Patient Preference and Adherence

Dovepress
Taylor & Francis Group

Open Access Full Text Article

ORIGINAL RESEARCH

Experiences of Effective Psychological Adjustment in Patients Undergoing Maintenance Hemodialysis: A Qualitative Study

Lin Zhang, Yongzhen Guo, Xin Meng, Yuping Li, Mengfan He, Hongtao Zhang

Blood Purification Center, Henan Provincial People's Hospital, Zhengzhou, Henan, People's Republic of China

Correspondence: Hongtao Zhang, Blood Purification Center, Henan Provincial People's Hospital, No. 7, Weiwu Road, Jinshui District, Zhengzhou City, Henan Province, People's Republic of China, Tel +86-13526614646, Email zhtzzu@126.com

Purpose: Patients receiving long-term maintenance hemodialysis (MHD) are prone to psychological distress, which adversely affects their self-management capabilities and overall quality of life. This study explores the experiences and strategies related to positive psychological adjustment in this population, with the aim of informing interventions to improve disease adjustment and quality of life.

Patients and Methods: This study, guided by the Roy adaptation model, utilized an interpretative phenomenological methodology. Adopting the patient perspective, semi-structured interviews were used to investigate the experiences of patients undergoing maintenance hemodialysis. From May to July 2025, a purposive sampling approach was employed to recruit 15 patients receiving maintenance hemodialysis from Henan Province, China, who demonstrated positive psychological adjustment. The data was organized via NVivo 12.0 and analyzed via Colaizzi's method.

Results: Four primary themes were identified: (1) Balancing acceptance of physiological limitations with proactive adjustment to life on maintenance hemodialysis; (2) Accurate Self-Repositioning; (3) Pursuing a renewed life by exploring and embracing novel social roles; (4) Drawing upon the strength of kinship and friendship to restore confidence in life.

Conclusion: The psychological adjustment of patients undergoing maintenance hemodialysis is a dynamic process characterized by accepting their health status, reconstructing personal values, and reshaping social roles, with robust social support systems playing a pivotal role in this process. This experiential framework offers critical insights for informing clinical patient management and designing targeted psychological interventions.

Keywords: maintenance hemodialysis, psychological adjustment, experience, qualitative research, roy adaptation model

Introduction

End-stage renal disease (ESRD), representing the final phase of chronic kidney disease, continues to exhibit a significant and sustained increase in prevalence, constituting a major public health burden. Hemodialysis (HD) serves as the primary renal replacement therapy for ESRD patients.[1] According to the Global Kidney Health Atlas (GKHA) published by the International Society of Nephrology (ISN), a survey spanning more than 160 countries worldwide revealed that over 3.5 million patients are currently undergoing hemodialysis treatment.[2] Moreover, according to the China National Renal Data System (CNRDS), the number of patients undergoing maintenance hemodialysis (MHD) in China reached 1.027 million by December 2024, reflecting a consistently increasing trend annually.[3] MHD patients are required to undergo regular hemodialysis treatment at hospital-based units at least three times per week, with each session lasting four hours. This long-term treatment regimen disrupts patients' daily lives and, combined with the physical discomfort and financial burden associated with dialysis, leads to varying degrees of psychological distress.[4]

The psychological status of HD patients is closely associated with self-management and quality of life. A positive mental state can facilitate the adoption of proactive coping strategies, thereby improving adjustment to illness and

https://doi.org/10.2147/PPA.S576627
Received: 24 October 2025
Accepted: 10 January 2026
Published: 21 January 2026

enhancing overall quality of life.[5,6] Conversely, if the persistent negative emotions experienced by MHD patients are not effectively addressed, they may progress to severe psychiatric conditions such as anxiety and depression.

Psychological adjustment refers to the capacity and process through which MHD patients, when confronted with the substantial life disruptions and uncertainties brought about by their illness and treatment, employ a range of internal cognitive and external behavioral efforts to readjust to life, rebuild self-worth, and ultimately achieve psychological equilibrium and a sense of meaning in life.[7] Psychological adjustment can enhance psychological resilience, hope, and treatment adherence by improving patients' self-efficacy and intrinsic motivation.[8,9] It has also been demonstrated that psychological adjustment serves as a core mediating variable in enabling effective health management and improving quality of life. Positive psychological adjustment contributes to the alleviation of psychological distress and the restoration of social functioning, thereby significantly enhancing patients' health management capabilities and overall living standards.[10–12]

The Roy adaptation model posits that the human being is an integrated biopsychosocial adaptive system that continuously employs coping mechanisms to respond to various stimuli from the environment. MHD presents a significant focal stimulus, necessitating adaptive responses from patients. Guided by this framework and employing a phenomenological approach with semi-structured interviews, this research elucidates the methods and strategies of effective psychological adjustment, thereby providing insights for clinical health management and psychosocial interventions. (Figure 1 presents Roy's Adaptation Theory).

Material and Methods

Study Design

This study employed an interpretative phenomenological analysis to explore positive psychological adjustment strategies of patients undergoing MHD. Through semi-structured interviews with 15 MHD patients who demonstrated effective psychological adjustment, the investigation adopted a patient-centered perspective to gain an in-depth understanding of their coping experiences and strategies. The research was conducted in Henan Province, China.

Research Ethics

The study received ethical approval from the Ethics Committee of Henan Provincial People's Hospital (Approval No. 14 (2024). All procedures were performed in accordance with the Declaration of Helsinki and relevant guidelines and regulations. All participants had provided signed informed consent prior to 30 April 2025, and the interviews were conducted between 1 May and 1 July 2025. Prior to participation, all respondents were provided with comprehensive

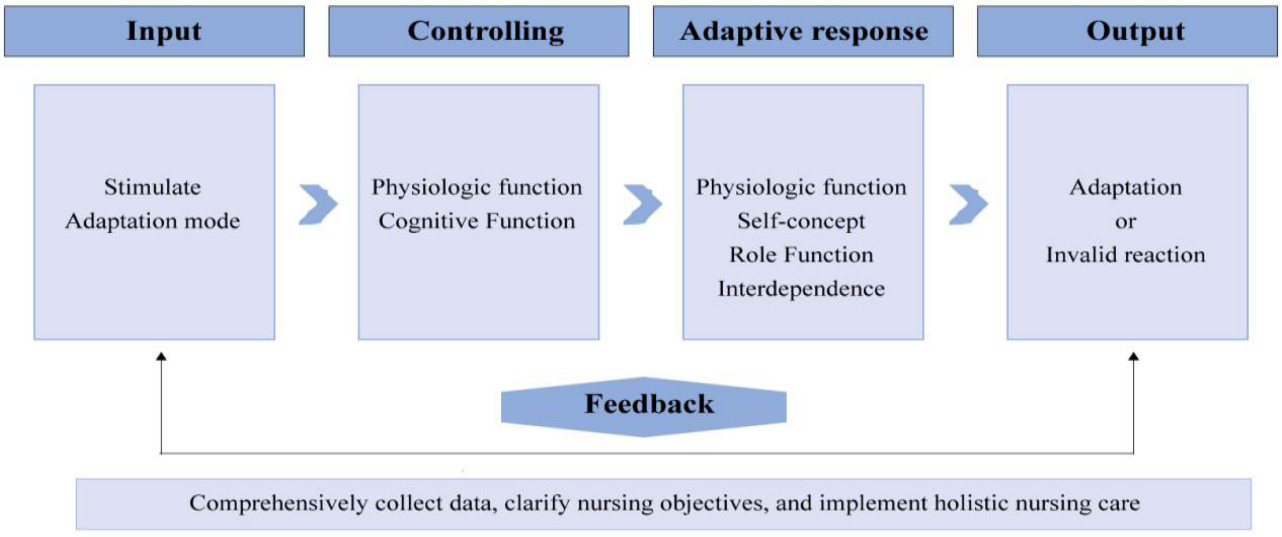

Figure 1 Roy's Adaptation Theory (it is reproduced).

information about the study. Each participant provided written informed consent to voluntarily take part in the research; this included explicit agreement to the publication of anonymized responses and direct quotes.

Participants

From May to July 2025, this study employed purposive sampling and a maximum differentiation strategy to select patients undergoing MHD. Recruitment was conducted in Henan Province, China. A total of 15 patients who met the inclusion criteria were ultimately enrolled. Inclusion criteria were as follows: (1) undergoing MHD treatment for more than 3 years; (2) being fully conscious with no cognitive impairment and the ability to communicate normally; (3) demonstrating good adjustment to the disease, defined as a score of > 106 on the "Disease Psychosocial Adjustment Scale" (a score exceeding 80% of the total indicates favourable adjustment); (4) has to be voluntary consent to participate in the study. We excluded the following patients: (1) Those who participated in other clinical studies simultaneously; (2) Patients with severe mental illnesses; (3) Patients with other serious diseases (malignant tumors).

Data Collection

Employing phenomenological methodology within a qualitative research framework, the first author of this study (who holds a PhD in Nursing and has six years of experience as a head nurse in a haemodialysis centre) conducted face-to-face, semi-structured interviews with MHD patients. This researcher had also received systematic training in qualitative interview techniques. The sample size was determined by saturation of interview topics: when the interview reached the 13th patient, no more new ideas emerged, and the researcher continued to interview two patients; still, no new ideas emerged, and the theme reached saturation. 15 participants were eventually recruited. A total of 28 patients were invited; thirteen refused to participate due to personal reasons (eg, time conflicts and privacy concerns).

To mitigate the potential influence of hierarchical relationship, potential desirability bias, non-neutral interviewing on the research outcomes, the following measures were implemented in this study: (1) Rapport was established with participants, and the researcher's role was explicitly clarified. Interviews were conducted using plain, accessible language to facilitate open dialogue. (2) Interviews took place in a neutral, private, and comfortable setting, avoiding formal office spaces to reduce environmental power cues, and no third parties were present aside from the interviewer and the patients. (3) Open-ended questions with neutral wording were employed throughout the interviews. The researcher refrained from evaluative comments and minimised expressive facial or bodily feedback to avoid leading participants. (4) Reflective memos were completed after each interview to enhance self-awareness and inform subsequent data collection.

Semi-Structured Interviews

We invited experts from specialist nursing, psychology, sociology, and other fields to discuss the interview outline. These experts had more than 10 years of experience in their field and possessed extensive clinical and research experience. Before the interviews, the experts provided suggestions, such as using open-ended questions and language that was accessible to patients with MHD. The researchers incorporated these recommendations to formulate questions that were relevant to the study topic and connected to the everyday lives of patients receiving MHD. We selected two patients for pre-interviews and found that patients receiving MHD had limited knowledge of psychological adjustment. As a result, the interview questions were adjusted on the basis of the interview context and the participants' emotional states. Moreover, information extraction was relatively limited during the initial analysis, and the structure of the outline was readjusted. Based on the feedback, the researchers further refined and finalized the interview guide, which is shown in Table 1.

Each interview lasted 20–60 minutes, and the interviews were concluded once data saturation was reached. During the interviews, the researchers listened carefully and adjusted their approach (eg, probing questions and clarification) on the basis of specific situations. Key points, facial expressions, and body language were also recorded. Within 24 hours of each interview, two researchers (the first author and second author) transcribed the audio recordings into text and returned them to the participants for confirmation.

Table 1 Interview Guide

Final Edition
Question 1: Please describe the most significant changes you have experienced in your physical condition and daily life since commencing and adapting to MHD. How did you gradually come to comprehend and accept this "new normality" on both a cognitive and emotional level?
Question 2: Has the illness and its treatment altered your perception of your own physical capabilities or bodily image? How do you now regard this version of yourself living with a chronic condition?
Question 3: In confronting this health-related adversity, have you reflected upon the meaning of life or your personal sense of value? How did you adjust your mindset to rediscover and redefine what is truly significant to you in your life?
Question 4: Has MHD treatment affected your roles within your family, workplace, or wider society? How have you adapted to this role transition, and in what ways have you used the identity of a "patient" as a foundation from which to explore and establish a new lifestyle?
Question 5: During your process of psychological adjustment, what forms of support have been provided by your family, friends, healthcare professionals, or fellow patients? In which specific aspects has this support been instrumental in helping you regain confidence and strength to face life's challenges?
Question 6: Upon reflecting on your journey overall, which personal strategies or key factors do you perceive as having been most effective in facilitating your positive psychological adjustment? What insights would you most wish to share with fellow patients who are commencing HD and are currently navigating a phase of uncertainty?

Data Analysis

Two researchers (the first and second authors) independently analyzed the textual data using Colaizzi's method and NVivo 12.0. Any new information emerging during this process was incorporated into the final description. If discrepancies arose during the analysis, the research team collectively reviewed and discussed the data to ensure rigour and accuracy in the final thematic findings. Numbers, percentages, means and standard deviations were used in the analysis of the sociodemographic data according to the features of their normal distribution.

Results

Patients

The Patient Descriptive Data Form comprises 8 closed-ended questions on sex, age, marital status, degree of education, occupation, primary disease, hemodialysis vintage and complications related to hemodialysis. Table 2 presents the general information of the participants.

Themes Identified

These interviews presented four main themes and eight subthemes, the thematic map of themes and sub-themes are presented in Figure 2.

Theme Cluster 1: Balancing Acceptance of Physiological Limitations with Proactive Adjustment to Life on MHD

Theme 1: Scientific Capacity Management and Active Adjustment to Dialysis

Owing to renal failure, patients receiving MHD require precise volume management to better adapt to the physiological changes after MHD. Some participants emphasized the importance of mastering fluid intake management strategies to adapt to MHD.

P1: At first, the doctor advised me to drink less water, which made life difficult. Later, I learned to add ice cubes to the water and drink small sips of water every time, which effectively relieved my thirst.

By adapting to fluid restriction, patients can acclimate themselves to the lifestyle of MHD.

P8: When I can control my fluid intake without feeling the pain of life, I truly adapt to MHD life (with smile).

Table 2 Characteristics of the Participants

Number	Sex	Age (Years)	Marital Status	Degree of Education	Occupation	Primary Disease	Hemodialysis Vintage (Years)	Complications Related to Dialysis
P1	Male	45	Married	Junior college		Unknown cause	7	Nothing
P2	Female	64	Divorce	High school	Retired	Unknown cause	15	Joint pain
P3	Male	29	Unmarried	Undergraduate	Lawyer	Membranous nephropathy	2	Nothing
P4	Female	65	Married	Junior college	Retired	Diabetic nephropathy	16	Skin itch
P5	Male	66	Married	Undergraduate	Retired	Hypertensive nephropathy	8	Nothing
P6	Female	65	Married	Master	Retired	Polycystic kidney disease	11	Malnutrition
P7	Female	42	Married	Junior college	Retired due to illness	IgA nephropathy	13	Nothing
P8	Male	40	Divorced	Undergraduate	Retired due to illness	Diabetic nephropathy	14	Hypertension
P9	Male	55	Married	Undergraduate	Retired due to illness	Polycystic kidney disease	10	Restless leg syndrome
P10	Female	60	Married	High school	Retired	Unknown cause	12	CKD MBD
P11	Female	54	Married	Junior high school	Farmer	Diabetes nephropathy	7	Intradialytic hypotension
P12	Female	43	Married	Master	Teacher	IgA nephropathy	7	Sleep disorders
P13	Male	44	Married	Undergraduate	Retired due to illness	Membranous nephropathy	9	Nothing
P14	Male	46	Married	Junior college	Retired due to illness	Unknown cause	13	Joint pain
P15	Female	45	Married	Junior college	Staff member	Unknown cause	12	Malnutrition

https://doi.org/10.2147/PPA.S576627

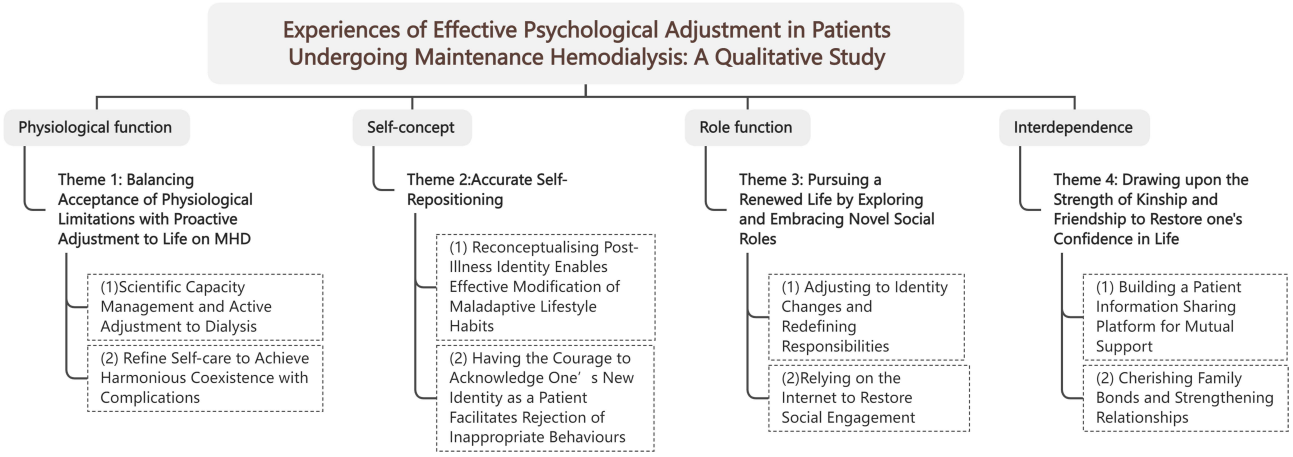

Figure 2 The thematic map of themes and sub-themes are presented.

Theme 2: Refining Self-Care to Achieve Harmonious Coexistence with Complications

Most respondents stated that understanding, preventing, and managing complications helped them better adjust to MHD treatment.

P9: Through health education from medical staff, I have learned about hemodialysis-related complications and how to prevent them, which has helped me eliminate the fear caused by ignorance (He sat up straight).

Patients learn to manage complications with scientific methods.

P15: I made a health checklist for myself and learned how to prevent and manage complications on my own, which gave me confidence in my MHD life.

Theme Cluster 2: Accurate Self-Repositioning

Theme 1: Reconceptualising Post-Illness Identity Enables Effective Modification of Maladaptive Lifestyle Habits

Self-perception shapes an individual's behavioural habits. After fully understanding their physical condition and disease-specific precautions, some participants adopted new lifestyles—changes that have positively impacted their health status as patients.

P1: After falling ill, I gave up my habit of jogging 5 kilometers every morning. Now my goal is to walk 8,000 steps a day, completed in several sessions. This intensity ensures I do not become overly fatigued.

While some habits are not easily changed overnight, patients will gradually adapt and adjust as their understanding of their physical condition deepens.

P13: It took me a year of MHD to gradually adapt to my new physical state. I tried to change many habits in my life —for example, no longer staying up late to watch dramas, and refraining from lifting heavy objects with my left hand (the side with the arteriovenous fistula).

Theme 2: Having the Courage to Acknowledge One's New Identity as a Patient Facilitates Rejection of Inappropriate Behaviours

Major life changes pose a challenge for anyone. Some participants noted that admitting their illness in public is often a difficult endeavour.

P14: I once could not accept who I am now, so I concealed my condition. When someone offered me a banana, I even dared not tell them I have hyperkalaemia.

However, some patients accept their current selves quickly and resolutely reject inappropriate behaviours.

P15: When guests toast me, I inform them that I am undergoing MHD and cannot consume alcohol. Most guests express understanding and extend their well wishes to me.

Theme Cluster 3: Pursuing a Renewed Life by Exploring and Embracing Novel Social Roles

Theme 1: Adjusting to Identity Changes and Redefining Responsibilities

Owing to the demands of MHD treatment, most participants were unable to work outside the home and instead assumed stronger family roles.

P1: Actually, the burden at home is also very heavy. This is what I felt after getting sick, so I consciously took on the work at home, which gradually helped me adapt to the days when I needed MHD due to illness.

The patients rediscover their own value through doing household chores.

P11: From needing someone to take care of me at the beginning to taking care of others now, I have realized my current value.

Theme 2: Relying on the Internet to Restore Social Engagement

With advancements in technology, nearly all participants reported using smartphones and computers to expand their social interactions with foreign countries, and some even found work online.

P7: I earn money by doing freelance work online, picking up projects such as designing posters and coordinating events for clients (With pride).

Theme Cluster 4: Drawing Upon the Strength of Kinship and Friendship to Restore One's Confidence in Life

Theme 1: Building a Patient Information Sharing Platform for Mutual Support

Most participants expressed that only fellow MHD patients truly understood their experiences, making peer support crucial.

P8: Only MHD patients understand each other the most, so we created a WeChat group to share our experience and insights into disease management.

The sense of empathy born from shared suffering has turned many patients into good friends, making their weekly treatments feel like a different form of get-together with pals.

P2: With fellow patients around, I do not feel lonely anymore. I like to go to the hospital early, chat and exercise with my patients, and talk about my recent feelings.

Theme 2: Cherishing Family Bonds and Strengthening Relationships

Many participants stated that after falling ill, they gained a deeper appreciation for family and prioritized maintaining relationships.

P3: The companionship of my family has given me hope to survive, and I am very grateful to them.

It is often after falling ill that many patients truly realize the meaning of family.

P6: When I am in physical pain, I thank my family for their careful care. I understand the meaning of family and have also let go of previous conflicts (Her eyes welled up).

Discussion

Enhancing the Self-Management Capabilities of Patients Undergoing MHD Is Paramount for Their Effective Psychological Adjustment

This study establishes that enhancing self-management capabilities is a central element of successful psychological adjustment for patients undergoing MHD. This enhanced capacity directly promotes more adaptive psychological adjustment, facilitating a transition from a passive "patient" identity—characterized by receiving treatment—to an active "collaborator" role in health management. Consequently, patients achieve greater acceptance of their condition, experience reduced psychological distress, and develop renewed confidence in their future. Wang et al[13] highlighted the vital role of health management knowledge in facilitating social reintegration and psychosocial adjustment for patients, a finding which echoes the results of the present study. Building on this, it is recommended that healthcare professionals

systematically integrate self-management skills training into psychological care protocols. By empowering MHD patients in this manner, we can foster sustainable psychological adjustment and significantly enhance their overall quality of life.

Adjusting to New Social Roles, Accurate Self-Repositioning, and Cultivating Personal Interests Serve as Critical Pathways for Facilitating Positive Psychological Adjustment Among Patients Undergoing MHD

This study reveals that successful psychological adjustment transcends passive acceptance of the illness. Instead, it entails an active reconfiguration of life, involving the renegotiation of social roles, the modification of self-concept, and the cultivation of personal interests. These findings resonate with established sociological and psychological theories, thereby deepening our comprehension of the mechanisms underpinning psychological adjustment in patients undergoing MHD.

Firstly, the recalibration of social roles is pivotal to reconstructing a meaningful life. This process enabled the construction of a new, valued identity, such as that of a "patient expert" or "family caregiver." This transition aligns with the "possible selves" theory, which posits that individuals navigate adversity by imagining and constructing positive, future-oriented self-concepts.[14] Secondly, the re-evaluation and re-orientation of one's life trajectory is fundamental to achieving internal psychological equilibrium. Research by Sadeghi et al[15] indicates that when MHD patients accept their treatment and the reorientation of their lives, this contributes to improved treatment adherence. Finally, Aligned with the work of Rogers et al[16] on the role of valued activities in chronic illness management, the present findings confirm that cultivating personally meaningful and physically compatible interests is essential for MHD patients. Such engagement not only redirects attention from pain but also enhances perceived control and life satisfaction, thereby supporting positive emotional regulation and the rebuilding of a purposeful daily life. Consequently, future interventions aimed at the psychological adjustment of MHD patients should evolve to systematically incorporate role reconstruction training, values-based identity clarification, and the promotion of meaningful activities.

The Establishment of Positive Family and Social Relationships Is a Cornerstone for Successful Psychological Adjustment in Patients Undergoing MHD

This study elucidates that when patients perceive themselves as understood rather than a burden within the family unit or other social relationship, they are more likely to accept their illness and reconstruct a sense of life's meaning. These findings are corroborated by research from Wang et al[17] and Safi,[18] which confirmed that higher levels of family support are associated with greater patient self-efficacy and improved quality of life. Beyond the familial domain, a robust social network is equally indispensable. This observation is substantiated by Permatasar et al,[19] who found that patients with stronger social support demonstrated significantly higher treatment adherence. The study offered a mechanistic explanation for this correlation: the understanding and encouragement derived from peers directly enhances patients' self-efficacy in managing their treatment regimen. Therefore, future interventions to enhance psychological adjustment in MHD patients should systematically embed the family system within treatment plans and actively foster supportive peer groups.

Limitations

This study has several limitations. First, this study has inherent limitations associated with qualitative research methods, such as researcher bias (eg, cognitive preconceptions) and variability in data analysis competencies. Second, the sample population was drawn from specific geographic and sociocultural backgrounds, potentially limiting the generalizability of the findings. Further research is needed to explore the mechanisms and timeline of psychological adjustment in this population.

Conclusion

Based on an in-depth analysis of the psychological adjustment experiences of patients undergoing MHD, this study identifies core themes characterizing effective adjustment. Following the initial impact of their diagnosis, patients achieve a preliminary accommodation by accepting physiological constraints and proactively adapting to treatment routines. Building on this foundation, they engage in cognitive reframing to redefine self-worth and actively explore new social

roles to reconstruct their identity. Ultimately, bolstered by emotional and instrumental support, they reignite confidence in life, completing a fundamental transition from passive endurance to active management. This adaptive process reveals that successful psychological adjustment is neither linear nor passive, but rather an agentive process involving multi-dimensional interactions among cognitive, behavioral, and social domains. It underscores the importance of situating individuals within their socio-ecological systems to guide holistic intervention.

Abbreviations

MHD, Maintenance Hemodialysis; ESRD, End-stage Renal Disease; HD, Hemodialysis; GKHA, Global Kidney Health Atlas; ISN, Society of Nephrology; CNRDS, China National Renal Data System.

Acknowledgments

The authors thank all who participated in this study and provided valuable input.

Funding

This work was supported by the Henan Province Clinical Research-Oriented Doctor Training Program (HNCRD202407), Open Projects of Henan Key Laboratory of Nursing Medicine (HNSYHLKT202304), and Young and Middle-aged Discipline Leader Funding Project in Henan Health Care in 2023.

Disclosure

The authors affirm that no conflicts of interest exist regarding this research.

References

1. Correa-Rotter R, Chadban SJ, Christen L, et al. Addressing the Human Experience of Chronic Kidney Disease: a Call to Transform Kidney Care. *Adv Ther*. 2024;42(2):559–567. doi:10.1007/s12325-024-03048-9
2. Wijewickrama E, Alam MR, Bajpai D, et al. Capacity for the management of kidney failure in the International Society of Nephrology South Asia region: report from the 2023 ISN Global Kidney Health Atlas (ISN-GKHA). *Kidney Int Suppl*. 2024;13(1):123–135. doi:10.1016/j.kisu.2024.01.007
3. Chen X. Advancing the Quality of Blood Purification Medical Care in China through Scientific and Technological Innovation. *Critical Care Nephrology and Blood Purification Conference*. 2025.
4. Rai P, Chaudhary B, Shrestha S. The Prevalence of Depression in Patients undergoing haemodialysis. *J Nobel Med Coll*. 2024;13(2):93–97. doi:10.3126/jonmc.v13i2.75244
5. Chang A, Kim J. Influence of self-management, self-efficacy, depression and social support on quality of life in patients undergoing haemodialysis by disease stage in South Korea. *J Clin Nurs*. 2024;34(3):978–989. doi:10.1111/jocn.17316
6. Yogi I, Ghimire R, Subedi S. Depression and coping strategies among haemodialysis patients of Bagmati Province. *Nepal Int J Basic Clin Pharmacol*. 2025;14(4):459–466. doi:10.18203/2319-2003.ijbcp20251829
7. Cheng QR, Huang QM, Wu FL, et al. A qualitative study on psychological adjustment of anxiety related to antigen testing in patients after radical prostatectomy. *J Nurs Sci*. 2023;38(23):10–13+19. doi:10.3870/j.issn.1001-4152.2023.23.010
8. Li RY, Yang YJ, Wang N, et al. Effects of attribution-based psychological adjustment on psychological resilience and self-efficacy in patients undergoing percutaneous coronary intervention for coronary heart disease. *Chin J Heal Psy*. 2025;33(01):61–65. doi:10.13342/j.cnki.cjhp.2025.01.012
9. Helali BA, Eliwa SM, Nosir FAAE, et al. Impact of a psychoeducational nursing program on self-efficacy and psychological adjustment in hemodialysis patients. *Sci Rep*. 2025;15(1):19568. doi:10.1038/s41598-025-04052-x
10. Liu HF, Dai XY, Sang J, et al. Effects of attribution-based psychological adjustment combined with progressive muscle relaxation training on physical and mental health in breast cancer patients with chemotherapy-induced insomnia. *Chin J Gene Pra*. 2024;22(04):704–708. doi:10.16766/j.cnki.issn.1674-4152.003484
11. Ajmera NB, Doss BD, Kim Y. Social support, social constraint, and psychological adjustment in patients with colorectal cancer. *J Behav Med*. 2025;48(3):414–429. doi:10.1007/s10865-025-00565-y
12. Sun D, Xu L, Zhang TT. Effects of psychological adjustment ability intervention on psychological stress and social function recovery in patients with interstitial lungdisease. *Chin J Heal Psy*. 2025;33(04):601–605. doi:10.13342/j.cnki.cjhp.2025.04.025
13. Wang H, Li L, Zhang H, et al. Construction of psychosocial adaptation model for hysterectomy patient: hermeneutical phenomenological research. *J Psychosom Obstet Gynaecol*. 2025;46(1):2515375. doi:10.1080/0167482X.2025.2515375
14. Hobbs M, Daly J. Using the possible selves theory to facilitate behaviour change in clients with diabetes. *J Health Visiting*. 2020;8(3):114–117. doi:10.12968/johv.2020.8.3.114
15. Sadeghi AH, Ahmadi SA, Ghodrati-Torbati A. The effectiveness of acceptance and commitment therapy on clinical symptoms and treatment adherence in dialysis patients. *J Educ Health Promot*. 2024;13(28). doi:10.4103/jehp.jehp_1704_22
16. Rogers HL, Reitzel LR, Vidrine DJ. The role of flow experience in buffering the impact of symptom distress on quality of life in chronic disease. *J Health Psychol*. 2020;25(10):1693–1704. doi:10.1177/1359105317750492
17. Wang Y, Yang Y, Zeng Q, et al. Mediating roles of family functioning and self-efficacy in the relationship between depression and family resilience among kidney dialysis patients. *BMC Psychol*. 2025;13(1):1013. doi:10.1186/s40359-025-03255-1

18. Safi F, Areshtanab HN, Ghafourifard M, et al. The association between self-efficacy, perceived social support, and family resilience in patients undergoing hemodialysis: a cross-sectional study. *BMC Nephrol*. 2024;25(1):1–9. doi:10.1186/s12882-024-03629-4
19. Permatasari, Safariyah E, Hamzah A. The Relationship Between Family Support and Self-Care Management in Chronic Kidney Disease Patients Undergoing Hemodialysis at Sekarwangi Regional Public Hospital. *PHJ*. 2025;7(2):661–669. doi:10.54832/phj.v7i2.1096