



COMPLIANCE WITH ANTIRETROVIRAL THERAPY AMONG MSM AT CLINIC X, JAKARTA

Kepatuhan Terapi ARV Pada LSL yang Berobat di Klinik X Jakarta

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Abstrak

Latar belakang: Kepatuhan terapeutik di Indonesia masih di bawah 80 persen dan dapat mengakibatkan peningkatan insidensi infeksi usus protozoanal, perkembangan AIDS yang lebih cepat, resistensi obat, kegagalan pengobatan, dan penularan virus ke orang lain.

Tujuan: Tujuan penelitian ini adalah untuk menggambarkan kepatuhan terhadap terapi antiretroviral pada LSL yang mencari pengobatan di klinik swasta dan menyelidiki faktor pendukung dan hambatan untuk retensi ART.

Metode: Penelitian ini menggunakan metode penelitian kualitatif dan data yang dikumpulkan melalui wawancara mendalam. Subjek penelitian dipilih dengan menggunakan *purposive sampling*. Data dianalisis menggunakan analisis isi.

Hasil: Informan berjumlah 7 orang, 4 ODHA, dan 3 petugas kesehatan. Hasilnya menunjukkan bahwa sebagian besar ODHA patuh dalam menggunakan terapi ARV dan mengikuti saran dokter. Faktor-faktor yang mendukung kepatuhan terhadap terapi ARV meliputi tingkat pendidikan, akses informasi, motivasi internal, hubungan pasien dengan dokter, dan dukungan sosial. Hoax, faktor yang terkait dengan pekerjaan, dan stigma adalah hambatan bagi orang yang hidup dengan HIV dalam mempertahankan kepatuhan terhadap terapi ARV.

Kesimpulan: Kepatuhan optimal terhadap terapi ARV perlu dipertahankan dan ditingkatkan karena dinamis dan dipengaruhi oleh berbagai faktor. Intervensi berbasis teknologi direkomendasikan dalam memantau kepatuhan ODHA dalam terapi ARV.

Kata Kunci: kepatuhan, terapi antiretroviral, hambatan, LSL, ODHA.

Abstract

Background: Therapeutic compliance in Indonesia was still below 80 percent and may resulted in increased incidence of protozoanal intestinal infection, faster AIDS progression, drug resistance, treatment failure, and transmission of the virus to others.

Objective: The purpose of this study was to describe adherence to antiretroviral therapy among MSM who seek treatment at private clinics and investigate facilitators and barriers to ART retention.

Method: This study used qualitative research methods and data collected through in-depth interview. The study subjects were selected using a purposive sampling. Data were analyzed using content analysis.

Results: The informants were 7 people include 4 PLWHA and 3 health workers. The results showed that most ODHA were compliant in taking ARV therapy and following doctor's advice. Factors supported adherence to ARV therapy include levels of education, access to information, internal motivation, patient relationships with doctors, and social support. Hoaxes, work related factors, and stigma are barriers to people living with HIV in sustaining ARV therapy adherence.

Conclusion: Optimal adherence to ARV therapy needs to be maintained and improved because it is dynamic and influenced by various factors. Technological interventions are recommended in monitoring PLWHA compliance in ARV therapy

Keywords: adherence, antiretroviral therapy, barriers, MSM, PLWHA.

INTRODUCTION

Compliance with Anti Retro Viral (ARV) therapy is one of the keys to the success of ARV therapy. Adherence to therapy is still a concern because ARVs are taken for life, cause side effect and stigma. Previous studies revealed optimal compliance in Indonesia are still below 80%.¹⁻³ Thus resulted in increasing the incidence of intestinal protozoa infections, leading to faster AIDS development, drug resistance, and treatment failure.^{4,5}

Based on the Situation Report on the Development of HIV-AIDS in Indonesia, July – September 2016, DKI Jakarta Province ranked in the 5th province with the highest incidence of new HIV infections and AIDS so it requires health care facilities that are able to reach people who need HIV services and ARV therapy, both public or private health care facilities.⁶ One of the HIV and ARV therapy services in DKI Jakarta is 2 private clinics owned by AngsamERAH Institution located in Menteng and South Jakarta.⁷ AngsamERAH Institution strongly upholds the philosophy of openness, therefore many key population groups including MSM feel comfortable using AngsamERAH health services. Seventy five percent of patients in AngsamERAH are male and 50 percent of them are MSM. Since the establishment of the AngsamERAH clinic at the end of 2013, KYA has provided tests to around 300 MSM people and around 20 percent of them are HIV positive and most of them continue with HIV treatment from KYA.⁸ In 2016, 85 percent of people living with HIV-AIDS (PLWHA) who accessed ARV therapy services in AngsamERAH had undetectable VL, still below the target of 90 percent undetectable VL in the blood.

A number of studies have identified factors associated with poor HIV medical care linkage, engagement, and retention. The main reasons for not complying with ARV therapy are being busy and forgetting.^{9,10} Other factors that

influence adherence to take ARVs are age, sex, knowledge, education level, ethnicity, type of occupation, duration of ARV therapy, illiteracy, depression, patient acceptance of his condition, improvement of health status after ARV therapy, motivation, alcohol consumption, drug use, family support, travel time to the hospital for more than 1 hour, availability of drugs, difficulty in remembering drug dosages, staff attitudes towards patients, and a good relationship between patients and health professionals.⁹⁻²⁰

Most studies examining factors associated with ART retention have been undertaken in Western countries. Even though HIV incidence in Indonesia is high and continues to increase and levels of ART retention are very low, there are still very few studies on ARV therapy adherence to PLWHA who access ARV services in private clinics in Indonesia, especially in MSM groups. In addition, most prior studies have used quantitative measures to identify factors associated with therapeutic non-compliance. Therefore, this study aims to describe the adherence of ARV therapy and to gain an understanding of barriers and facilitators of ART retention in one private clinic in Indonesia from the perspective of PLHIV themselves and health workers. These findings can help to guide the development of programs to improve the delivery of care to PLHIV with the aim of improving HIV-related health outcomes and decreasing future disease incidence.

METHODS

Study Design

A qualitative study with an exploratory descriptive design was used to further explore the level of compliance of PLHIV during ARV therapy and factors related to adherence to ARV therapy at the Clinic X in DKI Jakarta Province.

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Setting and Respondent

The informants of the study was 4 PLWHA undergoing ART and 3 health workers of Clinic X, DKI Jakarta in 2017. Purposive sampling method was used to select participants, and maximum variation in the selection of participants was observed. The inclusion criteria included speaking in Indonesian and willing to be interviewed. The data collected through depth interview and carried out immediately after obtaining the ethical pass and a research permit.

Participants were recruited through HIV medical service providers where individuals were approached directly by study staff. Announcements included study information and the study telephone number therefore the interested persons could call and be screened for eligibility. Written informed consent was obtained from all participants. The determination of the health workers informants was carried out by health workers who were more knowledgeable about their duties and work experience in both research sites.

The Variables, Instruments, and Measurements

Semi-structured, face-to-face and audio recorded interviews were used to collect data. The research team developed an interview guidelines by looking at the guidelines used in previous studies by Yuniar et al in 2011 regarding predictors of ARV compliance in Bandung and Cimahi. The interviews elicited detailed information about participants' (a) experience of HIV testing and ARV therapy; (b) the level of adherence in ARV therapy; (c) contributing factors for adherence to antiretroviral therapy; and (d) inhibiting factors for adherence to antiretroviral therapy. The interviews were conducted by the corresponding author in a private room (Mostly at Clinic X), and the duration of the interviews was between 60 and 90 minutes. The validity of the data is obtained by using triangulation data that is collecting data from different sources. In

this study the informants consisted of PLWHA, doctors and nurses.

Data Analysis

The in-depth interview process was recorded with a recording aid and then verbatim and content analysis were carried out. Qualitative data analysis performed in this study was using a flow of activities as follow: data collection, data reduction, data presentation, and finally draw a conclusion. Data analysis was performed interactively and continuously over time until the data was saturated. The qualitative data presented was already passed the reduction and verification of data, from the transcription of in-depth interviews to be research information/data.

Ethical Consideration

The study was approved by the Ethics Commission for Research and Community Service, Faculty of Public Health, University of Indonesia (letter number: 287/UN2.F10/PPM.00.02/2018). All participants provided prior written informed consent and were informed that they could withdraw at any time without negative consequence. They were assured that interviews would be completely confidential and results would not be assessed and would be reported anonymously.

RESULT

Informant Characteristics

All PLWHA informants were male, from the MSM group, aged <35 years and most had been taking ARVs for 3 years and completed their undergraduate education. The general information about the informants is presented in Table 1 for PLWHA and Table 2 for health workers. In the analysis of interviews, the following four themes were extracted: 1) Compliance to ART, 2) Reasons for forgetting to take ARVs, 3) Supporting factors for adherence to ARV therapy, and 4) Barriers to adherence in ARV therapy (Table 3).

Table 1. Characteristics of PLWHA

No	ID	Age	Education Level	Risk Factor	Duration of ART
1	Patient 1 (P1)	29	S1	MSM	3 years
2	Patient 2 (P2)	30-35	S1	MSM	3 years
3	Patient 3 (P3)	30	SMK	MSM	5 years
4	Patient 4 (P4)	35	S1	MSM	5 years

Table 2. Characteristics of Health Workers

No	ID	Age	Education Level	Job Position	Length of Work
1	Health Workers 1 (HW1)	50	S2	Doctor	>5 years
2	Health Workers 2 (HW2)	57	S1	Doctor	>5 years
3	Health Workers 3 (HW3)	39	D3	Nurse	>5 years

Table 3. Summary of Research Findings

Categories	Description
Benefits felt after taking ARVs	Feel healthier, calm at work, look the same as healthy people in general, do not transmit viruses, and are not easily infected with other diseases
Reason for forgetting to take ARVs	Busy at work, overslept
Supporting factors for adherence to ARV therapy	Access to information, internal motivation, patient doctor relationships, education levels, and social support
Inhibiting factors for adherence to ARV therapy	Work, hoaxes, use of herbal medicines, and HIV-related stigma.

Compliance to ART

All PLHIV stated that they had never experienced a change in therapy. One PLWHA said:

"Never, from the beginning I took the same medicine." (P3).

Patient compliance was mostly good and only a small proportion dropped out due to taking drugs other than antiretroviral drugs such as traditional medicine. Another reason is that they do not need medication and feel better about their physical health. Regarding this matter, one of health workers said:

"Compliance is actually good here. Mostly, 90% had optimal adherence. 10% have dropped out of medicine, tried other medicines, like traditional medicine." (HW1).

Efforts to remain compliant in taking ARVs carried out by PLWHA are to set an alarm, to be reminded by others, for example spouses and friends. As stated by an ODHA:

"Alarm and sometimes also reminded by a boyfriend or close friend" (P2).

The clinic also sets reminders or alarms for visiting and ARV collection schedules. Staff at the clinic will contact patients to remind them to check up and take ARVs. If there are PLHIV who forget not to take ARV according to their schedule, then health workers advise them to drink immediately when they remember. Health workers then remind them to always drink on time because it is feared that unwanted events will occur, such as drug resistance and must be replaced with new drugs that may be more expensive and difficult to obtain.

"The advice is that they set an alarm or reminder, so if someone calls and they say they forgot to drink according to schedule, then I say drink immediately whenever they remember." (HW1).

As for the patient's self-report, most of the key informants stated that the patient consciously and voluntarily reported to the doctor when he forgot to take ARV or wanted to go out of town, while other key informants stated that the doctor must proactively ask about patient compliance. In this regard, one of informants said:

"Well they like to say that they forget to drink or if they want to go out of town." (HW3).

Reasons for not taking ARV according to schedule was forgetfulness, work, and falling asleep. Health workers stated that the reasons for non-compliance expressed by PLWHA were due to forgetfulness and only a small number stated that the drugs were missed. Most said they forgot to take ARVs on schedule but did not cause symptoms and side effects, as one of the informants said:

"Sometimes he missed his schedule, but usually it's because he forgot, so he doesn't drink regularly. For those who are far away, outside DKI, as far as I know they drink regularly. Those who work also continue to work, because if they are already on ARVs, they can work normally." (HW2).

Supporting factors for adherence to ARV therapy

Factors that increase adherence to ARV therapy in this study include access to information, internal motivation, patient doctor relationships, education levels, and social support. Access to information is seen as one of the factors that helps improve adherence to PLHIV in ARV therapy. Informants decided to take an HIV test and also take ARV therapy after finding information about it on the internet. They are looking for a place that

guarantees privacy and more flexible opening hours through the internet and information from people they know, be they spouses, friends, or NGOs. This refers to the statement of PLWHA:

"I decided to start ART immediately. I told you from the beginning, at that time I first consulted at the health center, in the Manggarai area, right, and after that I didn't feel good, it wasn't good if I asked permission every working day. Finally I got information that I can start my therapy in the Angsamerah Polim, then I moved there and started my ART." (P3). Another PLWHA said: *"At that time I took HIV test at Carolus and was told that I had to take ARVs. But I don't want to start ART there. Finally I got information from my boyfriend about Angsamerah. I find out that it is safe in the angsamerah, so comfortable, and not queuing." (P4).*

Regarding this matter, health workers said:

"Others maybe have seen information about us on our website. We maintain confidentiality, therefore patients feel comfortable. We have visit by appointment system. Patients should make an appointment with us thus they came to clinic as scheduled and didn't to wait like at other places. They could discussed with health workers here 30 minutes to an hour, each patient. Thus, they could freely tell their stories and we can get a fair amount of information." (HW2).

Internal motivations such as wanting to be healthy and fear of being exposed to opportunistic infections affect the regularity of PLHIV taking ARVs. Other motivations include fear of looking thin, wanting to look like a healthy person in general, and being able to work calmly and safely as usual. In this regard, one of the informant said:

"As for me, I want to be healthy, my friends also like to remember, doctors and from the clinic also often remind me." (P2).

Other informant stated:

"What encourages me to drink diligently is because I also need to be healthy, especially since I'm not the person who does not open status, the motivation is so that I look healthy, fast recovery, even though it's actually just to avoid the risk, the infection." (P3).

Regarding the patient doctor relationship, most of the informants stated that doctors and all staff in the clinic were well behaved and friendly. Another informant added that doctors were also open and provided more time for counseling compared to other places. Most informants stated that doctors provided a lot of information when they came to the clinic and attended counseling sessions, especially at the beginning of therapy. Another informant stated that doctors always reminded them to take medicines as scheduled. Information obtained by PLHIV informants about adherence included how to take medicine, side effects of drugs, handling of side effects, and solutions if forgotten or late to take medication. All informants stated that they trusted the doctor. One informant added they were afraid of getting wrong information from the internet so they chose to trust doctors. The following are excerpts from the answers of several informants:

"The counseling was given quite a long time because I just wanted to start therapy, there was a lot of information, how to take the medicine, what benefits, what side effects, if I asked, the doctor would explain." (P3).

"Trust the doctor, the internet now has a lot of hoaxes, the doctor here is also doing well." (P1).

Health workers's efforts to improve relations with patients include the duration of the consultation, providing explanations to patients, always reminding and helping patients if there are obstacles and giving feedback to patients. In this regard, one of health workers said:

"Efforts include longer consultation time, providing explanations,

answering questions, if there are complaints such as side effects, forgetting to take medication, missed the schedule, I will help" (HW1).

Regarding the problem of side effects, doctors have warned PLHIVs the possibility of side effects after taking ARVs during the counseling process. Therefore, when side effects occur, PLWHA continue to consume ARVs and increase their compliance. This was stated by one ODHA:

"Now I don't feel anything, first, at the beginning like a headache and nausea, I've been told by the doctor, if there might be something like this." (P1)

Health workers suggested that the education level of PLHA helps them to understand the information that is conveyed during the counseling process. So that there are no obstacles during the process of communication with patients and they are easy to accept and always respond to what is delivered by health workers. This refers to the statement of a health worker:

"Maybe because of the education factor, they are much more receptive." (HW2).

Other health professionals state:

"They are mostly well educated, googling themselves, want to be healthy, want to look like ordinary people, do not want to look thin, maybe that's it." (HW1); "Some of them came alone with enough knowledge, so we can be more comfortable explaining to them. so it depends on their level of education and their knowledge too." (HW3).

The next factor that has a role in increasing adherence to therapy is social support. This social support includes support from partners, friends, health workers, or NGOs. Support provided such as a place to share, remind to take ARVs on time, and accompany them to visit the clinic. Helping to maintain the confidentiality of the HIV status of PLWHA also includes the support expected by PLWHA.

One PLWHA stated:

"Yes, NGO. It's been 3 years, for friends to share, I'm comfortable, because they're the same people." (P3).

Most health workers stated that PLWHA who came to the clinic with friends or companions provided benefits for ARV therapy. Regarding this matter, health workers stated:

"Sometimes when a patient has a friend, we feel better. Once we open the results, he still has a friend, then we can start ARV therapy, introduce ARV and his friend will remind him. If the patient comes alone then we must give a more extensive explanation." (HW1).

Other informants stated that people who knew their status would help remind them to take medicine. This referred to:

" My partner helped remind me to take the medicine." (P2).

Barriers to adherence in ARV Therapy

Barriers to adherence to antiretroviral therapy found in this study include work-related factors, hoaxes, the use of herbal medicines, and HIV-related stigma. All informants answered that the obstacle experienced in visiting the clinic was that they were busy working. Other informants added distance and cost were not an obstacle. Other barriers to ART revealed by key informants include work, fear of taking medication in front of other people, and being too busy. While the barriers expressed by PLWHA informants in taking ARVs are that they are busy because of work and are afraid of taking drugs in front of others. In this regard, one of participant said:

"Distance is not an obstacle, right now it's easy to go anywhere. cost is also not a problem, I work, so it doesn't matter anyway. the problem is time, when I am busy at work" (P2).

Another PLWHA stated:

"The obstacle is if I have work, afraid to take medicine, afraid of being seen

by others and they ask me what medicine I take. and at night sometimes I also have to work, and I should take medicine at 10 pm so sometimes it's hard to take it at 10." (P1).

Inaccurate information about ARVs is also the barrier to ART compliance. The following are some answers from the informants regarding this matter:

"The obstacle is social media, hoaxes." (HW1); "Trust the doctor, the internet now has a lot of hoaxes." (P1).

The next obstacle is use of herbal medicines. Health professionals reveal several ways of using herbal medicines in ARV therapy, which are used in conjunction with ARVs, taking herbal medicines first and delaying ARVs, and stopping taking ARVs and switching to herbal medicines. One PLWHA stated:

"In the past, I tried other drugs before starting ARVs, herbs, but only for a short time." (P2).

One health worker added:

"There are some patients, if my patients mostly take ARVs together with herbs. There was also before he took ARVs, he said 'doc, I'll take the herbs first," he said. 'After one month, I check, if there is no change, I will take ARVs later.' " (HW2)

HIV-related stigma experienced by PLWHA included wasting syndrome, fear of being discovered by others, and covering up their HIV status from family. Furthermore, health workers revealed that one of the challenges of HIV treatment in Indonesia is stigma. This referred to:

"That was wasting syndrome, afraid of being thin." (HW1).

"They may still be afraid of taking medicine and getting caught, so they are afraid of taking medicine in front of other people." (HW3).

Because of fear of stigma, thus not all informants reveal their status to others.

They only reveal their status to those they trust. Regarding this matter, one of the informants stated:

"Some of my playmates know my status, but my family doesn't know. I tell friends who are really trusted." (P1).

DISCUSSION

Adherence in ARV therapy reduces transmission of the virus, prevents drug resistance, and increases patient life expectancy.^{4,21} All informants stated that they never forget to take medicine and only occasionally late to take medication due to overslept or because of busy work outside. Most ODHA informants further stated that they had no desire to stop because they fear of undesirable things and want to be healthy. While other informants said they had a desire to quit because they felt bored and were not in a good mood, but in the end they still took ARVs. Factors that support compliance include levels of education, access to information, internal motivation, good patient-doctors relationship, and social support.

The barriers to complying with therapy include hoaxes, work, fear of taking medicine in front of other people, and being too busy. The reasons for not complying with taking ARVs that are most often cited by PLWHA are from individual factors such as forgetfulness, busy schedules, and frequent trips. Other reasons for individual factors include stress, fear of being revealed status, feeling healthy and from therapeutic factors such as side effects, long-term regimens, the number of drugs, complicated drug-taking rules, costs, and stigma. These reasons are consistent with the results of previous studies which state that the most common reasons that PLHIV often express are forgetfulness, being too busy, afraid of side effects, and being away.^{10,11,21-24} The informant in this study also revealed that the obstacle to visiting the clinic was that there was no time due to busy work, but these reasons did not cause PLHIV not to take ARVs.

Advances in HIV treatment should be accompanied by reduced stigma associated with HIV-AIDS. Stigma problems were reported in association with poor adherence to

HIV care visits. This can occur through the mechanism of depression symptoms and the management of a person's stigma. Therefore the results of previous research recommend the importance of dealing with HIV-related stigma problems and reducing depressive symptoms so that they can prevent unwanted effects such as high viral load, ARV resistance, and transmission of the virus to others.^{16,18,20} Furthermore, belief systems and social support were reported to be associated with adherence to HIV care. The diversity of belief systems affects a person's health behavior, including their belief in information about HIV treatment whether it is in the mass media or conveyed by other people. The results of previous research revealed that the perspectives of most respondents were guided by worldly thoughts, and others had spiritual or traditional roots which caused some of them to delay seeking treatment, undergoing traditional and/or spiritual medicine such as herbal medicine and fasting.^{16,19}

Problems related to PLWHA accessing ARVs at the research site are high blood cholesterol levels and the use of herbal medicines. Most of the PLWHA informants in this study stated that they had never used drugs other than antiretroviral drugs. However, one PLHIV informant stated that he had taken herbal medicine before starting therapy. All key informants also stated that there were some PLWHA who used herbal medicines. Previous studies indicated that the use of traditional medicines or herbs is related to patient compliance in ARV therapy.^{19,22,25-27} Therefore, patients should be advised to consult with health care providers when they need to take traditional medicines while using ARVs. The reasons for the use of herbal medicines revealed by PLWHA in this study include avoiding the side effects of ARVs, wanting to recover faster, and feeling bored with ARVs. This is in accordance with previous research which states that the reasons for patients using herbal medicines include treatment fatigue because they have to be taken in the long term, to treat symptoms such as fever or cough, to improve health status, and are given by family and friends.²⁵⁻²⁸

The doctor's relationship with the patient plays an important role in compliance with HIV treatment. Good communication between

clients and service providers helps clients understand CD4 levels and the importance of taking ARV, which in turn encourages adherence. In addition, deeper counseling and communication between patients and doctors can facilitate the detection of comorbidities such as depression, increasing adherence to ART and treatment outcomes for concomitant conditions. These competencies are obtained by doctors by attending training.^{12, 29-32}

PLWHA in this study are recommended to routinely carry out viral load and CD4 cell counts, this can increase contact or interaction between PLWHA and doctors. Regular visits to the doctor can strengthen a patient's motivation / self-efficacy and increase trust, competence, adaptability, resilience, and information seeking, and further increase adherence to ART.^{33,34} Relationships with doctors are also related to the experience of stigma related to HIV and trust or satisfaction with health care providers. Previous studies have shown that HIV stigma and discriminatory treatment by health workers are associated with lower levels of adherence and trust or satisfaction with health care providers and confidentiality is associated with higher levels of adherence.^{12,35,36} PLWHA who were satisfied with the information provided by their health workers were more likely to comply with ART.^{12,30-32} In this study, most ODHA informants stated that doctors provided a lot of information when they came to the clinic and attended counseling sessions, especially at the beginning of therapy. Another informant stated that doctors always reminded them to take medicines as scheduled.

The patient's level of education and previous counseling are positively related to knowledge about treatment. Therefore, health workers must provide information about possible side effects to patients during counseling sessions and how to deal with them. This information helps ODHA to continue taking ARVs despite certain side effects. The development of informative therapeutic guidelines that are supported by patient confidence in health professionals can help convey information about the importance of therapy adherence.^{37,38}

PLWHA in this study maintain adherence to taking ARVs by sounding the alarm and being reminded by a boyfriend or friend. Clinical

efforts to improve therapeutic adherence are to set reminders/alarms and contact patients to remind them of schedules to check and take ARVs. The results of previous studies mentioned several efforts that can be done to improve compliance such as short text messages every day, longer text messages and sent periodically, voice messages, voice calls, set alarms, using equipment such as wisepill that is connected to the reminder application. and reminder messages either at the ARV service clinic or on the patient's smartphone, etc.^{10,21,39,40} The use of mobile technology with text messaging has emerged as a potentially powerful strategy for the promotion of ART adherence and shows improvements in biological values.^{10,41-44}

CONCLUSION

PLWHA at this private clinic have optimal adherence to antiretroviral therapy. PLWHA always take ARV according to schedule even though they forget and are late taking ARV. Occupation, hoaxes, stigma are factors that often hamper adherence to taking ARVs. Good patient relationships with doctors, internal motivation, and staff support at the clinic are all factors that encourage adherence of PLHIV to taking ARVs.

RECOMMENDATION

Efforts are needed to maintain optimal adherence to ARV therapy, meet client needs, interact with clients in ways that do not cause fear and stigma, and ensure confidentiality. Technology-based interventions to remind the schedule of taking ARV every day, schedule to refill ARV stock, and arrange consultation agreements with health workers need to be improved so as to provide easy access and interaction with health workers which can further increase adherence in therapy and achieve undetectable virus levels in the blood. Innovations in services that improve the quality of the relationship between doctors or health workers with patients will increase the involvement and openness of patients regarding their conditions, which in turn can prevent the negative impact of hoaxes related to HIV treatment and reduce the stigma felt by PLWHA.

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