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The Effect of Nutritional Status on the Quality of Life of People with HIV/AIDS (ODHA) Receiving Antiretroviral Therapy

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Abstract

BACKGROUND: Human immunodeficiency virus (HIV) is a type of virus that can weaken the immune system. People living with HIV (PLHIV) is vulnerable to a decrease in quality of life due to declining physical health and stigma from themselves and society. PLHIV is also found to have less intake, changes in the body's metabolic rate, and changes in the digestive system, which results in malnutrition conditions.

AIM: The aim of the study is to analyze the effect of nutritional status on the quality of life of people with HIV/acquired immunodeficiency syndrome (AIDS) (ODHA) receiving antiretroviral therapy (ARV).

METHODS: This study was cross-sectional analytical study that examines nutritional status using body mass index with quality of life of PLHIV assessed by the World Health Organization Quality of life-HIV BREF questionnaire. Bivariate analysis was analyzed by Chi-square test and multivariate analysis by logistic regression test.

RESULTS: The results of the study found no relationship between nutritional status and quality of life. This study found a relationship between age, stigma, and depression with quality of life in PLHIV who received ARVs.

CONCLUSION: The integration of psychologists in the treatment of HIV/AIDS is also recommended considering that depression plays a role in the quality of life of PLHIV. Counseling and health education to the community to reduce stigma should also be done.

Introduction

Human immunodeficiency virus (HIV) is a type of virus that can weaken the immune system. The weaker the body's immunity, the more pathogens that can infect the body will cause the condition of acquired immunodeficiency syndrome (AIDS) [1], [2]. The number of people with HIV (PLHIV)/AIDS in Indonesia in the second quarter of 2023 almost reached 10,000 people, of which around 70% received antiretroviral therapy (ARV) [3].

Quality of life of PLHIV is an important component in assessing the success of therapy [4]. On the other hand, the nutritional status of PLHIV affects the progression of disease which has an impact on the quality of life. PLHIV is vulnerable to a decrease in quality of life due to declining physical health and stigma from themselves and society [5]. PLHIV is also found to have less intake, changes in the body's metabolic rate, and changes in the digestive system, which results in malnutrition conditions. This condition will further reduce the body's immune system, which will be at risk of causing opportunistic infections [6].

Because there are still few studies that show evidence of the relationship between nutritional status and the quality of life of PLHIV, this study aims to examine the effect of nutritional status on the quality of life of people with HIV/AIDS who receive ARV therapy.

Methods

This study is a cross-sectional analytical study that looks for associations between nutritional status and quality of life of people with HIV/AIDS who receive ARV therapy. The population of this research study is PLHIV who access health facilities in Surabaya City and at the Kompeda Foundation.

The inclusion criteria used are PLHIV who are able to communicate well and are willing to be research respondents. The exclusion criteria in this study are PLHIV who are mentally disturbed so that it can hinder in understanding and filling out the questionnaire and PLHIV who experience physical discomfort such as

dizziness and pain during the study so that it is not possible to continue filling out the questionnaire.

We collected 235 samples using the purposive sampling technique. The variables studied were respondent characteristics (age, sex, occupation and income, marital status, duration of HIV suffer, and duration of ARV therapy), stigma received using the HIV stigma scale by Beger, depressive status using the PHQ-9 questionnaire ("Patient Health Questionnaire-9"), body mass index (BMI), and quality of life of respondents assessed using the World Health Organization Quality of life-HIV BREF [7]. The patient's depressed status is categorized into "depressed" and "not depressed" while the stigma of PLHIV is divided into "low stigma" and "high stigma." BMI is divided into "abnormal nutrition" (BMI <17.0–18.4, BMI 25.1 >–27) and normal nutrition (BMI 18.5–25). Quality of life was categorized into "poor quality of life" (< mean score 13.82) and "good quality of life" (≥ mean score 13.82). All variables will then be analyzed univariately, bivariately, and multivariately. Bivariate analysis was performed using Chi-square test and multivariate analysis using multiple logistic regression test.

Results

As can be seen in Table 1, of the 235 respondents, the majority are over 30 years old, male, have jobs, and are single. Most participants also had normal nutritional status, the duration of HIV infection was <5 years, and the duration of treatment was more than 1 year. Most respondents did not experience depression, experienced low negative stigma, and had a poor quality of life.

Table 1: Characteristics of respondents (n = 235)

Variable	n (%)
Gender	
Man	181 (77)
Woman	54 (23)
Age (years)	
<30	162 (68.9)
More than 30	73 (31.1)
Employee	
Employee	216 (91.9)
Unemployee	19 (8.1)
Marital status	
Single	131 (55.7)
Married	35 (14.9)
Divorce	69 (29.4)
Body mass index	
Normal	188 (80)
Abnormal	47 (20)
Infectious HIV duration	
<5	129 (54.9)
More than 5	106 (45.1)
ARV duration	
<1	22 (9.4)
More than 1	213 (90.6)
Level of depression	
Depression	71 (30.2)
No depression	164 (69.8)
Negative stigma	
High	114 (48.5)
Low	121 (51.5)
Quality of life	
Less	124 (5.8)
Good	111 (47.2)

The results of the bivariate analysis listed in Table 2 found a value of p < 0.05 in the age variable (p = 0.022), stigma (p = 0.00), and depression (p = 0.002). Nutritional status, sex, income, marital status, duration of suffering from HIV/AIDS, and duration of ARV therapy were found to have value p > 0.005.

Table 2: Bivariate analysis of variables with quality of life

Variable	Prevalence ratio (95% CI)	p value
Nutritional status	0.838 (0.592–1.188)	0.382
Age	0.738 (0.584–0.934)	0.022*
Gender	1.072 (0.795–1.446)	0.756
Marital status	1.338 (0.999–1.793)	0.053
Infectious HIV duration HIV	1.065 (0.834–1.361)	0.707
ARV duration	1.037 (0.694–1.551)	1.000
Stigma	1.625 (1.261–2.093)	0.00*
Depression	1.459 (1.159–1.837)	0.002*

*Lower than alpha value *P*<0.05. CI: Confidence interval, ARV: Antiretroviral therapy.

The results of the multivariate analysis in Table 3 found that there was no relationship between nutritional status and quality of life. Age and stigma have a relationship with quality of life. Confounding the relationship between nutritional status and quality of life of PLHIV is age and stigma.

Table 3: Logistic regression: Factors affecting the quality of life of PLHIV

Variable	p value	OR	95% CI	
			Low	Up
Age	0.017*	0.441	0.227	0.8755
Stigma	0.000*	3.189	0.1742	5.837
Depression	0.001*	3.179	0.1825	5.673

PLHIV: People living with HIV, OR: Odds ratio, CI: Confidence interval.

Discussion

The study found that the majority of respondents had normal nutritional status. High waist circumference and BMI are significant health risk factors that can increase the likelihood of several malignancies, metabolic disorders, and cardiovascular diseases. In the past, indicators of HIV infection were malnourished. Based on research by de Carvalho *et al*., nutritional status can affect quality of life, especially in the physical domain [8]. Lower BMI is associated with lower quality of life, especially in the domains of physical and social functioning. However, some studies have pointed to the "obesity paradox," in which it is hypothesized that obesity improves immune responses and supplies fat reserves to reduce protein use [9]. According to research by Martinez, HIV infection in obese patients has a slower progression. Similar findings from Obry-Roguet *et al*., study also show that PLHIV with obesity has a better quality of life [10].

Almost half respondents in this study had a poor quality of life. It has recently been found that easy access to HIV diagnosis, ARV therapy, and earlier and better health facility support can improve the quality of life of PLHIV. Quality of life has been used as a criterion in assessing HIV treatment [11]. The findings in this study are similar to those by Handayani, who

found that good quality of life was most prevalent in the social and psychological domains, and poor quality of life was found most in the physical domain and level of independence [12], [13]. The findings of this study showed that there was no significant relationship between nutritional status and quality of life of PLHIV, similar to research by Thapa *et al*. [14] and Khatri [15].

This study found a significant relationship between age and quality of life of PLHIV ($p < 0.005$). Risk factors for age-related diseases were found to be similar among PLHIV and people without HIV/AIDS, but their prevalence was associated with unhealthy habits. Because PLHIV is usually found to have these habits, it is recommended for HIV clinics not only to focus on the survival of PLHIV but also on improving the quality of life of PLHIV who are getting older [16].

The study found a significant association with depression and stigma against PLHIV. Several previous studies have found similar results [17]. This stigma is usually caused by a lack of information about HIV/AIDS in the community. As a result of stigma, PLHIV will experience discrimination that will adversely affect their quality of life. Stigma and discrimination have also been found to be associated with depression in PLHIV [18], [19], [21].

Deteriorating physical health and side effects of ARVs have been found to result in depression [20]. Furthermore, a study has indicated that the neurotrophic effects of HIV may lead to neuropathological alterations in the substantia of the grisea, which in turn may cause depression [15], [16], [17], [18].

Conclusion

In this study, in general, PLHIV had a normal nutritional status and poor quality of life. There is no relationship between nutritional status and quality of life of PLHIV. There is a relationship between age, depression, and stigma and quality of life. The integration of psychologists in handling HIV/AIDS is recommended considering that depression plays a role in the quality of life of PLHIV. Counseling to the community to reduce stigma should also be done.

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