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ORIGINAL ARTICLE

Quality of life and self-care among Mexican adults undergoing hemodialysis in a hospital

Calidad de vida y autocuidado en adultos mexicanos con tratamiento de hemodiálisis en un hospital

Qualidade de vida e autocuidado em adultos mexicanos em tratamento de hemodiálise no hospital

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ABSTRACT

Introduction: Chronic kidney disease is a global public health issue. Promoting quality of life is currently a significant challenge for social policies. Patients undergoing hemodialysis reach varying degrees of well-being depending on how closely their outcomes align with health parameters, making it crucial to assess their quality of life and self-care. **Objective:** To determine the quality of life and self-care capacity of Mexican adults with chronic kidney disease undergoing replacement therapy in a hospital hemodialysis service. **Methodology:** This was a descriptive, cross-sectional, quantitative study involving 107 adult patients with chronic kidney disease undergoing replacement therapy. These patients were treated in the hemodialysis service of the General Hospital No. 30 in Mexicali, Mexico, between May and June 2024. Quality of life was assessed using the SF-12 questionnaire, while the Self-Care Agency Scale was applied to evaluate self-care capacity. **Results:** The average age of participants was 49 years (SD = 4.3). The majority were women (54.2%), with 41.1% having

a secondary school education and 34.6% identifying as homemakers. Comorbidities included hypertension (100%), diabetes mellitus, and heart disease (64.2% for both); 71% of the patients had a vascular catheter, and 29% had an arteriovenous fistula. Regarding quality of life, it was rated as good for 54.2% of the participants and low for 45.8%. As for self-care, 65.4% had a high capacity, 22.4% low, and 12.2% medium. **Conclusions:** Hemodialysis patients exhibit a good quality of life and high self-care capacity.

Keywords: Quality of Life; Self-Care; Renal Dialysis; Nephrology Nursing; Adult Health.

RESUMEN

Introducción: La enfermedad renal crónica es un problema de salud pública en todo el mundo. Actualmente promocionar la calidad de vida es un reto de las políticas sociales. El paciente con hemodiálisis alcanzará un mayor o menor grado de bienestar, conforme más se acerque al parámetro de salud, motivo por el cual es importante conocer la calidad de vida y autocuidado de estos pacientes. **Objetivo:** Determinar la calidad de vida y autocuidado en adultos mexicanos con enfermedad renal crónica con tratamiento de sustitución en el servicio de hemodiálisis de un hospital. **Metodología:** Estudio descriptivo, transversal y cuantitativo. Participaron 107 pacientes adultos con enfermedad renal crónica con tratamiento de sustitución atendidos en el servicio de hemodiálisis del Hospital General de Zona No. 30 en Mexicali, México, durante los meses de mayo a junio del 2024, a quienes se les aplicaron el cuestionario SF-12 para valorar la calidad de vida y la Escala Valoración de Agencia de Autocuidado. **Resultados:** Predominaron la edad media de 49 años (DE = 4,3), las mujeres (54,2%), nivel académico de secundaria (41,1%), ocupación el hogar (34,6%), antecedente de: hipertensión (100%), diabetes mellitus y cardiopatía (64,2%) respectivamente. El 71% tenían catéter vascular y el 29% fístula arteriovenosa. El 54,2% tuvieron un nivel bueno en su calidad de vida y el 45,8% malo. El 65,4% su capacidad de autocuidado fue alta el 22,4% baja y el 12,2% media. **Conclusiones:** Los pacientes con hemodiálisis tienen buena calidad de vida y alta capacidad de autocuidado.

Palabras clave: Calidad de Vida; Autocuidado; Diálisis Renal; Enfermería en Nefrología; Salud del Adulto.

RESUMO

Introdução: A doença renal crônica é um problema de saúde pública em todo o mundo. A promoção da qualidade de vida é atualmente um desafio de política social. Os pacientes em hemodiálise alcançarão um grau maior ou menor de bem-estar quanto mais próximos estiverem do parâmetro de saúde, razão pela qual é importante conhecer a qualidade de vida e o autocuidado desses pacientes. **Objetivo:** Determinar a qualidade de vida e o autocuidado em adultos mexicanos com doença renal crônica em tratamento de substituição no serviço de hemodiálise de um hospital. **Metodologia:** Estudo descritivo, transversal e quantitativo. Participaram 107 pacientes adultos com doença renal crônica com tratamento substitutivo atendidos no serviço de hemodiálise do Hospital General de Zona nº 30 de Mexicali, México, durante os meses de maio a junho de 2024, aos quais foi aplicado o questionário SF-12. para avaliar a qualidade de vida e a Escala de Avaliação da Agência de Autocuidado. **Resultados:** A idade média de 49 anos (DP = 4,3), mulheres (54,2%), escolaridade de ensino médio (41,1%), ocupação doméstica (34,6%) e histórico de: hipertensão (100%), diabetes mellitus e doenças cardíacas (64,2%), respectivamente. 71% tinham cateter vascular e 29% tinham fístula arteriovenosa. 54,2% apresentavam nível de qualidade de vida bom e 45,8% nível ruim. 65,4% tinham alta capacidade de autocuidado, 22,4% tinham baixa capacidade e 12,2% tinham capacidade média. **Conclusões:** Pacientes em hemodiálise apresentam boa qualidade de vida e alta capacidade de autocuidado.

Palavras-chave: Qualidade de Vida; Autocuidado; Diálise Renal; Enfermagem em Nefrologia; Saúde do Adulto.

INTRODUCTION

Chronic kidney disease (CKD) is a global public health issue, affecting approximately 850 million people worldwide, which represents 9.5% of the world population. In Latin America, people with CKD represent 10.5%. This disease increases morbidity, mortality, and healthcare costs. The primary modifiable risk factors for developing CKD are diabetes and hypertension.[1-3] According to estimates from the 'Global Burden of Disease' study, the prevalence of CKD across all age groups in Mexico in 2021 is 9,184.9 per 100,000 inhabitants.[4]

CKD is a decline in renal function (glomerular filtration rate <60 mL/min/1.73m² body surface area) or kidney damage persisting for more than three months, as observed directly through kidney biopsy or indirectly through albuminuria (≥30 mg/24h), proteinuria, or abnormalities in imaging tests.[5-6]

Regarding CKD treatment, timely intervention is essential to prevent complications. Treatment options include dietary management (restriction of salt and protein intake), medications that protect kidney function, and correcting electrolyte and hormonal imbalances.[7] When these approaches are no longer effective, renal replacement therapies such as dialysis, hemodialysis (HD), or a kidney transplant are initiated.[8]

Among renal replacement therapies, HD is the most widely used globally. Its purpose is to compensate for kidney function partially and is performed through vascular access, either via an arteriovenous fistula (AVF) or a tunneled central venous catheter such as the Mahurkar. HD is a demanding and invasive therapy that requires several hours per week, leading to lifestyle changes that impact the patient's quality of life and self-care. Consequently, it is essential to educate patients about these aspects.[9-10]

Health-related quality of life (HRQoL) encompasses aspects of life associated with physical health and functional capacity, psychological state and well-being, social interactions, and financial status.[11]

Self-care is "the set of actions and interactions undertaken by individuals to control internal and external factors that may compromise their life or further development."[12] In HD patients, self-care includes managing blood pressure and glucose levels, preventing nutritional deficiencies and dehydration, and maintaining good hygiene, among other factors. To achieve this, nursing staff must educate patients to prevent complications and improve their quality of life.[13]

Several studies have assessed self-care levels and quality of life in CKD patients undergoing HD. For instance, a study conducted in Colombia found that 76.0% of patients exhibited a low level of self-care. Another study in the same country examining quality of life reported that 57.3% of patients perceived their health as fair to good. It was also found that physical and emotional changes due to disease progression and prolonged treatment negatively impacted their quality of life.[14,15]

A study conducted in Chihuahua, Mexico, measured both quality of life and knowledge of self-care among HD patients, revealing that 69.5% had a moderate quality of life, while 40% had a moderate level of self-care awareness.[16] Another study from the Mexican Institute of Social Security (IMSS) mentions that the institution provides coverage for 73% of the Mexican population requiring dialysis in any form of renal replacement therapy. In 2014, CKD treatment accounted for 15% of the total annual healthcare expenditure, highlighting the need for strategies to prevent and slow CKD progression.[17]

Promoting quality of life is currently a significant challenge for social policies. The level of well-being experienced by a patient with CKD undergoing HD depends on how closely their status aligns with health parameters. For this reason, it is crucial to assess the quality of life and self-care capacity in these patients. Therefore, this study aims to determine the quality of life and self-care capacity in adults undergoing hemodialysis in a hospital setting.

METHODOLOGY

Type of Study

This was a descriptive, cross-sectional, and quantitative study.

Study Setting

The study was conducted in the hemodialysis unit of General Zone Hospital No. 30 (HGZ 30) of IMSS in Mexicali, Baja California.

Population and Sample

The population consisted of 129 patients with CKD who attended outpatient hemodialysis treatment at the hospital. A convenience and purposive sampling method was applied to achieve a sample size as close to the total population as possible. Of the patients who attended the hospital during the study period (May to June 2024), 107 were included.

Selection Criteria

Patients aged 18 to 70 who attended outpatient hemodialysis treatment at HGZ 30 during the study were included. Exclusion criteria encompassed patients who participated in the hemodialysis program for less than one month (no such cases were reported). As for elimination criteria, records with incomplete information or participants who revoked their consent after starting participation were not included in the final analysis.

Instruments and Data Collection Technique

A data collection form was used to gather the following information in a Word document: age, gender, education level, occupation, medical history (hypertension, diabetes, heart disease, dyslipidemia, and obesity), vascular access type (Mahurkar catheter or AVF), and levels of quality of life and self-care. The following instruments were used:

Short-Form Health Survey (SF-12): This questionnaire was developed in the United States and translated and validated into Spanish, with a Cronbach's alpha of 0.75-0.81. It consists of 12 items, takes approximately two minutes to complete, and evaluates physical and mental health domains (measuring eight dimensions: physical function, physical role, physical pain, mental health, general health, vitality, social function, and emotional role). Responses are based on a Likert scale (with three to six response options, depending on the item). The score ranges from 0 to 100 per item, with a mean of 50 and a standard deviation equal to 10. Scores over 50 indicate good quality of life, while under 50 indicates poor quality of life.[18,19]

Appraisal of Self-Care Agency Scale (ASAS): This questionnaire assesses the ability of respondents to care for themselves and make health-related decisions. It has a Cronbach's alpha of 0.77 and consists of 24 items, each with a Likert-type response format, where 1 (strongly disagree) represents the lowest self-care ability and 5 (strongly agree) the highest. Three items (6, 11, and 20) are reverse-scored. The total score ranges from 24 to 120 points, classifying individuals into three self-care ability levels: Low (<88), Moderate (≥88 to ≤95), and High (>95).[20,21]

Data Collection Procedure

Before the study, patients were informed about the objectives and procedures of the research, ensuring their understanding and addressing any questions. Subsequently, the questionnaire data were collected, and the scales were administered in person during the HD sessions, utilizing the patients' time in the unit.

Data Analysis

Descriptive statistics, specifically mean and standard deviation, were used for continuous variables, including age and SF-12 dimension scores (General health, Physical function, Physical role, Bodily pain, Emotional role, Mental health, Vitality, Social function, Physical health, and Mental health). Proportions and frequencies were applied for categorical variables such as gender, occupation, education level, and medical history (hypertension, diabetes, etc.). This analysis was carried out through SPSS version 24.

Ethical Considerations

All stages of the study adhered to the following ethical principles:

Respect for persons: The rights, dignity, and well-being of participants were protected at all times. Participants were adequately informed about the study objectives, procedures, potential risks and benefits, and their right to withdraw at any time without consequences.

All participants provided informed consent before being included in the study. This process involved clear and understandable explanations, as well as an opportunity to ask questions and receive satisfactory answers.

Confidentiality: The privacy of participants was safeguarded. Personal data were coded and securely stored to prevent unauthorized disclosure.

This study complied with the Declaration of Helsinki, which establishes ethical principles for medical research involving human subjects. The Ethics Committee of HGZ No. 30 of IMSS in Mexicali, Mexico approved the research under number R-2024-205-036.

RESULTS

The total sample consisted of 107 patients. The mean age was 49.13 years (SD = 14.3), with 54.2% women and 45.8% men. The highest education level of most patients was secondary education, accounting for 41.1%, followed by primary education at 24.3%. Concerning occupation, homemaking was the most common, representing 34.6%, followed by general employment at 27.1% (Table 1).

Regarding the history of chronic diseases, 100% of the patients had high blood pressure, while 64.2% had diabetes and heart disease, and 47.7% had dyslipidemia.

The population’s quality of life had a mean score of 53.67 (SD = 20.99), with a 95% confidence interval ranging from 49.95 to 57.62. Among the participants, 58 patients (54.2%) had a good quality of life, while 49 (45.8%) had a poor quality of life. The physical dimension was the most affected, showing the lowest mean score (41.84, SD = 24.72) compared to the mental dimension, which had a mean score of 65.44 (SD = 23.66) (Table 2).

Regarding self-care, 70 patients (65.4%) showed a high capacity, whereas 24 patients (22.4%) exhibited a low capacity (Table 3).

Table 1. Sociodemographic characteristics of patients undergoing hemodialysis (n = 107)

Variable	Category	n	%
Gender	Male	49	45,8
	Female	58	54,2
Occupation	Employed	29	27,1
	Homemaker	37	34,6
	Unemployed	16	15,0
	Teacher	1	0,9
	Retired	24	22,4
Education	No schooling	3	2,8
	Primary	26	24,3
	Secondary	44	41,1
	High School	22	20,6
	Bachelor's Degree	12	11,2

Source: Author's own elaboration.

Table 2. Dimensions of the SF-12 questionnaire (n=107)

Variable	Mean	SD
General health	34,95	19,29
Physical functioning	44,39	38,44
Role physical	31,77	46,77
Bodily pain	71,72	30,14
Rol emotional	72,05	44,98
Mental health	71,77	26,48
Vitality	45,98	28,04
Social functioning	68,45	28,59
Physical health component	41,84	24,72
Mental health component	65,44	23,66

Source: Author's own elaboration.

Tabla 3. Self-Care Capacity using the Self-Care Agency Assessment Scale (n=107)

Self-care	n	%
High	70	65,4
Medium	13	12,2
Low	24	22,4

Source: Author's own elaboration.

DISCUSSION

The predominant demographic characteristics of the population were an average age of 49 years, female gender, secondary education, and homemaking as an occupation, similar to the findings reported by Ramos-Alcocer.[22] Other studies report a mean age of 60 years and predominantly male gender (77%), which could be explained by differences in the proportion of men and women in the studied populations.[23,24]

Concerning comorbidities, high blood pressure and diabetes were the most common, aligning with the literature, as these are the primary factors associated with CKD.[3,5,25]

Regarding vascular access, the most frequently used was the Mahurkar catheter, which is widely employed in this type of patient despite its higher risk of infection, thrombosis, and central vein injury. For this reason, the arteriovenous fistula (AVF) is considered the first choice for vascular access; however, in some cases, its use is either not feasible or contraindicated.[26]

It is noteworthy that good quality of life was reported by 54.2% of the participants, contrary to findings by other authors, who more frequently report poor quality of life due to lifestyle changes, complications, and a lack of emotional and spiritual well-being in these patients.[13,24]

Regarding self-care, 64.2% exhibited a high capacity, while 22% had a low capacity. These findings differ from those reported by Peralta et al., who found that only 9.2% of the sample of older adults showed good self-care, while 56.9% had moderate self-care, and 33.8% had poor self-care; in their study, quality of life was found to be moderate or poor. Chronic kidney disease causes irreversible lifestyle changes and alters life expectancy, making the intervention of a multidisciplinary team—including nursing staff—crucial in educating patients on the necessary self-care practices to improve their quality of life.27

The main limitation of this study is its cross-sectional design, which only makes it possible to describe the population at a single point in time. A longitudinal study design would better establish causality. Additionally, information on quality of life and self-care was collected using self-assessment questionnaires, which could introduce response biases due to factors such as social desirability or subjective interpretation of the questions.

CONCLUSIONS

This study reveals that patients with chronic kidney disease undergoing hemodialysis generally exhibit good quality of life. However, the most affected domains are physical. Self-care capacity was found to be high.

Although hemodialysis improves patient survival, it does not necessarily enhance self-care capacity or perceived quality of life in all cases. Given these findings, it is essential to implement interventions that focus not only on medical treatment but also offer emotional and social support to ensure that patients maintain their self-care abilities and quality of life.

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JAF: Conceptualization, Investigation, Methodology, Writing – Original Draft Preparation, Writing – Review & Editing.
JCC: Conceptualization, Investigation, Writing – Original Draft Preparation, Writing – Review & Editing.
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FMC: Análisis formal, Investigación, Metodología, Escritura - borrador original, Escritura - revisión y edición.
MHC: Supervision, Visualization, Writing – Original Draft Preparation, Writing – Review & Editing

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