HASIL CEK_Dewi, Akrom, Simbara_HIV/AIDS, compliance with treatment, quality of life, service flow changes, drug consultation

by Rissa Maharani Dewi, Akrom, Ari Simbara The Influence Of Service Flow Changes

The influence of service flow changes and drug consultation on quality of life of HIV/AIDS-positive patients in Sunan Kalijaga regional public hospital, Demak regency

Rissa Maharani Dewi [1,2]*, **Akrom Akrom**[2], **Ari Simbara**[3]

[1]STIKES Telogorejo, Semarang, Indonesia
[2]Faculty of Pharmacy, Universitas Ahmad Dahlan, Yogyakarta, Indonesia
[3]Pharmacy of Sunan Kalijaga Regional Public Hospital, Demak, Indonesia
*corresponding author: e-mail: Ressmade015@yahoo.com

ARTICLE INFO

ABSTRACT

Human immunodeficiency virus (HIV) cannot be cured but can be controlled by antiretroviral medicines. Non-compliance with the treatment is influenced by internal and external factors. The internal factors (predisposing factors) include healthcare systems, socioeconomic conditions, and patients. Meanwhile, the external factors (enabling and reinforcing factors) include the condition of the disease and therapy. This study aims to determine the influence of service flow changes and drug consultation on the quality of life of people living with HIV/AIDS in Sunan Kalijaga Regional Public Hospital, Demak Regency.This research employed a quasi-experimental method with one group and a pre-post design. The research subject was HIV/AIDS-positive patients in Sunan Kalijaga Regional Public Hospital, Demak Regency. These subjects had met the inclusion and exclusion research criteria. The data were collected using an in-depth interview, consisting of 14 questions to determine factors in non-compliance with treatment and patients' quality of life. Patient compliance with treatment and quality of life were measured before and after the intervention. The dependent t-test was employed to determine differences in the average score of the compliance and quality of life before and after the treatment. The majority of HIV/AIDS-positive patients in Sunan Kalijaga Regional Public Hospital are in the productive age (49 people or 96.22%), female (33 people or 62.24%), employed in private jobs (16 people or 30.19%), married (34 people or 64.2%), and graduated from primary school (20 people or 37.7%). The majority of the patients have undergone the treatment for > 1 year (32 respondents or 60.4%) and received the drug regimen of ZDV + 3TC + NVP (90.57%). There is no significant difference in the patient compliance with the treatment before and after the intervention with the sig < 0.05. Moreover, the patients have a high quality of life with a compliance value of 80-100% before and after the intervention. The pre-post-interventions have influenced the physical health domain and the social relation domain with the sig < 0.05. The provision of education affects the quality of life on physical health and social relationship factors (sig < 0.05). The implementation of drug consultation could improve the HIV-positive patients' quality of life in physical health and social relationship domains. In contrast, the intervention does not affect the patients' compliance with the therapy.

1. Introduction

Acquired immunodeficiency syndrome (AIDS) is caused by the Human immunodeficiency virus (HIV), including human retrovirus, retroviridae family, and lentivirus subfamily. There are four

human T lymphotropic viruses (HTLV): HTLV-I, HTLV-II that transforms retroviruses and human immunodeficiency virus, HIV-I, and HIV-2 that belongs to the retroviridae family. Meanwhile, the etiological cause of AIDS is the HIV of the human retroviruses (retroviridae) family and the lentivirus sub-family (Sargo, 2016). HIV/AIDS infection cannot be cured but can be controlled by antiretroviral medicines (Herlambang Rasmita Aji, 2010). Antiretroviral medicines can reduce mortality and morbidity and improve the quality of life of people living with HIV/AIDS; thus, the disease is currently controllable (Kemenkes, 2014).

Compliance refers to pateints' obedience to carry out therapeutic actions. Moreover, compliance means that patients and their families must willingly spend their time to undergo a needed treatment (Potter & Griffin, 2005). The compliance with a therapy of people living with HIV/AIDS must be considered because if they are not adherent, various body system disorders will occur and increase morbidity and mortality (Husna, 2012). According to Green's theory, many factors are related to non-compliance with treatment regimens and influenced by internal factors (predisposing factor), such as health care systems, socioeconomic conditions, and patients, as well as external factors (enabling and reinforcing factors), such as disease conditions and therapy (Pujasari et al., 2017). The causes of patient non-compliance are age, education, economic problems, fear of side effects, lack of knowledge of diseases, easy access to services, family support, and medical staff. These factors are the results of a lack of information and communication. Lack of information usually makes patients perform self-regulation to the received drug therapy (Muliawan, 2008).

The success of management and care for people living with HIV/AIDS depends on the cooperation between health care staff and the patients' families. Counseling is necessary to provide knowledge for people living with HIV/AIDS and raise their acceptance into the pain. The knowledge includes the definition of ARV therapy, the importance of compliance with therapy, probably emerging side effects, and the treatment duration. More knowledge is expected to enable people living with HIV/AIDS to comply with antiretroviral therapy following the rules recommended by doctors (Nasronudin, 2007).

Optimal treatment for people living with HIV/AIDS requires support from the patients, their families, and medical staff who provide health care services. Family significantly supports people living with HIV/AIDS to comply with medicines because the family can convince the patients and determine the appropriate treatment for the patients; for example, monitoring doses of medicines and medication schedule as well as supervising the drug-taking (Nurhidayat, 2017). The increasing number of people living with HIV/AIDS triggers the increasing demand for health services to obtain treatment and health care.

Some doctors or other health staff still feel fear in dealing with AIDS patients because this disease is deadly, attacks immune systems, and has no medication to completely kill the virus. (Budiman et al., 2013) have discovered that compliance and quality of medical services are mutually influential because good medical services make patients comply with the treatment (Budiman et al., 2013). Moreover, (Budiman et al., 2013) have found that the ownership of health insurance highly contributes to the patients' compliance with the treatment because the health insurance provides low health financing for the patients (Budiman et al., 2013). Consequently, they become more obedient than those who do not have health insurance.

The description above has signified that 225 HIV/AIDS-positive patients (70%) do not comply with the treatment, and only 60 patients actively take medicines. Therefore, it is necessary to investigate the quality of HIV/AIDS-positive patients in Sunan Kalijaga Regional Public Hospital, Demak Regency.

2. Materials and Methods

This research is a quasi-experimental study with one group pretest-posttest design. A pretest-posttest design is described as follows (Sugiyono, 2016). This research employed primary and secondary data. The primary data were obtained using in-depth interviews, a quantitative questionnaire. of the World Health Organization Quality of Life (WHOQOL) of BREF, and the questionnaire of Medication Adherence Report Scale (MARS). The secondary data comprised of age, gender, marital status, educational level, occupation, and treatment duration from medical records in the pharmaceutical installation of Sunan Kalijaga Regional Public Hospital.
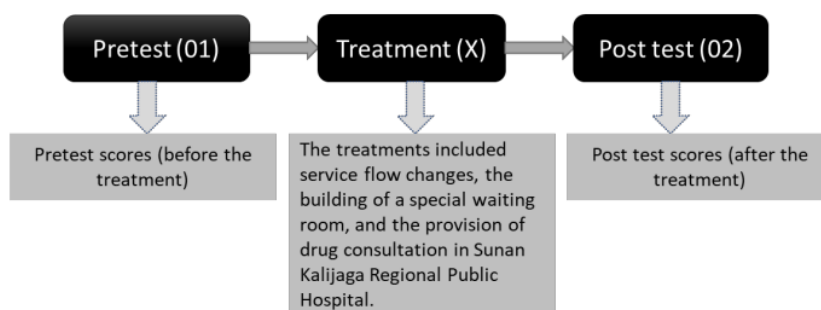
Fig. 1. Research Design of One-Group Pretest-Post test Design

2.1. Research Instruments

The research instruments were informed consents with the ethical clearance number of 011808114, patient datasheets, and the questionnaire of World Health Organization Quality of Life (WHOQOL-BREF). The questionnaire consisted of 26 questions and was divided into four domains, such as physical health, psychological relationships, social relationships, and environment, to measure the patients' quality of life. Then, all domains of the questions in the questionnaire were calculated and totaled after they had been categorized into the following groups: High: ≥ 95, Medium: 60-95, Low: ≤ 60 (WHO, 1996; Muhammad et al., 2017). The questionnaire of Medication Adherence Report Scale (MARS) was categorized into high compliance with a score of 25, moderate compliance with a score of 6-24, and low compliance with a score of < 6.

Inclusion criteria of this study as follows: People living with HIV/AIDS had taken antiretroviral drugs in Sunan Kalijaga Regional Public Hospital and received the treatment for, at least, 1 month. Patients were 18-65 years old and Patients approved the informed consent to be research participants. While the exclusion criteria as follows, Inpatients and Patients with blindness and Patients with deaf.

2.2. Data Analysis

The data were analyzed using the univariate and bivariate analyses. The univariate analysis was employed to describe each variable of age, gender, treatment duration, work, marriage status, education levels, and factors of non-compliance with treatment. Meanwhile, the bivariate analysis was employed to determine the difference in average scores of the compliance and quality of life before and after the intervention. This difference was measured using the paired t-test of one dependent group which had been previously distributed with the Chi-square of SPSS test version 21. The results of the interviews were presented descriptively in the form of a transcript.

3. Results and Discussion

3.1. Identification of Non-Compliance Factors of People Living with HIV/AIDS in Sunan Kalijaga Regional Public Hospital, Demak Regency

The in-depth interview was employed to identify actions and revealed that people living with HIV/AIDS experienced some constraints when managing their medicines in Sunan Kalijaga Regional Public Hospital. For example, the hospital administration fee is expensive because some patients prefer general health services. Another example is the expensive monthly administration fee of health insurance (BPJS). If the insurance fee is not paid, the patients could not get medicines. The following problem is the long queue to get health services and medicines. The next problem is the long distance between the patients' homes and Sunan Kalijaga Regional Public Hospital. The last problem is patients' unavailable time to visit the hospital.

The results of the interview signify negative values of the hospital. Therefore, it is necessary to perform some actions, such as changing service flows of taking medicines, providing a special waiting room, and offering drug consultation in Sunan Kalijaga Regional Public Hospital.

3.2. Characteristics of People Living with HIV/AIDS in Sunan Kalijaga Regional Public Hospital, Demak Regency

The characteristics of the patients in this study are summarized in Table 1. Most of the people living with HIV/AIDS in this study were under 60 years old (51 people), and only two patients are above 60 years (2 people). It shows that people vulnerable to HIV/AIDS are in the productive age (Depkes, 2006).

HIV/AIDS patients in Sunan Kalijaga Regional Public Hospital were dominated by women (33 people), and there were only two male patients. This gender condition disagrees with the 2017 data of the Directorate General of Disease Prevention and Control (Ditjen P2P), which reported that 38% of HIV/AIDS cases occurred in women and 62% of the cases occurred in men. These data were sourced from the information systems of HIV/AIDS and STI (Sexually Transmitted Infection).

The study found that 16 people living with HIV/AIDS (30.19%) worked as private employees, 15 people (28.30%) were unemployed, 9 people (16.98%) were self-employed, 9 people (16.98%) worked as farmers, and 0 person was a civil servant. Most of the patients were married (34 people), 7 patients were unmarried, and 12 patients were widows or widowers. (Fatiregun et al., 2009) have reported that 51.60% of HIV/AIDS patients in Nigeria are married.

The data of education levels show that 20 patients earned an elementary school degree, 16 patients earned a junior high school degree, 10 patients earned a senior high school degree, 5 patients earned a bachelor's degree S1, patients earned diploma's degree, and 1 patient did not earn an education level. These findings are in accordance with (El et al., 2013), who postulate that higher education supports someone to have better knowledge of health and impacts of diseases; this knowledge is expected to positively influence an individual's attitude to prevent HIV/AIDS and decline the incidence of HIV/AIDS in the community.

The data of treatment duration show that 32 patients (60.4) have undergone the treatment for more than a year, 15 patients (28.3) have undergone the treatment for a year, 3 patients (5.7) have undergone the treatment for a month, 2 patients (3.8%) have undergone the treatment for three months, and 1 patient (1.9) have undergone the treatment for 6 months (1.9%).

3.3. The influence of the Intervention on HIV/AIDS-Positive Patients' Compliance with the Treatment in Sunan Kalijaga Regional Public Hospital, Demak Regency

This research subjectively assessed the patients' compliance using the medication adherence report scale (MARS) method and concludes attitudinal barriers of medication adherence. This method used scores to determine the patients' compliance levels which consisted of multiple-choice questions. The respondents could indicate whether their compliance was in accordance with the conditions and how often they were involved in five types of uncompliant behavior with the frequency scales of 1 to 5: always, often, sometimes, rarely, and never. A high score means better compliance. Table 2 summarizes the research results and describes that the HIV/AIDS-positive patients in Sunan Kalijaga Regional Public Hospital do not show different compliance with the therapy before and after the intervention. The result shows that the significance value is 0.584 or above 0.05, which indicates no significant difference. This result concludes that the patients' compliance with the treatment before and after the intervention is high because the score is 23 and is categorized as good. Moreover, they are aware of the importance of antiretroviral drugs for their lives.

3.4. The Influence of the Intervention on Quality of Life of HIV/AIDS-Positive Patients in Sunan Kalijaga Regional Public Hospital, Demak Regency

The WHOQOL-BREF questionnaire was used to measure the quality of life of HIV/AIDS-positive patients in Sunan Kalijaga Regional Public Hospital, Demak Regency. The quality of life assessed four domains: physical health, psychological health, social relationships, and environment. The results of the quality of life of HIV/AIDS-positive patients in Sunan Kalijaga Regional Public Hospital are summarized in Table 3 and show a high quality of life, ranging from 80-90% (WHO, 1996).

Table 1. Characteristics of HIV-Positive Patients in Sunan Kalijaga Regional Public Hospital, Demak Regency

Characteristics		$\sum$ (n = 53)	Percentage (%)
Age	- 18-60 years old	49	96.22%
	- > 60 years old	4	3.78%
Gender	- Male	20	37.7
	- Female	33	62.24
Occupations	- Civil servants	0	0
	- Self-employed	9	16.98
	- Private employees	16	30.19
	- Drivers	4	7.55
	- Unemployed	15	28.30
	- Others	9	16.98
Marital Status	- Unmarried	7	13.2
	- Married	34	64.2
	- Widows or widowers	12	22.6
Education	- Not school	1	1.9
	- Elementary school	20	37.7
	- Junior high school	16	30.2
	- Senior high school	10	18.9
	- Diploma III	1	1.9
	- Bachelor's degree	5	9.4
Treatment Duration	- 1 Month	3	5.7
	- 3 Months	2	3.8
	- 6 Months	1	1.9
	- 1 Year	15	28.3
	- Others	32	60.4
Regimens of antiretroviral drugs	- (ZDV + 3TC) + NVP	48	90.57
	- TDF + 3TC + EFV	4	7.54
	- ZDF + 3TC + EPV	1	1.89
	- (ZDV + EFV) + EFV	0	0

Table 2. Results of the Test Analysis of HIV/AIDS Patients' Compliance with the Treatment in Sunan Kalijaga Regional Public Hospital, Demak Regency Pre- and Post-Intervention

	Mean ± SD of Pre-Intervention	Post-Intervention Mean ± SD	t	sig
Compliance	23.43 ± 1.876	23.58 ± 1.669	-.551	0.584

Table 3. Results of the Test Analysis of the Quality of Life of HIV/AIDS-Positive Patients in Sunan Kalijaga Demak Regional Public Hospital before and after the Intervention

Domains of Quality of Life	Mean ± SD of Pre-Intervention	Mean ± SD of Post-Intervention	t-count	Sig.
Physical health	22.018 ± 2.9187	22.754 ± 2.875	2.172	*0.034
Psychological health	20.641 ± 3.3517	21.056 ± 3.3016	-.808	*0.423
Social relations	9.962 ± 1.7646	10.415 ± 1.5371	2.197	*0.033
Environment	27.660 ± 4.5990	27.641 ± 4.1929	.647	*0.520
Total of quality of life	80.281 ±12.632	81.866 ± 11.095	-1.160	*0.251

Description: *Paired T-Test

1) The Relationship of Physical Health Factors on Quality of Life

This study has revealed that there are significant differences between the physical health factor and quality of life before and after the intervention with a significance value of 1.034 < 0.05. These numbers indicate that physical health factors have significantly influenced the quality of life of HIV/AIDS-positive patients in Sunan Kalijaga Regional Public Hospital before and after the intervention. The physical health domain enables the patients to feel physical pain that prevents physical activities and problems with infection (Hardiansyah et al., 2014).

2) The Relationship between Physical Health Factors and Quality of Life

This study has revealed that there are significant differences between psychological factors and quality of life before and after the intervention with a significance value of > 0.05. These numbers indicate that physical health factors do not significantly influence the quality of life of HIV/AIDS-positive patients in Sunan Kalijaga Regional Public Hospital before and after the intervention. This finding disagrees with the study by (Hapsari et al., 2016), who have discovered that all domains have a high average relationship with depression as seen from the patients' disease records. The longer the patients suffer from the disease, the more vulnerable to other diseases they will be. When they are easily affected by other diseases, their physical appearance will be affected. Consequently, they feel that their physical condition is poor, and they become not confident in facing life. Such a phenomenon is probably one of the factors decreasing the patients' quality of life.

3) Social Relationships on Quality of Life

The research has revealed that there is a significant difference between social relationships and quality of life before and after the intervention with a significance value of 0.033 or smaller than 0.05. These numbers denote a significant influence. The social relation domain affects the quality of life of HIV/AIDS-positive patients in Sunan Kalijaga Regional Public Hospital because social support functions as an affinity or social bond (Nursalam & K, 2013).

4) Environmental Relationships on Quality of Life

This study has discovered that there is no significant difference between environmental factors and quality of life before and after the intervention with a significance value of > 0.05. These numbers indicate that environmental factors do not significantly influence the quality of life of HIV/AIDS-positive patients in Sunan Kalijaga Regional Public Hospital before and after the intervention. The environmental dimension is the highest dimension among other domains because the patients are dissatisfied with the environment. This finding disagrees with research by (Rohmah et al., 2016), who have deployed that the environment influences the quality of life with a value of 39.2%.

3.5. HIV/AIDS-Positive Patients' Impression of Waiting Rooms, Education, and Counseling in Sunan Kalijaga Regional Public Hospital, Demak Regency

Based on the results of the identification and interviews with HIV/AIDS-positive patients, the intervention was done by changing the service flow and providing a separate room for HIV/AIDS patients to take medicines. The results show that some HIV/AIDS-positive patients are happy with the building of a separate room to take their medicines and the provision of drug counseling information.

4. Conclusion

Service flow changes, provision of drug consultation, and the building of a separate waiting room specifically have affected the quality of life of people living with HIV/AIDS in Sunan Kalijaga Regional Public Hospital before and after the interventions. The positive effects are found in physical health and social relationship domains with a sig value < 0.05, which indicates significant differences. In contrast, the intervention of service flow changes, the provision of drug consultation, and the establishment of a separate waiting room do not affect the patients' compliance with the therapy with the statistical value of sig > 0.05. However, the result of an in-depth interview conducted after the intervention describes positive impressions. The patients feel happy with the interventions because they could quickly manage their medicines. Unfortunately, not many people know and receive the information and drug consultation when managing medicines.

Author Contributions: Rissa Maharani Dewi conceived and designed the study. Rissa Maharani Dewi performed all data analyses. Akrom, Ari Simbara and Rissa Maharani Dewi interpreted the results and revised the paper. Rissa Maharani Dewi wrote the manuscript. All authors read and approved the final manuscript.

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