Indonesian Journal of Global Health Research
Volume 8 Number 1, February 2026
e-ISSN 2715-1972; p-ISSN 2714-9749
http://jurnal.globalhealthsciencegroup.com/index.php/IJGHR

QUALITY OF LIFE AND ITS ASSOCIATED FACTORS IN PATIENTS WITH CHRONIC KIDNEY DISEASE UNDERGOING HEMODIALYSIS

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ABSTRACT
The increasing prevalence of CKD has become a global concern. Moreover, hemodialysis is one of the therapies that patients must undergo for life, which significantly impacts their overall well-being. Of course, the process greatly affects the patient's quality of life. This study aimed to assess the quality of life and its associated factors in patients with CKD undergoing hemodialysis. The study used a descriptive analytic design with a cross-sectional approach. The respondents were all patients undergoing hemodialysis in the room, totalling 74 respondents. Data collection was carried out through a questionnaire, namely demographic data and KDQOL SF-36 that are valid and reliable. Data analysis used bivariate tests, namely chi-square. The results showed that half of the respondents had a good quality of life (55.4%). Age, gender, and number of comorbidities had a significant relationship with the quality of life of CKD patients undergoing hemodialysis (p-value < 0.05). Hence, the importance of a multidisciplinary approach in the management of hemodialysis patients that includes psychological and social interventions. By understanding the factors that influence quality of life, healthcare professionals can design more targeted and effective intervention programs to improve patients' overall well-being.

Keywords: CKD; factors; hemodialysis; quality of life

How to cite (in APA style)
Dharmapatni, N. W. K., Strisanti, I. A. S., & Dewi , N. W. E. P. (2026). Quality of Life and Its Associated Factors in Patients with Chronic Kidney Disease Undergoing Hemodialysis. *Indonesian Journal of Global Health Research*, *8*(1), 1055–1060. https://doi.org/10.37287/ijghr.v8i1.471.

INTRODUCTION

Chronic kidney disease (CKD) is a progressive disease that is estimated to affect around 700 to 840 million people with a prevalence of 8-14% worldwide (Jha et al., 2023). Additionally, CKD is the third fastest-growing cause of death, particularly for older adults and those with a history of hypertension and type 2 diabetes (Cockwell & Fisher, 2020). As a result, the burden of CKD has grown to be a major worldwide health issue. In Indonesia, the prevalence of CKD has also increased. According to data of The Basic Health Research in 2018, there has been an increase in the prevalence of CKD from 0.2% in 2013 to 0.3% in 2018 (Riskesdas, 2018). While data from the Indonesian Renal Registry mentioned an increase in cases of CKD patients undergoing hemodialysis (IRR, 2018). Indeed, among the 20 most populated islands, Bali was rated second in terms of the number of hemodialysis cases (Indonesia, 2021).

The worst condition of CKD is known as end-stage renal disease (ESRD). This condition is the most critical phase because kidney function is almost completely lost permanently (Arriola-Montenegro, Cheungpasitporn, Thongprayoon, Craici, & Miao, 2025). In this condition, the patient's body is no longer able to maintain balance independently, requiring kidney replacement therapy, one of which is hemodialysis. This procedure not only affects physical conditions but also psychological, social, and economic aspects. So that the impact will affect the patient's quality of life (Dembowska et al., 2022; Mulyati, Fitriyanto, Ernawati, & lesmana Wati, 2025). According to the World Health Organization (WHO), a person's quality of life encompasses their physical and mental well-being, degree of independence, social connections, personal convictions, and interactions with their surroundings (Kim, 2024). Therefore, a good quality of life will have a positive impact on a person. Even more so if the individual has to live with a chronic disease, such as CKD patients who have to undergo hemodialysis therapy. This is proven by research conducted

by Rahmah (2021), which states that the quality of life of CKD patients decreases along with the progressiveness of the disease.

Therefore, it is crucial for enhancing the quality of life, particularly for this population. There are numerous things that can improve the quality of life for CKD patients receiving hemodialysis. The literature review's findings reveal that a number of variables, including sociodemographic characteristics, clinical state, psychological illnesses, and the kind of dialysis therapy being used, have an impact on the quality of life of CKD patients. Both outside and in Indonesia, many studies have focused on the quality of life of CKD patients (Anggraini & Fadila, 2023; Dembowska et al., 2022; Istiqomah, Naptarika, & Sukmalara, 2025). But there is currently barely any study being done in Bali. Studies within the scope of CKD have mostly focused on curative measures (Afriyudha, Aini, & Lactona, 2024; Kurniawan & Daryaswanti, 2024; Putri, Wiardani, & Juniarsana, 2025). Thus, the study aimed to assess the quality of life and its associated factors in patients with CKD undergoing hemodialysis. Which is the study of the quality of life and factors influencing the quality of life of CKD patients receiving hemodialysis is crucial. It is envisaged that the findings of this study will contribute to the development of multidisciplinary strategies for enhancing patients' quality of life.

METHOD

This study is quantitative, applying a cross-sectional approach and a descriptive-correlative method in a non-experimental research design. The research study was carried out in the hemodialysis unit of one of Bali's regional hospitals. All hemodialysis patients having a medical diagnosis of chronic kidney disease (CKD) at least at stage 4 represented the study's population. Seventy-four respondents who matched the inclusion criteria were selected by total sampling. In collecting data, there are two types of questionnaires used, namely the demographic data questionnaire made by the researcher. The second is the Kidney Disease Quality of Life Short Form 36 (KDQOL SF-36) questionnaire (Hays et al., 1997), which is used to measure the quality of life of patients with kidney problems. This questionnaire has also been back translated. The KDQOL SF-36 has been widely used in Indonesia, so the Indonesian version of the questionnaire has been declared valid and reliable (Kadek, Made, & Ketut, 2024; Putra, Hidyatullah, Aida, & Hidayat, 2021). Both univariate and bivariate analysis were used to analyze the data. Chi-square is a bivariate technique used to examine aspects related to quality of life. The Ethics Commission of ITEKES Bali approved this study prior to data collection, with number 04.0049.1/KEPITEKES-BALI/II/2025.

RESULT

Table 1.
Characteristics of CKD patients undergoing hemodialysis (n=74)

Participant's Characteristics	f	%
Age		
Adult	53	71.6
Elderly	21	28.4
Gender		
Male	51	68.9
Female	23	31.1
Marital Status		
Not married	6	8.1
Married	65	87.8
Divorced	3	4.1
Education		
Elementary	5	6.7
Senior High School	50	67.6
Higher Education	19	25.7
Job		
Government	15	20.3
Private-employed	12	16.2
Self-employed	8	10.8
Unemployed	39	52.7

Participant's Characteristics	f	%
Comorbidities		
Hypertension (HT)	48	64.8
Diabetes Mellitus (DM)	17	23.0
HT dan DM	9	12.2
Duration of Hemodialysis		
< 5 year	45	60.8
5 – 10 year	24	32.4
> 10 year	5	6.8
Quality of Life		
Good	41	55.4
Poor	33	44.6

Table 1 shows that the majority of respondents in this study fall into the adult age category (71.6%) and are male (68.9%). As many as 87.8% of respondents were married, and more than half of them graduated from high school/vocational school (67.6%) and were not working (52.7%). All respondents had comorbidities such as hypertension and diabetes mellitus, and more than half had a history of hypertension (64.8%). In addition, 60.8% of respondents had a duration of hemodialysis of less than five years. In terms of quality of life, 55.4% of patients undergoing hemodialysis had a good quality of life.

Table 2.
Factors Associated with Quality of Life in Patients with CKD Undergoing Hemodialysis

Factors	Good n= 41, f (%)	Poor n = 33, f (%)	*p-value*
Age			0.021
Adult	38(61.3)	24(38.7)	
Elderly	3(25.0)	9(75.0)	
Gender			0.031
Male	24(47.1)	27(52.9)	
Female	17(73.9)	6(26.1)	
Number of Comorbidities			0.004
1	32(49.2)	33(50.8)	
2	9(100)	0(0.0)	
Duration of Hemodialysis			0.655
< 5 year	24(53.3)	21(46.7)	
> 5 year	17(58.6)	12(41.4)	

Table 2 shows the results of bivariate tests using chi-square analysis. Of the four factors that are thought to have a relationship with the quality of life of patients, three factors, namely age ($0.021 < 0.05$), gender ($0.031 < 0.05$), and the number of comorbidities ($0.004 < 0.05$), have a significant relationship with the quality of life of CKD patients undergoing hemodialysis.

DISCUSSION

Quality of Life of CKD Patients Undergoing Hemodialysis

In this study, it was found that more than half of the respondents, 55.4% of CKD patients undergoing hemodialysis, had a good quality of life. However, these results are slightly different from the findings that as many as 44.6% of patients have a poor quality of life. In theory, it is stated that the quality of life of CKD patients will decrease as the stage of CKD increases (Rahmah, 2021). In this study, the respondents were CKD patients with at least stage 4 who had undergone hemodialysis therapy. Physiologically, it can be explained that the increasing stage of CKD indicates the decline and even loss of kidney function in the body (Alwiyah, Rudiyanto, Anggraini, & Windarti, 2024). This will have an impact on the condition of patients who are at high risk of complications that may occur.

Some previous studies have also shown similar results. Research conducted by Wahyuningsih and Astuti (2022) on the quality of life of hemodialysis patients in Yogyakarta stated that 52.4% of patients had a good quality of life. In contrast, research conducted in Semarang showed that 56.1% of CKD patients undergoing hemodialysis had a poor quality of life (Suwanti, Wakhid, & Taufikurrahman, 2019). However, based on several studies above, it can be concluded that the quality of life of CKD patients undergoing hemodialysis is very fluctuating and differs slightly

between good and bad. This could be due to the different characteristics of the research sample. The current study showed that the majority of respondents were married. This can support that the presence of a life partner plays an important role in strengthening the patient's mentality in undergoing hemodialysis therapy for the rest of his life. Theory states that the role of family in supporting sick family members is very important (Suharti, Judijanto, Utami, & Lestari, 2024). This is evident in a study conducted by Fadlilah (2019), which states that the biggest source of family support is from the husband/wife.

In addition, education is also one of the factors that affect the patient's quality of life. The results showed that only 6.7% of the total respondents had primary school education. The rest of the respondents have at least a high school / vocational school education. These results are similar to research conducted by Fadlilah (2019), where the level of education is directly proportional to a person's quality of life. The higher the patient's education, the better the quality of life. And seen based on emotional aspects, patients who have higher education tend to be better able to control their emotions. Based on employment characteristics, half of the respondents did not work. This can be caused by the limited movement and activities of patients undergoing hemodialysis (Rahayu, 2024). So that it will have an impact on the patient's ability to work as before. A study found that CKD patients who undergo hemodialysis and still work tend to have a better quality of life than those who do not work (Priyanti, 2016). This is because the perception of patients who continue to work tends to be positive towards their physical and mental aspects. So that they do not feel burdened by their work.

Factors Associated with the Quality of Life of CKD Patients Undergoing Haemodialysis

The current study shows that there are three factors, including age, gender, and number of comorbidities, that have a significant relationship with the quality of life of CKD patients undergoing hemodialysis (p-value < 0.05). Based on age category, adult respondents tend to have a good quality of life. In contrast, elderly respondents tend to have a poor quality of life. This is in line with research conducted by Siwi (2021), where CKD patients aged 45-60 years tend to have a good quality of life. While only 6.4% of patients aged over 60 years had a good quality of life. It can be explained physiologically that with increasing age, there will be a decrease in body function. Likewise with the patient's cognitive function (Rahmah, 2021). So that even though the patient's education is high, with increasing age it will affect the patient's cognitive function. In addition, there will also be a decrease in kidney function. At the age of 30 years and above, the kidneys will naturally atrophy, which is characterized by thinning of the renal cortex by around 20% and thickening of the glomerular basement membrane, which has a high risk of glomerulosclerosis (Siwi, 2021). So that increasing age will further exacerbate the progressivity of the disease, which is usually accompanied by comorbidities.

Based on gender, women tend to have a good quality of life compared to men. This is supported by several similar studies (Rahmah, 2021; Siwi, 2021). In theory, it can be explained that men have a higher risk of developing CKD than women. This can be explained by the fact that women have more estrogen. This hormone has a function to inhibit the formation of cytokines so that calcium levels will be balanced. Calcium provides a protective effect against the absorption of excess oxalate, which has a high risk of developing kidney stones, one of the precipitating factors of CKD. In addition, women may be more concerned about their health by maintaining a healthy diet than men. Men tend to consume energy-boosting instant drinks, which have a high risk of overloading the kidneys (Iriane & Setyawan, 2025; Rohma & Kristinawati, 2022).

Based on the number of comorbidities, patients with one comorbidity tend to have a poor quality of life compared to patients who have 2 comorbidities. This result is inversely proportional to several previous studies that found that more comorbidities will worsen the quality of life of CKD patients undergoing hemodialysis (Damayantie, 2022; Mulyati et al., 2025). This can happen because patients with more than one comorbidity have a much higher level of awareness of complications compared to patients who only have one comorbidity or who do not have one. Generally, these

patients will be more routinely controlled and exposed to more information about their comorbidities. Therefore, patients tend to be more careful in every step of their lives. This will have a positive impact on patients, namely paying more attention to their health. This is supported by a study conducted by Masi and Kundre (2017), where their research found that CKD patients who have comorbidities such as diabetes mellitus or hypertension tend to have a good quality of life. So that the presence of comorbidities in patients will increase the patient's self-awareness of their health status even though the presence of these comorbidities will also accelerate the progressiveness of the disease. However, there is no correlation between the patient's quality of life and the duration factor, or the length of hemodialysis therapy. This outcome is contrary to a number of earlier studies, which discovered a significant relationship between patients' quality of life and the length of time they spent receiving hemodialysis (Istiariningsih, Kurniawan, & Laksana, 2023; Sari, Rasyidah, & Maulani, 2022). The use of various measurement tools and variations in the characteristics of the respondents may be the cause of this variance in the results.

CONCLUSION

According to this study, the quality of life is good for a half of CKD patients receiving hemodialysis. It has been shown that the number of comorbidities, age, and gender significantly influence patients' quality of life. These results indicate that numerous demographic and clinical factors, in addition to medical disorders, have an impact on hemodialysis patients' quality of life. When managing hemodialysis patients, medical professionals should take a multidisciplinary approach, including social and psychological therapies into standard care.

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