RELATIONSHIP BETWEEN ADHERENCE TO TAKING ANTIRETROVIRAL AND NUTRITION INTAKE WITH THE QUALITY OF LIFE OF PERSON WITH HIV AT JOHAR BARU PUBLIC HEALTH CENTER

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Abstract

Human Immunodeficiency Virus (HIV) is a virus that can weaken the immune system. When the immune system weakens, the body becomes more susceptible to various pathogens, which can ultimately cause AIDS (Novita, 2022). In general, someone who is confirmed positive for HIV is called PLHIV (People with HIV). The aim of this research is to determine the relationship between medication adherence and nutritional intake on the quality of life of PLHIV. The number of respondents who met the inclusion criteria was 40 people aged 30-49 who were married. There were 35 respondents. Observations were made when patients took antiretroviral (ARV) drugs in June 2024, the majority of respondents had high compliance with ARV drug consumption (45.70%), good quality of life (68.6%), adequate nutritional intake. The results of the Somers'd test showed a significant relationship between adherence to taking ARV and the nutritional status of respondents (0.002) with a level of closeness that was close to perfect and quality of life (0.007) with a strong relationship. However, there was no significant relationship between nutritional intake and the nutritional status and quality of life of respondents (p>0.005). This research concludes that the level of medication adherence can be related to the quality of life of PLHIV. It is recommended that health workers provide education to PLHIV regarding vitamin C and zinc by increasing consumption of vegetables and fruit.

Keywords: HIV; ARV; Nutrition; Intake; Quality of Life

1. INTRODUCTION

Human immunodeficiency virus (HIV) is a virus that can weaken the immune system. The weaker the immune system becomes, the more susceptible the body becomes to infection, which can lead to acquired immunodeficiency syndrome (AIDS) (Novita, 2022). According to data from the Indonesian Ministry of Health, 35% of HIV cases in Indonesia in 2023 occurred among housewives. This percentage is higher than that of HIV/AIDS sufferers from MSM (men who have sex with men). Putri's (2022) research shows that married women are commonly infected with HIV through husbands who engage in socially deviant behaviour, despite the women themselves usually being faithful to one partner and adhering to societal norms and morals. The severity of the illness can be reduced through ARV therapy, which is one of the CST (Care, Support and Treatment) programmes. ARV therapy should be started within seven days of diagnosis and clinical assessment (Ministry of Health, 2019).

Indicators of successful ARV therapy include an increase in the weight of PLHIV, a stable controlled viral load, an absence of opportunistic infections and an increase in CD4 cell count (Seba Marta, 2019). Adherence to taking ARV drugs among PLHIV is influenced by patient knowledge and

family support. Patients with good knowledge showed 55.7% adherence to taking ARV drugs, while positive family support was associated with 53.7% adherence to medication (Debby, 2019). Research conducted by Nurhayati and Hafiz (2022) showed that adherence to ARV medication improves the quality of life of PLHIV, with a p value of 0.005. This means that the better the adherence, the better the quality of life.

The use of certain ARV drugs can have side effects that are exacerbated if taken without food, and poor nutrition can inhibit the effectiveness of ARV drugs (Novita, 2022). Providing adequate nutrition and consumption of safe, clean water will improve treatment effectiveness, prevent severity, and the emergence of new co-infections (Sidjabat, 2021). In addition, one of the side effects of ARVs is loss of appetite, which can reduce food consumption (Juli Andri, 2020). Margareth's (2020) study showed that HIV patients often have low energy intake, with 90.3% having insufficient energy intake, and 71% having low protein intake. Sidjabat's research (2021) also found that 28.3% of HIV patients had low fat intake and 19.2% had low carbohydrate intake, with the reason being avoiding high-fat snacks to maintain body condition. In addition to the need for macronutrients such as energy, carbohydrates, protein, and fat, micronutrients are also very important for AIDS patients. Micronutrient deficiencies can affect immune function and accelerate disease progression. This study will further explore the effect of zinc and vitamin C sufficiency on women with HIV. Vitamin C and zinc are micronutrients with antioxidant properties that can aid recovery from infection by protecting cells and tissues from damage. Nutritional imbalances are an important factor in HIV infection and can lead to death during the progression of AIDS.

2. METHODOLOGY

The research design was cross-sectional. The study was conducted from June to July 2024 at the Puskesmas in Johar Baru District, Central Jakarta. The study population comprised all adult women aged 30–49 years who took antiretroviral therapy (ART) at the Puskesmas of Johar Baru District. Samples were taken by accidental sampling, totalling 35 adult women who met the following inclusion criteria: (a) outpatient status at Puskesmas Johar Baru, (b) female gender, (c) aged 30–49 years, and (d) married and undergoing ARVs for at least six months. Exclusion criteria included: (a) being pregnant, (b) having comorbidities (e.g. diarrhoea, TB, hepatitis, degenerative diseases), (c) following a certain diet and (d) being illiterate.

The independent variables in this study were adherence to taking ARV and nutritional intake. Adherence to taking ARV was assessed using a questionnaire containing questions about the date of taking medication, the amount of medication taken, and the remaining medication. Adherence to taking ARV was categorized as Low (number of ARVs taken <80%), Moderate (number of ARVs taken 80-95%), High (number of ARVs taken >95%). Nutrition intake data consisting of energy, carbohydrate, protein, and fat intake were obtained using the 24-hour recall method. The method was conducted twice a week for three months. Intake was categorized as Inadequate (<80% nutritional requirements), Adequate (80-100% RDA), Excessive (>100% RDA). The dependent variable in this study was quality of life. Quality of life uses the WHOQOL-BREF questionnaire which has previously been used by other researchers. This questionnaire has 100 points. When <50 is categorized as poor quality of life and when ≥50 is good quality of life. In this study, the relationship between medication adherence and nutrient intake and quality of life was analysed using the Somers'd test statistic.

3. RESULTS

3.1 Adherence To Taking ARV

Table 1. Adherence To Taking ARV

Adherence To Taking ARV	n	%
Low	8	22.9
Moderate	9	25.7
High	18	51.4

The distribution of the level of adherence to taking ARV showed that the number of patients with adherence to taking ARV at the Puskesmas of Johar Baru Subdistrict in 2024 was more likely to have high adherence with a proportion of 16 people (45.7%). PLHIV adherence to taking ARV is also based on self-motivation, support from family, support from friends and from health workers. Through ARV treatment, the quality of life of PLHIV is improved, and there is a good relationship with the health care provider and the role of the medication companion (Tae, 2019). PLHIV are said to have high adherence if the minimum ARV consumption is 90-95%. The level of adherence of PLHIV can also be seen from their physical condition that no longer has opportunistic infections, no drastic weight loss which is also accompanied by an increase in CD4 levels and a decrease in viral load.

3.2 Nutrition Intake

Table 2. Nutrition Intake

Nutrition Intake	n	%
Energy Intake		
Inadequate	1	2.9
Adequate	34	97.1
Excessive	0	0
Protein Intake		
Inadequate	0	0
Adequate	31	88.6
Excessive	4	11.4
Fat Intake		
Inadequate	1	2.9
Adequate	31	88.6
Excessive	3	8.6
Carbohydrate Intake		
Inadequate	1	2.9
Adequate	32	91.4
Excessive	2	5.7
Zinc Intake		
Inadequate	21	60.0
Adequate	6	17.1
Excessive	8	22.9
Vitamin C Intake		
Inadequate	18	51.4
Adequate	2	5.7
Excessive	15	42.9

Based on the results of a 24-hour recall conducted twice a week for three months, it is known that 35 respondents in the study mostly had adequate intake. The importance of providing additional food containing macro and micronutrients can reduce the risk of opportunistic infections, and the incidence of malnutrition (Manggabarani, 2018).

In this study, most HIV patients at Puskesmas Johar Baru had inadequate zinc and vitamin C intake. Inadequate zinc intake can cause a decrease in natural killer cell activity, CD4+ and CD8+, reduce lymphocyte proliferation activity, and inhibit antibody formation by B cells. This can affect the speed of HIV replication in the cell. Vitamin C is one of the antioxidant micronutrients that can help recover from infection, where vitamin C functions to protect cells and tissues against damage caused by reactive oxygen and nitrogen that increases during infectious diseases, especially when the immune system is activated to eliminate the presence of pathogenic organisms (Rezeki, 2015).

3.3 Quality Of Life

Table 3. Quality Of Life

Quality Of Life	n	%
Poor Quality of Life	11	31.4
Good Quality of Life	24	68.6

Assessment of quality of life can provide an overview of how disease and treatment affect patients' lives (Khademi, 2021). The distribution in Figure 5.8 explains that HIV patients at the Johar Baru Health Center mostly have a good quality of life as much as 68.6%. Based on the results of research conducted by Liyanovitasari (2021), it is known that quality of life can cause its own problems for people with HIV because of the many changes in terms of physical and health as well as rejection and negative stigma from the community which will cause lack of confidence in PLHIV which will affect the quality of life of PLHIV itself. The impact of the diagnosis and treatment of HIV/AIDS will also cause problems of depression, anxiety, anger, and confusion which will also affect the quality of life.

3.4 The Relationship Between Adherence To Taking ARV And Quality Of Life

Table 4. The Relationship Between Adherence To Taking ARV And Quality Of Life

	Quality Of Life		
	n	p-Value	r- Value
Adherence To Taking ARV	35	0.007	0.690

This study shows that there is a significant relationship between adherence to taking ARV with the quality of life of PLHIV, especially at the Johar Baru Health Center with a p-value of 0.007 ($p < 0.005$) with a correlation value of 0.690 having a positive correlation direction with a moderate correlation relationship. The results of this study are in line with research conducted by Nurhayati & Hafiz (2022) obtained a p-value = 0.005, it can be concluded that there is a relationship between adherence to taking ARV drugs on the quality of life of HIV/AIDS patients in the Working Area of the Cakung District Health Center, East Jakarta.

In theory, physical health greatly affects an individual's ability to move and includes daily activities, dependence on drugs and medical assistance, energy and fatigue, mobility, pain and discomfort, sleep and rest and work capacity (Suárez, 2018). The results of a study conducted (Betancur, 2017) to women with HIV in Brazil stated that respondents who missed ARV doses in the previous month or in the sense of not being adherent to ARV consumption had lower scores in the health domain coupled with a higher risk of body pain when compared to those who were adherent to taking ARVs.

3.6 The Relationship Between Nutrition Intake And Quality Of Life

Table 5. The Relationship Between Nutrition Intake And Quality Of Life

	Quality Of Life		
Nutrition Intake	**n**	**p-Value**	**r- Value**
Energy Intake	35	0.507	0.116
Protein Intake		0.777	0.050
Fat Intake		0.705	0.066
Carbohydrate Intake		0.694	0.069
Zinc Intake		0.115	0.271
Vitamin C Intake		0.724	0.062

From the results, it was found that p>0.05 for both macro and micronutrient intake, so it can be concluded that there is no significant relationship between macro and micronutrient intake and quality of life. Side effects of drugs due to poor nutritional intake affect PLHIV not consistently taking ARV therapy. Internal factors that can affect the quality of life of PLHIV are nutritional intake and physical activity. The role of nutrition is important in supporting the recovery of a disease, including in PLHIV so that it has an impact on the quality of Life. PLHIV often experience increased nutrient requirements due to fever, vomiting, oppurtunistic infections, metabolic stress, diarrhea and malabsorption as well as changes in body composition where fat-free mass is reduced, especially muscle. Adequate nutrition can prevent malnutrition, inhibit HIV progression, increase resistance to oppurtunistic infections, improve treatment effectiveness and improve quality of life (Lestari, 2022).

The role of nutrition is very important in the management of HIV AIDS because HIV infection can affect the nutritional status of PLHIV. Nutrition is very important and central in comprehensive prevention, care and treatment, adequate nutritional interventions help reduce the risk of infection, reduce clinical symptoms and improve nutritional status and malnutrition that can worsen the disease. Inadequate nutrient intake increases susceptibility to and exacerbates oppurtunistic infections that result in weight loss for PLHIV. Therefore, nutrition workers in health services must know the correct information about HIV AIDS and health issues related to the condition of PLHIV in the service. Thus, cross-program cooperation in HIV/AIDS response in health services to monitor the health development of PLHIV. Nutritional needs that are in accordance with the Nutritional Adequacy Rate (NAC) can improve health conditions for PLHIV. In addition, good body condition helps the body in the process of absorbing drugs consumed by PLHIV and adequate food intake can prevent malnutrition and maintain ideal body weight. One of the side effects of antiretoviral (ARV) therapy treatment for PLHIV is loss of appetite (Hoffman, 2008).

4. CONCLUSIONS

The morbidity rate due to HIV and AIDS-related death can be reduced through ARV treatment which is one of the Supportive Care and Treatment programs. The results showed that the majority of

respondents had high adherence to taking ARV, adequate nutritional intake, with good quality of life. The results also showed that there was a significant relationship between adherence to taking ARV with quality of life, while nutritional intake did not have a significant relationship with the quality of life of PLHIV. This study suggests that HIV patients can adhere to taking ARV. In addition, the intake of vitamin C and zinc in respondents based on the study was mostly inadequate, therefore it is recommended to increase the intake.

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