405 people, respectively. Also as 838 People Living with HIV/AIDS (PLWHA) are already passed away.<sup>3</sup>

Recently, the number of HIV infected women are increase, especially the cases within group of housewife are higher than women sex workers. Some reason may be possible as the factors, such as the risk sexual activity of their husbands outside home, the lack awareness to gender equality, and the socially weak position of women as part of their community.<sup>4</sup>

The women of childbearing age are women in the range of aged 15-49 years old, married, widowed, and also single.<sup>5</sup> Women in this group term have the high risk of HIV transmission due to their sexual activity. In addition, the women can be pregnant during their childbearing age period. Unfortunately, the pregnant women suffering from HIV without ARV treatment will be possible to transmit the virus to their children.<sup>6</sup> The HIV transmission from mother to child is still the important issue in the HIV prevention programme.

Harm reduction is programme for HIV/AIDS prevention by United Nations Programme on HIV and AIDS (UNAIDS).<sup>7</sup> One of the harm reduction agenda is the Voluntary Counseling and Testing (VCT) services.<sup>8</sup> However, still a few of PLWHA who already accessed the VCT services in Indonesia, i.e. group of injecting drugs users (18%), women sex workers (15%), customers of women sex workers (3%), and man who have sex with man (15%). Thus, the true knowledge about HIV and AIDS among those vulnerable groups already increase but still not enough yet. Commonly, only man who have sex with man (43%), women sex workers (24%), the customers of women sex workers (24%), and injecting drugs users (7%) who able to identify the HIV prevention, correctly.<sup>9</sup>

The Care, Support, and Treatment (CST) activities for PLWHA can be conducted in the hospital, public health center, and places which be appointed by the goverment. West Papua already has 58 of counseling and testing for HIV and antiretroviral (ARV) services, 30 of sexually transmitted infections services, 48 of prevention of transmission from mother to child services and 23 of ARV services.<sup>3</sup> The CST implementation will be easily conducted through VCT. VCT services are very essential for PLWHA to prevent the HIV transmission, to access the ARV treatments and also its case management services. Thus, this will leads to no disease transmission and the enhancement of PLWHA life quality.<sup>10</sup>

---

\* Corresponding author  
(ninawidhy@gmail.com)

The less utilization of health services can be affected by some factors as predisposing, enabling, and reinforcing factors. The predisposing factor such as the individual knowledge, attitudes, and stigma. The enabling factor included the availability of health facilities, infrastructure, accessibility, and the easy way to reach the health services in terms of distance, cost, and availability of transportation facilities. While, the reinforcing factors such as attitudes and families behaviour, health workers, and community leaders.<sup>11</sup>

The aims of our study were to analyze the factors which determine the utilization of VCT for accessing antiretroviral (ARV) treatment by women of childbearing age living with HIV in West Papua.

## METHODS

This was an observasional, cross-sectional study. The study was conducted in West Papua Province, at VCT of Manokwari hospital, VCT of Sele be Solu Sorong hospital, and VCT of Fak-fak hospital, during May to July 2019. Total subjects were 140 respondents. The inclusion were women of childbearing age who living with HIV, aged 15-49 years old, receiving ARV therapy.

The dependent variable was the utilization of VCT. While, the independent variables were demographic factor (age, education, profession

status, marital status), predisposing factor (attitude, stigma), enabling factor (distance, transportation), and reinforcing factor (social support, health guarantee).

Data collection was carried out through interview, and also observation using questionnaire which already test for validity and realibility. The data were analyzed univariate to show the frequency and proportion of each variables, and bivariate to identify the association between dependent and independent variables. The statistic analysis using chi square test with significancy of  $\alpha=0,05$ .

## RESULT

Table 1, the characterization of women of childbearing age living with HIV (CLWH) whose high intensity in utilization of VCT services were aged 15-35 years, senior high school-university education, unemployment and married status. The women of CLWH already access the VCT services without experiencing negative stigma were about 95.7%, while the rest of them still experienced with negative stigma. The proportion of women of CLWH whose health guarantee were higher than no health guarantee, and also the women of CLWH using the public transportation to reach the VCT were higher than using the private transportation.

**Table 1. Characterization of Women of Childbearing Age Accessing VCT Services from May to July 2019 in West Papua**

Variables	Category	Frequency	Percentage
Age	15-35 years old	71	50,7
	36-49 years old	69	49,3
Education	Elementary-Junior school	37	26,4
	Senior high school-University	103	73,6
Profession status	Unemployment	72	51,4
	Working	68	48,6
Marital Status	Single	69	49,3
	Married	71	50,7
Negative Stigma	Without negative stigma	126	90
	With negative stigma	14	10
Distance	Near	107	76,4
	Far	33	23,6
Health Guarantee	Yes, have	118	84,3
	No, have not	22	15,7
Transportation	Private transportation	63	45
	Public transportation	77	55
Social Support	No, have not	41	29,3
	Yes, have	99	70,7
Attitude	Positive	134	95,7
	Negative	6	4,3

Table 2, the variables of age, education, profession, marital status (demographic factors) were not significantly associated with the

utilization of VCT by women of CLWH in West Papua. Statistically, the result showed all of its  $p$  value  $> 0,05$ .

**Tabel 2. Association of Demographic Variables with VCT Utilization by Women of Childbearing Age Accessing VCT Services from May to July 2019 in West Papua**

Variables	Category	Utilization of VCT services		<i>p-value</i>
		Low	High	
Age	15-35 years old	17	54	0,540
	36-49 years old	17	52	
Education	Elementary-Junior school	9	28	0,579
	Senior high school-University	25	78	
Profession status	Unemployment	17	55	0,502
	Working	17	51	
Marital Status	Single	16	53	0,845
	Married	18	53	

Table 3, the predisposing factors were not significantly associated with the utilization of VCT. However, the variable of distance (enabling factor) and social support (reinforcing factor) were significantly

associated with utilization of VCT ( $p$  value  $< 0,05$ ). The tendency to utilize the VCT services was high among women of CLWH whose homes were near to VCT services and given social support.

**Tabel 3. Association of Predisposing, Enabling, and Reinforcing Factor Variables with VCT Utilization by Women of Childbearing Age Accessing VCT Services from May to July 2019 in West Papua**

Variables	Category	Utilization of VCT services		<i>p-value</i>
		Low	High	
<i>Predisposing factor</i>				
Attitude	Negative	28	5	0,549
	Positive	6	101	
Negative stigma	Without negative stigma	28	95	0,545
	With negative stigma	6	11	
<i>Enabling factor</i>				
Distance	Near	6	100	0,000*
	Far	28	6	
Transportation	Private transportation	12	51	0,236
	Public transportation	22	55	
<i>Reinforcing factor</i>				
Social support	No, have not	5	36	0,033*
	Yes, have	29	70	
Health guarantee	Yes, have	29	89	0,547
	No, have not	5	17	

## DISCUSSION

This study found the age was not significantly associated with the utilization of VCT by women of CLWH in West Papua. The utilization of VCT by them whose age 15-35 years old almost as same as by them whose age 36-49 year old. Although, statistically the age was not significantly associated with the utilization of VCT, but other study found the age affecting the utilization of health service. The age determined the increase of diseases incidence, the change of morbidity pattern, and the determinants of health service needs.<sup>12,13</sup> Respondents utilized the VCT services in West Papua were women of childbearing age in the range of 15-49 years old and sexually active. This corresponds to the UNAIDS report that as 90% of women living with HIV in Asia were infected by the virus from their husband or sexual partner. The data also reported the HIV transmission from men to women was oftenly higher than the transmission from women to men.<sup>14</sup>

The education of women of CLWH was not significantly associated with the utilization of VCT services. In this study, the utilization of VCT was higher among women of CLWH whose senior high school-university education than those whose below senior high school-university education. Generally, the person whose high education would tend to utilize the health services as well as possible.<sup>15</sup> The PLWHA graduated from senior high school-university visited the health services more often than those with less education.<sup>11</sup> A study in Nigeria Africa found higher education level increase accessibility to follow ARV therapy.<sup>16</sup> In the opposite, study in India stated education level was not associated with access to health services but it was associate with residence and the appointment to meet medical workers.<sup>17</sup>

The profession status was not significantly associated with utilization of VCT by women of CLWH in this study. Both the worker and unemployment women of CLWH had utilized the VCT services in West Papua, although the number of unemployment women of CLWH

were slightly higher than the worker. A report showed as 45% of PLWHA had lost their jobs because be fired or be forced to resign.<sup>18</sup> Other study found many PLWHA had covered their HIV status to prevent job loss, thus they still able to fulfill their financial needs and healthcare cost.<sup>19</sup>

In this study, the marital status was not significantly associated with utilization of VCT by women of CLWH. Both of them, married or single had utilized the VCT services. This was different to a study in Africa found association between marital status with health services accesibility and adherence to ARV therapy. The married people suffering from HIV would tend to have positive attitudes which affect their accessibility and adherence to ARV therapy.<sup>16</sup> The marital status might affect person during healthcare seeking. Generally, the unmarried women or widowed were less to seek healthcare than married women. This might be affected by some factors, such as keeping close the disease status, and economic factor, i.e. had no income since be a widow or jobless. Although the PLWHA could access ARV drugs freely in VCT, but they still spending money to access other healthcare services.<sup>11</sup>

The attitudes and stigma were not significantly associated with VCT utilization by women of CLWH in this study. Most of the respondents never experienced with negative stigma while accessing VCT. The negative stigma existance inside the health services could destruct the PLWHA's trust to health facilities where they accessing the treatments. Next, this might reduce their participation in the programme. The negative stigma potentially made the PLWHA be objection to open their HIV status, especially to their family and medical workers related to medication. Thus, the negative stigma must be eliminated. Stigma elimination could be carried out through health education, such as health promotion.<sup>14</sup> The negative stigma toward PLWHA during access health services could obstruct the utilization of those services, affect the PLWHA's trust and their knowledge about HIV and AIDS, and might degrade their confidence.<sup>16,20</sup>

The variable of distance (enabling factor) was significantly associated with the utilization of VCT by women of CLWH, with p value <0,05. The house distance which close to VCT service was very essential for women of CLWH in West Papua. The site of this study was located in VCTs inside the capital of regency or urban area. Therefore, the respondents proportion whose residence near with VCT services were about 71% of them. A study in Kenya Africa indicated the women lived in urban area had probability accessing health services 2.7% higher than who lived in rural area.<sup>21</sup> The health services, the drugs supplies and drugs distributions in urban area were faster and more adequate than in rural area.

Moreover, the regencies as sites in this study had enough smooth transportation. Besides, the VCTs locations were easy to reach using public transportation. Also, the VCT's services waiting time was not too long Thus, the women of CLWH always come to VCT accessing ARV drugs at least once a month, even though they had to pay the extra cost for long-distance transport. A study in Malawi stated the VCT services were less utilized by the group of PLWHA who sexually active due to accessibility issue to the services. Though, the highest prevalence of HIV/AIDS were among group of aged 15-24 years old, they could not access the services. Thus, the inadequate infrastructure were still a problem.<sup>22</sup> In Kenya, the VCT utilization was still low among women group even though the facilities already be expanded. Only as many as 15% from 87% of women could access VCT services. The rest of them could not access the VCT services because the geographical factor.<sup>23</sup>

Statistically, the social support (reinforcing factor) was significantly associated with utilization of VCT by women of CLWHA in this study. Most of women of CLWHA in West Papua receiving social support, both from medical workers and also peer community. The peer community social support could upgrade the knowledge about HIV/AIDS among the community members. Peer community provided the possible place to communicate and learn the update information of HIV/AIDS among the members, through the discussion

activities which involved the health workers and also seminar. The openness and comfort condition made the informations transfer were easier among them.<sup>24</sup> Another study found as 78.6% of women suffering from HIV/AIDS receiving support from people around them had utilized the health services well. PLWHA receiving social support had possibility 19.8% higher to utilize the health services.<sup>25</sup>

Social support made PLWHA feel not alone and still be loved, having good knowledge and sharing the information about HIV/AIDS, and comply to ARV therapy. Finally, these empower theirselves and improve their quality of life.<sup>26</sup> The limitation of our study are all this study site were located in capital city of the regencies, therefore the factors which determined the utilization of VCT services in rural area are still not represented yet.

## CONCLUSION

In conclusion, the distance accessibility and social support were significantly associated with increasing the utilization of VCT by women of childbearing age living with HIV in West Papua. The easy accessible distance increase their visitation to VCT health services, also the social support given to them has impact on increasing VCT utilization. Finally, these will improve their quality of life.

## RECOMMENDATION

We recommend the government of West Papua Province provide assistant to health services providers and patients using a proactive, comprehensive, and socio-cultural approach to increase coverage of VCT services and health promotion about the purpose and benefit of VCT services.

## ACKNOWLEDGEMENTs

The authors would like to thank the Head of Health Office, the Hospital Director, as well as the Person in Charge of VCT at Manokwari, Sorong, and Fak-Fak Hospital for their assistance, support and permission, so the research can run well and on time.

## REFERENCES

1. Suya Rakhmat Hidayat LDNF. Hubungan Pemanfaatan Pelayanan Kesehatan dengan Kepatuhan Minum Obat pada Odha di Puskesmas Temindung Samarinda. *Borneo Student Res.* 2020;2(1):215–20.
2. Dirjen P2P Kemenkes. Laporan Perkembangan HIV AIDS & Penyakit Infeksi Menular Seksual (PIMS) Triwulan III Tahun 2020. Jakarta; 2020.
3. Dinkes Prov Papua Barat. Jumlah Kasus HIV AIDS Papua Barat. Manokwari; 2016.
4. Kurnaesih E, Immunodeficiency H, Hiv V. Persepsi Wanita Usia Subur (WUS) ODHA dalam Berumah Tangga di Wilayah Kerja Puskesmas Jumpandang Baru Kota Makassar Tahun 2018. *J Ilm Kesehat Diagnosis.* 2018;12:320–8.
5. Badan Pusat Statistik. Pedoman Pewawancara Rumah Tangga dan Wanita Usia Subur (WUS) Survei DEMografi dan Kesehatan Indonesia 2012. Jakarta; 2011.
6. Diani Ruth. Faktor-Faktor yang Berhubungan dengan Kejadian HIV/AIDS pada Wanita Usia Subur (WUS) yang datang Ke Klinik VCT RSUP H Adam Malik Medan Tahun 2016. Universitas Sumatera Utara; 2016.
7. UNAIDS. UNAIDS [Internet]. Programme on HIV/AIDS. 2017. p. 1–248. Available from: [http://www.unaids.org/sites/default/files/media\\_asset/20170720\\_Data\\_book\\_2017\\_en.pdf](http://www.unaids.org/sites/default/files/media_asset/20170720_Data_book_2017_en.pdf)
8. Irmawati I, GP CV, Rasyid Z. Determinan Pemanfaatan Pelayanan Voluntary Counselling and Testing (VCT) pada Ibu Hamil di Wilayah Kerja Puskesmas Langsung Kota Pekanbaru Tahun 2020. *J Kesehat Komunitas.* 2020;6(3):335–41.
9. Suriyani; Mapeaty Nyorong; Sudirman Natsir. Faktor Pendorong terhadap Pemanfaatan Layanan VCT HIV dan Aids di Kabupaten Jayapura. *J Unhas [Internet].* 2014;1(1). Available from: <http://pasca.unhas.ac.id/jurnal/files/815d5e625df552218a2e06ba551c78a0.pdf>
10. Dirjen Bina KIA. Pedoman Manajemen Program Pencegahan Penularan HIV dan Sifilis dari Ibu Ke Anak [Internet]. Jakarta: Kementerian Kesehatan RI; 2015. Available from: [https://siha.kemkes.go.id/portal/files\\_upload/Pedoman\\_Manajemen\\_PPIA.pdf](https://siha.kemkes.go.id/portal/files_upload/Pedoman_Manajemen_PPIA.pdf)
11. Burhan R. Pemanfaatan Pelayanan Kesehatan oleh Perempuan Terinfeksi HIV / AIDS Health Service Utilization in Women Living with HIV / AIDS. *J Kesehat Masy Nas.* 2013;8(1):33–8.
12. Yagyu F. Factors affecting utilization of facilities caring for HIV / AIDS in Ho Chi Minh City , Vietnam. 2012; Available from: <https://cdn1.sph.harvard.edu/wp-content/uploads/sites/114/2012/10/RP259.pdf>
13. C. N, Den Borne B Van, De Vries NK. The Experiences and Complexities of Care-Seeking Behavior of People Living with HIV/AIDS: A Qualitative Study in Nigeria. *Soc Psychol Asp HIV/AIDS their Ramifications.* 2011;(October).
14. Yeni Tasa, Ina Debora Ratu Ludji RP. Pemanfaatan Voluntary Counseling and Testing Oleh Ibu Rumah Tangga Terinfeksi Human Immunodeficiency Virus. *J Kesehat Masy [Internet].* 2016;11(2):222. Available from: <http://journal.unnes.ac.id/nju/index.php/kemas/article/view/4495>
15. Prawesti NA, Purwaningsih P, Armini NKA. Faktor pendorong pemanfaatan layanan Voluntary Counselling and Testing (VCT) oleh lelaki suka dengan lelaki (LSL) di LSM gaya nusantara. *J Ners dan Kebidanan (Journal Ners Midwifery).* 2018;5(2):129–36.
16. Latifat K, Mobolanle B. Knowledge and attitude towards antiretroviral therapy and adherence pattern of HIV patients in southwest Nigeria. *Int J Infect Control [Internet].* 2014;10(3):1–8. Available from: <https://www.ijic.info/article/view/12971>
17. Kipgen J, Yesudian C, Marrone G, Lundborg C. Health service utilization among widows living with HIV/AIDS: an interview survey in Manipur, India. *Asia Eur J [Internet].* 2011;8(4):485–97.

- Available from:  
<https://econpapers.repec.org/RePEc:kap:asiaeu:v:8:y:2011:i:4:p:485-497>
18. Brandt LW. American psychology. [Internet]. Vol. 25, American Psychologist. 2021 [cited 2021 Mar 10]. p. 1091–3. Available from: <https://www.apa.org/topics/hiv-aids>
  19. Inter U, Task A. HIV / AIDS education [Internet]. 2021 [cited 2021 Mar 10]. Available from: <https://www.factlv.org/education.htm>
  20. Li L, Lee SJ, Thammawijaya P, Jiraphongsa C, Rotheram-Borus MJ. Stigma, social support, and depression among people living with HIV in Thailand. *AIDS Care - Psychol Socio-Medical Asp AIDS/HIV*. 2009;21(8):1007–13.
  21. Julie Namazzi. Determinants of using voluntary counseling and testing for HIV/AIDS in Kenya. *J Manag Policy Pract*. 2010;11:89–96.
  22. Daire J. Advocating for the Improvement of Adolescent VCT Services in Malawi. *Malawi Med J*. 2008;19(3).
  23. Epule ET, Mirielle MW, Peng C, Nguh BS, Nyagero JM, Lakati A, et al. Utilization rates and perceptions of (VCT) services in Kisii Central District, Kenya. *Glob J Health Sci*. 2013;5(1):35–43.
  24. Nurjasmie E. Peran Dukungan Sebaya Terhadap Peningkatan Mutu Hidup ODHA di Indonesia Tahun 2011. *Ikat Bidan Indones* [Internet]. 2018;1. Available from: [https://ibi.or.id/id/article\\_view/A20150112005/welcome.html](https://ibi.or.id/id/article_view/A20150112005/welcome.html)
  25. O OO, K TN, M MN. People living with HIV/AIDS and the utilization of home-based care services. *African J Microbiol Res*. 2011;5(20):3166–74.
  26. Khairurrahmi. Pengaruh Faktor Predisposisi, Dukungan Keluarga dan Level Penyakit Orang Dengan HIV/AIDS Terhadap Pemanfaatan VCT di Kota Medan. Universitas Sumatera Utara; 2009.