



Original Research

Relationship between Information Skills and Antiretroviral Adherence in People Living With HIV/AIDS

Novianti Lailiah, Nursalam Nursalam*, and Ninuk Dian Kurniawati

Faculty of Nursing, Universitas Airlangga, Surabaya, East Java, Indonesia

ARTICLE HISTORY

Received: February, 19 2021
Revised: no revision
Accepted: March, 8 2021
Available online: April, 1 2021

KEYWORDS

HIV/AIDS, antiretroviral, adherence, information skills

CORRESPONDING AUTHOR

Nursalam Nursalam
nursalam@fkip.unair.ac.id
Faculty of Nursing, Universitas Airlangga, Surabaya, East Java, Indonesia

ABSTRACT

Introduction: adherence in ARV therapy is an important mechanism in preventing drug resistance. The level of adherence is influenced by several factors, one of which is the information skills factor. This study aims to analyze the relationship between information skills and ARV adherence in People Living With HIV/AIDS (PLWHA).

Method: this was a cross-sectional approach with a sample size of 100 respondents who were selected through simple random sampling technique. The inclusion criteria for respondents were PLWHA who were undergoing ARV therapy, cooperative, aged 20-60 years. The instrument used was information skills questionnaire and Medical Adherence Rating Scale (MARS). The data were analyzed using descriptive analysis and logistic regression test with p value ≤ 0.05 .

Results: information skills were associated with ARV adherence ($p = 0.01$). Information skills consisting of knowledge about HIV/AIDS and ARV therapy can increase ARV adherence in PLWHA with indicators taking drugs regularly and have medical control on schedule.

Conclusion: the information skills factor has an effect on ARV adherence. Increasing information skills can be done through educational activities or peer-group support aimed at gaining insight into disease and treatment, especially for newly diagnosed PLWHA.

Cite this as:

Lailiah, N., Nursalam, N., & Kurniawati, N.D. (2021). Relationship between Information Skills and Antiretroviral Adherence in People Living With HIV/AIDS. *Fundam Manaj. Nurs. J.* 4(1), 23-27. doi.org/10.20473/fmnj.v4i1.25551

1. INTRODUCTION

Adherence in ARV therapy was demonstrated as an action in treatment in the form of consuming drugs according to the recommended schedule and dose and conducting regular medical examinations (Suswani, Arsunan, Amiruddin, Syafar, & Yurniati, 2018). In PLWHA, adherence to ARV is the main thing that must be done to prevent drug resistance. However, adherence to ARV therapy is still low, even though ARV treatment has been provided free of charge by the Indonesian government since 2004 (Health, 2019). Several factors, such as demographics, socioeconomics (Johnson et al., 2016) and information, are known to influence the level of adherence. Information skills are considered as the

main factor influencing the level of adherence in treatment (Nelson et al., 2018).

HIV/AIDS cases are increasing every year. Currently, around 38 million people worldwide are reported to be infected with HIV/AIDS (UNAIDS, 2018). An increase in cases also occurred in Indonesia, East Java, being the province with the highest infection rate, amounting to 8,885 cases (Health, 2019). One area in East Java, namely Tulungagung Regency, is also reported to have had a high number of HIV / AIDS cases, namely 464 cases (BPS, 2019). To prevent resistance to treatment, PLWHA is expected to have a high level of adherence to ARV therapy. However, of the 108,479 people who had received ARV, 49,417 (22%) were lost to follow-up (LFU) (Health, 2019). Non-adherence to ARV

therapy can cause various problems, such as increased viral load, drug resistance, decreased number of Cluster of Differentiation 4+ (CD4 +), deteriorating objective health status and decreased subjective health status (Tandon et al., 2019). The occurrence of resistance to a given drug will result in limited choice of drugs that can be used in the future. If this continues, it will result in ARV therapy no longer being beneficial in HIV / AIDS patients, and the worst risk that will occur is an increase in virus transmission and the occurrence of severe opportunistic infections that can even lead to increased mortality in HIV / AIDS patients (Neupane, Dhungana, & Ghimire, 2019).

Information skills factors in the form of knowledge about HIV disease, correct use of ARVs, side effects and drug reactions received by individuals will affect individual behavior and ultimately will affect the level of adherence to treatment (Neupane et al., 2019). Adherence-related information includes accurate information a person has regarding antiretroviral regimens, such as how and when the drugs should be taken, potential side effects, and incorrect medication decisions, such as believing that drugs should not be taken if they feel they are getting better (Martawinarti, Nursalam, & Wahyudi, 2020). Uninformed HIV patients often do not know the rules for treatment, and, therefore, their adherence rates are low. The knowledge of PLWHA about ARV therapy can affect adherence in following the agreed rules in ARV therapy. Limited knowledge of treatment is a potentially reversible barrier to adherence (Santillán Torres Torija, Villagrán Vázquez, Robles Montijo, & Eguiluz Romo, 2015). This study aims to analyze the relationship between the information skills factor and ARV adherence in PLWHA.

2. METHODS

2.1 Research Design

The research design used was descriptive correlational with a cross-sectional approach. The study was conducted during November 2020 - February 2021. The measurement of the relationship between information skills and ARV compliance was only done at one time and without any follow-up.

2.2 Population, Sample, and Sampling

Population in this study was all PLWHA in Tulungagung Regency. Based on data from the AIDS Commission (KPA) Tulungagung Regency, it is known that people living with HIV who are registered until November 2020 are 134. The sample size used in this study was 100 people living with HIV with the following inclusion criteria: 1) PLWHA undergoing ARV therapy, 2) 20-60 years old, 3) Able to read writing and communicate verbally well, and 4) Cooperative. The sampling technique used was simple random sampling. The names of PLHIV in the population were written on paper then placed in boxes and taken randomly.

2.3 Research Variables

The independent variable in this study was information skills, while the dependent variable was ARV adherence to PLWHA.

2.4 Research Instrument

The data were collected using an instrument in the form of a questionnaire consisting of three questionnaires, namely a demographic data questionnaire, an information skills questionnaire and an ARV compliance questionnaire. The information skills questionnaire consisted of 10 questions with the answer option "Yes" with a value of 1 and the answer "No" worth 0, while the ARV compliance questionnaire, adapted from the Medical Adherence Rating Scale (MARS) consisted of 10 questions and the same scoring system, namely the answer " Yes "has a value of 1 and the answer" No "has a value of 0.

2.5 Procedure

The research procedure was started by asked permission at the research location. Next was to test research ethics and test the validity and reliability of the questionnaire to be used. At the time of data collection, the researcher provided an explanation regarding the purpose of the research to be carried out, PLWHA who were willing to become research respondents were asked to sign an informed consent first. The data were collected by means of the respondents being asked to fill in the answers on the questionnaire in accordance with the perceived conditions. During data collection, researchers were assisted by KPA officers to provide assistance, so that if there were questions that were not understood, they could be asked directly.

2.6 Data Analysis

The data analysis used was descriptive and inferential analysis. In descriptive analysis, data are grouped by category and frequency. Meanwhile, inferential analysis used logistic regression test with a significance value of $p \leq 0.05$.

2.7 Ethical Clearance

This research has received approval from the Nursing Research Ethics Commission (KEPK), Faculty of Nursing, Universitas Airlangga on January 30, 2021 with ethical certificate number 2150-KEPK.

3. RESULTS

The study was conducted on 100 respondents registered in the AIDS Commission (KPA) Tulungagung Regency. KPA is a non-structural organization that aims to coordinate the management of PLWHA in Tulungagung Regency. Based on data on demographic characteristics, it is known that the majority of respondents are female as many as 71 people (71%), with the largest age range being 41-45 years, namely 38 respondents (38%). The majority of respondents have a history of

Table 1 Characteristic of PLWHA

Demographic Characteristic	Category	n	%
Gender	Male	29	29.0
	Female	71	71.0
	Total	100	100.0
Age	20-25 years	3	3.0
	26-30 years	15	15.0
	31-35 years	2	2.0
	36-40 years	28	28.0
	41-45 years	38	38.0
	46-50 years	12	12.0
	51-55 years	2	2.0
	56-60 years	0	0.0
	Total	100	100.0
Educational Background	Elementary	41	41.0
	Middle	46	46.0
	High	13	13.0
	Total	100	100.0
Occupation	Housewives	21	21.0
	Entrepreneur	46	46.0
	Employee	29	29.0
	Not Working	4	4.0
	Total	100	100.0
Income	< 1 million	38	38.0
	1-2 million	48	48.0
	> 2 million	14	14.0
	Total	100	100.0
Marital Status	Married	76	76.0
	Single	24	24.0
	Total	100	100.0
Duration of HIV Diagnoses	6 months – 1 years	3	3.0
	> 1 – 5 years	57	57.0
	> 5 – 10 years	27	27.0
	> 10 years	12	12.0
	Total	100	100.0
Duration of ARV Therapy	6 months – 1 years	13	13.0
	> 1 – 5 years	52	22.0
	> 5 – 10 years	24	24.0
	> 10 years	11	11.0
	Total	100	100.0

Table 2 Characteristic of Variable

Variable	Category	n	%
Information skills	Good	91	91.0
	Moderate	6	6.0
	Bad	3	3.0
	Total	100	100.0
ARV adherence	High	94	94.0
	Moderate	6	6.0
	Low	0	0
	Total	100	100.0

Table 3 Information skills in ARV Adherence of PLWHA

Variable	Logistic Regression							Significance
	S.E	Wald	Sig.	d	Exp(B)	95% Confidence Interval		
						Lower	Upper	
Information Skills	-3.942	1.522	6.711	1	.010	.019	.001	Significant

secondary level education as many as 46 respondents (46%) with the most common type of work being self-employed, namely 46 respondents (46%). Based on the amount of income, the average

respondent earns 1-2 million in a month as many as 48 respondents (48%), and 76 respondents (76%) stated that they were married. Based on HIV status, it is known that more than half of the respondents,

namely 57 PLWHA (57%) were diagnosed with HIV for more than 1 year - 5 years and as many as 52 respondents (52%) stated that they had received ARV therapy for more than 1 year - the last 5 years (Table 1.).

In the analysis of the research variables, it was found that 91 respondents (91%) had good information skills, and almost all respondents, 96 (96%), had high ARV compliance (Table 2). The logistic regression test results showed that information skills had a significant effect on ARV adherence ($p = 0.010$) with a positive direction, which means that the higher the information skills, the higher the level of adherence to ARV therapy (Table 3).

4. DISCUSSION

The information skills factor had a significant effect on HIV-positive HIV treatment. A good level of information skills in the form of knowledge about HIV disease, correct use of ARVs, as well as information about side effects and drug reactions will affect the increase in ARV adherence in terms of behavior to prevent or minimize side effects or drug reactions, behavior to take medication according to the rules, and behavior in obtaining information and managing ARVs (Neupane et al., 2019). Providing effective and gradual education will improve information skills that are not optimal for PLWHA (Santillán Torres Torija et al., 2015).

Increasing the information skills possessed by PLWHA in addition to improving behavioral skills in treatment, also can improve behavior in taking precautions related to the risk of opportunistic infections (Bahrami & Zarani, 2015). Information skills possessed by PLWHA in the form of drug adherence, dietary adherence and physical activity compliance are very influential and have a significant relationship. Appropriate information related to recommendations for healthy living will make PLWHA more accepting of their situation and improve skills in treatment without coercion (Ameri, Ehsan, & Jamileh, 2018). In the construction of the IMB model, information skills were assessed as the main factor that had the most influence on ARV adherence, because to achieve adherent behavior in treatment, PLWHA must have accurate information skills about treatment, drug side effects, drug interactions in the body and, hopefully, no misinformation about what happens (Santillán Torres Torija et al., 2015).

The majority of PLWHA who were respondents in this study were diagnosed with HIV/AIDS for a period of 1 to 5 years. During that time, PLWHA received various forms of education related to HIV/AIDS management, mainly related to behavioral skills in administering treatment, so that the information skills they have had a significant effect on HIV / AIDS ARV compliance. Providing continuous education, especially for newly diagnosed PLWHA, will increase their confidence in carrying out treatment. PLWHA can be given basic information regarding the importance of treatment therapy that must be

undertaken so that it creates a positive perception and is able to improve the behavioral skills of PLWHA and prevent treatment dropouts.

5. CONCLUSION

Information skills affect the level of ARV adherence to PLWHA. To increase adherence to ARV therapy, it can be done by increasing the information skills of PLWHA. Efforts to increase information skills can be done through educational activities about HIV / AIDS and / or about ARV therapy. Peer group support activities consisting of several PLWHA can be carried out to exchange insights and experiences related to treatment

6. REFERENCES

- Ameri, M., Ehsan, M., & Jamileh, F. (2018). *Effect of information, motivation, and behavioral skills model on adherence to medication, diet, and physical activity in HIV/AIDS patients: A health promotion strategy*. 1–6. doi: 10.4103/jehp.jehp
- Bahrami, Z., & Zarani, F. (2015). Application of the Information-Motivation and Behavioral Skills (IMB) model in risky sexual behaviors amongst male students. *Journal of Infection and Public Health*, 8(2), 207–213. doi: 10.1016/j.jiph.2014.09.005
- BPS. (2019). Number of Disease Cases by Regency / City and Type of Disease in East Java Province in 2018. Retrieved 24 December 2020 from <https://jatim.bps.go.id/statictable/2019/10/16/2032/jumlah-kasus-hiv-aids-ims-dbd-diare-tb-dan-malaria-menurut-kabupaten-kota-di-provinsi-jawa-timur-2017.html>
- Health, M. O. (2019). Report on the Situation of HIV / AIDS and PIMS in Indonesia in 2018. Directorate General of Disease Control and Environmental Health, 1–30. doi: 10.1017/CBO9781107415324.004
- Johnson, A. B., Sebastian, A., Sudulaguntla, A., Sabu, A. C., Meka, S., & Nanjwade, B. K. (2016). Medication Adherence Rating of Patients With Hypertension in a Tertiary Care Hospital. *694 WORLD JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES SJIF Impact Factor 5, 5(2)*, 694–710. Retrieved 24 December 2020 from www.wjpps.com
- Martawinarti, R. T. S. N., Nursalam, N., & Wahyudi, A. S. (2020). Lived Experience of People Living With HIV/AIDS in Undergoing Antiretroviral Therapy a Qualitative Study. *Jurnal Ners*, 15(2), 157–163. doi: 10.20473/jn.v15i1Sp.19002
- Nelson, L. A., Wallston, K. A., Kripalani, S., Lestourgeon, L. M., Williamson, S. E., & Mayberry, L. S. (2018). Assessing barriers to diabetes medication adherence using the Information-Motivation- Behavioral skills model. *Diabetes Research and Clinical Practice*, 142, 374–384. doi: 10.1016/j.diabres.2018.05.046

- Neupane, S., Dhungana, G. P., & Ghimire, H. C. (2019). Adherence to antiretroviral treatment and associated factors among people living with HIV and AIDS in CHITWAN, Nepal. *BMC Public Health*, 19(1), 720. doi: 10.1186/s12889-019-7051-3
- Santillán Torres Torija, C., Villagrán Vázquez, G., Robles Montijo, S. S., & Eguiluz Romo, L. de L. (2015). The information and motivation and behavioral skills model of ART adherence among HIV-positive adults in Mexico. *Journal of the International Association of Providers of AIDS Care (JIAPAC)*, 14(4), 335-342. doi: 10.1177/2325957415581903.
- Suswani, A., Arsunan, A. A., Amiruddin, R., Syafar, M., & Yurniati. (2018). Qualitative study; knowledge, Arv access, and adherence among people living with HIV in Bulukumba district, South Sulawesi. *Indian Journal of Public Health Research and Development*, 9(6), 267-272. doi: 10.5958/0976-5506.2018.00562.4
- Tandon, N., Mao, J., Shprecher, A., Anderson, A. J., Cao, F., Jiao, X., & Brown, K. (2019). Compliance with clinical guidelines and adherence to antiretroviral therapy among patients living with HIV. *Current Medical Research and Opinion*, 35(1), 63-71. doi: 10.1080/03007995.2018.1519499
- UNAIDS, Global HIV & AIDS statistics—2018 fact sheet (2018). Retrieved 18 December 2020 from <http://www.unaids.org/en/resources/fact-sheet/>