

Correlational Study: Patient's Characteristics and Quality of Life (QoL) in Patients with Chronic Renal Diseases Undergoing Hemodialysis in Gambiran Hospital, East Java Indonesia

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ABSTRACT- Background. Chronic kidney disease (CKD) is one of the most terrible health problems. Most of these patients choose to be placed on hemodialysis which can be debilitating and can threaten body image, finances, independency, and quality of life (QoL). Therefore it is important to conduct studies to identify the related factors of quality of life in patients with CKD undergoing dialysis to determine what strategies can be implemented to improve quality of life. This study was aimed to identify the relationship between patients' characteristics and their quality of life. **Method:** Twenty-nine patients with CKD undergoing hemodialysis were recruited from a Hospital in Kediri, East Java Indonesia. The patients' quality was of life measured using WHO-QoL BREF which consisted of 26 questions including physical and psychological dimension, social, and environment dimension. Descriptive statistic was used to analyze patients' characteristics data and level of patients QoL, while the relationship between both variable was analyzed by Chi Square. **Results:** Almost all patients were Muslim (96.55%), mostly male (72.4%), and more than half of patients were over 51 years old (51.72%). Additionally, more than half of patients (58.62%) had high QoL. However, there was no significant relationship between gender, religion, family relationship, and social activity with patient's quality of life. There was significant relationship between age and educational state with quality of life. **Conclusion:** It was concluded that patients' QoL in this area need an improvement. It also is extensively recommended to further conduct study with bigger sample and broader predisposing factor in order to identifying build strong evidence in improving patients QoL.

Keywords: hemodialysis, quality of life, chronic kidney disease.

Introduction

Chronic kidney disease (CKD) is patofisiological process with vary of causes that progressively reduce kidney function and generally ended with renal failure (Syaifulloh, 2001). This condition occurred when the glomerular filtration rate (GFR) less than 50 ml/minute (Guyton, 1994). In this condition, kidney is no longer able to effectively eliminate unwanted product of body metabolism which cause uremic syndrome and increase blood creatinine level. Uremia is one of the most detectable symptoms of kidney failure (Hudak & Gallo, 1997). Additionally, the decreases of kidney function in renal failure are irreversible and require dialysis therapy or renal transplantation.

Previous study showed that prevalence of patients with CKD was continuously increased. In America, its prevalence increased from 166 thousand in 1990 to 372 thousand in 2000 and this number being double in 2010. In Africa, the prevalence of CKD was predicted almost 4 times higher than its prevalence in developed countries. This high incidence rate was also followed by high mortality rate (Santoso, 2008). In Indonesia, Indonesian Society of Nephrology (PERNEFRI) noted that almost 12.5% (18 million) of Indonesian population detected had glumerular filtration rate (GFR) less than 60 ml/minute and 2400 of them required hemodialysis (HD). That number is predicted being greater nearly 300 patients each month. In East Java, it was reported there were 200 patients each day undergoing hemodialysis therapy in Dr. Soetomo

Hospital (tertiary hospital) and 88 patients per month in Gambiran Hospital (secondary hospital). Furthermore, Moni (2010) suggested that most of patients undergoing hemodialysis in Gambiran Hospital showed moderate level of Quality of Life (QoL).

Hemodialysis is one therapy that helps patients to minimize the negative impacts of CKD that caused by progressive loss of kidney function. However, this therapy would not help these patients to be totally healed. Additionally, patients with CKD required hemodialysis therapy for the rest of their life until they found kidney transplantation (Smeltzer & Brenda, 2002). On the other hand, hemodialysis also negatively impacted on patients' life, including physical, psychological, and financial burden. Furthermore, it also noted that hemodialysis was closely related to fatigue, sleep disturbance, and low QoL.

Recently, optimum QoL of patients is one essential issue in nursing intervention. Since, there were many factors affecting patients' QoL such as age, gender, occupation, family, comorbid disease, duration of HD, frequency of HD, financial burden of HD, and so on, it is important to conduct study in order to identify the correlation between patients' characteristic and patients' QoL in Hemodialysis Unit, Gambiran Hospital Kediri, East java Indonesia.

Methods

Research design

Correlational design was used in this study. Correlational study is one of research design that aimed to identify association of two or more dependent variables (Arikunto, 2002). In this study, the researchers would like to identify the association between patients' QoL (dependent variable) and selected patients' characteristics (independent variable) including comorbid diseases, duration of HD, frequency of HD, and cost of HD. This study was conducted in Hemodialysis Unit of Gambiran Hospital, Kediri, East Java Indonesia during September 2009 to June 2010.

Subjects of the study

Population of this study were all patients with CKD undergoing HD in Hemodialysis Unit of Gambiran Hospital during June 2010. Totally there were 65 patients. Twenty nine samples were recruited using consecutive sampling technique.

Data collection

Data were collected using two questionnaires, namely patients' characteristics questionnaire and QoL questionnaire. Demographic data questionnaire was developed by the researcher and used to collect comorbid diseases, duration of HD, frequency of HD, and financial burden related to HD. The QoL questionnaire was adopted from Quality of Life Questionnaire developed by WHO (short version). It consisted of 26 items and four dimensions including physical and psychological status, social relationship and environmental dimension. Each item consisted of 5 answers level ranged from very disagree to very agree (WHO, 2003). The QoL was divided into low QoL when patients' total score equal or less than mean and high QoL when patients' total score was higher than mean.

Data analysis

Descriptive statistic was operated to analyze patients' characteristics and level of patients' QoL, then Chi Square was used to further analyze the relationship between both variables. The level of significance was set at $p < .05$

Ethical consideration

This study was conducted with the intention of protecting the human rights of all subjects. Before giving consent, patients were approached with required information including significant, purposes, benefits, and potential impacts when they participated in this study. They had the right either to participate or refuse to participate in this study without any penalty. The identity of all patients was noted anonymously and the data collected were destroyed after completion of the data analysis.

Results

Patients' Characteristics

Almost all patients were Muslim (96.55%), mostly male (72.4%), and more than half of patients were over 51 years old (51.72%). Most of patients reported had good relationship with their family (82.76%), had comorbid diseases (79.31%), had no social activities (72.41%). Considering patients' related hemodialysis history there were most of patients already run HD therapy less than 3 years (75.86%), HD therapy more than 3 times/week (75.86%), and more than half of them free charge of HD therapy (68,97%). See detail on Table 1.

Table 1
Patients' characteristics (n = 29)

	Characteristics	f	%
Age	Less than 51 years old	14	48.28
	51 years old and over	15	51.72
Gender	Male	21	72.41
	Female	8	37.59
Religion	Muslim	28	96.55
	Non-Muslim	1	3.45
Level of education	Primary school	6	20.69
	Senior high school and college	23	79.31
Family relationship	Good	24	82.76
	Not Good	5	17.24
Social activity	Have social activity after diagnosed CKD	8	37.59
	Have no social activity after diagnosed CKD	21	72.41
Comorbid diseases	No comorbid disease	6	20.69
	Had at least one comorbid disease	23	79.31
Duration of Hemodialysis	≤ 3 years	23	79.31
	>3 years	6	20.69
Frequency of Hemodialysis	≤ 3 times/week	24	82.76
	>3 times/week	5	17.24
Hemodialysis cost	Free of charge	20	68.97
	Not free of charge	9	31.03

Note: CKD = chronic kidney diseases

Patients' Quality of Life

Data showed that more than half patients (58.62%) had high Quality of Life. See the detail at Table 2.

Table 2

Patients' Quality of Life (n = 29)

Quality of Life Level	f	%
Low Quality of Life	12	41.38
High Quality of Life	17	58.62

1.1. Relationship between patients' QoL and age

There were 3 patients under 50 years old (10,3%) who perceived that they had low quality of life, while 12 patients under 50 years old (41,7%) perceived high quality of life. The analysis suggested that there was a significant relationship between age and quality of life ($p = 0,016$).

In the initial period of hemodialysis, patients' respond the lost of kidney function with denial, anger, or sadness. These conditions required adaptation that vary the period. The older patients relatively more concern on their religious aspect and the meaningful life. Culturally, especially Javanese culture, they believe that the current life is just the temporary. Elderly people perceived that they relatively close to death, therefore they optimize their efforts in achieving high quality of life.

1.2. Relationship between patients QoL and gender

There were 13 female patients (44,8%) perceived that they had high quality of life. The statistic analysis suggested no significant different of quality of life among gender ($p = 0,56$).

Although in this study was dominated by male patients, however there was no significant difference in their quality of life. This finding suggested that, either male or female patients similarly perceived that their quality of life changed when they suffered from chronic diseases and take HD routinely.

1.3. Relationship between patients QoL and religion

The result showed that there were 17 Muslim patient (58%) perceived that they had moderate quality of life. In addition, the statistical analysis noted that no significant different of patients' quality of life among religion ($p = 0,226$).

In this study, respondents were dominated by Muslim patients. In Muslim believe that every diseases and other moment of life has a lesson learn or wisdom and receive test from God fatefully. This believe may affect patients in perceiving their quality of life.

1.4. Relationship between patients QoL and Level of education

There were 16 patients with high level of education (55,1%) who perceived that they had high quality of life. Statistical analysis suggested there was no significant different of quality of life between patients' with low and high level of education.

Although there was no significant different QoL between educational level, higher educational level potentially enabling patients in conceiving the goal of treatment, diet, and medication program. These combination potentially enhance patients' quality of life. Smeltzer and Brenda (2002) said that patients with longer period of HD performed better adaptation. This situation caused by the educational program that received during patients run HD. Therefore, patients with longer period of HD would receive more frequent and a lot of information that they need in managing their condition. In addition, patients with longer period of HD may enter the acceptant period naturally.

Healthcare professional involvement and their roles including care provider, educator, or continuous treatment are very important. More frequent HD improve patient adaptation to the routine activity and shorten stressful period. Therefore, more frequent HD not affect quality of life.

1.5. Relationship between patients QoL and family relationship

Result showed 14 patients (48,2%) reported good relationship their family and they reported high quality of life. Statistically there was no significant different QoL between patients with positive and negative family relationship ($p = 0,95$).

Someone who received warm support from the family relatively adherence to the healthcare advices. Warm relationship in Eastern culture, particularly Indonesia, each family member have responsibilities in maintaining and improving health an life quality of the other family members. Child have to take care their parent when they got sick and vice versa.

In this study found that respondents who categorized as negative family support showed high quality of life. This phenomenon may related to

Indonesian culture where most of people live with their extended family. Patients might not receive positive support from their core family, but they received adequate support from their extended family that enabling them maintain their quality of life.

1.6. Relationship between patients QoL and social activity

The result showed there were 12 patients (41,3%) with negative social activity reported high quality of life. In addition, statistically there was no significant different quality of life between patients who have positive or negative social activity ($p = 0,793$).

This finding not supported by the previous study where noted that social activity caused patients experienced excessive fatigue and unsatisfied sleep quality, and finally worsening health and quality of life (Smeltzer & Brenda, 2002). Physical health such as pain, discomfort, medical treatment dependence, energy and fatigue, sleep quality, mobility, daily activities, and working ability were some of the most familiar indicators of quality of life (WHOQoL Group, 1994). In the other hand, social activity potentially enlarge patient opportunity to gain better social and quality of life by receiving any positive input from their group and enjoying group activities.

Limitation of the study

There were some limitations in this study, such as the number of samples, single setting, and the instrument used in this study. Although the instrument already used in the other settings, it might required some adjustment, either items or the answer options.

Conclusion and Recommendation

The results showed that quality of life of patients with CKD undergoing hemodialysis in this area required improvement. Since, the selected factors in this study did not show significant association with patients' QoL, further study with bigger number of sample and broader aspect of predisposing factors of CKD patients' undergoing HD therapy QoL were extensively needed.

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