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Quality of Life Hemodialysis Patient and Caregiver: A Correlational Study During Pandemic Covid-19 on Indonesian Sample

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A B S T R A C T

Pandemic COVID-19 has caused great panic and anxiety worldwide, including for patients dialysis who was reported a high number of mortality, decreased patients quality of life including for caregiver. This study aimed to investigate the correlation between quality of life among patients undergoing hemodialysis and caregiver, especially during COVID-19 in Indonesia. A cross-sectional study design has been adopted. An accidental sampling technique was employed in this study between June and December 2021. Short Form-36 and Hospital Anxiety and Depression Scale were used to measure primary outcomes. Seventy-eight patients receiving hemodialysis and Seventy-eight caregivers were recruited. All of the patients had comorbidities (88.7%) and patients tend to be at a high level of depression and anxiety (53.2%), Middle level of depression and anxiety (30,4%). However, only a few (26.9%) caregiver had comorbidities, and all were without a high level of depression and anxiety. This study shows no correlation between the patient's quality of life and the family caregiver's quality of life during pandemic COVID-19, both from the physical (p=0.43) and mental dimensions (p=0.55). This study concluded that hemodialysis status, being older, number of comorbidities, and depressing status influence quality of life. Program and specific treatment on depression among end-stage renal disease suggested for future study.

Kata kunci:

penyakit ginjal stadium akhir
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A B S T R A K

Pandemi COVID-19 telah menimbulkan kepanikan dan kecemasan yang luar biasa di seluruh dunia, termasuk bagi pasien cuci darah yang dilaporkan memiliki angka kematian yang tinggi, penurunan kualitas hidup pasien termasuk bagi caregiver. Penelitian ini bertujuan untuk mengetahui hubungan kualitas hidup antara pasien yang menjalani hemodialisis dengan caregiver khususnya selama COVID-19 di Indonesia. Sebuah desain studi cross-sectional telah diadopsi. Teknik pengambilan sampel secara kebetulan digunakan dalam penelitian ini antara bulan Juni dan Desember 2021. *Short Form-36* dan *Hospital Anxiety and Depression Scale* digunakan untuk mengukur hasil primer. Tujuh puluh delapan pasien yang menerima hemodialisis dan Tujuh puluh delapan pengasuh direkrut. Semua pasien memiliki penyakit penyerta (88,7%) dan pasien cenderung berada pada tingkat depresi dan kecemasan tinggi (53,2%), tingkat depresi dan kecemasan sedang (30,4%). Namun, hanya sedikit (26,9%) pengasuh yang memiliki penyakit penyerta, dan semuanya tanpa tingkat depresi dan kecemasan yang tinggi. Penelitian ini menunjukkan tidak ada hubungan antara kualitas hidup pasien dengan kualitas hidup caregiver keluarga selama pandemi COVID-19, baik dari dimensi fisik (p=0,43) maupun mental (p=0,55). Penelitian ini menyimpulkan bahwa status hemodialisis, usia lanjut, jumlah penyakit penyerta, dan status depresi mempengaruhi

kualitas hidup. Program dan pengobatan khusus pada depresi di antara penyakit ginjal stadium akhir disarankan untuk studi masa depan.

INTRODUCTION

End-stage renal disease (ESRD) is a health problem worldwide. In addition, Pandemic coronavirus disease 2019 (COVID-19) has caused great panic and anxiety worldwide, including for ESRD patients with dialysis treatment (Chan et al., 2021; Yang et al., 2021). Patients with ESKD require life-sustaining treatment at a specialized facility three times weekly and travel to dialysis centers, often using public transportation or shared ride services; they are particularly vulnerable to COVID-19 secondary to their inability to follow social distancing guidelines while undergoing treatment strictly, it is high risk (Lee et al., 2020). In addition, the study reported that hemodialysis patients suffer from somatic disorders and are also at high risks of psychiatric problems, such as the high burden of symptoms such as depression and anxiety (Al Naamani et al., 2021; Hao et al., 2021; Lee et al., 2020; Yang et al., 2021), including in this pandemic situation.

Dialysis is closely linked to the quality of life the patient experiences because of the physical, psychological, social, economic, and spiritual problems associated with their illness. (Rini et al., 2021). Quality of life is the sum of individuals' perception of their abilities, limitations, symptoms, and psychosocial characteristics. It can be defined based on culture and value systems, and it plays a part in how people carry out their roles and functions (Gerasimoula et al., 2015; Rini et al., 2021). Quality of life focuses on aspects of an individual's physical or mental health that is affected by the presence of disease or treatment; it has been an important, subjective clinical parameter used to assess the effects of illness and the outcomes of treatment (Post, 2014; Sosnowski et al., 2017; Wantonoro et al., 2020) including hemodialysis patients.

The study informed that hemodialysis patients had diminished their quality-of-life scores and negatively impacted physical and mental dimensions compared with healthy individuals. (Rini et al., 2021). In addition, pandemic COVID-19 has been changed the role of life with adaptation with new normal adaptation. The study reported a relationship COVID-19 outbreak and the concerns related to the feeling of threat experienced during the pandemic (Lardone et al., 2020). Indonesia reported a high number of COVID-19 cases and mortality and has different health care systems and cultures from western countries. Therefore, this study purposed to investigate the relationship quality of life among patients undergoing hemodialysis and caregivers, especially during pandemic COVID-19 in Indonesia.

METHODS

Study design and sample

A cross-sectional study design has been adopted. An accidental sampling technique was employed in this study between July and December 2021. Seventy-eight patients receiving hemodialysis and Seventy-eight caregivers have participated in Yogyakarta, Central Java area, Indonesia. The study was performed and reported in compliance with the STROBE guidelines (von Elm et al., 2014)

Measurement

Data were collected through self-completed questionnaires by respondents. Health-related Quality of life was operationally defined by the Indonesian version of the Short Form-36 scale (SF-36). Indonesian version of the SF-36 scale: 1 to 2 (item 4a, b, c, d, and 5a, b, c), 1 to 3 (item 3a to 3j), 1 to 5 (item 1, 2, 6, 8, 10, 11a, 11b, 11c, 11d), 1 to 6 (item 7 and 9a to 9i). For each scale, reverse items scale which recoded simple algebraic sums scale were computed then the raw scale scores were transformed into a scale of 0–100. The higher the score, the better the implied health related quality of life. The SF-36 has been translated into numerous languages, including Bahasa Indonesia. Internal consistency of Indonesian SF-36 showed Cronbach alpha >0.7 for all subscale (Novitasari et al., 2016). In this study, Cronbach's alpha coefficient for each SF-36 subscale was found a range from 0.70 to 0.75. A general accepted rule is that Cronbach's alpha of 0.6 - 0.7 indicates an acceptable level of reliability, and 0.8 or greater a very good (Ursachi et al., 2015).

Hospital Anxiety and Depression Scale (HADS) Indonesian version were used to measure depression. The validity of HADS Indonesian version have been conducted for anxiety subscale is 0,706 and for depression subscale is 0,681(Rudi M et al., 2012).

Data analysis

Data were analyzed using SPSS for Windows Version 18.0 (SPSS, Inc., Chicago, IL, USA). The statistical approach with Spearman correlation has been used to determine the correlation between family caregivers' quality of life of patients

RESULTS

Seventy-eight patients and Seventy-eight families (family caregivers) were involved in filling out the questionnaire in this study. The mean age of the patient is 53.72 years, and the family caregiver's age is 48.5 years. Most are male; 48 patients (61.7%) and family (family caregivers) 45 (57.7%) respondents. The majority of junior high school up to high school education; 49 patients (62.4%) and family (family caregiver) 50 (64.1%) respondents. At the same time, almost all of the patients had comorbidities 69 (88.7%), while in the family (family caregiver), there were 21 (26.9%) who had certain diseases such as hypertension and diabetes mellitus. In measuring anxiety and depression, patients tend to be at a high level of depression and anxiety 42 (53.2%), while in families, it is still at a low level of 74 (94.9%). Summarized in Table 1

Table 1.
Sample Characteristic

Characteristic	Patients(n=78)	Caregiver(n=78)
Age (mean±SD)	53.72±12.29	48.5±13.70
Gender		
Male (1)	48 (61.7%)	45 (57.7%)
Female (2)	30 (38.3%)	33 (42.3%)
Education		
Illiteracy (1)	1 (1.3%)	0 (0%)
Primary school *(2)*	4 (5.1%)	10 (12.6%)
Junior-senior high school(3)	49 (62.4%)	50(64.1%)
University (4)	24 (30%)	18 (23.1%)
Co-morbidities		
With Co-morbidity(1)	69 (88.7%)	21(26.9%)
Without Co-morbidity (2)	9 (11.3%)	57(73.1%)
HARDS		
Low(1)	12 (15.2%)	74 (94.9%)
Middle (2)	24 (30.4%)	4 (5.1%)
High (3)	42 (53.2%)	0 (0%)

Note; HARDS: *Hospital Anxiety and Depression Scale*

Table 2.
Correlation between Quality of life hemodialysis patient and caregiver

		QoL; *physics dimensions (Family)*
QoL; *physics dimensions (patients)*	*r*	0.091
	p	0.43
		QoL; *Mental dimensions (Family)*
QoL; *Mental dimensions (patients)*	*r*	-0.068
	p	0.55

The statistical approach with Spearman correlation has been used to determine the relationship between family caregivers' quality of life of patients (the data are not normally distributed). Statistical analysis results relationship between the quality of life of the family caregiver and the patient's quality of life were found to be *p=0.55* for the physical dimension and *p=0.43* for the mental dimension. Results show that there is no relationship between the quality of life of the patient and the quality of life of the family caregiver, both from the physical dimension and the mental dimension of the quality of life (Table 2)

DISCUSSION

Chronic renal failure (CKD) is a slow/progressive and irreversible renal function disorder, and finally fall in end-stage renal disease (ESRD), the kidneys are unable to maintain body metabolism and fluid and electrolyte balance, causing uremia (retention of urea and other nitrogenous wastes in the blood) (Yang et al., 2021). Several studies have been carried out that, over time, the dysfunction of kidney function will cause various complications that cause the patient's physical and mental condition to deteriorate and significantly affect the patient's quality of life. However, this study provides information that there is no relationship between the quality of life between ESRD undergoing hemodialysis patients and family caregivers. The results are thought to be caused by several factors, including; differences in conditions due to ESRD in patients plus depressed status, the number of comorbidities in patients, and being older is higher than caregivers/families.

Caregivers/families characteristically majority without diseases, younger mean age. The presence of ESRD will slowly have an impact on the patient's quality of life; studies report that there will be a decrease in the quality of life in patients undergoing hemodialysis over time (Zazzeroni et al., 2017). The higher age (elderly) of hemodialysis patients is reported to affect patients' quality of life. Being older decreased in quality of life in hemodialysis patients and increased the mortality rate (Hall et al., 2020; van Loon et al., 2017). In addition, patient samples in this study were a high proportion of comorbidities. Studies report that comorbidities such as diabetes and hypertension are factors that will worsen the quality of life of hemodialysis patients (Md. Yusop et al., 2013). Comorbidities significantly negative impact on quality of life patients with end-stage renal disease (Cha & Han, 2020). The inline study showed better quality of life associated with younger age fewer comorbidities, then improving comorbidity treatments are essential (Bah et al., 2014). Another study reported those patients with the end-stage renal disease with multiple comorbidities were associated with lower quality of life (Krishnan et al., 2020; Pei et al., 2019). Study reported Gender, age, and comorbidity have been as critical factors depression (Chan et al., 2017)

The status of anxiety and depression in the patients as the sample in this study had a very high proportion; almost all patients were depressed. According to reports of several studies, depressed status contributed to a decrease in patients' quality of life (Cho et al., 2019). Depressed is reported in all hemodialysis patients, which negatively affects the patient's quality of life (Hagemann et al., 2019; Salari et al., 2020). The study showed that the overall quality of life of hemodialysis patients' scores was associated with the levels of depression. (Vasilopoulou et al., 2015). Inline, low scores on quality of life hemodialysis patients related were to depressive symptoms (Ganu et al., 2018). Therefore, it is implied that the mental health condition among hemodialysis patients is a significant part of the quality of life. Lack of social support and a lengthy treatment regimen especially in this covid-19 pandemic may also result in depression (Lilympaki et al., 2016; Murillo-Zamora et al., 2016).

LIMITATION OF THE STUDY

This study was affected by limitations the sample population was recruited from only one hospital in Central Java, Indonesia, which may limit the generalizability of the findings to the rest of the Indonesian country.

CONCLUSION

Number of comorbidities, being older, anxiety, and depression in the patient end-stage renal disease, need immediate attention to maintain and improve quality of life. Patients and family caregivers program is needed to maintain quality of life and prevent caregiver burden. Developing specific treatment for depression among end-stage renal disease is suggested for future studies.

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ETHICAL CONSIDERATIONS

The institutional review board of the local orthopedic hospital approved this study (ref. 00127/KT/74/IV/2021) which was conducted in accordance with the General Data Protection Regulations (2018) and the Declaration of Helsinki (McCall, 2018). Participants completed a written consent form, were assured of the data confidentiality, and could withdraw from the study.

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Conflicts of interest

There are no conflicts of interest.

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