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# Quality of Life Patients HIV Based on Characteristic, Duration of Diagnosis, and Types Antiretroviral (ARV)

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**ABSTRACT**

Human Immunodeficiency Virus (HIV) is a retrovirus that attacks the body's immune system, leading to an increase in morbidity and mortality rates in Indonesia. HIV can cause problems in both physical and emotional aspects, impacting the quality of life in daily activities. This study aims to determine the health-related quality of life of HIV patients based on characteristics, duration of diagnosis, and types of antiretroviral treatment at RSUD Sumedang. The research utilized a cross-sectional design with a population of HIV patients visiting the teratai clinic at RSUD Sumedang. Sampling was done using consecutive sampling, involving 71 respondents who met the inclusion criteria. Data analysis in this study utilized univariate analysis and bivariate analysis using chi-square. The univariate analysis results indicated that the majority of respondents had a good quality of life at 56.3%, measured using EQ-5D-5L, with the anxiety/depression domain being the one with the most issues. The results of bivariate analysis using chi-square showed no significant relationship between characteristics, duration of diagnosis, and types of antiretroviral treatment with the quality of life in HIV patients at RSUD Sumedang. It was concluded that the quality of life of HIV patients at RSUD Sumedang, measured using EQ-5D-5L, is mostly good. The domain of anxiety/depression is the most problematic.

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## INTRODUCTION

Human Immunodeficiency Virus (HIV) is a retrovirus that attacks the human immune system, making individuals infected more susceptible to infections than normal individuals. The progression of HIV continues to show an increase despite various efforts by the government to address it. According to the World Health Organization, it is estimated that by the end of 2022, 39 million people will be living with HIV (World Health Organization, 2023).

In Indonesia, the reported cases of HIV by the Ministry of Health (Kementerian Kesehatan RI, 2022) indicate 52,955 people with HIV, with 42,610 receiving Antiretroviral Therapy (ART). In the third quarter report of 2022, the highest distribution of people with HIV (PLHIV) was in West Java Province, reaching 6,215 individuals, while the number of AIDS patients was 967. In Sumedang Regency in 2022, there were 133 HIV patients, with 10 of them already having progressed to AIDS (Erik, 2022).

HIV patients can experience a wide range of problems, affecting various aspects of their physical and emotional well-being, resulting in a decline in their quality of life. The quality of life is a multidimensional assessment that combines a person's health status with their overall feelings, including physical, mental, and emotional aspects, which individuals can subjectively evaluate to assess life positively or negatively (Prayoga et al., 2022).

Generally, the public is only aware of HIV as a sexually transmitted infectious disease with dangerous consequences for those infected. This lack of understanding leads to overprotective attitudes towards people living with HIV/AIDS (PLHIV), such as avoiding interaction with them and believing that HIV patients should be avoided (Hardiansyah et al., 2017). This misunderstanding worsens the situation for

PLHIV as they feel marginalized by society, leading them to isolate themselves from social life, both at home and at work, thus affecting their quality of life. Additionally, individuals with HIV/AIDS face various symptoms of HIV over an extended period, requiring constant efforts to overcome physical and social challenges that impact their quality of life.

While HIV/AIDS cannot be cured, the infection can be controlled with Antiretroviral Therapy (ARV) (Galistiani et al., 2013). The use of ARV in HIV patients is an effort to prolong life expectancy, making PLHIV healthier and more productive by reducing viremia and increasing CD4 cell counts (Handayani et al., 2017). Combination ARV therapy, consisting of two essential drugs and one optional drug, has proven effective in extending the life expectancy of ODHA. However, the side effects of ARV can vary among individuals, impacting the quality of life of PLHIV.

The quality of life in HIV patients is influenced by the virus attacking the immune system, making them more vulnerable to various diseases that affect their daily activities. Successful daily functioning requires good physical and psychological support. Mobility, self-care, usual activities, and pain/discomfort are related to the physiological abilities of PLHIV, which are influenced by disease stage, opportunistic infections, ARV side effects, and the presence of pain that may hinder PLHIV from performing daily activities. PLHIV faces many problems that various sources can cause. When these stressors occur, PLHIV often fails to develop adaptive coping mechanisms, leading to depressive conditions (Kusuma, 2016).

The importance of addressing Health-Related Quality of Life (HRQoL) among PLHIV has become a national program for HIV/AIDS prevention and control in Indonesia, in line with the global strategy 95-95-95 (Kementerian Kesehatan RI, 2022). HIV is considered a chronic condition, and with ARV therapy, life expectancy is similar to that of the general population. Therefore, enhancing and ensuring Health-Related Quality of Life (HRQoL) among PLHIV is increasingly crucial and has become a national program.

Characteristics (such as gender, age, education, occupation, marital status), diagnosis duration, and antiretroviral type can affect an individual's quality of life. According to Handayani et al. (2017), demographic characteristics influence the quality of life of PLHIV, including age, gender, education, occupation, marital status, and duration of diagnosis. Demographic characteristics vary for each individual; the duration of diagnosis is the duration from the initial HIV diagnosis, and the antiretroviral is the ARV consumed by PLHIV according to perceived conditions and government guidelines.

Therefore, this research is needed to explore the health-related quality of life-based on characteristics, duration of diagnosis, and the antiretroviral at RSUD Sumedang, serving as an evaluation tool to enhance care and support programs and improve the quality of life for HIV patients.

## METHOD

This research method utilizes a quantitative descriptive approach with a cross-sectional design. The sampling technique employed consecutive sampling, involving 71 HIV patients at Rumah Sakit Umum Daerah Sumedang (RSUD Sumedang)

Which is one of the government referral hospitals in addressing HIV/AIDS cases in Sumedang as one of the areas with potential for HIV/AIDS transmission. To address this, RSUD Sumedang has opened a Teratai Clinic for HIV/AIDS. The inclusion criteria for sample selection were HIV patients undergoing outpatient treatment at RSUD Sumedang. Patients with communication disorders were excluded from the study. Data analysis for this research involves univariate analysis, aiming to describe patients' quality of life based on characteristics, duration of diagnosis, and types of antiretroviral drugs. Bivariate analysis using chi-square is also employed to test relationships between characteristics, duration of diagnosis, and ARV type with the quality of life of HIV patients, with p-value≤0,05 indicating a significant relationship.

Variables in this study include characteristics (gender, age, education, occupation, and marital status), duration of diagnosis, and types of antiretroviral drugs, with the dependent variable being the quality of life. Quality of life, assessed using the EQ-5D-5L instrument in the Indonesian language, has been validated for reliability and validity (Tondok et al., 2021). This research has obtained ethical approval from the Research Ethics Committee of Universitas ‘Aisyiyah Bandung with the number 664/KEP.01/UNISA-BANDUNG/VII/2023.

|The quality of life of HIV patients can be seen through 5 dimensions: mobility, self-care, usual activities, pain/discomfort, and the

dimension of anxiety/depression. Each dimension has five levels: no problems, slight problems, moderate problems, severe problems, and unable/ extreme problems. The EQ-5D-5L instruments describe five dimensions. A 1-digit number expresses the level selected for that specific dimension, called the health state. For example, state '54321' indicates 'unable to walk about, severe problems doing self-care, moderate problems doing usual activities, slight pain or discomfort, and no anxiety or depression. Health state can vary for each individual.

## RESULTS

Based on Table 1, the most common demographic characteristic of the patients is that 47 individuals (66.2%) are male, compared to 24 individuals (33.8%) who are female. The respondents in the study range from 17 to 55 years, with the majority falling in the 26-35 age group or early adulthood, comprising 34 individuals (47.9%). The late adolescent age group, 17-25, accounts for 15 respondents (21.1%). Among the respondents, 42 individuals (59.2%) have completed high school (SMA/SLTA) education, and the majority, 38 individuals (53.5%), are employed, which is greater than the number of unemployed respondents, totaling 33 individuals (46.5%). Regarding marital status, 37 respondents (52.1%) are unmarried. Regarding the variable of the duration of diagnosis, 47 respondents (66.2%) have been diagnosed for ≤ 5 years, while 24 respondents (33.8%) have been diagnosed for more than five years. Overall, respondents are taking Antiretroviral Drugs (ARV), with 36 individuals (50.7%) consuming the NtRTI type of ARV, specifically) Atripla.

**Table 1. Frequency distribution of characteristics, duration of diagnosis, and types of ARV patients HIV**

| Characteristic | f | % |
|---|---|---|
| **Sex** | | |
| Male | 47 | 66.2 |
| Female | 24 | 33.8 |
| **Age** | | |
| 17-25 years | 15 | 21.1 |
| 26-35 years | 34 | 47.9 |
| 36-45 years | 10 | 14.1 |
| 46-55 years | 12 | 16.9 |
| **Education** | | |
| Elementary School | 5 | 7 |
| Junior High School | 18 | 25.4 |
| Senior High School | 42 | 59.2 |
| Diploma (D1/D2/D3/D4) | 2 | 2.8 |
| Bachelor's (S1/S2/S3) | 4 | 5.6 |
| **Occupation** | | |
| Unemployed | 33 | 46.5 |
| Employed | 38 | 53.5 |
| **Marital Status** | | |
| Single | 37 | 52.1 |
| Married | 27 | 38 |
| Divorced | 4 | 5.6 |
| Widowed | 3 | 4.2 |
| **Duration of Diagnosis** | | |
| ≤ 5 years | 47 | 66.2 |
| > 5 years | 24 | 33.8 |
| **Types ARV** | | |
| TDF(300)/3TC(300)/EFV(600) | 36 | 50.7 |
| TDF(300)/ 3TC(300)/DTG(50) | 9 | 12.7 |
| TDF(300)+3TC(150)+NVP(200) | 3 | 4.2 |
| ZDV(300)/3TC(150)+NVP(200) | 19 | 26.8 |
| ZDV(300)/3TC(150)+EFV(600) | 4 | 5.6 |

**Table 2. Domain quality of life patient HIV**

| Domain | % | | | | |
|---|---|---|---|---|---|
| | Level 1 | Level 2 | Level 3 | Level 4 | Level 5 |
| Mobility | 67 (94.4%) | 3 (4.2%) | 1 (1.4%) | - | - |
| Self Care | 70 (98.6%) | 1 (1.4%) | - | - | - |
| Usual activities | 69 (97.2%) | 2 (2.8%) | - | - | - |
| Pain/discomfort | 42 (59.2%) | 18 (25.4%) | 9 (12.7%) | 2 (2.8%) | - |
| Anxiety/depression | 26 (36.6%) | 20 (28.2%) | 15 (21.1%) | 7 (8.9%) | 3 (4.2%) |

Based on Table 2, it is shown that the majority of HIV patients have no issues in each dimension. Specifically, 67 respondents (94.4%) have no problems in the mobility domain, 70 respondents (98.6%) have no problems in the self-care domain, 69 respondents (97.2%) have no problems in the usual activities domain, 42 respondents (59.2%) have no problems in the pain/discomfort domain, and 26 respondents (61.4%) have no problems in the anxiety/depression domain.

**Table 3. Health state patients HIV**

| Health State | f | Value | % |
|---|---|---|---|
| 11111 | 20 | 1.000 | 28.2 |
| 11113 | 6 | 0.945 | 8.5 |
| 11133 | 1 | 0.936 | 1.4 |
| 11115 | 2 | 0.922 | 2.8 |
| 11112 | 11 | 0.921 | 15.5 |
| 11121 | 3 | 0.914 | 4.2 |
| 11135 | 1 | 0.913 | 1.4 |
| 11132 | 3 | 0.912 | 4.2 |
| 11211 | 1 | 0.910 | 1.4 |
| 11114 | 1 | 0.907 | 1.4 |
| 11134 | 4 | 0.898 | 5.6 |
| 21111 | 1 | 0.881 | 1.4 |
| 11123 | 3 | 0.859 | 4.2 |
| 11143 | 2 | 0.842 | 2.8 |
| 31121 | 1 | 0.841 | 1.4 |
| 11122 | 6 | 0.835 | 8.5 |
| 11124 | 2 | 0.821 | 2.8 |
| 21123 | 2 | 0.740 | 2.8 |
| 12223 | 1 | 0.668 | 1.4 |

Table 3 shows the utility values or health states of HIV patients at RSUD Sumedang. Perfect health is indicated by the health state 11111. The study identifies 19 different health states. In the condition of perfect health or health state, 11111, 20 respondents (28.2%) are found, meaning most respondents have perfect health, while 51 other respondents have varying health states.

In this study, utility values ranging from 0.668 to 1.000 were obtained and calculated according to the EQ-5D-5L value set in Indonesia (Purba et al., 2017). Based on the normality test conducted in this study, the utility values are generally not distributed, resulting in a median value of 0.912. Respondents are considered to have good quality of life if they have a utility value ≥0.912 and considered to have less quality of life if the utility value is <0.912. Consequently, 40 respondents (56.3%) have good quality of life and 31 (43.7%) have less quality of life.

**Table 4. Frequency distribution of quality of life in HIV patients based on characteristic**

| Variable | Quality of Life | | | | | | p-value |
|---|---|---|---|---|---|---|---|
| | Good | | Less | | Total | | |
| | n | % | n | % | n | % | |
| **Sex** | | | | | | | |
| Male | 26 | 55.3 | 21 | 44.7 | 47 | 100 | 0.809 |
| Female | 14 | 58.3 | 10 | 41.7 | 24 | 100 | |
| **Age** | | | | | | | |
| 17-25 years | 8 | 53.3 | 7 | 46.7 | 15 | 100 | |
| 26-35 years | 22 | 64.7 | 12 | 35.3 | 34 | 100 | 0.525 |
| 36-45 years | 5 | 50 | 5 | 50 | 10 | 100 | |
| 46-55 years | 5 | 41.7 | 7 | 58.3 | 12 | 100 | |
| **Education** | | | | | | | |
| Elementary School | 2 | 40 | 3 | 60 | 5 | 100 | |
| Junior High School | 11 | 61.1 | 7 | 38.9 | 18 | 100 | 0.853 |
| Senior High School | 23 | 54.8 | 19 | 45.2 | 42 | 100 | |
| Diploma (D1/D2/D3/D4) | 1 | 50 | 1 | 50 | 2 | 100 | |
| Bachelor's (S1/S2/S3) | 3 | 75 | 1 | 25 | 4 | 100 | |
| **Occupation** | | | | | | | |
| Unemployed | 22 | 66.7 | 11 | 33.3 | 33 | 100 | 0.102 |
| Employed | 18 | 47.4 | 20 | 52.6 | 38 | 100 | |
| **Marital Status** | | | | | | | |
| Single | 22 | 59.5 | 15 | 40.5 | 37 | 100 | |
| Married | 17 | 63 | 10 | 37 | 27 | 100 | 0.107 |
| Divorced | 1 | 25 | 3 | 75 | 4 | 100 | |
| Widowed | - | - | 3 | 100 | 3 | 100 | |
| **Duration of Diagnosis** | | | | | | | |
| ≤ 5 years | 29 | 61.7 | 18 | 38.3 | 47 | 100 | 0.202 |
| > 5 years | 11 | 45.8 | 13 | 54.2 | 24 | 100 | |
| **Types Antiretroviral** | | | | | | | |
| TDF(300)/3TC(300)/EFV(600) | 20 | 55.6 | 16 | 44.4 | 36 | 100 | |
| TDF(300)/ 3TC(300)/DTG(50) | 5 | 55.6 | 4 | 44.4 | 9 | 100 | 0.897 |
| TDF(300)+3TC(150)+NVP(200) | 1 | 33.3 | 2 | 66.7 | 3 | 100 | |
| ZDV(300)/3TC(150)+NVP(200) | 12 | 63.2 | 7 | 36.8 | 19 | 100 | |
| ZDV(300)/3TC(150)+EFV(600) | 2 | 50 | 2 | 50 | 4 | 100 | |

Table 4 shows that 26 respondents (55.3%) out of 47 male respondents have good quality of life. Among female respondents, 14 (58.3%) have a good quality of life. In this study, most

respondents are 26-35 years old, which falls into the early adulthood category. Of these, 22 respondents (47.9%) have good quality of life.

In the education sub-variable, 23 respondents (54.8%) with a last educational background of high school (SMA/SLTA) and junior high school (SMP/SLTP) have a good quality of life, and even among 19 (45.2%) respondents high school-educated respondents, the quality of life is less. In the occupation sub-variable, 22 respondents (66.7%) who are unemployed have a good quality of life. In the duration of diagnosis sub-variable, 29 respondents (61.7%) diagnosed ≤5 years have good quality of life. About 20 respondents (55.6%) have a good quality of life by consuming the ARV medication type Atripla.

## DISCUSSION

The quality of life is a multidimensional assessment that combines a person's health status with their overall feelings, including physical, mental, and emotional aspects, which individuals can subjectively evaluate to assess life positively or negatively (Prayoga et al., 2022). The research also examined the relationship between characteristics, duration of diagnosis, and ARV types. However, after conducting bivariate tests using chi-square, there was no significant relationship between characteristics, duration of diagnosis, and ARV types with the quality of life in HIV patients at RSUD Sumedang.

The research results indicate that most respondents did not have issues in the domains of mobility, self-care, usual activities, and pain/discomfort. However, the majority did have problems in the domain of anxiety/depression. This is similar to the findings of research conducted by Popping et al. (2021), which showed that the domain of anxiety/depression is the primary concern among PLHIV in the Netherlands and the UK. PLHIV experience more anxiety or depression problems compared to people not affected by HIV. Anxiety and depression are significant causes of poor HRQoL among PLHIV in the Netherlands and the UK (Popping et al., 2021).

Factors contributing to increased anxiety and depression among PLHIV include being newly diagnosed with HIV, problems in social relationships, negative stigma, social isolation, loneliness, and the experience of living with a chronic illness. Unknown and untreated mental health problems are associated with non-compliance and increased high-risk behavior, such as substance abuse and injection drug use, which can trigger HIV transmission. Mobility, self-care, and usual activities are related to the physical component of each individual. During HIV treatment with ARV, patients may experience depressive symptoms due to worsening health status, difficulty in performing activities, ARV side effects, stigma and discrimination, and poor economic conditions (Tran et al., 2018). Elderly living with HIV, besides experiencing anxiety and depression, have additional problems, especially in the physical component. Most elderly PLHIV have more comorbidities, use multiple medications, and are vulnerable to experiencing many changes in physical, cognitive, and stress-related well-being.

Based on the research results, 19 health state variations were obtained, and more than half of the respondents were in good health. Quality of life is an individual's perception of living their life, closely related to their quality of life. In the domains of mobility, self-care, usual activities, and pain/discomfort, which are closely related to an individual's physical well-being, generally, individuals have good physical conditions, as indicated by the majority of respondents being able to take care of themselves, having good mobility such as visiting health services for treatment, being able to carry out daily activities. The majority are not experiencing pain/discomfort. If people with HIV have adaptive coping mechanisms, their quality of life perception will be good (Rai et al., 2010).

These research findings are consistent with the research by Prayoga et al. (2022) on the quality of life of HIV/AIDS patients in Pasar Rebo using EQ-5D-5L, which showed that PLHIV had good quality of life. Similar research was conducted by (Rayanakorn et al., 2022) on HIV quality of life in Thailand, where one of the instruments used was EQ-5D-5L, with an average utility value of 0.912 ranging from 0.056 to 1.000. HRQoL in each country will be different, as in the study by Popping et al. (2021), elderly PLHIV in the UK had lower HRQoL compared to the Netherlands, indicating that HRQoL is specific to each country.

Frequency distribution is based on age sub-variables; most are aged 26-35 or the early adulthood group with a good quality of life. Whether someone's quality of life is good or less is influenced by various factors; the early adulthood group tends to have a good quality of life because older adults tend to experience cognitive-affective depressive symptoms more than early adults (Monteiro et al., 2016). This

differs from the research conducted by Handayani et al. (2017), where 51.6% of respondents aged ≤35 years had less quality of life.

Based on 71 respondents, the most significant gender percentage was male and had a good quality of life. According to Kusuma (2016), males are more vulnerable to HIV infection based on their transmission methods, including injecting drug use (IDU), homosexual, and heterosexual (unprotected sex). Additionally, males use logic rather than feelings like females when facing stressors. Research conducted in the UK and Netherlands by Popping et al. (2021) showed that in both countries, the majority of respondents were male, with the highest transmission being through men who have sex with men (MSM).

Education is a factor that can affect quality of life. These results are consistent with the research by Hardiansyah et al. (2017), where most respondents were high school graduates. However, according to the research by Handayani et al. (2017), higher education levels have a good quality of life, and vice versa. This differs from the results found because respondents with good and low quality of life were high school graduates. Respondents who are not employed have a better quality of life, which may be because they are under social pressure and prefer to stay at home. However, this can also be a stressor because PLHIV, who only stays at home, will depend on others, especially financially. The income earned can be used to meet living needs such as transportation costs to get ARV at the hospital and recreation with their partners.

Marital status can affect the quality of life due to social support from partners in undergoing treatment. According to Kusuma (2016), respondents who are not married have a 2.204 times higher risk of having poor quality of life. This is supported by research conducted by Handayani et al. (2017), where married PLHIV receive support from their partners and families in undergoing treatment. As social beings constantly interact with their environment, humans will affect their conditions when they are healthy and sick. One way that can help when someone faces stressful conditions is support and assistance from their surroundings (Rahakbauw, 2016). Family or partner social support can help PLHIV cope with their illness. Marriage or living with a partner is associated with a decrease in HIV stigma (Rayanakorn et al., 2022) because this can explain that marital status is beneficial in terms of the social and psychological support they feel.

The research results show that respondents diagnosed ≤5 years have a good quality of life. This may be because individuals are in the phase of accepting their condition and trying to extend their life expectancy by regularly consuming ARV. Respondents >5 years old have a quality of life, one of the reasons being that they have to take ARV medication every day, so respondents feel bored, affecting their quality of life. PLHIV who have been taking ARV for a long time may have better acceptance and adapt better to daily activities compared to individuals who are newly diagnosed and have not undergone treatment.

The most commonly consumed type of ARV is Atripla. According to the research by Yunita et al. (2020), this combination of ARV impacts the number of CD4+ cells used to assess the immunity of HIV/AIDS patients. The results of the study by Yunita et al. (2020) indicate that the longer the use of the Atripla combination, the higher the number of CD4+ cells, which affects their quality of life. Rayanakorn et al. (2022) research suggests that combining 2 NRTIs with NNRI is a commonly used regimen. Although the treatment duration is long, the study's respondents showed good compliance and low ARV resistance.

## CONCLUSION

The quality of life of HIV patients at RSUD Sumedang, measured using EQ-5D-5L, is mostly good. The domain of anxiety/depression is the most problematic. However, there is no significant relationship between characteristics (such as gender, age, education, occupation, marital status), duration of diagnosis, and ARV type with the quality of life of HIV patients at RSUD Sumedang.

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