

# Supportive Educative Interventions Based on The Information Motivation Behavioral Skills on the Compliance of Antiretroviral Therapy and Quality of Life in HIV Patients

Nursalam Nursalam, Rts Netisa Martawinarti, Andri Setiya Wahyudi

**Abstract---** *Anthroviral therapy (ART) is the only drug to treat the HIV virus. Non-adherence to ART is a major factor in treatment failure and one of the causes of decreased quality of life in HIV patients. This Study aimed was to improve the compliance and quality of life in patients with HIV. A quantitative research with quasi-experimental design with 30 control samples and 30 intervention samples, the sampling technique used was purposive sampling, the dependent variable was adherence and quality of life. In this study using instruments in the form of a questionnaire consisting of 3 behavioral skills, compliance (MARS), and quality of life (WHOQOL). Analysis using Shapiro Wilk, paired T test and Wilcoxon sign rank test. Interventions are given 3 times a month. The results showed the effect of intervention on adherence seen from the p value of 0.014 (<0.05), while for behavioral skills and quality of life of the control and intervention groups both had an influence, but the delta value of the intervention group had a significant difference in value of quality of life, while behavioral skills do not have meaningful value differences. Improving adherence and quality of life in HIV patients is very dependent on the behavioral skills possessed by HIV patients, which are closely related to the information and motivation possessed. Techniques for providing information, self-motivation and social support are carried out using supportive educative methods, namely providing education through learning methods, guidance and support.*

**Keywords---** *HIV, Antiretroviral, Adherence, Quality of life, IMB, Behavioral skills, Supportive educative.*

## I. INTRODUCTION

Adherence to antiretroviral therapy (ART) is still a major problem in Indonesia, this is evidenced from the Lost Follow Up (LFU) rate for treatment and ART is still quite high at 21.87% (Ministry of Health of the Republic of Indonesia, 2018). Adherence to ART in HIV patients is very important to suppress the virus so that it does not develop so that a better quality of life is achieved. Non-adherence to ART is a major factor in treatment failure in HIV patients. Various factors cause non-compliance of HIV patients with ART such as side effects from treatment and wrong perceptions about treatment.

HIV/AIDS sufferers continue to increase each year, currently more than 36.9 million people worldwide suffer from HIV and Indonesia is one of the Asian countries with a rapidly growing rate of Human Immunodeficiency Virus (HIV) infection [1]. East Java occupies the first position in Indonesia with the highest number

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of HIV in 2017 followed by DKI Jakarta and Central Java (Indonesian Ministry of Health, 2018). According to a report on HIV care and antiretroviral therapy in 2017 recorded that there were around 214,819 people who were eligible for ARVs, but only 180,843 people had received ARVs, out of 180,843 people who had received ARV therapy 39,542 people (21.87%) had lost follow-up (21.87%) LFU) and 3,501 (1.93%) stopped taking ARVs.

Non-compliance with antiretroviral treatment is caused by several factors, in research [2] states that the level of female compliance is lower than men, this is due to a mismatch of treatment with guidelines that have been made so that women are more often experience side effects of treatment than men . However, there is also research which states that non-compliance with ARVs is caused by the information received incomplete at the beginning of registration [3]. In Papua, more than one third of PLWHA are not compliant in the treatment of ARV therapy, forgetfulness, careless use of drugs, ethnicity, stigma and the problem of side effects of treatment are the reasons for non-compliance with ARV treatment [4].

Antiretroviral is an important factor to improve the quality of life of people with HIV, a complex problem in people with HIV triggers non-compliance factors in undergoing ARV therapy [5]. Social care, the home environment, finance, freedom, and opportunities to obtain information related to ARV treatment get the lowest score that adversely affects the quality of life of PLWHA [6]. Support from the surrounding environment both family and health care workers also affects the compliance of HIV patients in undergoing ARV treatment, treatment of health workers who still exist discriminates against HIV sufferers with certain cases to be one of the obstacles or obstacles in the care and initiation of ARVs [7].

Whereas in research Narsai et al., states socioeconomic factors have an influence on adherence to ARVs and improvement of quality of life, of the 600 patients studied more than one third have difficulties in accessing health services. High drop-off rates after starting antiretroviral drugs aside from problems of stigma and discrimination on social factors, the economy also played a role in non-compliance with HIV patients undergoing ARV treatment [8]. Subjective support and the use of social support and knowledge are very influential in improving the quality of life of HIV sufferers [9], in a study Lan et al., stating that low social support has reduced the quality of life of HIV sufferers.

Based on previous studies that supportive educative has an influence on cardiac patient compliance in self-care and adherence to taking medication [10]. in HIV cases there is no research on supportive educative to address the problem of adherence to ART. In this study researchers combined OREM's supportive educative theory with The Information Motivation Skill (IMB) [11] to help improve adherence to antiretroviral therapy and quality of life in HIV patients.

## II. LITERATURE REVIEW

HIV/AIDS is one of the disease that have many symptoms and make patient in complex problems. The literature review of this study was conducted about the supportive caring for HIV/AIDS patient. This disease need to taking medicine regularly, adherence to ART in HIV patients is very important to suppress the virus so that it does not develop so that a better quality of life is achieved. Non-adherence to ART is a major factor in treatment failure in HIV patients. Various factors cause non-compliance of HIV patients with ART such as side effects from treatment and wrong perceptions about treatment. Based on previous research, non compliance patiet is caused by several.

factors, in research [11] states that the level of female compliance is lower than men, this is due to a mismatch of treatment with guidelines that have been made so that women are more often experience side effects of treatment than men. Antiretroviral is an important factor to improve the quality of life of people with HIV, a complex problem in people with HIV triggers non-compliance factors in undergoing ARV therapy [12].

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### III. DATA COLLECTION

A quasi experiment with pre post test design, which revealed a causal relationship by involving an experimental control group that selected by random techniques. Samples in this study were 60 patients consisting of 30 controls and 30 interventions. Respondents were determined by nonprobability sampling with purposive sampling inclusion criteria, namely: 1) HIV / AIDS patients who have been taking antiretroviral therapy for more than 1 year, 2) Willing to be a participant by filling out statements and signing consent sheets, after reading and explaining the research objectives by researchers , 3) More than 20 years old, 4) can read and write. Exclusion criteria are: 1) HIV patients hospitalized, 2) Pregnant women, 3) patients who have severe complications, 4) patients who have hearing loss. The dependent variable in this study is adherence and quality of life.

This research was conducted from January 2020 to February 2020 at the Sidoarjo Regional General Hospital, East Java Indonesia. The instrument used in this study was a questionnaire consisting of behavioral skills adapted from the life windows information motivation behavioral skills ARV Adherence Questionnaire (LW-IMB-AAQ) (The Lifewindows Project Team, 2006). Consists of 14 questions with indicators of the level of behavior skills score <5 low, 6-9 moderate, 10-14 high. The compliance questionnaire uses the medication adherence rating scale (MARS) consisting of 10 questions with the highest score of 10 and the lowest 0, assessment score > 8 of high compliance, <8 of low compliance. The third questionnaire uses the World Health Organization Quality of Life (WHOQoL) consisting of 26 questions with a minimum score of 26 and a maximum of 130. Data analysis in this study uses descriptive analysis by calculating the average (standard) and standard deviation to obtain descriptive characteristics of respondents and description of variables. Hypothesis testing is used to determine the differences in the post test of each group using MANOVA, with a significance value of  $p < 0.05$ . This research has also been passed an ethical test by the Health Research Ethics Commission of Sidoarjo Hospital with an ethical number 893.3 / 0059 / 438.6.7 / 2020.

### IV. DATA ANALYSIS

The majority of respondents were male, in the intervention group consisting of 16 people (53.3%) men and 14 people (46.7%) women. The most age both two groups were 26-35 years (40%) and 43% had married. The majority of research subjects were 13 self-employed workers, in the intervention group 43.3% and 86.7% in the control group, with average of the earners were 1 million to 4.2 million. The Education background both of the intervention and control group were senior high school, and majority they consumed the type of FDC antiretroviral drug once a day (Table 1).

**Table1. Demographical Characteristic of Respondents**

Characteristic of Respondents	Intervention (n)	Control (n)
<b>Sex</b>		
Male	16	23
Female	14	7
<b>Old (Years)</b>		
17-25	3	3
26-35	12	12
36-45	10	7
46-55	5	8
<b>Marital Status</b>		
Married	13	13
Not Married	12	11
Widower/ widow	5	6

Characteristic of Respondents	Intervention (n)	Control (n)
<b>Sex</b>		
<b>Job</b>		
Entrepreneur	13	26
Civil servant	2	0
Housewives	9	1
Others	6	3
<b>Education</b>		
Elementary school	3	2
Junior high school	2	8
Senio high school	20	15
Diploma	1	0
Bachelor	4	5
<b>Income</b>		
<1.000.000	12	1
1.000.000-4.200.000	15	16
>4.200.000	3	13
<b>Kind of Medicine</b>		
FDC	27	23
TLE	0	0
D/N	2	6
Aluvia	1	1

The influence of supportive educative interventions based on IMB in this study not too significant on behavioral skills, because the p value of the two groups after the Paired t test was <0.05, which distinguished only in the delta value (the difference was 0.97) (Table 2). The influence of supportive educative interventions based on IMB with respondent compliance in taking ART showed that there were significant differences between adherence before the intervention, p value of 0.014 and the delta value in the intervention group was 0.87. (Table 3). The influence of supportive educative interventions based on IMB in quality of life of respondents did not too significant, because the p value after being tested Paired t test in the two groups <0.05, which distinguished only in the delta value. The delta value showed that the intervention group had a difference of 7.059 with the control group (Table 4). The similarity of variance-covariance individually for each variable Box test values showed significant numbers. The box test value was 0.166 which showed that the variance-covariance in all variables same for each group (Table 5).

**Table 2. Variable of behavioral skill**

Group	Pre Test (Mean ±SD)	Min-Max	Post Test (Mean ±SD)	Min-Max	Delta	P value
Intervention	7.27 ± 3.493	1-14	8.97± 3.672	2-14	1.7	0.000
Control	8.37 ± 2.553	4-13	9.10 ±2.440	5-14	0,73	0.000

**Table 3. Compliance of Patients**

Group	Pre Test (Mean ±SD)	Min-Max	Post Test (Mean ±SD)	Min-Max	Delta	P value
Intervention	7.20 ± 1.215	5-10	8.07±1.172	5-10	0.87	0.014
Control	7.20 ± 1.186	5-10	7.27 ±1.112	5-10	0,07	0.317

**Table 4. Quality of Life**

Variable	Group	Pre Test (Mean ±SD)	Min-Max	Post Test (Mean ±SD)	Min-Max	Delta	P value
Quality of Life	Intervention	67.84 ± 13,258	41-94	75.33 ± 11.934	63-88	7.49	0.000
	Control	64.59 ± 8,596	48-83	64.591±7.74	50-88	0.43	0.000

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**Table 5. MANOVA Test**

Variable	N	Box test				P value	
		Box M	F	Df1	Df2	levene	Manova
BS	30	0166	1.524	6	24373,132	8.831	0.000
Compliance	30					0.279	
Quality of Life						2,875	

## V. STUDY RESULTS, SUMMARY AND CONTRIBUTION

The results of research on the intervention of behavioral skills showed an influence but not too significant difference between the control group and the intervention. Respondents have good behavioral skills, seen from each statement filled by the respondent, there is a slight difference in the value of the delta between the intervention group and the control group influenced by the level of information obtained by the respondent. Respondents who previously stated it was difficult to get information about HIV disease and its treatment so that it becomes one of the obstacles in behavioral skills to know where to get information after the intervention.

Respondents who experience side effects / uncomfortable reactions when taking the drug during the pre-test only

know that the patient is dizzy when sleeping, if nausea is taken to eat dry foods, after being given an intervention HIV patient know other ways to overcome the unpleasant effects when taking medication. The alarm as a reminder to take medicine has been implemented by some of the respondents, and it is considered effective by the respondent. Watches and cellphones are seen as supporting factors to help patients with reminders to take medicine [13].

Provision of clear information, guidance and motivation influences a person's behavioral skills in taking action for themselves in line with research conducted by Mohammadpour et al., 2015 that patients who undertake

learning interventions and guidance related to their illness will have knowledge, motivation and skills behavior in taking care of himself. The results of interventions for compliance have a significant effect on respondents [9]. In the control group the level of compliance was low whereas in the intervention group the results of the post test showed a good improvement. Respondents who have knowledge, motivation and have the support of family or peers have high compliance [10].

Compliance is not only assessed from the drugs taken, taking routine drugs every month, delays in taking drugs either 1 hour or more and not taking 3 or more times in 1 month are obedient and Careless [14]. When a high level of compliance test is performed, the patient has begun to realize and understand compliance. adherence is not only assessed from the drugs taken, taking routine drugs every month, the delay in taking drugs either 1 hour or more and not taking 3 or more times has been considered non-compliant and careless [15]. When a high level of compliance test is performed, the patient has begun to realize and understand compliance [5].

Supportive educative interventions based on the information behavioral skills (IMB) are considered capable of increasing HIV patient compliance with treatment regimens. Provision of learning, guidance and motivation for HIV patients can improve adherence because it is supported by good behavioral skills acquired during interventions. Behavioral skills have a direct effect on adherence to taking ARV drugs in people living with HIV. PLHIV who have good behavior skills have relevant information and sufficient motivation to make them compliant in taking ART medicines [12], [15].

Quality of life in the control group and intervention respondents after the paired t test was equally had a good effect, a significant difference seen from the delta results after the respondent carried out the intervention there was a difference of 7.059. Supportive educative interventions based on the information motivation behavioral skills show good results in physical, psychological and environmental aspects, but for the social relations aspects of the control and intervention groups do not show significant changes, this is because many respondents still keep their disease status in the family and not ready to reveal their disease status, respondents also felt normal in their sexual relations.

Antiretroviral is a very important factor to improve the quality of life in HIV patients [7],[10]. Research conducted by Moghadam et al., 2018 related to providing education to increase knowledge of people with HIV shows an improvement in the quality of life in HIV patients. In line with the results of this study, HIV sufferers who are given learning interventions by providing knowledge about HIV and ARV have improved quality of life in physical, psychological, and environmental health aspects. In the aspect of social relations, the interventions provided did not affect the quality of life of HIV patients [3],[4].

In this study respondents intervened with counseling and groups with the aim that respondents could be open to each other and be able to adapt to the conditions of the disease after getting friends who have the same conditions, but some respondents were still closed with others, limited time owned by the respondent and the amount the few research members in the research become one of the obstacles to be able to do personal guidance and learning for patients who have not been able to open up with others. So that further research needs to be done personally before the group.

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