Medical Science

To Cite:
Winiarska M, Wiśniewska D, Klimas M, Jucha D, Jamro A, Krupa-Nurcek S. Assessment of quality of life in patients undergoing dialysis. *Medical Science* 2025; 29: e234ms3775
doi: https://doi.org/10.54905/disssi.v29i166.e234ms3775

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Peer-Review History
Received: 03 August 2025
Reviewed & Revised: 16/August/2025 to 07/December/2025
Accepted: 16 December 2025
Published: 24 December 2025

Peer-review Method
External peer-review was done through double-blind method.

Medical Science
pISSN 2321–7359; eISSN 2321–7367

DISCOVERY SCIENTIFIC SOCIETY

Assessment of quality of life in patients undergoing dialysis

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ABSTRACT

Dialysis is a a method of renal replacement therapy, most often caused by chronic renal failure, and is a significant clinical and social problem, as it affects the lives of patients undergoing it in many ways. On the one hand, it is a particularly effective and irreplaceable method; on the other hand, it is associated with several disadvantages and limitations in patients' daily functioning. The aim of this study was to assess the quality of life of dialysis patients and highlight the most common complaints associated with this therapy. The study involved 100 adults undergoing chronic dialysis. A specially designed questionnaire, consisting of both single- and multiple-choice questions, was used as a diagnostic tool. The questions concerned the physical condition, mental health, social and professional activity, as well as the sexual sphere of the patients. The study results show that dialysis therapy substantially affects overall patient well-being. Patients reported experiencing fatigue, headaches, nausea, and generalized weakness. Respondents also experienced low mood, impaired interpersonal relationships, reduced physical activity, and decreased sexual satisfaction. The study shows that dialysis patients experience a significantly reduced quality of life, affecting multiple life domains. Patient and family education, along with targeted psychological and dietary support, are crucial in addressing these challenges. Regularly assessing quality of life should be integrated into comprehensive patient care.

Keywords: dialysis, quality of life, renal replacement therapy, side effects

1. INTRODUCTION

Dialysis is a basic method of renal replacement therapy when renal excretory function is significantly limited or completely lost due to acute or chronic renal failure. Its aim is to remove metabolic waste products, excess water, and toxins, which are normally eliminated by the kidneys. Patients who require dialysis are those who suffer from end-stage-renal disease (ESRD). This condition relates to kidney dysfunction, the most common caused by diabetes, hypertension, and glomerular diseases (Rout & Aslam, 2025). The most frequently used forms of dialysis are hemodialysis (HD), peritoneal dialysis (PD), and kidney transplantation (Alshehri et al., 2023). All of these methods have advantages and disadvantages for quality of life. Dialysis patients have lower overall quality of life (HRQoL) compared to the general population, and it do not depend on the dialysis technique. HD is the most commonly performed form of dialysis worldwide, accounting for

approximately 80% of all dialysis procedures (Chuasuwan et al., 2020). It has not been determined which form of dialysis is the most effective and has the fewest side effects (AlRowaie et al., 2023). Patients undergoing hemodialysis usually have to visit a dialysis center approximately 2-3 times a week and they spend about 4 hours there, which without the doubt impacts their professional and personal lives (Zazzeroni et al., 2017). It is possible to perform peritoneal dialysis at home or at the workplace, providing patients with more comfort and greater freedom. It is made every 4-5 hours and lasts approximately 30 minutes. Some studies remark that patients treated with PD rate their quality of life higher than who are treated with hemodialysis (Antoun et al., 2023; Jung et al., 2019), but hemodialysis patients may demonstrate better quality of life in the physical domain over time (Boateng & East, 2011). Further research is essential to compare the impacts of different dialysis types on patients' quality of life and well-being. The decision on type of renal replacement therapy should be made individually, in agreement between the doctor and the patient. Dialysis affects every area of a patient's life, including physical fitness, sexual activity, mental health, social functioning, work life, and financial status (Hejazi et al., 2021). The most frequently described somatic complaints during dialysis therapy are muscle cramps, dryness and itching of skin, weakness, increase or decrease in blood pressure, sleep disorders, pain, and sexual dysfunction (Dąbrowska-Bender et al., 2018). In dialysis patients, the risk of mood disorders, anxiety, and depression is significantly increased (Stasiak et al., 2014). All these symptoms and their consequences affect the quality of life of patients undergoing dialysis.

2. REVIEW METHODS

The study subjects were patients undergoing dialysis. The examination was conducted in the individual dialysis points. The study group consisted of 100 people with personal experience of illness. The used method was a diagnostic survey. The study tool was a questionnaire that had been shared with patients in the specialized clinics. Survey participants answered questions, of which 16 of 22 concerned different aspects of patients' lives and their feelings about their quality of life. Qualitative (metric) data were presented as the number of people in each group (n) and the percentage of the group (%).

The study was referred to adults who were chronically dialysed and was conducted from 01/11/2023 to 31/12/2023. Respondents were responding to single-choice questions - questions with answers such as "yes," "no," "partially," or concerning the frequency of a given phenomenon. There were eight such questions. The remaining questions were multiple-choice, with an additional option in the "other (what?)" section. Unfortunately, none of the dialysis patients surveyed provided additional suggestions. The questions concerned both the physical and psychological aspects of the respondents, and even matters related to their sexuality, but there was no hesitation among the respondents in providing answers.

3. RESULTS

Among the 100 survey participants, men constituted the majority, representing 59% (59 people). Of those surveyed, 56% (56 people) were over 60. Another 14% (14 people) were aged 51-60. 13% (13 people) each declared their age between 41 and 50, and 31 and 40. The smallest group consisted of people aged 18 to 30, representing 4% (4 people). Urban residents accounted for 69% (69 people) of all survey participants. The majority of the survey participants, 67% (67 people), were in a relationship. The largest group among the survey participants was those with secondary education (47%, followed by 32% of vocational education), 15% (15 people) with higher education, and six (6%) declared primary education.

Among the survey participants, 55% (55 people) reported being housewives. Another 18% (18 people) were white-collar workers, and 17% (17 people) were manual laborers. The remaining 10% (10 people) were unemployed. The largest group of respondents, 43% (43 people), had been on hemodialysis for one to five years. Another 30% (30 people) had been on dialysis for up to one year, and 25% had been on dialysis for between five and ten years. The remaining 2% had been on dialysis for more than ten years.

A significant percentage of respondents stated that kidney disease and dialysis affect their well-being, as many as 79%. 12% responded that it does not affect their well-being at all, and only 9% that it does to some extent. The vast majority of respondents identified fatigue (80) and headaches (76) as the most common symptoms associated with dialysis. Malaise (48 respondents) and nausea (34) were next. Only three respondents reported that patients did not experience symptoms during dialysis (Table 1).

When it comes to feelings of joy and satisfaction, respondents' opinions are divided: 27% say they are happy, 38% say they have no opinion, and 19% say they are sometimes happy. 7% of respondents reported never being happy or satisfied with their lives (Table 2). Thirteen percent of respondents said they constantly felt sad and dissatisfied with their lives, while 39% were unable to describe their emotional state. However, seven people said they had never felt this way (Table 3).

Table 1. The most common ailments of patients undergoing dialysis

What symptoms do you experience during dialysis?	What symptoms do you experience during dialysis?
	Answers
Malaise	48
Nausea	34
Vomiting	7
Itchy skin	15
Decrease in blood pressure	2
Decrease in glycemia	8
Headache	76
Increase in body temperature	12
Muscle crumps	10
Dyspnoea	5
Feeling tired	80
Others	9
No complaints	3

Table 2. Feeling of joy and satisfaction with life

How often do you feel joy and satisfaction with life?	How often do you feel joy and satisfaction with life?
	Answers
All the time	27%
Sometimes	19%
Rarely	9%
Never	7%
Hard to say	38%

Table 3. Feeling sad and dissatisfied with life

How often do you feel sadness and dissatisfaction with life?	How often do you feel sadness and dissatisfaction with life?
	Answers
All the time	13%
Sometimes	29%
Rarely	12%
Never	7%
Hard to say	39%

Eighty-five percent of those who completed the survey stated that their disease and dialysis impacted family life, while 8% stated that it did not, and 7% stated that it did sometimes. Kidney disease and dialysis create many social challenges for patients. They most often interfere with family outings (90%), childcare (76%), and earning money (70%). Cleaning and shopping are also challenging for these individuals. Seventeen individuals also noted that cooking was problematic. Five individuals selected "other (specify)" but did

not specify the family life activities. Half of the respondents reported frequently experiencing conflict with others, and 34% reported that their relationships with others were permanently damaged. Only 5% stated that this did not pose any problem in their lives (Table 4).

Table 4. The impact of illness and dialysis on social relationships

Has your illness damaged your family or friends relationships?	Has your illness damaged your family or friends' relationships?
	Answers
I have permanently deteriorated relationships with others.	34%
I often experience conflicts with others.	50%
I rarely experience conflicts with others.	11%
I do not experience conflicts with others.	5%

Most of the surveyed patients undergoing dialysis (72%) reported being physically inactive, while only 28% reported that they engaged in regular physical activity. Among those who declared being active, walking was the most common activity (58%). 12% reported not being engaged in any physical activity. According to 70% of respondents, kidney disease and dialysis limit their ability to engage in any physical activity. Only 25% felt the opposite (Table 5).

Table 5. The impact of dialysis on the limitation of physical activity

Do illness and dialysis limit physical activity?	Do illness and dialysis limit physical activity?
	Answers
Yes	70%
No	25%
Partially	5%

Fifty-eight percent of respondents stated that the disease and dialysis had a negative impact on their sex life. 21% stated that it had no impact or only a partial impact (Table 6).

Table 6. The impact of dialysis on sexual life

Do illness and dialysis have a negative impact of sexual life?	Do illness and dialysis have a negative impact of sexual life?
	Answers
Yes	58%
No	21%
Partially	21%

Most respondents rely on family support (36%), followed by friends (17%), nurses (15%), and other people, such as neighbors or complete strangers (13%). 10% of respondents reported having no support at all (Table 7). When asked about their main concerns, respondents most often cited being a burden to someone (90). They also feared the diet and rehabilitation regime (89 respondents) and the embarrassment associated with changes in appearance (76). Injections were the least intimidating option for these individuals – only seven people selected this option (Table 8).

Table 7. The support from others

Whose support can you count on the most?	Whose support can you count on the most?
	Answers (%)
Family	36%
Friends	17%
Nurses	15%
Doctors	9%
Others (neighbours, strangers)	13%
I have no support.	10%

Table 8. The main patients' concerns.

Most of all, I am afraid of	Most of all, I am afraid of
	Answers
Performing injections	7%
Long-term immobilization during hemodialysis due to pain	55%
Treatment regimen – diet and rehabilitation	89%
The life prospects of my closest relatives, because my illness means suffering and stress to them.	90%
Contact with other people due to shame regarding changes in appearance (scars, change of skin color, swelling)	76%
Kidney transplant prospects	45%

According to respondents, the biggest challenge related to the disease and dialysis therapy is the need to restrict dietary intake during meal preparation – 76 people responded this way. Undertaking rehabilitation alone, according to 71 respondents, is also a significant challenge. Twenty-nine respondents found maintaining a fluid regimen challenging (Table 9).

Table 9. Recommendations that cause the biggest problem

Which recommendations do you consider as the biggest problem?	Which recommendations do you consider as the biggest problem?
	Answers
Self-care (for example, maintaining cleanliness of vascular access)	5
Self-control and observation– weighting, measuring, measurements of vital signs	8
Maintaining fluid regime	29
Dietetery restrictions during meal preparation	76
Undertaking independent rehabilitation	71

Moreover, when asked what having a chronic disease means to them, respondents stated that they primarily associate their illness with the bothersome symptoms of dialysis treatment (85 responses). They often feel helpless (56 responses). They also experience pain (43 responses). Patients also perceive the disease as a prospect of imminent death and as a loss of participation in certain aspects of life (23 responses each). Only eight respondents stated that it does not pose any problem in their lives.

The respondents primarily obtain information about their illnesses from their doctors (75 respondents indicated this) and from patients (60 respondents indicated this). Additionally, the internet is a significant source of information in this area for 29 respondents. Only two respondents indicated specialized medical journals.

4. DISCUSSION

The above results indicate that kidney disease and dialysis therapy impact many aspects of the participants' lives. Unfortunately, research shows that this impact is most often perceived negatively. Patients' lives are dominated by their illness and treatment, which undoubtedly causes many problems in their daily lives, lowers their mood, and negatively impacts their relationships with loved ones. The difficulties in everyday life caused by kidney disease and dialysis therapy are often raised in surveys on the quality of life of these patients. In our study, 72% of respondents reported not being physically active. This result is consistent with international studies – for example, in a study conducted by Hu et al., (2024) at a Chinese centre, it was shown that the level of physical activity of 69% of participants was lower than that recommended by the World Health Organisation (WHO), meanwhile a higher level of physical activity was associated with a higher quality of life.

Other studies have shown that the introduction of rehabilitation and patient education programs promoting moderate physical activity tailored to the capabilities of dialysis patients can have a beneficial effect on both general condition and quality of life (Curtin et al., 2002). A study by Dąbrowska-Bender et al., (2018) showed that the most common complaints among dialysis patients were muscle cramps, dry skin, itching, sleep disturbances, and limited physical activity, which differs somewhat from the results of our study, in which the most frequently reported complaints among survey respondents were chronic fatigue and headaches. Nevertheless, both in our own study and in the cited literature, the impact of physical symptoms on the overall quality of life of dialysis patients is indisputable.

In turn, Sułkowski et al., (2024) study showed that haemodialysis patients achieve significantly lower quality-of-life scores than healthy individuals, both in physical and mental health. The authors also emphasise the importance of psychological support, which can reduce the negative impact of chronic disease on mental health. Our own study also confirms this trend — dialysis patients show a reduced level of life satisfaction and report frequent feelings of sadness. It is also worth noting the deterioration of family and social relationships among the respondents, which may negatively affect the provision of sufficient social support to patients. Plenty of studies emphasise that the low quality of life of dialysis patients worsens their clinical prognosis.

A 2024 study published in BMC Nephrology has shown that higher rates of quality-of-life are connected with a reduced risk of hospitalization and death (Rincón-Bello et al., 2024). Another study performed in Slovakia showed that patients with lower levels of health literacy have worse quality-of-life outcomes (Skoumalova et al., 2022).

In our own study, patients obtained information about their disease mainly from doctors; hence, it can be concluded that appropriate therapeutic dialogue and health education can affect the quality of life of dialysis patients and their prognosis.

5. CONCLUSION

The study confirms that chronic dialysis therapy has an impact on both the physical condition and the patient's mental health. It seems that the main device to improve the quality of life of patients undergoing dialysis is reliable education and psychological. This applies to the patients themselves and their closest family members who support them. Often, problems stem simply from a lack of knowledge – for example, regarding appropriate nutrition, activity, or forms of rehabilitation. Dialysis patients should be monitored to quickly detect problems, primarily psychological and emotional, related to the disease, its complications, and treatment. Long-term low mood states can lead to depression, which further complicates patients' lives and is not controlled to support the treatment process. Research on the quality of life of dialysis patients can also help medical staff appropriately assign these patients to roles.

Abbreviations

ESRD – End-Stage Renal Disease
HD – Hemodialysis
PD – Peritoneal Dialysis
HRQoL – Health-Related Quality of Life
WHO – World Health Organization

Acknowledgments

The authors have no acknowledgments to disclose.

Author's contribution

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All authors have read and agreed with the final published version of the manuscript.

Informed consent

Written & Oral informed consent was obtained from the participant included in the study.

Ethical approval

The work was approved by the Bioethics Committee at the University of Rzeszów (KBE No.09/05/2020).

Funding

This research did not receive any external funding like specific grant from funding agencies in the public, commercial, or nonprofit sectors.

Conflict of interest

The authors declare that they have no conflicts of interests, competing financial interests or personal relationships that could have influenced the work reported in this paper.

Data and materials availability

All data associated with this study will be available based on reasonable request to the Corresponding Author.

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