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Evaluation of the Effectiveness of Pharmaceutical Counseling on Therapeutic Outcomes of HIV/AIDS Patients at Waihaong Community Health Center

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Abstract

Introduction

HIV/AIDS is a global health problem. Over the past 30 years, HIV/AIDS rates have increased at an alarming rate, ranking among the top 10 diseases posing a global burden. Pharmacists play a crucial role in HIV/AIDS control, including through drug counseling. Pharmacist counseling is crucial for improving patient adherence, which impacts therapy outcomes, including viral load levels and quality of life

Material and Methods

The study was conducted using a cross-sectional method, using questionnaires to assess patient quality of life and compliance. A retrospective approach, reviewing patient medical records, was used to determine viral load levels. The data was then processed using SPSS 's chi-square method

Results

A study of 234 HIV patients found that the frequency of pharmacist counseling significantly correlated with therapeutic outcomes, including viral load levels and patient quality of life. However, no significant association was found between frequency and patient adherence to therapy

Conclusions:

Counseling by pharmacists can impact therapeutic outcomes for HIV patients; therefore, providing effective counseling is crucial. Pharmacists should also consider providing other professionals to support consultations whenever the patient needs them, not just every three months for patients on multi-month dispensing.

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Keyword: HIV/AIDS, Pharmacist Counseling, Therapeutic Outcome

Introduction

Background of the Study

HIV/AIDS is a global health problem. Over the past 30 years, HIV/AIDS rates have increased to a significant level, ranking among the top 10 diseases that pose a global burden. WHO data shows that by 2023, globally, 39.9 million people will be living with HIV, and 630,000 will die from HIV-related illnesses. In Indonesia, 546,573 people will be living with HIV, with 24,223 people infected in 2022 [1]. In 2022, there were 564 new cases of HIV/AIDS in Maluku, and this number increased to 769 in 2023. This issue prompted the United Nations Programme on HIV/AIDS (UNAIDS) to update the 90-90-90 target to 95-95-95, which aims to achieve 95% of people living with HIV by 2030 knowing their HIV status, 95% of those who know they are living with HIV receiving antiretroviral treatment, and 95% of those on ARV therapy experiencing adverse effects on their virus [2]. Achieving these targets requires patient adherence to therapy. This is where comprehensive pharmaceutical services play a crucial role, including providing patient counseling [3].

Objective of the Study

This study aims to determine the relationship between counseling and therapeutic outcomes, as measured by viral load, quality of life, and adherence to therapy in HIV patients. It also aims to determine the level of patient satisfaction with the counseling provided.

Methods

The study was conducted on 234 HIV patients at the Waihaong Community Health Center who met the inclusion criteria, namely HIV patients aged 18-59 years and currently on ARV therapy, and the exclusion criteria were HIV patients with comorbidities such as cancer and autoimmune diseases. In this study, patients were divided into multi-month dispensing (MMD) patients and non-MMD patients. Then, a cross-sectional method was used by filling out questionnaires to assess quality of life, patient compliance, and patient satisfaction with counseling. The questionnaires used in this study included the WHOQOL-BREF questionnaire to measure quality of life, the MMAS-8 questionnaire to measure therapy compliance, and a questionnaire created by the researcher to measure patient satisfaction with counseling. A retrospective method by looking at patient medical records was used to

determine viral load levels. The data were then processed using SPSS with the chi-square method.

Result

Socio-Demographic Characteristics

The study involved 234 respondents, all HIV patients aged 18–59 at the Waihaong Community Health Center, who did not have comorbidities such as cancer or autoimmune diseases. The following table shows the respondents' socio-demographic characteristics.

Tabel 1: Distribution of Socio-Demographic of the Participants

Variables	Count (n)	Percentage (%)
Age (in years)		
18-30	93	40
31-45	112	48
46-59	29	12
Sex		
Male	161	69
Female	73	31
Education		
Elementary	9	4
Middle	30	13
Senior	105	45
Undergraduate	88	38
Master	2	1
Marital Status		
Married	76	32
Not Married	130	56
Divorced	28	12
Provider		
Yes	108	46
No	126	54

The majority of respondents in this study were patients aged 31-45 years (48%) and male (69%). The highest level of education was high school (45%), respondents were unmarried (56%), and respondents did not have a provider (54%).

Instrument Quality Test

This questionnaire aims to determine patient satisfaction with the therapeutic counseling provided. The questionnaire contains five items covering patient satisfaction with information related to medications consumed, drug side effects, patient satisfaction with the language used by the pharmacist, and satisfaction with the duration of counseling. Validity and reliability tests of the questionnaire were conducted on 30 patients to measure the accuracy of the questionnaire used. The test results obtained a Pearson bivariate correlation value of <0.00 and a Cronbach's Alpha value of 0.839, indicating that the questionnaire is valid, reliable, and can be used.

Correlation of Counseling and Therapeutic Outcomes in Hiv Patients

The relationship between counseling and therapeutic outcomes, as assessed by viral load levels, quality of life, and adherence to HIV therapy, was tested using the chi-square and Fisher exact method. The results of the correlation test of counseling and therapeutic outcomes in 234 HIV are shown in Table 2.

Tabel 2: Correlation of Counseling and Therapeutic Outcomes in HIV Patients

	Counseling (n)%		Total (n)%	P Value
	4 times per year	12 times per year		
Viral Load				
High	32 (62%)	20 (38%)	52 (22%)	0.049*
Low	73 (74%)	26 (26%)	99 (42%)	
Undetected	67 (81%)	16 (19%)	83 (36%)	
Quality of Life				
Poor	53 (100%)	0 (0%)	53 (23%)	0.000**
Fair	94 (71%)	38 (29%)	132 (56%)	
Good	25 (51%)	24 (49%)	49 (21%)	

Drug Adherence				
Low	11 (73%)	4 (27%)	15 (6%)	0.121*
Moderate	75 (81%)	18 (19%)	93 (40%)	
High	86 (68%)	40 (32%)	126 (54%)	
Total	172 (74%)	62 (26%)	234 (100%)	

*Chi-square
** Fisher exact

The data showed a significant relationship between counseling frequency and viral load levels in HIV patients, with a significance value of 0.049 (<0.05). The results showed that patients who received counseling four times a year had more undetectable or low viral loads than patients who received counseling 12 times a year. The test of the relationship between counseling and quality of life in HIV patients revealed that patients with poor quality of life were only found in those who received counseling four times a year, a total of 53 patients (23%). A fair quality of life was found in 132 patients (56%); 94 patients were included in the group of patients who received counseling four times a year, and 38 patients received counseling 12 times a year. A good quality of life was found in 49 patients (21%), 25 patients who received counseling four times a year, and 24 patients who received counseling 12 times a year. There was a significant difference in the quality of life between the two groups of HIV patients, with a significance value of 0.000 (<0.05). These results indicate that the frequency of counseling for HIV patients influences their quality of life. The next correlation test was conducted on the relationship between counseling and patient adherence to therapy. Results showed that 15 patients (6%) had low adherence, 11 of whom received counseling four times a year, and 4 patients received counseling 12 times a year. No significant difference was found in adherence to therapy between the two groups, with a significance value of 0.121 (>0.05). The data indicate that the majority of patients had high adherence to therapy.

Patient Satisfaction with Counseling

Patient satisfaction with counseling was tested using a questionnaire. The minimum score was calculated by multiplying the smallest answer score, which is 1, by the number of statement items, which is 5, to obtain a minimum score of 5. The maximum score was calculated by multiplying the largest answer score, which is 4, by the number of statement items, which is 5, to obtain a maximum score of 20. Then, the score transformation was classified into three levels of satisfaction as follows: a score <60% means dissatisfied, a score of 60% - 80% means satisfied, and a score >80% means very satisfied [4]. The results of the calculation of patient satisfaction with counseling can be seen in Table 3. Patient satisfaction with therapy counseling: The results obtained were that 5 patients (2%) were dissatisfied with the counseling provided, 3 patients were MMD patients, and 2 patients received counseling every month. Patients who were satisfied with the counseling were 106 patients (45%), and patients who were very satisfied with the counseling provided were 123 patients (53%).

Table 3: Patient Satisfaction with Counseling

	Patient Satisfaction (n)%			Total
	Not Satisfied	Satisfied	Very Satisfied	
Counseling				
4 times	3 (60%)	83 (78%)	86 (70%)	172 (74%)
12 times	2 (40%)	23 (22%)	37 (30%)	62 (26%)
Total	5 (100%)	106 (100%)	123 (100%)	234 (100%)

Correlation of Counseling Satisfaction with Therapy Adherence

The relationship between counseling satisfaction and patient therapy compliance showed that 5 patients (2%) were dissatisfied with the counseling provided but had high compliance. 106 patients (45%) were satisfied with the counseling with low, medium, and high compliance levels, respectively, namely 11 patients, 15 patients, and 80 patients. 123 patients (53%) were very satisfied with the counseling provided, with 4 patients having low compliance levels, 78 patients having moderate compliance levels, and 41 patients having high compliance levels. There was a significant relationship between counseling satisfaction and patient therapy compliance with a significance value of 0.000 (<0.05). The data showed that patients with low levels of satisfaction had high compliance (Table 4).

Table 4: Correlation of Counseling Satisfaction with Therapy Adherence

	Adherence n (%)			Total	P Value
	Low	Moderate	High		
Patient Satisfaction					
Not Satisfied	0 (0%)	0 (0%)	5 (4%)	5 (2%)	0.000**
Satisfied	11 (73%)	15 (16%)	80 (63.5%)	106 (45%)	
Very Satisfied	4 (27%)	78 (84%)	41 (32.5%)	123 (53%)	
Total	15 (100%)	93 (100%)	126 (100%)	234 (100%)	

**Fisher exact

Discussions

The Correlation between Counseling and Viral Load Results

A significant correlation was found between counseling and viral load levels, with a significance value of 0.049 (<0.05). This is consistent with a systematic review conducted by Ahmed et al. (2022a) in 13 journals, which showed that pharmaceutical care provided by pharmacists, including patient education about the disease and identification of drug interactions, has a of suppressive effect on patients' viral load [5]. Another study by Schoenherr et al. (2022) 44 HIV patients in Brazil also found similar results: patients who received pharmaceutical care, including therapy counseling, experienced an increase in viral load suppression from 81.8% to 84.1%. The viral load suppression effect is due to the information, counseling, monitoring, and identification of emerging issues during treatment provided by pharmaceutical care to patients and caregivers, which impacts patient adherence [6]. However, in this study, patients who received fewer counseling sessions, i.e., four times a year, had more controlled, lower, or even undetectable viral load levels compared to patients who received regular monthly counseling.

HIV patients who underwent counseling four times had controlled viral load levels because they were multi-month dispensing (MMD) patients. MMD patients are patients who meet the criteria, including having taken ARV drugs for six months or more with good adherence and having an undetectable/suppressed viral load (≤ 50 copies/ml) or a CD4 count> 200 cells/ml (in children 3-5 years > 350 cells/mm) and no signs and symptoms of opportunistic infections. Meanwhile, HIV patients who must undergo counseling every month or 12 times a year are patients who have been newly diagnosed or do not meet the MMD criteria, resulting in high blood viral load levels. This is why in this study, patients with fewer counseling sessions had lower viral load results. This is in line with research conducted by Semo et al. (2023), which also showed that MMD does not lead to poorer treatment outcomes. Patients on MMD experienced higher viral load suppression 6 months after starting ART (88% vs. 87%) compared to patients not on MMD, with a higher percentage of undetectable viral load (65% and 58%, respectively) [7]. A study by Lamba et al., 2025, of 10,758 HIV patients in Chawama, found that 10,396 patients experienced viral load suppression. Of these, 7,222 were on 3-5 months of dispensation, 296 were not on MMD, and 2,878 were on MMD with dispensation for >= 6 months. In addition to viral load suppression, patients on MMD for >= 3 months also showed protection against viral rebound [9].

The Correlation between Counseling and Patient's Quality of Life
A good quality of life is crucial because it reflects a person's well-being and life satisfaction. This study found a relationship between counseling and the quality of life of HIV patients. Fifty-three patients (23%) had a moderately poor quality of life among those who received counseling four times a year. Four times counseling, or the multi-month dispensing method, is provided to patients who meet the criteria to reduce costs and visits. It also reduces the risk of other infections for both staff and patients by reducing the number of visits to healthcare facilities. It also increases patient retention on ARVs, ultimately increasing HIV viral suppression and improving patient quality of life.

A study conducted by on 15 HIV patients aged 18-45 years showed that patients using multi-month dispensing had better clinical outcomes [9]. This is due to shorter waiting times, shorter drug administration intervals, reduced stigma due to fewer healthcare visits, and improved patient adherence to therapy[9]. A study by on 129 HIV patients in Yogyakarta found that adherence to therapy and undetectable viral load levels resulted in improved quality of life [10]. Quality of life was quite poor in 53 patients, 35 of whom did not have a family provider. This resulted in a lack of social support for patients, which undoubtedly impacted their quality of life. Social support for HIV patients creates a conducive environment and motivates patients to undergo therapy and improve their lives. Furthermore, social support also addresses psychosocial stress, allowing patients to continue their daily activities within their social environment. One way to address the issue of poor quality of life in multi-month dispensing patients is by, in addition to providing medication consultations with patients, involving pharmacists and other professionals and community members who can assist with the counseling process for each patient.

The Correlation between Counseling and Drug Adherence

Adherence in HIV treatment refers to the extent to which patients follow healthcare providers' instructions regarding medication use, such as dosage, frequency, and timing of ARV medication. Adherence is key to successful therapy, especially for people with chronic diseases like HIV/AIDS. This study found that counseling for HIV patients was not associated with patient therapy adherence. This is inconsistent with research conducted by Wahyuni et al. (2020), which showed that patients with counseling intervention had a compliance rate of 93.8%, while in the control group it was 54.2%. Counseling should have an impact on respondent adherence to therapy because it helps patients understand obstacles or problems and resolve issues related to their treatment, enabling them to adhere to their treatment safely and correctly [11]. The lack of difference in patient adherence between the two groups could be due to one factor: the patients who received counseling four times a year were on a multi-month dispensing program, which is primarily intended to improve patient adherence to therapy. A study conducted by Shabani et al. (2025) on 18 HIV patients using an interview method showed that the MMD method impacted HIV patient adherence to therapy9. A study conducted by Ruhago et al. (2022) showed similar results, indicating that MMD patients had better adherence than non-MMD HIV patients. A total of 164 MMD patients had poor adherence, while 369 non-MMD patients had poor adherence. This was due to shorter waiting times and the clinical consultations provided, which made them aware of the importance of taking ARVs. Furthermore, for HIV patients, frequent clinic visits can be a burden, both in terms of time and cost. Therefore, the MMD method can save patients time and costs, which encourages patient adherence to therapy [12].

Patient Satisfaction with Counseling

The results of this study indicate a significant relationship between satisfaction with counseling services and patient adherence to therapy. Although a small proportion of dissatisfied patients still demonstrated high adherence, patients who were generally satisfied or very satisfied with counseling tended to have better adherence. This is consistent with research conducted by on 2,309 HIV patients in Africa [13]. This study demonstrated that patient satisfaction with HIV services was related to patient adherence to therapy13. A study by 656 HIV patients found a positive relationship between patient satisfaction and adherence to therapy, with a p-value of 0.003 [14].

Another study conducted by found that a good relationship between patients and healthcare providers built on understanding, involvement, and perception-appreciation, empathy, accessibility, equal responsibility, recognition of patients as full members of

the care process, promotion of health literacy, and willingness to build relationships with patients-has a positive impact by reducing patient non-adherence to the therapy being carried out [15]. Research conducted by Belete et al. (2023) on 308 HIV patients in Ethiopia showed that 75% of patients were satisfied with the therapy services provided by pharmacists, and patients also showed good therapy adherence [16].

Limitation and Future Study

The study was limited to patient satisfaction with the counseling services provided by pharmacists, thus not evaluating the quality of counseling and the counseling approach, such as whether counseling took place in an open or closed setting (providing privacy for patients to discuss their condition without intervention), whether there was recording or follow-up after the counseling session, and whether the counselor demonstrated empathy for the patient.

For further research, several recommendations could be made, such as focusing counseling sessions on non-MMD patients or groups less frequently accessed by PDP services to explore more flexible alternative counseling strategies, such as telecounseling, digital education, or community-tailored counseling.

Conclusion

This study shows that the frequency of consultations is significantly associated with viral load levels and quality of life in HIV patients, but not with patient adherence to therapy. While consultation frequency does not directly impact adherence to therapy, satisfaction with counseling services has been shown to significantly impact patient adherence due to other external and internal factors that influence patient adherence to therapy. Therefore, engaging patients through effective counseling, education, and ongoing support can improve the quality of care, treatment adherence, and clinical outcomes in HIV patients. Healthcare workers, particularly pharmacists, need to be equipped with effective communication training to build positive relationships with patients, thereby increasing patient satisfaction and motivation in undergoing therapy. Furthermore, collaborative efforts between medical personnel, families, and communities are needed to provide social and psychological support to patients.

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