Journal of Public Health and Pharmacy
2775-4952 (Online - Elektronik)
Research Articles Open Access

Health Literacy with Quality of Life in People with HIV AIDS

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ARTICLE INFO

Manuscript Received: 03 Dec, 2024
Revised: 19 Mar, 2025
Accepted: 10 Apr, 2025
Date of publication: 02 Oct, 2025
Volume: 5
Issue: 3
DOI: 10.56338/jphp.v5i3.6530

KEYWORDS

Gender;
Age;
Education;
Long Suffering;
Access Information;
Literacy;
HIV/AIDS

ABSTRACT

Introduction: Indonesia is the 5th most vulnerable country in Asia, with an accumulated number of 519,158 cases in 2022. Health literacy is essential for people with HIV/AIDS (PLWHA) to avoid opportunistic infections through increased insights related to their health care. This study aims to analysing the relationship between respondent characteristics and access to information with health literacy and the relationship of health literacy with the quality of life of HIV/AIDS sufferers.
Methods: Cross-sectional studies are used in this kind of quantitative research. The population in this study is 316 people with PLWHA undergoing treatment at Kendari City Hospital in 2023, with a sample of 177 people. Sampling of the study used Simple Random Sampling. The data analysis used is the Chi-Square Test.
Results: The results of the study were obtained from the Chi Square test based on gender, p-value (0.769) > α (0,05), based on age p-value (0.598 > α (0,05), based on education p-value (0,004) < α (0,05), based on the length of suffering p-value (0,006) < α (0,05), and based on access to information p-value (0,001) < α (0,05). The results of the binary logistic regression analysis were obtained by the information access variable with Exp (B) = 3,222.
Conclusion: Factors related to health literacy in people with HIV/AIDS are education, long-time suffering and access to information. Health literacy related to quality of life in people with HIV/AIDS at Kendari City Hospital. It is expected, the hospitals which are the basis for health information services for PLHIV need to improve health literacy programs both conventionally and electronically involving digital technology.

Publisher: Pusat Pengembangan Teknologi Informasi dan Jurnal Universitas Muhammadiyah Palu

INTRODUCTION

Human Immunodeficiency Virus (HIV) is one of the retro viruses that infect white blood cells, this causes a weakening of the immune system and damages the function of 4 positive (CD4+) cluster cells and other immune cells (1,2). According to World Health Organization (WHO) data, HIV/AIDS is a serious health problem in the world. In 2021, as many as 650,000 people died and as many as 1.5 million new patients out of a total of 38.4 million people (3). Indonesia itself is the 5th most at risk of HIV-AIDS in Asia. HIV-AIDS in Indonesia from April 1, 1987 to June 2022 in Indonesia reached 519,158 cases spread across all provinces. In Southeast Sulawesi, Kendari City and Bau-Bau City had the highest distribution of HIV/AIDS cases. In Kendari City specifically, there were 134 cases in 2020, 155 cases in 2021, and 224 cases in 2022. Three medical facilities, Bahteramas Hospital, Kendari City Hospital, and Lepo-Lepo Health Center are responsible for treating HIV/AIDS patients in Kendari City (4).

Based on data obtained at the VCT Clinic of Kendari City Hospital over the past 5 years, there has been an increase in new cases, where the IR in 2020 it was 0.049% (49/100,000), and in 2021 the HIV/AIDS IR was 0.075% (75/100,000). While in 2022 the HIV/AIDS IR was 0.183 (183/100,000) (5). Infected people with HIV/AIDS face a wide range of issues, including emotional, social, and physical ones. The patients' quality of life will be impacted if these issues are not appropriately addressed (6).

The concept of quality of life refers to how a person views their place in life in relation to their objectives, standards, expectations, and worries as well as the culture and value system in which they live. Poor quality of life will interfere with the condition of PWHIV. People living with HIV with a good quality of life have a greater ability to comply with treatment, overcome the disease, and manage their lives. There are several factors that affect the quality of life of people with HIV-AIDS, including social support, the effects of ARV, the effects of psychosocial, spiritual, the duration of HIV virus infection, coping mechanisms, depression, stigma, employment, and marital status (7).

The impact of HIV/AIDS on various aspects of life makes it important to develop new research, policies, strategies and effective programs that target a good quality of life for people living with HIV/AIDS. In addition, emphasis should be placed on factors that affect their quality of life when using ARVs, and counselling and guidance professionals with a good quality of life should be strengthened to address the factors of bad behaviour. as well as psychosocial support. Sorensen et al. created one of the many theoretical notions pertaining to health literacy. The three components of health in this literacy notion make it a significant aspect of health literacy. The three elements are disease preventive initiatives, health care capabilities, and health promotion or education that will generate health care knowledge and skills (8).

Health literacy has a direct impact on the quality of life of people living with HIV. It influences medication adherence, emotional well-being, self-care practices, and access to essential resources. Improving health literacy can therefore empower individuals with HIV to take control of their health, reduce complications, and enjoy a better quality of life. Healthcare providers and community programs can play an important role in supporting people with HIV in improving their health literacy (9). From various results of health literacy research, stated that the importance of health literacy for people who have chronic HIV/AIDS disease, with good literacy a person can increase his insight into knowledge, be able to access information, understand and evaluate information, know how to transmit, how to prevent and use health services to treat himself from the disease he suffers from (10). mHealth apps or text message programs that provide reminders for medication, educational content, and information on coping strategies for living with HIV are increasingly being used to improve health literacy. Studies have found that mHealth interventions can improve medication adherence, reduce viral load, and help patients better understand their condition, thus improving overall quality of life (11,12). Health literacy is very important for people with HIV/AIDS (PWHIV) because they are very vulnerable to opportunistic infections if they are unable to provide health care, disease prevention and health promotion, it is hoped that ODHA can meet their needs through information obtained to improve health status. This study aims to find out how the picture of health literacy of people with HIV/AIDS.

METHOD

Cross-sectional studies are used in this kind of quantitative research. This study included 316 people living with HIV/AIDS (PWHIV) who are under control and are undergoing treatment at the Kendari City Hospital in 2023. The number of samples in the study was 177 people with research sampling using Simple Random Sampling with the sample criteria registered as patients undergoing ARV therapy at the VCT Clinic of Kendari City Hospital and

domiciled in Kendari City. Data collection was through direct interviews filling out questionnaires for HIV/AIDS patients. The health literacy questionnaire uses the HLS-EU-47Q Questionnaire from the European Health Literacy Study project (HLS-EU). This questionnaire has been used in various countries that have been tested for validity and reliability (13). Meanwhile, the quality of life uses the questionnaire according to the World Health Organization Quality of Life-HIV BREF Questionnaire (14). Descriptive and inferential data analysis using the Chi-Square test in bivariate analysis and the binary logistic model in multivariate analysis.

RESULTS

In this study, there are several determining factors of Health literacy in people with HIV/AIDS, including gender, age, education, duration of suffering, and access to information. The results of the study showed that not all of these variables were related to Health literacy, as in the table below.

Table 1. Analysis of Gender Relationships, Age, Education, Length of Suffering, Access to Information with Health Literacy in People with HIV/AIDS

Variables	Health Literacy				Total		Analysis Statistics
	Good		Not Good				
	n	%	n	%	n	%	
Gender							
Man	118	73,3	43	26,7	161	100,0	p-value = 0.769
Woman	11	68,8	5	31,2	16	100,0	
Age							
Adolescent	52	69,3	23	30,7	75	100,0	p-value = 0.598
Adult	72	75,0	24	25,0	96	100,0	
Elderly	5	83,3	1	16,7	6	100,0	
Education							
Diploma/ Bachelor	86	81,1	20	18,9	106	100,0	p-value = 0,004 phi = 0,227
High School	43	60,6	39,4	39,4	71	100,0	
Long Suffering							
Early	90	80,4	22	19,6	112	100,0	p-value = 0,006 phi = 0,221
Old	39	60,0	26	40,0	65	100,0	
Access Information							
Enough	80	83,3	16	16,7	96	100,0	p-value = 0,001 phi = 0,256
Less	49	60,5	32	39,5	81	100,0	
Total	**129**	**72,9**	**48**	**27,1**	**177**	**100,0**	

Source: Primary Data, 2024

Based on table 1, it is known that factors related to health literacy in people with HIV/AIDS are education, long-time suffering and access to information (p-value < 0.05). The results of the relationship closeness test obtained education, duration of suffering and access to information have a weak relationship (phi = 0.20 - 0.339).

Table 2. Analysis of the Relationship between Health Literacy and Quality of Life in People with HIV/AIDS

Health Literacy	Quality of Life				Total		Analysis Statistics
	Good		Not Good				
	n	%	n	%	n	%	
Health Literacy							
Good	98	76,0	31	24,0	129	100,0	p-value = 0,001
Not Good	23	47,9	25	52,1	48	100,0	phi = 0,268
Total	**121**	**68,4**	**56**	**31,6**	**177**	**100,0**	

According to the findings of the Chi Square test, which are shown in table 2 above, there is a relationship between health literacy and quality of life in individuals with HIV/AIDS, with p-values (0.001) < α (0.05). According to the proximity test results, there is a weak relationship between health literacy and quality of life (phi value = 0.268).

Table 3. Multivariate Analysis of Health Literacy in People with HIV/AIDS

Variable	B	*P value*	Exp B	95% CI	
				Lower	*Upper*
Education	1,040	0,005	2,831	1,370	5,850
Long Suffering	1,076	0,004	2,934	1,414	6.089
Access Information	1,170	0,002	3,222	1,544	6,724

Table 3 shows that Diploma/Bachelor has a chance of 2,831 having good health literacy, compared to respondents with high school education. Respondents who suffered from the early category had a chance of 2,934 having good health literacy, compared to respondents with a long-time suffering from the old category. Access to information was 3,222 likely to have good health literacy, compared to respondents with less access to information. The variable that has the greatest influence on health literacy in people with HIV/AIDS is access to information.

DISCUSSION

Relationship between Gender with Health Literacy

Gender states the biological differences between men and women, but what actually plays a determinant of *health literacy* are the socially constructed characteristics, roles, responsibilities and attributes between men and women known as gender (15). In the study, the results of the analysis showed that both gender groups had high levels of mental health literacy. However, in this study, it seems that in general, gender does not affect health literacy. In line with other studies that obtained a gender variable with a p-value = 0.715. Because the p-value >0.05 means that there is no meaningful relationship between gender and health literacy (16). Gender is not necessarily the main factor influencing how people with HIV obtain and use health information, even if there are numerous other factors that affect health literacy. In individuals with HIV, there is a mixed relationship between gender and health literacy, which is frequently influenced by socioeconomic determinants of health, healthcare access, cultural norms, and education (17). In line with research that explains that patients in KDK Kiara do not have gender discrimination in the opportunity to obtain education and health information that can affect the level of health care, thus causing no relationship between sex and health care (18).

Relationship between Age with Health Literacy

The influence of age on health literacy has also been shown by previous studies where the older a person is, the lower the level of health literacy (19,20). The results of this study show that age has no meaningful relationship with health literacy. Although it is statistically meaningless, if you look at the distribution of health literacy levels among each age group of adolescents, adults, and the elderly, that all age groups have a fairly high level of health literacy. The results of this study are in line with a study conducted by Karina Samaria Santosa in 2012 which stated that there was no meaningful relationship between age and health literacy. But for its proportion, the more advanced age category has high health literacy compared to the younger age category (18). Other studies that have been conducted have shown that there is no meaningful relationship between age and health literacy (16).

Relationship between Education with Health Literacy

Education is a factor related to knowledge; education is a basic need for people. Individuals with a high level of education will find it easier to find and understand the information they get. Education is also related to the implementation of reading health information, so it will help produce the development of health literacy levels (21). The results of the statistical test showed a value of p = 0.004 which means that there is a factor that affects the level of education and health literacy. The development of health-related knowledge and abilities is influenced by education. A person's lifestyle, interests, and behaviours may all be influenced by their level of education, which can eventually have an impact on their health. A person's capacity to gather and analyse health data is also enhanced by

education. Additionally, via a continual learning process, education may meld a person's capacity to constantly add to or update the health information they currently possess.

Based on the results of the study, it was shown that respondents with a high level of education, namely Diploma/Bachelor, had high literacy (81.1%). This is consistent with studies showing a relationship between health literacy and both the duration of schooling and the quality of education. Their level of literacy will increase with their level of schooling (18). The ability to comprehend, manage, and navigate HIV-related healthcare is greatly influenced by education. Higher educated individuals typically have higher health literacy, which improves medication adherence, prevention, and overall health management. For those with lower educational attainment, however, targeted health education programs that address specific literacy needs are crucial to enhancing their capacity to effectively manage their condition (22). Another study conducted by Lee, et al. that adults around (30.0%) have low literacy, due to low education levels resulting in poor mental health (23).

Relationship between Long-Suffering with Health Literacy

The length of time a person is diagnosed or suffering from a disease, one of which is HIV/AIDS will describe how the level of health literacy of a person is. Based on the results of the study, it was shown that people with HIV/AIDS who had been diagnosed for less than 32 months (80.4%), had good health literacy, while people with HIV/AIDS who had been suffering for more than 32 months (40.0%) had poor literacy, this was because people with HIV/AIDS who had only been diagnosed with HIV/AIDS for less than 32 months, they tend to often follow the efforts of health workers in providing information.

In line with Dawson-Rose, et al., that there is a relationship between health literacy of people with HIV/AIDS and the existence of health workers (24). In line with the research of Stonbraker, et al., that people who have lived with HIV/AIDS for more than 5 years have low literacy, due to the increasing age of people with HIV/AIDS (25). This relates to each person's coping strategy for adjusting to the challenges they encounter. PLWHA's experience with their sickness increases with the length of their infection. This experience can be utilized to predict the pressures that PLWHA would encounter, allowing them to adjust and improve their quality of life in comparison to newly infected PLWHA (26).

Relationship between Information Access with Health Literacy

The *ability to access information* itself is the ability of individuals to obtain various information that the individual needs. Individuals with a high level of literacy will have a tendency to access information more easily (27). The results of the study showed that most of the respondents stated that access to health information was sufficient (54.2%), this is because there have been many efforts by health workers and the government in efforts to provide information such as meetings with people with HIV/AIDS which are routinely held every three months and counselling carried out by health workers every patient who comes to take medication every month at the hospital. In addition, nowadays to obtain information related to HIV/AIDS and treatment is increasingly accessible with technology such as the internet and social media.

Access to health information greatly affects the improvement of respondents' health literacy. The use of adequate media plays an important role in the process of conveying information. Currently, respondents are more likely to access HIV/AIDS and health care from the latest technology that is audiovisual, e.g., television and the internet. The delivery of information is not only once but should be done continuously so that patients are better in their compliance with treatment and health care. The delivery of information should follow the latest information technology development patterns. Exposure to information will form new abilities compared to literacy skills in general. So that HIV/AIDS patients can decide how important treatment and treatment for HIV/AIDS.

In line with the research that has been carried out which states that the factor most related to the level of health literacy is access to health information. A person who frequently accesses health information will have better health literacy than someone who rarely accesses health information (28). Prior studies have demonstrated a connection between health literacy and the availability of health information (29). And it is also in line with the research carried out in Jakarta on patients visiting KDK FKUI, which found a substantial correlation (p-value of 0.005) between information access and health literacy (18). Therefore, increasing efforts of health workers and the government in providing information such as counselling and learning clubs that are routinely held every three

months. In addition, other supporting efforts by installing posters and brochures in the Kendari City Hospital to make it easier to access health information and other important components in health literacy.

Relationship between Health Literacy with Quality of Life

The health literacy dimension can be seen from the way patients actively manage their health by being actively involved in finding good health information and the ability to understand health information in health service providers. This can be a prediction of improving the patient's quality of life (30). According to the study's findings, which included a p-value of 0.001, the quality of life of individuals living with HIV/AIDS can be correlated with their degree of literacy. A person's perception of the quality of life, both for physical health, psychological well-being, social relations and relationships with the environment is influenced by internal factors owned by the individual. In terms of the quality of life of people with HIV/AIDS, health literacy affects the perception of people with their quality of life, for example, people with good knowledge will also affect their quality of life, as well as in terms of work. In addition, health literacy will have an impact on a person's motivation to do health care which will ultimately affect the quality of life.

According to a Korean study, older persons with chronic illnesses who had sufficient health literacy were more likely to take their medications as prescribed. Therefore, a multifaceted strategy will be needed to improve health outcomes in older persons with chronic conditions. This strategy will include encouraging medication adherence, enhancing health literacy, and preserving a strong nurse-patient connection via good communication (31). The findings of this study support those of Safitri and Syafiq's research, which found a significant correlation between health literacy and the quality of life for those with type 2 diabetes. Health literacy related to DM Type 2 had a meaningful relationship with quality of life (p=0.000), and the influence of health literacy on quality of life was 33.8% (32). The findings of this study are corroborated by earlier investigations which states that age, occupation, knowledge, marital status, degree of injury, and economic status are factors that affect the quality of life. In addition, gender factors, length of time with DM, and education affect the quality of life (33,34).

CONCLUSION

There is a relationship between education, access to health information, and long suffering with health literacy in people with HIV/AIDS at Kendari City Hospital. There is a relationship between health literacy and quality of life in people with HIV/AIDS at Kendari City Hospital. Considering the importance of access to information on health literacy in improving the quality of life of HIV sufferers, hospitals which are the basis for health information services for PLHIV need to improve health literacy programs both conventionally and electronically involving digital technology. This study has limitations including selection bias in respondents who do not remember the habits or honesty of respondents in filling out the questionnaire so that there is a possibility that the results are less accurate. In addition, data were only collected at one time, there was no opportunity to study the dynamic effects between variables over a longer period of time and this study only examined the influence of several factors that affect health literacy and quality of life of HIV sufferers so that further research can use longitudinal design or qualitative methods to gain deeper insights into the dynamics of health literacy and quality of life among people with HIV/AIDS.

AUTHOR'S CONTRIBUTION STATEMENT

Rahmawati developed the design and implementation of the research, collecting data, analysing and interpreting data, revising draft article, and final approval of the version to be published. Sunarsih contributed to the data analysis and interpretation. Komang Ayi Sukma contributed to the writing and revising draft article.

CONFLICTS OF INTEREST

This research has no conflict of interest.

SOURCE OF FUNDING STATEMENTS

This research was funded by the Mandala Waluya Kendari Foundation.

ACKNOWLEDGMENTS

The researcher expressed his gratitude to the Director of the Kendari City Regional General Hospital for giving permission to conduct the research and also to the partners who have assisted in the data collection process, as well as to all respondents who have participated in this study.

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