PREDICTORS OF QUALITY OF LIFE IN HIV INFECTED WOMEN, MEDAN, INDONESIA

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ABSTRACT:

Background: Living with Human Immunodeficiency Virus (HIV) is life threatening to infected women and can influence their quality of life. Optimizing the quality of life in HIV infected women has become an important aim of care. The Revised Wilson and Cleary Model for Health Related Quality of Life (HRQOL) was applied. The study aimed to determine factors that influenced the quality of life among HIV infected women in Medan, Indonesia.

Methods: A cross-sectional study based on a purposive sampling was employed with 111 participants aged 18-45 years old. The instruments composed of Demographic Information Questionnaire, Fatigue Rating Scale, Inventory Functional Status, General Health Perception, Multidimensional Perceived Social Support Scale, and World Health Organization Quality of Life-BREF (WHOQOL-BREF).Multiple regression was used to determine factors predicting of quality of life in HIV infected women.

Results: The study revealed that the significant predictors for quality of life in HIV infected women were social support ($B = 0.499$, $p < .01$), functional status ($B = 0.354$, $p < .01$), and general health perception ($B = 0.231$, $p < .01$), and which explained 66.9 % (adjusted $R^2 = 0.669$, $p < .01$) of the variance in quality of life. However, age, marital status, educational level, employment status, family income and fatigue were not significant predictors of quality of life in this study.

Conclusion: Social support, functional status, and general health perception could influence the quality of life in HIV infected women. The strongest predictor was social support. Therefore, family and peers should be encouraged to be involved in health care services to provide support for HIV infected women.

Keywords: HIV infected women, Quality of life, Indonesia

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INTRODUCTION

The World Health Organization (WHO) [1] has reported that the number of people living with HIV in the world has increased from 29.4 millions in 2001 to 34 millions in 2011, half of those infected were women. In Indonesia, although the total number of people living with HIV has slightly decreased, from 21, 591 people in 2010 to 21, 511 people in 2012. However, the number of HIV infected women were increased. Particularly in Medan, North Sumatera, Indonesia the number of HIV infected women had increased from 25.9% in 2009 to 32% in 2012.This number indicates that women are increasingly vulnerable to HIV. Some women were infected from sexual transmission with their husband or spouse. Living with HIV has led women to be stigmatized from society and consider themselves living with a punishment for their sinful sexual activities [2]. Consequently, living with HIV influences infected women to confront with uncertainty and low quality of life.

Quality of life is a subjective concept that is associated with various aspects of one's life [3].Previous studies revealed that the quality of life experienced between women and men living with HIV were different, men had better quality of life than women [4]. Salomon et al. [5] found that in male-dominated cultures, women were more vulnerable to HIV infection and had lower quality of life. The patriarchal system such as in some part of Indonesia, particularly in Medan, is more likely to cause women a sense of powerlessness and an inability to negotiate sexual relations regarding

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condom usage from their sexual partner or husband. Monika [6] explained that a patriarchal system in Medan puts men in a higher position than women in all aspects including social, cultural, and economic status. This social condition leads women to be less able to protect themselves from their relations and more at risk to be infected with HIV. Therefore, this condition may contribute to the rapid growing number of HIV infected women in Indonesia [2] which can impact the quality of life. There are several factors that could influence quality of life, particularly in people living with HIV.

Factors influencing the quality of life in HIV infected women had been identified in previous study [7]. However, inconsistent findings have been disclosed. Some previous studies similarly revealed that individual characteristics including age, marital status, educational level, employment status, and family income were influenced the quality of life of people living with HIV [8]. Furthermore, variables that can affect the quality of life of people living with HIV were fatigue, functional status, general health perception, and social support.

Fatigue, a highly prevalent symptom among people living with HIV [9], had found to be significantly associated with quality of life in HIV infected women [10]. In terms of functional status, the ability of an individual to perform and adapt to one's environment [11], a study of Hudson et al. [10] showed that there was the significant relationship between functional status and quality of life. Social support was examined in previous studies as a factor that potential to influence health outcomes and the quality of life. Several studies found that perceived social support was factor related to quality of life in people living with HIV [12].

The Revised Wilson and Clearly model for Health Related Quality of Life (HRQOL) by Ferrans [13] was applied to guide this study. The model explained how factors including characteristic of the individual, characteristics of environment, symptoms, functional status, and general health perception can influence the quality of life. Previous study was applied in the HRQOL model of Wilson and Clearly in the HIV population to identify factors related to quality of life [14]. Therefore, the HRQOL was helpful in this study to identify predictors of quality of life in HIV infected women.

Many studies have explored the quality of life of people living with HIV. However, the study of the patriarchal system as exists in Indonesia is limited information in regard to HIV and quality of life. Therefore, determined predictors of quality of life in HIV infected women can provide insightful understanding and the knowledge about quality of life for HIV infected women in Medan, North Sumatera, Indonesia.

MATERIALS AND METHODS

Method

A cross-sectional study was conducted between July to September 2014 in the community HIV clinic of Adam Malik Hospital, Medan, North Sumatera, Indonesia. The purpose of this study was to determine predictors of quality of life in HIV infected women. There were one hundred and eleven participants, 70 % of case recruited from the community HIV clinic in Medan. The sample size was determined by using Slovin's formula. The purposive sampling was employed within inclusion criteria including; an adult HIV infected women aged 18 to 45 years old, diagnosed with HIV at least three months, attending routine clinical care visit such as the regular appointment with a doctor or to meet a peer group at a community HIV clinic of Adam Malik Hospital, able to read, and willing to participate in this study. HIV infected women who hospitalized after meeting with physicians on the date of data collection were excluded from participating in the study.

Measurements

Questionnaires that were employed in this study were composed of a demographic information questionnaire, fatigue rating scale, inventory functional status, general health perception, multidimensional perceived social support scale, and the WHOQOL-BREF.

Demographic information questionnaire

The demographic information questionnaire consisted of age, marital status, education level, employment status, and family income.

Fatigue rating scale

Fatigue was measured by a single numeric rating scale that is a common approach to measure the intensity of symptoms (e.g. pain, fatigue, etc.) [15]. Participants were asked to rate the fatigue symptom that currently perceived from 0 = "no fatigue" to 10 = "extreme fatigue".

Inventory functional status (IFS)

The Inventory of Functional Status (IFS) is a self-administrated questionnaire developed by Tulman et al. [16]. The IFS questionnaire was composed of four sub-scale with 39 items. The four sub-scale activities were: a) household and family activities, b) social and community activities, c) self-care activities, and d) employment status activities. Each items was measured using a 4 Likert-scale ranging from 1 to 4. Interpretation by using mean score, $\geq$ 3 indicated independently performing

function and < 3 indicated dependently performing function. The internal consistency reliability was good, with a Cronbach's alpha 0.83.

General health perception

General health perception is measured by a single question by Ferrans [13]. The question asked participants how they perceived their health. The scale ranges from "poor health" (1) to "excellent health" (10). The scale was divided into two categories. The score from 1 to 5 represented a poor health perception, while score from 6-10 represented a good health perception [13].

The multidimensional perceived social support scale

The multidimensional perceived social support scale questionnaire by Zimet et al. [17] was used to measure social support. It consisted of 12 items, dividing into 3 subscales including perceived social support from family (4 items), from friends (4 items), and from significant others (4 items). Interpretation of social support classified to 3 levels based on mean score, the score range from 1 to 2.9, 3 to 5, and 5.1 to 7 were considered to be a low, moderate and high level of support [17]. Content validity of MPSS was examined by 3 experts. The internal consistency reliability was good, with a Cronbach's alpha 0.87.

WHOQOL-BREF

WHOQOL- BREF [18] was used to measure perceptions of participants on their own quality of life within the context of their culture. WHOQOL-BREF consisted of 26-items dividing into 4 domains; 1) physical domain (7 items), 2) psychological domain (6 items), 3) social domain (3 items), and 4) environment domain (8 items), and 2 more items which measured overall quality of life and individual's health satisfaction. The scores of each domain were calculated in accordant with the manual guideline of WHOQOL and the scores were transformed to 4-20 [18]. Higher scores indicated a good quality of life. WHOQOL-BREF was tested for internal consistency, which is obtained Cronbach's alpha physical domain= 0.89, psychological domain = 0.90, social domain= 0.79, and environment domain= 0.83.

Ethical consideration

The study was approved by Ethics Review Board (ERB) Committee for Research Involving Human Research Subjects, Boromarajonani College of Nopparat Vajira, Bangkok, Thailand (ERB No. 47/2014).

Data collection

Data was collected after obtaining permission from the director of Adam Malik Hospital and the head of community HIV, Medan, Indonesia from July to September 2014. A blind collecting method was applied to recruit participants because HIV is a sensitive issue and HIV infected women are a vulnerable group. The researcher provided participants information sheet and questionnaires by put in a place where possible participants to easily get attention at community HIV clinic of Adam Malik Hospital, Medan, Indonesia. Participants took approximately 45-60 minutes to complete the all questionnaires.

Data analysis

Data were analyzed by using the Statistical Package for the Social Science (SPSS) version 15.0. for windows provided by Kasetsart University. Descriptive statistics including mean, standard deviation, percentage, and frequency distribution were analyzed to describe characteristics of participants. Relationship analyses were used to find the relationship between independent and dependent variables by using Pearson Product-Moment correlation, Spearman correlation coefficient, and Point-biserial correlation coefficient. Multiple regression analysis with Enter method was used to indicate predictors of quality of life of participants. A significant level was set at $p < .01$.

RESULTS

Table 1, the majority of participants were in an age range of 26-35 years old with an average age 31.41 years old. Seventy three of participants were married, 72 of participants did not work or were unemployed, and 73 had monthly family income ranged Rp. 1,000,000 – Rp. 2,999,900. Based on North Sumatera Province Central Bureau of Statistics in 2011, this family income was classified to a moderate level of income. The majority of participants graduated from a high school or had a moderate level of education. Furthermore, more than half of participants had a period of HIV infection which was less than 2 years.

The results revealed that functional status, general health perception, and social support had positive relationship with the four domains of quality of life; physical domain, psychological domain, social domain, and environment domain. However, employment status and fatigue scale had negative relationship with four domains of quality of life. Functional status had a strong relationship with physical domain ($r=0.63$, $p<.01$), general health perception had a strong relationship with physical domain ($r=0.67$, $p<.01$), and social support had a strong relationship with social domain ($r=0.67$,

Table 1 Characteristics of HIV infected women (n = 111)

Individual characteristics	Frequency	%
Age (years)		
20 – 25	14	12.60
26 – 35	71	64.00
36 – 44	26	23.40
Range 20-44 (M = 31.41,SD = 5.38)		
Education level		
Junior high school	20	18.00
Senior high school	68	61.30
College	23	20.70
Marital status		
Married	73	65.80
Unmarried (Single, Divorced, Widowed)	38	34.20
Employment status		
Employed	39	35.10
Unemployed	72	64.90
Family income		
Low (< Rp. 1,000,000)	12	10.80
Moderate (Rp. 1,000,000 – Rp. 2,999,900)	73	65.80
High (≥ Rp. 3,000,000)	26	23.40
Time since HIV diagnosis (years)		
< 2	60	54.00
2-5	42	37.90
>5	9	8.10

Table 2 Relationship among independent variables and dependent variables (n=111)

Variables	Physical domain	Psychological domain	Social domain	Environment domain
	R (CI 95%)	R (CI 95%)	R (CI 95%)	R (CI95%)
Age[a]	0.15	0.15	0.01	0.21
Marital status[b]	0.03	-0.07	-0.14	-0.08
Employment status[b]	-0.20*	-0.23*	-0.20*	-0.30*
Educational level[c]	0.04	0.11	0.05	0.15
Family income[c]	0.14	0.16	0.01	0.27
Fatigue scale	-0.49*	-0.45*	-0.26*	-0.36*
Functional status	0.63*	0.61*	0.46*	0.61*
General health perception	0.58*	0.67*	0.55*	0.48*
Social support	0.50*	0.58*	0.67*	0.53*

([a]) Pearson's product moment correlation coefficient; ([b]) Point Biserial correlation coefficient;
([c]) Spearman's rank, * $p < .01$

Table 3 Predictors of quality of life in HIV infected women (n = 111)

Predictors	B	B	t	SE
Age	.001	.018	0.302	.004
Marital status	-.028	-.035	-.554	.051
Educational level	.062	.116	1.861	.033
Employment status	.105	.130	1.353	.078
Family income	.044	.065	.946	.047
Fatigue	.002	.011	.162	.011
Functional status	.147	.354*	5.299	.028
General health perception	.045	.231*	3.332	.014
Social support	.327	.499*	4.711	.069
Adjusted R^2 = .669 F = 25.662*				

*p < .01

p<.01). In this study, age, marital status, educational level, and family income did not have a statistically significant relationship with the four domains of quality of life (Table 2).

Predictors of quality of life

Table 3, the findings of standard multiple regression analyses revealed that all the variables in this model could explain 66.9% of the variance in quality of life in HIV infected women (adjusted R^2 = .669, F = 25.662, p < .01). From this findings, the strongest predictor of quality of life in HIV infected women was social support (B = 0.499, p< .01), followed by functional status (B = 0.354, p < .01), and general health perception (B = 0.231, p< .01). Considering social support for HIV infected women, the data was disclosed that if the social support increase 1 unit, the quality of life will increase 0.327.

DISCUSSION

The significant findings of this study suggested that three factors including functional status, general health perception, and social support were important in predicting quality of life in HIV infected women.

Social support was the strongest significant factor affecting the quality of life in HIV infected women. Similarly, previous studies [8, 11] found that social support was a factor influencing the quality of life of people living with HIV. The findings indicated that the lower social support-HIV infected women perceived, the less quality of life they had. Social support is mostly influenced by cultural or social norms that surround the people living with HIV. Because HIV is a disease that is often characterized by social stigma, people living with HIV were commonly discriminated, particularly when they were labeled as being sexually promiscuous. Many of them were rejected by their family and community. The lack of social support implied less care and caused misunderstandings from surrounding people. This resulted in the reduction of quality of life among HIV infected women.

Functional status was also significant in affecting the quality of life of HIV infected women. A possible reason was due to the majority of women in this study were in age range productive (64 %), early diagnosed with HIV (54 %) or asymptomatic stage of HIV symptom. Therefore, they were able to accomplish a women's role. Furthermore, in Medan as a patriarchal society, women have multiple roles, as a wife and a mother. They should be maintaining the household and taking care of their children and husband, even when they were infected with HIV. In this study, participants were mostly able to performed independent role to take care of their family and other roles. These situations have affected their quality of life, they are perceived like normal people rather than people with an illness, and reported a good quality of life. This finding was consistent with previous studies that found functional status was significant in influencing quality of life in HIV infected women [5, 10].

In addition, general health perceptions another of the significant predictive factor in this finding. The result was consistent with a study by Eller and Mahat [19]. In Medan, although living with HIV, the participants perceived their health status at a good level. The possible reason for this finding might be that those women neither suffer with other complication, nor fatigue as a common symptom of HIV. When HIV infected women perceived their general health was good, they were more likely satisfied with their quality of life. Wilson and Clearly cited in Sousa, et al. [14] explained that general health perception as an individual's perception of health, it is highly subjective and takes into consideration biological and psychological factors of HIV infected women.

This study reached all the objectives and revealed important information of the predictors that related to quality of life of HIV infected women. However, there were limitations including employed cross-sectional study which is limited in its ability discover causation. This study used self-administered questionnaires which is lack of reliable than the interview method. Then, data was collected from one place, community HIV clinic of Adam Malik Hospital, Medan, Indonesia that limited its ability to be generalize to other populations and geography.

Based on this findings, social support should be emphasized in nursing intervention to promote quality of life among HIV infected women. Family, friends, and the significant others should be encourage to support HIV infected women to improve their quality of life. Qualitative studies should be explored to investigate social support received by HIV Infected women and how social support affects their quality of life. Moreover, this study should be a reference for improving nursing knowledge about quality of life in HIV infected women.

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