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Analysis of factors influencing health-related quality of life in HIV/AIDS patients

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Abstract

Introduction: Patients with human immunodeficiency viruses (HIV)/acquired immune deficiency syndrome (AIDS) face a wide range of physical and mental issues. Hhealth-related quality of life (HRQoL) has to be given more attention, since HIV/AIDS epidemic has not been fully addressed. Study participants were those living with HIV/AIDS, who wanted to learn more about variables, which influence their HRQoL.

Material and methods: Using a cross-sectional technique, the study was performed in a descriptive analytic style. Overall sample size was 101 respondents, who were selected using a basic random sampling procedure, based on inclusion criteria. Characteristics of participants in this research, including income, duration of sickness, ease in accessing care and infrastructure, and presence of family and peer support, served as independent factors. Health-related quality of life was the dependent variable in this research. A questionnaire was employed as a testing tool. Logistic regression statistical test was applied, with a significance threshold of $p = 0.05$.

Results: According to the findings of the present study, there was a correlation between income ($p = 0.044$), infrastructure ($p = 0.003$), social support ($p = 0.009$), and health-related quality of life ($p = 0.009$). An individual's HRQoL was most strongly influenced by the presence of adequate infrastructure (Exp(B) = 38.549), social support (Exp(B) = 31.575), and a stable source of income (Exp(B) = 26.764).

Conclusions: HRQoL of people living with HIV/AIDS can be affected by variables, including income, infrastructure, and social support.

Introduction

Patients with human immunodeficiency viruses (HIV)/acquired immune deficiency syndrome (AIDS) experience various problems, both physical and psychological, one of which is health-related quality of life (HRQoL). HRQoL is shown through the need of physical, mental, emotional, and social functions [1]. Factors that affect health services include patience, family factors, and empowerment [2].

HRQoL in HIV/AIDS individuals should receive attention and be improved, since the incidence of HIV/AIDS is increasing every year [3]. This service is to evaluate treatments and provide new interventions, to improve healthcare of patients infected with HIV/AIDS in an assessment-required measurements related to HRQoL [2]. However, factors that affect health-related quality of life in HIV/AIDS patients

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based on the assessment and health-related quality of life theory approach have not been studied.

HIV disease is still a rising trend in the world and in Indonesia, and the number of people infected with HIV/AIDS is increasing every year, with more than 36.9 million people worldwide suffering from HIV [4, 5]. Indonesia, as one of the Asian countries, has HIV rate growing rapidly, especially in the age group of 25-49 years, with 33,448 patients confirmed positive [6, 7]. The number of HIV/AIDS cases in East Java is the highest in the country, with 8,204 people, most of which residing in the Island of Java. Especially in Surabaya, there are 918 of HIV-positive individuals. Moreover, the prevalence of HIV in Tulungangung increases every year; in 2017, there were 303 cases infected with HIV/AIDS [8, 9].

Well-being is currently a measure to perceive a person's health-related quality of life [1, 10]. The lack of knowledge and understanding of community causes HIV/AIDS patients to be avoided and ignored. Low quality of life is mostly experienced by HIV/AIDS patients, supported by low CD4+ counts. Low HRQoL problems can affect the immune system response and worsen the overall health of patients [4, 5]. Moreover, they cause susceptibility to infections, such as pulmonary tuberculosis, herpes simplex, pneumonia, chronic diarrhea, lipoma, hepatitis C, and neurological disorders. Low health-related quality of life in a person diagnosed with a chronic disease has an impact on psychological issues, including various feelings and stress reactions, such as frustration, difficulty in recovery, denial, shame, grieving, and struggling in adaptation to the disease [2, 11].

Health services provided to HIV/AIDS patients are of the most importance of early detection of HIV/AIDS to facilitate, accelerate diagnosis, and determine management as well as analyze a problem and formulate effective planning [3]. Spiritual well-being motivates a person to gain religious and spiritual experiences to achieve physical health and avoid self-anxiety, so that a good quality life can be achieved [8]. The aim of the present study was to examine the factors related to HRQoL using precede-proceed theory approach of Lawrence Green, which consists of three factors, namely predisposing factors (knowledge and attitudes), enabling factors (affordability of health facilities), and reinforcing factors (social support) [9, 12]. These factors are interrelated with behavior, lifestyle, and health. Behavior, lifestyle and health are inter-connected in aspects of HRQoL, which consist of physical, psychological, social, and environmental aspects. Knowing these factors, it is expected to produce solutions that can be used as a basis for identifying the main targets for policy-making and interventions. This study aimed to analyze factors that influence health-related quality of life among HIV/AIDS patients.

Material and methods

In this analytical descriptive research, cross-sectional approach was applied to analyze health-related quality of life and its' influencing factors. Population of this study included HIV/AIDS patients in Surabaya and Tulungagung regencies, who were registered into the AIDS Eradication Commission in December 2020. Sample size was 101 respondents taken by simple random sampling using the following criteria: 1) patients currently undergoing ARV treatment; 2) patients able to communicate verbally with writing skills; 3) patients with HIV/AIDS stage 3-4 (advanced stage); and 4) HIV/AIDS pregnant individuals. Independent variable was a variable that determined other variables. Independent variables used in this study were financial situation, duration of illness, access to services, infrastructure data, and family and peer support, while the dependent variable was health-related quality of life. As a research instrument, demographic data questionnaire and a modification of several questionnaires from previous research were used, which had previously been tested for validity and reliability. The questionnaire consists of several questions, with 4-point Likert scale of 'strongly agree', 'agree', 'disagree', and 'strongly disagree'. Data analysis process in the study used logistic regression statistical tests. Between independent variables, the dependent variable was significant if p-value was ≤ 0.05. By using this analysis, it was possible to see which variables had the strongest relationship with the associated quality of life. The study received an ethical approval from the Faculty of Nursing, Airlangga University.

Results

Table 1 shows the characteristics of patients with HIV/AIDS based on gender, and most of the respondents were males (n = 52, 51.5%). Most of the respondents were between 30 and 39 years, as many as 39 respondents (38.6%). Last elementary school education was completed by 34 respondents (33.7%). The work carried out by respondents as private employees included 68 individuals (67.3%). Income ≤ UMR was reported by 59 (58.4%) patients, while ≥ UMR = 42 (41.6%). Duration of HIV diagnosis from 1 year to 5 years was found in 45 (44.6%) respondents, and duration of HIV diagnosis at least 6 months to 1 year was reported by 13 (12.9%) patients.

Research variable characteristics

Table 2 demonstrates that that the availability of health facilities in the moderate category was shown in 71 respondents (70.3%), while the less category in 14 (13.9%). Social support with the parameter of emotional support in the less category was found in 58 respondents (57.4%), while the sufficient category in 40 (39.6%). The parameter of information support in the less category was reported by 88 (87.1%) respondents, while the sufficient category in 12 (11.9%). The parameter of facility support in the less category was seen in 77 (76.2%) individuals, while the sufficient category in 19 (18.8%). The parameters of health-related quality of life was good in 86 (85.1%) respondents, while the poor category included 15 (14.9%). The psychological aspect parameter in the poor category was observed in 72 (71.3%)

Table 1. Criteria for HIV/AIDS patients in Tulungagung and Surabaya regencies in December 2020

Respondents' characteristics/Category	n (%)
Gender	
Male	52 (51.2)
Female	49 (48.5)
Age	
20-29 years	20 (19.8)
30-39 years	39 (38.6)
40-49 years	33 (32.7)
≥ 50 years	9 (8.9)
Educational background	
Elementary school	34 (33.7)
Junior high school	16 (15.8)
Senior high school	28 (27.7)
Diploma	23 (22.8)
Job	
Housewife	33 (32.7)
Private employee	68 (67.3)
Income	
Under minimum regional income	59 (58.4)
Above minimum regional income	42 (41.6)
Infection period	
< 1 year	13 (12.9)
1-5 years	45 (44.6)
6-10 years	29 (28.7)
> 10 years	14 (13.9)

Table 2. Research variable characteristics

Variable/Category	n (%)
Availability of infrastructure	
Less	14 (13.9)
Moderate	71 (70.3)
High	16 (15.8)
Emotional support	
Less	58 (57.4)
Moderate	40 (39.6)
High	3 (3.0)
Informational support	
Less	88 (87.1)
Moderate	12 (11.9)
High	1 (1.0)
Facility support	
Less	77 (76.2)
Moderate	19 (18.8)
High	5 (5.0)
Health-related quality of life	
Moderate	15 (14.9)
High	86 (85.1)
Psychological aspects	
Less	72 (71.3)
High	29 (28.7)
Social aspects	
Less	101 (100.0)
Physical aspects	
Less	84 (83.2)
High	17 (16.8)
Environment aspects	
Less	85 (84.2)
High	16 (15.8)

respondents, and the good category in 29 (28.7%). The social aspect parameter in the less category were found in 101 (100%) respondents. The parameters of physical aspect indicated in the less category were in 84 respondents (83%), and the good category in 17 (16.8). The environmental aspect parameter in the less category was found in 85 (84.2%) respondents, and in the good category was observed in 16 (15.8%) patients.

Statistical analysis

Table 3 shows that three of the four parameters assessed had an effect on HRQoL, including income (0.044), infrastructure availability (0.003), and social support (0.009). However, HIV/AIDS patients' HRQoL was unaffected by the duration of their disease. The Exp(B) value of the variable with a significant influence or the sig value of 0.05 may be used to determine the most important factor influencing health-related quality of life. The availability of infrastructure had the greatest influence on health-related quality of life, with an Exp(B) = 38.549 value, indicating that infrastructure availability changes 38.549 times over time.

As a final component, social support had an Exp(B) value of 31.575, which indicated that social support was likely to alter health-related quality of life 31.575 times. With an Exp(B) = 26.764 value, money was the last major factor that impacted health-related quality of life of the participants. This indicated that a sufficient income would alter 26.764 times.

Discussion

Effects of respondents' characteristics and HRQoL

The results of the study showed that various factors influenced HRQoL of the patients. A person who had a job would reach a stage to meet the needs of everyday life. However,

Table 3. Hypothesis test results on the relationship between respondents, rewards from health infrastructure, and social support with health-related quality of life

Variable	Logistic regression					
	S.E	Wald	Sig.	Exp(B)	95% confidence interval	
					Lower	Upper
Income	1.634	4.048	0.044	26.764	1.089	657.928
Duration of illness	−0.129	.557	0.054	0.879	0.295	2.619
Availability	1.223	8.914	0.003	38.549	3.506	423.827
Social support	1.319	6.855	0.009	31.575	2.382	418.571

the average income was found to be ≤ 1,000,000, which was not sufficient to meet daily needs. The results of this study are in line with research of Kusuma (2011) and da Costa (2014), which observed that there was a stage in quality of life related to health. Income greatly affects quality of life in relation to health of HIV/AIDS patients [13, 14]. Physical and mental health can be obtained from activities that are carried out inter-actively and support each other [15]. In addition to increasing income to help HIV/AIDS individuals, they divert attention from problems related to disease and create feelings of usefulness and productivity [16, 17]. The income is used to meet daily needs, care, and medical expenses as well as other costs that affect a person's health status [18].

High stage of HIV/AIDS patients would impact their psychology. In fact, in Tulungagung regency, the stage is still < UMR, so it requires assistance from various parties. HIV/AIDS individuals expect economic empowerment, especially in providing venture capital to create jobs. The economic burden that affect the patients results mainly from emerging infections. An assistance is expected to meet daily needs of HIV/AIDS persons.

Effects of infrastructure availability and HRQoL

Easy and fast service access enable the patients to check their conditions. The availability of adequate health facilities and infrastructure can support the health of HIV/AIDS persons. The results of this study are in line with a research of Nursalam *et al.* (2020), showing that there is a relationship between the availability of infrastructure and health-related quality of life in HIV/AIDS patients [13, 18].

The availability of infrastructure and easy access to health service facilities is necessary, because it affects the success of government-mandated community health clinics (Puskesmas) in carrying out their functions [19, 20]. Individuals with HIV/AIDS need high-quality medical care, since it improves their health, education, and ability to work [21]. HIV/AIDS patients would have a better quality of life, if they have access to affordable and readily available health care facilities, which is determined by accessibility and cost [22].

The availability of infrastructure not only covers the distance but also relates to access, which is facilitated by KPA. Access is an important indicator of health-related quality of life of HIV/AIDS patients, making it easy to buy drugs and conduct counseling on their current condition [20, 23]. HIV/AIDS individuals greatly benefit the availability of adequate infrastructure to control signs and symptoms caused by a decreased immune system. Signs and symptoms experienced by HIV-AIDS persons are associated with the emergence of opportunistic infections as well as controlling CD4+ counts.

Influence of social support and HRQoL

Most of the patients with HIV-AIDS get high social support from their families and peers. The form of family social support that HIV-AIDS persons receive, is usually obtained from psychological support and facilities. Meanwhile, the form of peer support is obtained from group activities, daily activities, and the assurance that someone can help when needed if there is a problem as well as emotional support, at least to share solutions and information.

This study is in line with a research performed by Kurniasari *et al.* (2016), who explains the relationship between family and peer social support with health-related quality of life. Social support would minimize psycho-social pressure on patients with HIV/AIDS, so that they have a better lifestyle and can provide a more positive response to social environment [13]. Social support is an antidote to stress from a psychological aspect caused by discrimination in social environment, which can improve health-related quality of life [8].

Emotional support is a support related to improving psycho-social function in terms of reducing stress and increasing feelings of positive orientation [2]. This support shows empathic attitudes and behaviors from family members that give rise to a sense of joy, happiness, comfort, calm, and love for each other [24, 25]. Information support is an assistance related to increasing knowledge from verbal or written material that is presented both online and in print [1, 10].

Individuals with HIV/AIDS have various physical and psychological problems. The role of family is very much needed when a new case is diagnosed, because of a huge

burden experienced. The acceptance of this condition would happen much faster with a support from family. Peer support also has a very important role in helping HIV/AIDS patients in dealing with their problems. The support provided can be in the form of emotional support, advice, or help to solve the problems.

Conclusions

Individuals with HIV and AIDS experience various physical and psychological problems. The role of the family is very much needed when a new case is diagnosed, because of huge burden felt. Acceptance of his condition would happen much faster with a family support. Peer support also has a very important role in helping HIV/AIDS patients in dealing with their problems. The support provided can be in the form of emotional support, advice, or assistance in solving the problems.

Conflict of interest

The authors declare no conflict of interest.

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