



The Comprehensive Impact of Maintenance Hemodialysis Treatment: a Qualitative Study

Qin Guan¹, Hongfei Yang², Lu Zhou³, Zhipeng Xue¹, Xiaoling Zhu^{2*}

¹ Dali University, Dali 671000, Yunnan, China

² The First Affiliated Hospital of Dali University, Dali 671000, Yunnan, China

³ Emergency Department of Southwest Medical University Affiliated Hospital, Luzhou 646000, Sichuan, China

DOI: 10.32629/jcmr.v5i2.2312

Abstract: Objective: To investigate the comprehensive impact of maintenance hemodialysis treatment on patients and their families, in order to improve their quality of life and enhance treatment effectiveness. Method: Colaizzi phenomenological analysis is used to analyze data and extract themes. Results: The comprehensive impact of maintenance hemodialysis treatment can be summarized into five themes: decreased work ability, disease restriction of life freedom, decreased physical function, decreased quality of life, and increased family burden. Conclusion: Hemodialysis has a significant impact on patients and their families, with economic, physical, and psychological impacts, directly reducing their quality of life. It is recommended to adopt multidimensional strategies to improve the quality of life and treatment outcomes of patients.

Keywords: hemodialysis; comprehensive impact; qualitative research

1. Introduction

Maintenance hemodialysis (MHD) is a crucial treatment for patients with renal failure, aimed at replacing the physiological functions lost due to renal failure[1]. The dialysis process uses an artificial dialysis device to remove metabolic products and excess water from the body, in order to maintain the body's water electrolyte balance and acid-base balance. This is one of the routine treatment methods for patients with advanced kidney disease[2]. This treatment effectively simulates the excretion function of the kidneys, clears metabolic waste in the body, maintains the stability of the internal environment, prolongs the patient's survival time, and improves their quality of life [3]. However, maintenance hemodialysis treatment not only has a significant impact on the patient themselves, but also profoundly affects their family's economic and psychological status [4]. Due to the significant medical resources and cost support required for its treatment process, patients and their families also need to adapt to new lifestyles and cope with psychological adjustments in the long term. Therefore, this article aims to deeply explore the comprehensive impact of maintenance hemodialysis treatment on patients and their families, in order to improve the quality of life of patients and enhance treatment effectiveness.

2. Object and Method

2.1 Research subjects

The study used purposive sampling method to include stable hemodialysis patients at a tertiary hospital in Yunnan, aged ≥ 18 years, with normal communication, and excluding those with unclear consciousness and severe organic diseases. The sample size is 32, with 14 males and 18 females, aged 36-76 years old, and has passed the ethical review (DFY20240122001).

2.2 Research Methods

2.2.1 Design interview outline

Based on literature review, develop an interview outline, and after pre interviews and expert feedback revisions, form a formal outline. Starting from the impact of illness, gradually understand the individual and family impacts of patients.

2.2.2 Data collection

The researcher is responsible for conducting one-on-one structured interviews and selecting a convenient and quiet environment. Follow the principle of not interrupting or inducing, gradually deepen understanding, and each time for no less than 20 minutes. Obtain informed consent form and record the entire process.

2.2.3 Data analysis

After converting the interview recording into text, code it as P1~P32 and import it into Nvivo 20 software. Using the

Colaizzi phenomenological 7-step analysis method [5]: transcriptional data, inductive viewpoints, encoding, aggregation, listing encoding, sublimation themes, feedback.

3. Results

3.1 Theme: Decline in Work Ability

Dialysis treatment requires multiple hours per week, which is time-consuming and reduces the patient's physical strength, affecting their daily life. P1: "If the body is soft, it means that one cannot work for too long. Doing it for too long will make it difficult." I used to be able to do some work, but now I can't do it at all P5: "Working is not possible, you can't even walk." P23: "I haven't been working since I got sick."

3.2 Theme 2: Disease restricts freedom of life

Dialysis requires multiple weekly visits to the hospital, depriving patients of their freedom of life and strict dietary restrictions affecting their choices. P29: "Where do you want to go? If you can't go, what do you want to eat? I definitely can't eat either." P11: "I'm already on dialysis now, so I don't have a chance to go out and play." P30: "I need regular dialysis, so I don't have time to leave. I only have two days off, so I can't go anywhere."

3.3 Theme 3: Decreased physical function

Dialysis therapy can maintain balance, but it may lead to side effects such as hypotension and anemia, affecting daily life and work. P22: "From all aspects, I feel like it's getting worse every year." P25: "After penetration, I have no strength, feel dizzy and dizzy, and uncomfortable." P9: "If I don't move, I have to go to the hospital, and my health is not good." P31: "My body is actually very weak."

3.4 Theme 4: Decline in Quality of Life

The quality of life of patients is influenced by various factors, including health, treatment time and cost, mental health, and lifestyle changes. P7: "Working at home can still sustain me, but now that I'm sick, I can't keep up at all." P19: "There's nothing good in life, it's just not as good as before." P23: "I never had to worry about my money before."

3.5 Theme 5: Increasing Family Burden

Dialysis patients add burden to their families, including time, financial, emotional support, and lifestyle adjustments. P7: "I can't work, and if there's a relapse, the children can't work either. They have to come and serve. It's delaying the whole family." P12: "I just want to say that I've implicated them too much, and I always feel that I've implicated them too much." P17: "It cost three to four hundred thousand yuan to treat the illness. If we had to build a house, we could have built it."

4. Discussion

4.1 Comprehensive response measures

Dialysis treatment may cause complications such as anemia, hypotension, malnutrition, decreased physical strength, weakened immunity, increase psychological stress and anxiety, directly affect physical function, lead to poor mental state, decreased sleep quality, and other problems, affecting physical health [6-7]. It is recommended to develop a reasonable diet, ensure sufficient intake of nutrients, actively treat complications, regularly monitor physical condition, detect and treat early, and choose appropriate exercise methods and intensity based on physical condition to maintain physical health.

4.2 Reducing Economic Pressure

Dialysis treatment is a long-term and expensive medical process, with costs including equipment use, medication, and medical examinations, which puts pressure on patients and families[8]. Regular treatment may reduce working hours and increase economic burden[9]. It is recommended to understand the welfare programs of the government or non-profit organizations, such as medical assistance and low-income family support programs, and plan expenses, make reasonable use of the budget, reduce economic pressure, and ensure affordable treatment and living needs.

4.3 Maintain a positive mindset

Dialysis treatment is a long-term and frequent treatment process that requires patients to visit hospitals or dialysis centers multiple times a week for treatment, which limits their lifestyle and personal freedom and may lead to psychological problems such as anxiety and depression[10]. In addition, dialysis treatment involves blood filtration and cleaning, and patients may experience discomfort and complications, such as physiological reactions such as hypotension, anemia, fatigue, etc., which can affect their psychological state [11]. Therefore, maintenance hemodialysis patients often face dual

physiological and psychological challenges. Patients should establish a positive attitude and accept the existence of the disease; Kidney disease can also provide emotional support and understanding, helping oneself overcome difficult times. In addition, learning effective coping strategies such as relaxation techniques, meditation, and breathing exercises can help patients stay calm and composed when facing stress and anxiety.

5. Summary

This article delves into the comprehensive impact of maintenance hemodialysis treatment on patients and their families. The results showed that treatment led to a decrease in the patient's work ability, limited freedom of life, weakened physical function, decreased quality of life, and increased family burden. In response to these impacts, it is recommended to adopt multidimensional strategies to improve the quality of life and treatment outcomes of patients, including providing dialysis related education and psychological support, optimizing dialysis techniques to reduce physical burden, and alleviating economic pressure through government and social resources. These comprehensive measures can help patients better adapt to treatment, reduce the negative impact of dialysis, and improve overall quality of life.

Acknowledgments

Found projects: The 2024 Graduate Research Project of the School of Nursing at Dali University has been approved as a special project (Title: Mechanism study on the impact of economic toxicity on the quality of life of maintenance hemodialysis patients: based on a quantitative qualitative mixed method); Special Project Approval for Graduate Research Projects in the School of Nursing, Dali University in 2024 (2024HLY32).

References

- [1] Zeraati A, Mousavi S S B, Mousavi M B. A review article: access recirculation among end stage renal disease patients undergoing maintenance hemodialysis[J]. *Nephro-urology monthly*, 2013, 5(2): 728.
- [2] Luo J, Wu C, Xu T, et al. Diffusion dialysis-concept, principle and applications[J]. *Journal of Membrane Science*, 2011, 366(1-2): 1-16.
- [3] Namdar A, Beigizadeh S, Najafipour S. Health-related quality of life in dialysis patients[J]. *Pars Journal of Medical Sciences*, 2022, 10(4): 19-27.
- [4] Kari J A, Alzahrany M, El-Deek B, et al. Social impact of dialysis on children and their families[J]. *The Indian Journal of Pediatrics*, 2014, 81: 1020-1026.
- [5] Colaizzi P F. Psychological research as the phenomenologist views it[J]. 1978.
- [6] Li P K T, Chow K M. Infectious complications in dialysis — epidemiology and outcomes[J]. *Nature Reviews Nephrology*, 2012, 8(2): 77-88.
- [7] Nataatmadja M, Evangelidis N, Manera K E, et al. Perspectives on mental health among patients receiving dialysis[J]. *Nephrology Dialysis Transplantation*, 2021, 36(7): 1317-1325.
- [8] Ma Y, Yu H, Sun H, et al. Economic burden of maintenance hemodialysis patients' families in Nanchong and its influencing factors[J]. *Annals of Palliative Medicine*, 2020, 9(6): 3877884-3873884.
- [9] Li P K T, Chan G C K, Chen J, et al. Tackling dialysis burden around the world: A global challenge[J]. *Kidney Diseases*, 2021, 7(3): 167-175.
- [10] Vestman C, Hasselroth M, Berglund M. Freedom and confinement: Patients' experiences of life with home haemodialysis[J]. *Nursing research and practice*, 2014, 2014.
- [11] Tzanakaki E, Boudouri V, Stavropoulou A, et al. Causes and complications of chronic kidney disease in patients on dialysis[J]. *Health Science Journal*, 2014, 8(3): 343.

Author Bio

First author: Qin Guan, female, Master's degree student in nursing at Dali University, 2022.

Corresponding author: Xiaoling Zhu*, female, Doctoral degree, nursing master's supervisor, nursing department of the First Affiliated Hospital of Dali University.