

## The Relationship Between Self-Esteem and Body Image in Chronic Kidney Failure Patients Undergoing Hemodialysis

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### ABSTRACT

**Introduction:** Patients undergoing hemodialysis often experience physical changes. These changes can affect their perception of their body image. Self-esteem is believed to be a key determinant of body image. This study aimed to determine the relationship between self-esteem and body image in chronic kidney failure patients undergoing hemodialysis.

**Methods:** This was a quantitative study with a cross-sectional design. Measurements were made using the Rosenberg Self-Esteem Scale (RSE) and the Body Image Scale (BIS). The sample size was 78 patients with chronic kidney disease undergoing hemodialysis.

**Results:** The Spearman rank test between self-esteem and body image in patients undergoing hemodialysis showed a p-value of 0.000 ( $p < 0.05$ ) and an r-value of 0.404, indicating a statistically significant positive correlation between the two variables.

**Conclusions:** The findings is a significant correlation between self-esteem and body image in patients undergoing hemodialysis. Therefore, efforts are needed to increase self-esteem as part of treatment so that the patient's body image becomes more positive.

## Introduction

Chronic kidney disease (CKD) is a condition characterized by kidney damage, characterized by a glomerular filtration rate (eGFR) of less than 60 mL/min/1.73 m<sup>2</sup> (Vaidya & Aeddula, 2024). Globally, an estimated 788 million people aged 20 years and older will suffer from CKD by 2023 (Mark et al., 2025). Furthermore, the prevalence of CKD is increasing annually, indicating that this disease is a global problem (Francis et al., 2024). This disease is characterized by a progressive and irreversible decline in kidney function (Francis et al., 2024). Therefore, it requires renal replacement therapy, such as hemodialysis. However, hemodialysis brings about physical and psychological changes in patients (Bakhsh & Mahallawi, 2025). The prevalence of CKD in Indonesia is 0.18%, while the prevalence in North Sulawesi is above the national average of 0.29%. This indicates a significantly greater burden of CKD in North Sulawesi, placing the region at higher risk of health impacts, including hemodialysis services and their side effects (Kementerian Kesehatan Republik Indonesia, 2023). Patients undergoing hemodialysis often experience physical changes such as darkening of the face, decayed teeth, thinness, weakness, and fatigue, as well as the need for vascular access (Rosyanti et al., 2018).. These changes can affect the patient's perception of their body image. Body image issues can lead to embarrassment, social withdrawal, and even anxiety and depression (Malfasari et al., 2023; Rosyanti et al., 2018).

It's believed that self-esteem is a key factor in body image (O'dea, 2012).. Self-esteem is an individual's subjective evaluation or assessment of their overall abilities and qualities (Muris &



Otgaar, 2023). CKD patients undergoing hemodialysis commonly experience poor body image and self-esteem (Chairunnisa et al., 2026; Malfasari et al., 2023). Low self-esteem in patients undergoing hemodialysis can increase anxiety, stress, and depression (Lestari et al., 2022). Furthermore, the impact of body image disturbances can impact the quality of life of hemodialysis patients (Afifi et al., 2024).

Based on previous studies, body image in patients with CKD is more closely associated with quality of life, while self-esteem is more frequently associated with quality of life and nutritional status. However, research specifically examining the relationship between self-esteem and body image in patients with CKD undergoing hemodialysis is still limited. Physical changes resulting from hemodialysis therapy have the potential to influence body perception, ultimately impacting patient self-esteem. Therefore, research is needed to analyze the relationship between self-esteem and body image in patients with CKD undergoing hemodialysis. The relationship between body image and self-esteem in patients undergoing hemodialysis is important to study because negative perceptions of their bodies can lower self-esteem, while low self-esteem can worsen acceptance of body changes. Understanding the relationship between these two variables is expected to assist healthcare professionals, particularly nurses, in designing appropriate psychosocial interventions to improve patient adaptation to chronic illness and hemodialysis therapy. The aim of this study was to determine the relationship between self-esteem and body image in chronic kidney failure patients undergoing hemodialysis.

## Methods

### Design and Setting

This study was a quantitative cross-sectional study to examine the relationship between self-esteem and body image in patients with chronic kidney disease undergoing hemodialysis. The study was conducted in the Hemodialysis Ward, Prof. Dr. R.D. Kandou General Hospital, Manado, with data collection over a three-month period (August to October 2025).

### Population and Sample

The population in this study was all adult patients undergoing hemodialysis in the Hemodialysis Unit of Prof. Dr. R.D. Kandou General Hospital, Manado. The sample size in this study used the Slovin formula with a 10% margin of error due to the small population size, resulting in a sample size of 78 patients. The sampling technique used in this study was purposive sampling because the population was limited to hemodialysis patients and the researchers required specific characteristics based on predetermined inclusion and exclusion criteria. The inclusion criteria were: 1) Respondents diagnosed with chronic kidney disease (CKD); 2) Respondents aged 18 to 65 years; 3) Respondents currently undergoing hemodialysis. The exclusion criteria were: 1) Respondents who did not complete the questionnaire completely; 2) Respondents suffering from mental disorders; 3) Uncooperative respondents; and 4) Patients who did not agree to participate.

### Instruments and Measurement

The research instruments were:

#### 1. Demographic Data Questionnaire

The respondent demographic data questionnaire consisted of: respondent's initials, age, gender, marital status, highest level of education, occupation, residence, and length of time diagnosed with chronic kidney disease (CKD).

#### 2. Self-Esteem Questionnaire

The questionnaire used to measure self-esteem was the Rosenberg Self-Esteem Scale (RSE). This instrument contains 10 statements with a Likert scale for response options (strongly agree, agree, disagree, and strongly disagree). The Cronbach's alpha for the RSE questionnaire



is 0.84 (Poorgholami et al., 2016). The validity of the RSE has an AVE value of 0.69 and 0.68, and the square root of the AVE is 0.83 and 0.82, which indicates that each measured variable is significant (Muslih and Chung, 2024).

### 3. Body Image Questionnaire

The researcher used the Body Image Scale (BIS) to measure respondents' body image. This questionnaire contains 9 questions with response options using a Likert scale. The Cronbach's alpha value for this instrument was 0.9 (Özkaraman et al., 2017). The validity of the BIS corrected ITC value which ranges from 0.722 to 0.941 (Shunmugasundaram et al., 2022).

### Data Analysis

This study used univariate and bivariate analyses. Univariate analysis produces a frequency distribution that provides an overview of the number and percentage. Univariate analysis was conducted using Microsoft Excel. Bivariate analysis was conducted to examine the relationship between self-esteem and body image in patients with chronic kidney failure undergoing hemodialysis. Bivariate analysis was conducted using SPSS with the Spearman correlation test.

## Results

Table 1. Respondent Demographic Characteristics

Variables	Category	Frequensi (f)	Percentage (%)	Mean±SD
Age				55,92 ± 12,453
Marital Status	Married	63	80,8	
	Widow/widower	10	12,8	
	Not married	5	6,4	
Education	Elementary School	11	14,1	
	Junior High School	13	16,7	
	High School	31	39,7	
	College	23	29,5	
Employment status	Unemployment	51	65,4	
	Entrepreneur	9	11,5	
	Government employment	8	10,3	
	Retired	5	6,4	
	Other	5	6,4	
Living alone	Not alone	77	98,7	
	Alone	1	1,3	
Duration of diagnosed CKD	≤ 12 bulan	38	48,7	
	> 12 bulan	40	51,3	
Self esteem				21,41 ± 1,18
Body image				43,12 ± 4,84

Based on Table 1, 78 kidney failure patients undergoing hemodialysis participated in this study. The average age of respondents was 55.92 years. The majority of respondents were married (63 people) (80.8%). The highest level of education of respondents was mostly high school (31 people) (39.7%). The majority of respondents were unemployed (51 people) (65.4%). Almost all respondents lived with their families (77 people) (98.7%). The duration of chronic kidney disease (CKD) was mostly more than 12 months (40 people) (51.3%).

Table 2. Relationship between Self-esteem and Body Image in CKD Patients Undergoing HD

Variables	n	p value	r
Self esteem	78	0,000*	0,404
Body image			



Table 2 explains that the p value is 0.000 with an r value of 0.404. This means that there is a statistically significant relationship between self-esteem and body image in patients undergoing hemodialysis, as indicated by a p-value of 0.000 ( $p < 0.05$ ) and the direction of the relationship is positive with moderate strength ( $r = 0.404$ ), which means that the higher the patient's self-esteem, the more positive their body image, and vice versa.

## Discussion

### Self Esteem

Self-esteem is a simplistic term for varied and complex mental states pertaining to how one views oneself (Bailey, 2003). High self-esteem helps patients better accept their condition, develop adaptive coping strategies, and remain active in their social lives. Conversely, low self-esteem can lead to feelings of hopelessness, depression, and a tendency to isolate themselves from their social environment (Nasution, 2025). The average self-esteem score of respondents in this study was categorized as low, at 21.41. A previous study conducted on 30 CKD patients undergoing hemodialysis at Doloksanggul Regional Hospital (RSUD Doloksanggul) found that 18 (60%) reported poor self-esteem (Nasution, 2025). Another study conducted on 108 hemodialysis patients at RSUD Welas Asih also reported that 72 patients (66.67%) had low self-esteem (Chairunnisa, Komariah and Sari, 2026). These findings confirm that the majority of CKD patients undergoing hemodialysis tend to have low self-esteem.

### Body Image

body image (BI) is a person's internal picture of their physical appearance, which includes how the individual perceives their body and their personal attitudes toward it, including aspects of thoughts, beliefs, feelings, and behavior (Tort-nasarre, Pocallet and Artigues-barber, 2021). A positive body image has numerous protective benefits for individuals, as it is associated with well-being, self-care, and adaptive physical health, while body image disturbance has the opposite effect (Marki et al., 2023). The findings of this study indicate that the mean score for the body image variable was 43.12. This indicates that the body image of the respondents in this study was in the negative category. This is in line with several previous studies. A study conducted on 133 CKD patients undergoing hemodialysis at Sidoarjo Regional Hospital, East Java Province, reported that 73 patients (54.9%) experienced negative body image (Wijayanti et al., 2024). Another study conducted in the Indonesian dialysis patient community (KPCD) in Pekanbaru on 49 patients found that 28 patients (57.1%) experienced body image problems (Malfasari et al., 2023). The results of this study indicate that the majority of CKD patients undergoing hemodialysis tend to experience negative body image, which is influenced by various factors, including disease condition and ongoing therapy.

### Relationship Between Self Esteem and Body Image

The results of the study showed a significant relationship between self-esteem and body image in patients undergoing hemodialysis ( $p = 0.000$ ;  $p < 0.05$ ) with a moderate strength and positive direction ( $r = 0.404$ ). This means that the higher the patient's self-esteem, the more positive their body image. Conversely, patients with low self-esteem tend to have a negative perception of their body. This finding is in line with several studies that explain that body image and self-esteem have a unidirectional or positive relationship (Manoe et al., 2025; Safitri et al., 2025). Self-esteem is a simplistic term for varied and complex mental states pertaining to how one views oneself (Bailey, 2003). Meanwhile, body image (BI) is a person's internal picture of their physical appearance, which includes how the individual perceives their body and their personal attitudes toward it, including aspects of thoughts, beliefs, feelings, and behavior (Tort-



nasarre, Pocallet and Artigues-barber, 2021). Self-esteem affects a person's body image (Sandhu *et al.*, 2025).

Body image and self-esteem have an indirect, positive relationship. An individual's body image shapes self-esteem, which influences their self-exploration (Yudiarso & Della, 2021). Individuals with high self-esteem tend to have better self-acceptance of changes in their body image. Individuals with high self-esteem tend to have better self-acceptance of changes in their body or body image. (Idris *et al.*, 2024).

Chronic kidney failure patients undergoing hemodialysis experience physical changes such as pruritus, skin discoloration, edema, and the presence of an arteriovenous fistula (AVF), which can affect body image (Daryaswanti, 2019; Dina *et al.*, 2024; Yulisetyaningrum *et al.*, 2023). This condition often leads to dissatisfaction with appearance, feelings of shame, and social withdrawal. Hemodialysis patients often experience body image disturbances due to their physical changes (Malfasari *et al.*, 2023). Chronic kidney disease patients undergoing hemodialysis often experience low self-esteem. This reflects the cumulative effects of long-term therapy, such as fatigue, social problems, and changes in body image (Chairunnisa *et al.*, 2026). Low self-esteem can lead to other psychological problems such as depression, stress, and anxiety (Lestari *et al.*, 2022). This low self-esteem then contributes to negative perceptions of body image, thus strengthening the relationship between the two variables.

This study has several limitations, including the limited sample size and characteristics. The sample in this study was drawn from only one healthcare facility, so the results may not be generalizable to the entire hemodialysis patient population. Another limitation is the physical condition of the respondents at the time of completing the questionnaire, which may have affected fatigue or discomfort, which could have affected their concentration while answering the questionnaire.

## Conclusion

Based on the research results, it can be concluded that there is a significant relationship between self-esteem and body image in patients undergoing hemodialysis. These results indicate that self-esteem is a crucial factor in shaping patients' perceptions of their body condition. Therefore, improving self-esteem can be one way to improve the body image of patients undergoing hemodialysis.

## Ethics approval and consent to participate

This research has received approval from the Research Ethics Committee of the Ministry of Health, R.D. Kandou Hospital, under number 122/EC/KEPK-KANDOU/VI/2025. The ethical principles applied include informed consent, anonymity, beneficence, confidentiality, respect for human dignity, and justice.

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