



## Relationship Between Anxiety, Depression, And Quality Of Life Among Hemodialysis Patients: A Systematic Review

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### ABSTRACT

**Background:** Anxiety and depression are the most prevalent psychological disorder among hemodialysis patients and affect quality of life. The aim was to analyze prevalences of anxiety, depression and quality of life among hemodialysis patients. **Methods:** We comprehensively searched in multiple data bases limited to the last 5 years from 2019 to 2024 used keyword “quality of life”, restricted our search to “hemodialysis”, “depression” and “anxiety” in the title and abstract connected by the Boolean operator “AND”. Reviewers working independently and appraised the quality and included 15 cross sectional study that evaluated, in patient with depression and anxiety on hemodialysis treatment and how can affect QoL (Short From Health Survey with 26 question (SF-36). Fiveteen moderate quality cross-sectional met the inclusion criteria. **Result:** Total of 2.458 hemodialysis patients showed that anxiety and depression is highest psychological disorder prevalences which was associated with a lower Quality of Life. **Conclusion:** The body of evidence suggest that depression and anxiety can decrease quality of life on hemodialysis patients.

Keyword: Anxiety, depression, hemodialysis, quality of life

## INTRODUCTION

Global prevalence of patients on maintenance haemodialysis have increased since 2000. Patient with haemodialysis was more than 70% these patients underwent hemodialysis or peritoneal dialysis in 2017, with kidney transplantation supporting the remaining affected individuals (Daniel et al., 2021). The worldwide increase in patients on hemodialysis need more attention because hemodialysis has become an important global public health issue with other comorbidities. Depressive and anxiety are the most common psychiatric disorders in hemodialysis patients, with prevalence rates of 20-88,8% for depressive disorders and 23,6-92,5% for anxiety disorders (Alshelleh et al., 2023). Psychiatric comorbidities such as anxiety and depressive disorders can affect quality of life (QOL) patients' with hemodialysis.

In patients with hemodialysis, these mental disorders like anxiety and depression are associated with various conditions that lead to poorer health conditions, with direct impacts on patients' quality of life and survival. Previous research in Brazil shows that hemodialysis patients who have a good quality of life have a high perception of happiness, positive thinking, and are not easily anxiety. Depression are also associated with unhealthy forms of behavior, such as alcohol and tobacco use, poor eating habits, sedentary lifestyle and non-compliance with treatment. These factors translate into increased risks of clinical events, bring the patient to more bad condition and need for emergency services, thus resulting in higher healthcare costs and poor prognosis (Brito et al., 2019).

Coping strategies are cognitive, emotional, and behavioral endeavors used to reduce or completely eliminate adverse effects of stressors or events and to combat them. Coping strategies are better commonly utilized is adaptive than others. Understanding the relationship between patients' anxiety and depression strategies and their QOL will allow us for a better psychiatric approach to patients (Işık Ulusoy & Kal, 2020). The aim of this Study is to explore the impact of anxiety

and depressive disorders on hemodialysis patients' QOL. The results of the systematic review is expected to be reference to health service especially hemodialysis nursing

## METHODS

### Data Sources

The systematic review research design resulted focused on the latest research over the last 5 years. This study used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach. The process of searching the articles was electronic. The data was obtained from Scopus, ProQuest, and EBSCO databased. The literature review used the keywords 'Quality of Life', 'depression' and 'anxiety'. In the article search, we used the Boolean operator "AND". After a number of articles was obtained, the researcher then selected them again according to the specified inclusion and exclusion criteria. The article searching process was carried out from December 2023-February 2024. After obtaining articles that were in accordance with the researchers' intentions, the articles were analyzed one by one and grouped to get the results. The next step was to discuss what had been found based on the points obtained from the results. Ethic clearance was not required due to the article being based on a systematic review.

Table 1. electronic search strategy for scopus database

<b>Keyword</b>			
Quality Of Life	Hemodialysis	Anxiety	Depression
<b>The Number of Articles that Appeared from Scopus Database = 133</b>			
<b>After screening with title = 53</b>			
Authors	Subject Area		
1. Chilcot, J.	1. Medicine		
2. Davenport, A.	2. Nursing		
3. Dekker, F.W.	3. Psychology		
4. Farrington, K.	4. Biochemistry		
5. Johansson, L.	5. Pharmacology		
<b>The Name of The Journal that Appears in The Scopus Database</b>			
1. Clinical Journal Of The American Society Of Nephrology			
2. American Journal Of Kidney Diseases			
3. Enfermeria Nefrologica			

4. Canadian Journal Of Kidney Health And Disease
5. Journal Of Psychosomatic Research

### Inclusion and Exclusion Criteria

We included cross sectional study that describe relationship between anxiety and depression with quality of life on hemodialysis patients. We excluded research that not cross sectional like RCT and qualitatif study. The choosen outcome of interest was QoL and we included any cross sectional that contained QoL as one of their outcomes regardless of its category as primay or secondary outcome. Any kind of scales assessing QOL were get in this study and we choose the SF-36 and EQ-5D Questionnaire only. We included only cross sectional in order to eliminate the disparity of the difference in baseline characteristics of patients which might have affected their QoL and just from point of view anxiety and depression.

### RESULT

The literature search get 117 journal (53 from SCOPUS, 43 from EBSCHOST and 21 from PROQUEST) from variable quality of life, hemodialysis, anxiety and depression on boolean operator. First reviewing the tittle and abstracts for matching them with the variable and inclusion criteria and get 84 articles, 34 articles were not selected because not full-text review (17 from SCOPUS, 11 from EBSCHOST and 6 from PROQUEST). There were 23 article not cross-sectional analyze, 12 not SF-36 or EQ-5D, and total 33 duplicate articles which were excluded. Finally, 15 articles were chosen to be reviewed. The studies were heterogeneous because not all using the same sample characteristics, instrument, and research time periode, but we choose all cross sectional study. The instruments used were 9 studies analyzed with The Short-Form Health Survey (SF-36), and 6 with EQ-5D qestionnaire. The Short-Form Health Survey (SF-36) and EQ-5D questionnaire has been proven to be the most widely used tool to evaluate quality of life among patients undergoing hemodialysis patients. Anxiety and depression have significant affect for condition hemodialysis patients. All of the studies stated the majority

of respondents' with anxiety and depression have decreased QOL scores with a ratio more than 63%, both in the physical and mental domains.

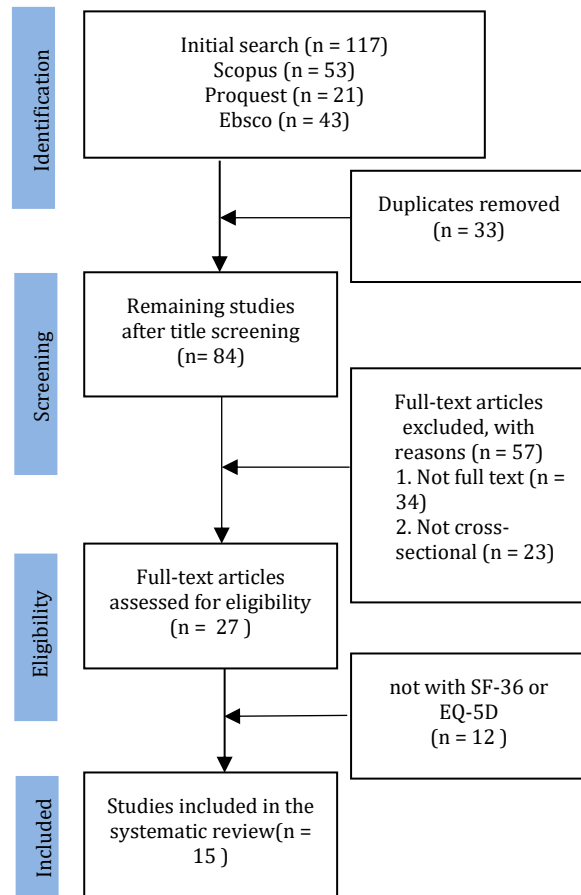


Figure 1: Flowchart of articles selected in the systematic review; the selection process using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyzes)

Table 2. Journal Data Reviewed

Author	Design	Sample	Variables	Results
(Alshelleh, et al, 2023)	Cross-sectional	66 respondents	Quality of life, depression, generalized anxiety disorder, chronic kidney disease	The high prevalence of depression, GAD, and low QOL in ESRD patients on dialysis highlights the need for caregivers to provide psychological support and counselling for these patients and their families. This can promote psychological health and prevent the onset of psychological disorders.
(De Brito et al., 2019)	Cross-sectional	205 respondents	Depression, anxiety, dialysis, kidney transplantation	Depression and anxiety symptoms occurred more frequently among patients undergoing dialysis. Quality of life, comorbidities and loss of vascular access were associated factors.
(Ulusoy and Kal, 2019)	Cross-sectional	117 respondents	Coping Strategies, QoL, anxiety, depression	Patients with hemodialysis use variety of coping strategies. The use of emotion focused coping was associated with better QOL and reducing the risk of depressive disorder. Interventions to facilitate the use of adaptive coping strategies may improve patients' QOL and mood.
(Yuan et al., 2019)	Cross-sectional	576 respondents	Health-related QoL, maintenance haemodialysis	Different health interventions should be implemented to improve patients' HRQOL.
(Sandwijk et al., 2018)	Cross-sectional	168 respondents	Fatigue, anxiety, depression and quality of life	Fatigue and depression are common in HD patients, resulting in a low QoL, comparable to haematological patients receiving chemotherapy. KTR do better, with scores similar to patients with a haematological malignancy in remission, but still have a lower QoL than healthy controls.
(Higuita et al., 2019)	Cross-sectional	142 respondents	Health-related QoL, haemodialysis	The result of this study revealed the impact on the quality of life of Colombian patients undergoing hemodialysis with chronic kidney disease who were highly affected by the disease burden. KDQOL-36 has excellent properties of reliability, internal consistency, and discriminant power; thus, its use is recommended in subsequent studies to monitor HRQL in this population.
(Martinez et al., 2019)	Cross-sectional	122 respondents	Fatigue, anxiety, depression and quality of life	Depression and anxiety symptoms occurred more frequently among patients undergoing dialysis
(Marthoenis et al, 2021)	Cross-sectional	213 respondents	Depression, anxiety, quality of life	The rates of depression and anxiety among patients undergoing hemodialysis in the current study setting are relatively similar to the rates in other settings. Patients' acceptance of their illnesses is significantly associated with the occurrence of anxiety and quality of life. Therefore, health practitioners should help patients accept their illnesses and the administration of regular hemodialysis.

Author	Design	Sample	Variables	Results
(Nagy et al., 2023)	Cross-sectional	298 respondents	Anxiety, depression, hemodialysis, quality of life, mental disorders	Anxiety and depression are prevalent among HD patients in Egypt, and several sociodemographic and clinical risk factors are associated. In addition, these mental disorders are associated with poor QOL.
(Khalil et al., 2022)	Cross-sectional	120 respondents	End-stage renal disease, depressive symptoms, anxiety, quality of life,	Anxiety and depressive symptoms in both patients and caretakers are equally crucial in end-stage renal disease management
(Daniel et al., 2020)	Cross-sectional	124 respondents	Depression, anxiety, dialysis, nutrition	While nutritional status is an important element in predicting hemodialysis patient outcomes, its relationship to depression and QOL, in this sample, demonstrated only moderate explanatory ability. However, dialysis vintage and level of education had a significant relationship with depression and QOL. These findings suggest that patients with longer dialysis vintage and limited health literacy require unique plans of care. Future studies aimed at understanding the interrelationships between non-modifiable patient characteristics and psychosocial outcomes are imperative.
(Al-Nashri, Fatima dan Hayfa Almutary)	Cross-sectional	114 respondents	Anxiety, depression, haemodialysis, nursing care, quality of life	Support the need to adopt effective strategies to improve screening for anxiety and depression. The detection of high physical symptom burden should draw attention to potential psychological issues.
(Agrawaal et al., 2019)	Cross-sectional	100 respondents	Depression, hemodialysis	There is a high prevalence of depression in patients with Chronic Kidney Disease stage 5 on hemodialysis compared to general population.
(Bai et al., 2019)	Cross-sectional	405 respondents	Fatigue, sociodemographic characteristics, depression, QoL	The results of the study further suggest that comprehensive management programs should be applied with patients to reduce their fatigue, and ultimately to improve their quality of life.
(Aljawadi et al., 2024)	Systematic review	6 articles	Dialysis, quality of life, QOL tools, chronic kidney disease, ckd	Dialysis negatively impacts all aspects of QoL in CKD patients. This review can guide clinicians in understanding the disease and treatment burden by identifying the most appropriate tools for assessing the QoL of adult CKD patients undergoing dialysis. There is a need for further studies to explore the detrimental effects of CKD treatment and better understand its impact on patients' QoL.

*QoL: Quality of Life; HRQOL : Health-related Quality of Life*



## DISCUSSION

In this study, the overall hemodialysis patient who studied show poorer quality of life with anxiety and depression disorder. Deterioration in the quality of life that occurs is evident in physical and psychological aspects such as the inability to do activities, worse clinical conditions, expressions of sadness, and feelings not noticed by family or other people (Yuan et al., 2019). This certainly must be a special concern for nurses to be even harder in gathering aspects that can improve the quality of life of hemodialysis patient (M.S van Sandwijk, 2019; Yuan et al., 2019).

Depression status was associated with the mental component result of the SF-36 and EQ-5D among dialysis patients. Anxiety was associated with loss of vascular access over the last 1 year and with the physical and mental component summaries of the SF-36 among dialysis patients (M.S van Sandwijk, 2019). According to the many literature, depression status is so common in hemodialysis patients and depression and anxiety were so associated with impaired and decreased quality of life (M.S van Sandwijk, 2019). Semaan et al. reported that depressed patients receiving hemodialysis had a reduced QoL but when they were treated with antidepressants their QoL parameters improved. Brito et al. claimed that depression is a predictor index for low QoL. Relative to depression, the importance of anxiety may have been underestimated in patients receiving hemodialysis and it is mentioned that anxiety, independently of depression, can impair QOL in hemodialysis patients (Higuita-Gutiérrez et al., 2019).

In this study, a significant relationship between QOL and mood was observed like depression and anxiety. These results, which showed that anxiety and depressive disorders have a significant and harmful effect on the mental and physical components of the SF-36 and EQ-5D QOL scale, are similar with the literature (Merino Martínez et al., 2019; Nagy et al., 2023)–[9]. In HD patients, most of them show that they experienced greater depressive, anxiety and physical domain of QOL in the lower scores (Nagy et al., 2023). However,

depression in hemodialysis patients often remains undetected and untreated or undertreated. Understanding the significant psychological impact of long-term maintenance hemodialysis and its contribution to reduced quality of life highlights the essential need for early and aggressive treatment of depression in hemodialysis patients (Daniel et al., 2021)

Dialysis leads to dramatic life changes stressful and to require major coping efforts. HD patients with depressive symptoms may use methods of coping and appraisal to beat their uncomfortable feeling. Studies have shown that coping must be appraised relative to a social or cultural group support. In addition to social support, the fact that the genetic, social and spiritual characteristics of the patient also greatly influence the patient's coping mechanisms for dealing with anxiety and depression (A. Khalil et al., 2022). Beside of these three factors, the quality of life of HD patients is also related to the importance of the level of education that HD patients have. Most of studies show that HD patients who have a high level of education, at least senior high school, have higher confidence in recovering than patients who do not have a higher education. This is related to the patient being more deeply involved in the treatment that provided and having a high level of compliance in carrying out the treatment (A. Khalil et al., 2022; Bai et al., 2019). Another problem experienced by HD patients is the physical pain of the disease itself, dialysis therapy tiring and requires frequent visits to the hospital or dialysis center several times per week. Apart from physical pain, patients also often experience several negative symptoms, namely fatigue, sleep disturbances, lack of appetite, stomach ache and hypotension. This causes a decrease in the QOL of HD patients. One of the causes of decreased QOL above is fatigue. This fatigue is often accompanied by muscle weakness and pain when moving the patient's limbs. Because of these limitations, the patient is unable to go out of the house or carry out activities that he used to do before he was sick. This has an impact on the patient's mental and emotional health (Aljawadi et al., 2024). Thus,

the quality of life of hemodialysis patients is reduced in the presence of affective symptoms, which leads to poor clinical outcomes and decreased ability to face the demands of the disease and its treatment.

## CONCLUSION

This study explain that depression and anxiety are common conditions among hemodialysis patients. Lower quality-of-life from physical and phsycological scores were so associated with symptoms of depression and anxiety. Presence of comorbidities, loss of vascular access and worse quality of life were associated with anxiety and depression symptoms among dialysis patients. Treatment of mental disorders needs to be effectively included within the routine care provided for chronic kidney disease patients and should be maintained across the continuum of care. Nursing should be pioneer to care this point because nursing is first person to meet patient from come and go, further investigations are warranted to identify major risk factors and design better interventions for management, control and prevention mental disorder like anxiety and depression so that it can maintain and even improve quality of life hemodialysis patient.

## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest or financial interest in the preparation of this article.

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