Journal of Clinical and Nursing Research, 2024, Volume 8, Issue 7
http://ojs.bbwpublisher.com/index.php/JCNR
Online ISSN: 2208-3693
Print ISSN: 2208-3685

Research Progress on Psychosocial Adaptation of Hemodialysis Patients

Jing Wang*, Ying Dong, Chong Liang, Mi Zhang, Yuan Yuan

School of Medicine, Xi'an Siyuan College, Xi'an 710038, Shaanxi Province, China

Corresponding author: Jing Wang, 836308123@qq.com

Abstract: From the perspective of the biopsychosocial medical model, hemodialysis patients often suffer from psychosocial maladaptation in the face of a series of changes and pressures, which greatly affect their physical and mental health. This paper reviews the concept of psychosocial adaptation of hemodialysis patients, the current research status, influencing factors, measurement tools, and the current status of interventions, aiming to provide a reference for improving the psychosocial adaptation ability of hemodialysis patients.

Keywords: Hemodialysis; Psychosocial adaptation; Influencing factors; Measurement tools; Intervention

Online publication: July 29, 2024

1. Introduction

End-stage renal disease (ESRD) has become a major public health issue affecting human health [1]. Hemodialysis is the primary replacement therapy for patients with ESRD [2]. Studies have shown that the 5-year survival rate of dialysis patients is 41.8% [3]. Although hemodialysis can slow disease progression and extend survival, the strict self-management regimen, treatment burden, loss of sexual function, changes in body image, and cognitive impairment exacerbate patients' suffering [4]. Patients may experience low self-esteem, anxiety, depression, fear, tense family relationships, marital discord, loss of working ability, decreased socioeconomic status, deficiencies in self-care ability, and social isolation, all of which significantly impact disease treatment, prognosis, and overall health [5,6]. This paper reviews the concepts, current research status, influencing factors, assessment tools, and current interventions for the psychosocial adaptation of hemodialysis patients, providing a reference for future intervention programs.

2. Concept

Luo Yi defined adaptation as a process and outcome, whereby individuals or groups achieve integration with the environment through conscious awareness and choice, encompassing physiological, psychological, and social aspects [7]. Livneh *et al*. described psychosocial adaptation as a dynamic, developmental, and complex process,

philosophically aligned with positive psychology, emphasizing individuals' positive qualities and agency [8]. Londono *et al*. stated that psychosocial adaptation involves a series of changes resulting from the interaction between individuals and their environment [9]. Domestic scholar Wang Panpan, based on qualitative research results and related theories, defined psychosocial adaptation as the state or level achieved when individuals utilize their resources and interact with the social environment to seek a new normal balance after falling ill [10]. "Psychosocial adaptation of hemodialysis patients" refers to the psychological and social responses of hemodialysis patients to stress events. Psychological adaptation specifically refers to the self-regulation process by which patients alleviate internal and external pressures and gradually restore internal balance using their psychological defense mechanisms. Social adaptation is the process by which hemodialysis patients achieve a new balance by changing their behavior or environment through interactions with society.

3. Research status on the psychosocial adaptation of hemodialysis patients

Due to the high frequency, long duration, and high cost of hemodialysis treatment, patients are highly susceptible to negative psychological states. As a result, much research has focused on negative emotions. Li Zhengyan *et al*., through semi-structured interviews with maintenance hemodialysis patients, found that the vast majority of patients experience depression, fear, despair, and helplessness [11]. A few patients experience anxiety and depression at the start of dialysis but gradually accept and cope with the situation with the guidance of nurses, encouragement from fellow patients, and support from family members. Data shows that the prevalence of depression among maintenance hemodialysis patients is 29.4%, and the prevalence of anxiety is 35.9% [6]. Depression is an independent risk factor for mortality in chronic dialysis patients [12]. Anxiety and depression significantly affect the quality of life of elderly hemodialysis patients [13]. Additionally, the long-term nature of hemodialysis treatment imposes a heavy psychological and familial burden on family members. About 78.57% of patients experience moderate to severe self-perceived burden [14]. Negative emotions lead patients to maladapt to their disease passively.

Despite the various psychological issues induced by long-term hemodialysis, patients can still find positive significance in their experiences. Some studies have explored the good state of psychosocial adaptation in hemodialysis patients from the perspective of positive psychology. Wang Xiaoxu *et al*. found that the total score for post-traumatic growth in hemodialysis patients was (60.16 ± 8.35) points, which is above the midpoint score of 50 points on the scale, indicating an above-average level of positive coping with the disease [15].

Due to the numerous complications, long treatment duration, and heavy economic burden associated with hemodialysis, patients often have poor activity and self-care abilities and frequently experience anxiety, depression, fear, low self-esteem, and social isolation. These psychosocial issues lead to a lower quality of life and an inability to return to normal social life. Multiple studies have shown that hemodialysis patients have low employment rates, high unemployment rates, low social participation, and poor disease adaptation [16-20].

In summary, research on the psychosocial adaptation of hemodialysis patients yields varying results. Most studies focus on anxiety, depression, and self-perceived burden, while fewer explore aspects such as post-traumatic growth. Some research uses employment rate, unemployment rate, social reintegration, and quality of life to represent patients' psychosocial adaptation. Most of these studies are cross-sectional, with fewer longitudinal and qualitative studies. Future research is recommended to focus on the trajectory of psychosocial adaptation in hemodialysis patients.

4. Factors influencing the psychosocial adaptation of hemodialysis patients

4.1. Demographic data

Lin *et al*. pointed out that gender is an important variable affecting the psychosocial adaptation of hemodialysis patients [21]. However, other studies have found that gender does not significantly impact the psychosocial adaptation of hemodialysis patients [22]. Gerogianni *et al*., in a survey of 414 maintenance hemodialysis patients across 24 dialysis centers in Greece, found that depression and anxiety were significantly associated with female gender, low education level, increasing patient age, retirement, poor economic status, marital status, and comorbidities [6]. Other research also found that anxiety symptoms are more common in female hemodialysis patients, while male patients are more prone to depression [23]. Ying Jinping *et al*., in a survey of 548 maintenance hemodialysis patients, showed that education level can predict social reintegration in hemodialysis patients. Patients with lower education levels have a lower degree of social reintegration, possibly due to their weaker ability to accept new knowledge and information, limited social interactions, and poorer understanding of the disease and treatment plans, resulting in weaker adaptation abilities [24]. Lee *et al*. showed that occupation significantly affects the psychosocial adaptation of hemodialysis patients [22]. Thus, due to differences in assessment tools and measurement times across various studies, the impact of demographic data on the psychosocial adaptation of hemodialysis patients varies and requires further research.

4.2. Disease-related factors

Gerogianni *et al*. found that the more comorbidities patients have, the higher their levels of anxiety and depression [6]. Ying Jinping *et al*. indicated that self-care ability predicts the psychosocial adaptation of hemodialysis patients, with greater dependence on others correlating with lower levels of social reintegration [19]. Tang Xinlong *et al*. pointed out that patients with a higher frequency of monthly dialysis sessions have a higher incidence of anxiety [25]. Research shows that during the first six months of dialysis, the incidence of depression in dialysis patients is 75%, significantly higher than in patients who have been on dialysis for more than six months. Therefore, it is necessary for healthcare providers to pay more attention to patients with multiple comorbidities, poor self-care abilities, and frequent monthly dialysis sessions, and to provide timely nursing interventions.

4.3. Other factors

Lee *et al*. indicated that disease uncertainty, social support, and coping strategies are significantly related to the psychosocial adaptation of hemodialysis patients [22]. Lower disease uncertainty, higher perceived social support, and better coping and adaptation outcomes are beneficial for the psychosocial adaptation of hemodialysis patients. Kimmel *et al*. showed that social support from family, friends, and healthcare providers is an important factor in the disease adaptation of hemodialysis patients [26]. Therefore, healthcare providers should help patients understand disease-related knowledge, establish correct disease perceptions, strengthen social support, and adopt positive attitudes to ultimately improve patients' psychosocial adaptation abilities.

In summary, the psychosocial adaptation of hemodialysis patients is related to demographic data, disease-related factors, disease uncertainty, social support, and coping strategies. Current research on the psychosocial factors of hemodialysis patients is not in-depth. Future research can longitudinally assess the adaptation of hemodialysis patients at different stages based on the trajectory of psychosocial adaptation, providing a more comprehensive understanding of the factors influencing psychosocial adaptation and offering references for developing psychosocial adaptation intervention programs for hemodialysis patients.

5. Measurement tools for psychosocial adaptation in hemodialysis

Currently, methods for measuring the psychosocial adaptation of hemodialysis patients include comprehensive assessment scales and disease-specific psychosocial adaptation scales.

5.1. Comprehensive assessment scales

Psychosocial adaptation in hemodialysis patients refers to their psychological and social responses to stressful events. Therefore, several studies measure the psychosocial adaptation levels of hemodialysis patients using indicators such as anxiety, depression, employment rate, family adaptation, social reintegration, and quality of life [16-19,25,27]. Psychosocial adaptation measurement questionnaires employ various tools for comprehensive assessment, including the Self-Rating Depression Scale, Self-Rating Anxiety Scale, Psychological Resilience Scale, Symptom Checklist-90 (SCL-90), Quality of Life Scale (SF-36), Family Cohesion and Adaptability Evaluation Scale, and Social Reintegration Scale [20,28-32].

5.2. Self-Report Psychosocial Adjustment to Illness Scale (PAIS-SR)

PAIS-SR was revised by Derogatis *et al*. from the PAIS to measure patients' psychosocial adjustment to illness [33]. The scale includes seven dimensions—healthcare, vocational environment, domestic environment, sexual relationships, extended family relationships, social environment, and psychological distress—comprising 46 items with a total score range of 0 to 138. Scores are categorized into three levels: 0–34 (low), 34–50 (moderate), and 50–138 (severe). Subsequently, Chinese scholar Yao Jingjing translated and culturally adapted the scale [34], resulting in a revised version with 44 items and seven dimensions: healthcare (7 items), family relationships (7 items), vocational ability (8 items), communication (5 items), social environment (6 items), psychological status (7 items), and sexual ability (4 items). Each item is scored on a 4-point scale, with a total score range of 0 to 132; higher scores indicate poorer psychosocial adaptation. The scale has been validated in various patient populations, including those with cancer, COPD, stroke, coronary heart disease, hemodialysis, and diabetes, and has demonstrated good reliability and validity [22,35-39].

Although the above tools for measuring psychosocial adaptation in hemodialysis patients have good reliability and validity, the measurement tools are not uniform. Additionally, the disease-specific psychosocial adaptation scale was initially applied to cancer patients, whose psychosocial adaptation differs from that of hemodialysis patients. Therefore, future research should develop a specific psychosocial adaptation scale for hemodialysis patients.

6. Current status of psychosocial adaptation interventions in hemodialysis

Currently, interventions targeting the psychosocial adaptation of hemodialysis patients are relatively rare, mainly including peer education, group training, staged education combined with graded follow-up, and disease adaptation intervention programs, which have been proven effective in enhancing the psychosocial adaptation abilities of hemodialysis patients [20,31,40,41]. Future researchers are recommended to develop more scientific nursing intervention programs based on relevant theories and influencing factors when conducting interventional studies on the psychosocial adaptation of hemodialysis patients. These programs should be validated through large-sample, multicenter, randomized controlled trials.

7. Conclusion

Psychosocial adaptation is an important indicator of patients' physical and mental health and should receive

sufficient attention from healthcare professionals. Currently, research results on the psychosocial adaptation of hemodialysis patients are varied, measurement tools are not uniform, and most studies are cross-sectional, with qualitative and interventional studies being relatively rare. Future research should focus on qualitative and longitudinal studies of the psychosocial adaptation of hemodialysis patients, developing scientific intervention programs based on relevant theories and influencing factors at different stages of psychosocial adaptation. These programs should be validated through large-sample, multicenter, long-term follow-up studies to improve the psychosocial adaptation abilities of hemodialysis patients.

Disclosure statement

The authors declare no conflict of interest.

References

[1] Webster AC, Nagler EV, Morton RL, et al., 2017, Chronic Kidney Disease. Lancet, 389(10075): 1238–1252. https://doi.org/10.1016/S0140-6736(16)32064-5

[2] Htay H, Bello AK, Levin A, et al., 2021, Hemodialysis Use and Practice Patterns: An International Survey Study. Am J Kidney Dis, 77(3): 326–335.e1. https://doi.org/10.1053/j.ajkd.2020.05.030

[3] Kramer A, Pippias M, Noordzij M, et al., 2018, The European Renal Association - European Dialysis and Transplant Association (ERA-EDTA) Registry Annual Report 2015: A Summary. Clin Kidney J, 11(1): 108–122. https://doi.org/10.1093/ckj/sfx149

[4] Bale C, Douglas A, Jegatheesan D, et al., 2016, Psychosocial Factors in End-Stage Kidney Disease Patients at a Tertiary Hospital in Australia. Int J Nephrol, 2016: 2051586. https://doi.org/10.1155/2016/2051586

[5] Zhang Y, Xian H, Yang Y, et al., 2019, Relationship Between Psychosocial Adaptation and Health-Related Quality of Life of Patients with Stoma: A Descriptive, Cross-Sectional Study. J Clin Nurs, 28(15–16): 2880–2888. https://doi.org/10.1111/jocn.14876

[6] Gerogianni G, Lianos E, Kouzoupis A, et al., 2018, The Role of Socio-Demographic Factors in Depression and Anxiety of Patients on Hemodialysis: An Observational Cross-Sectional Study. Int Urol Nephrol, 50(1): 143–154. https://doi.org/10.1007/s11255-017-1738-0

[7] Roy C, 2011, Extending the Roy Adaptation Model to Meet Changing Global Needs. Nurs Sci Q, 24(4): 345–351. https://doi.org/10.1177/0894318411419210

[8] Livneh H, Martz E, 2016, Psychosocial Adaptation to Disability Within the Context of Positive Psychology: Philosophical Aspects and Historical Roots. J Occup Rehabil, 26(1): 13–19. https://doi.org/10.1007/s10926-015-9601-6

[9] Londono Y, McMillan DE, 2015, Psychosocial Adaptation: An Evolutionary Concept Analysis Exploring A Common Multidisciplinary Language. J Adv Nurs, 71(11): 2504–2519. https://doi.org/10.1111/jan.12723

[10] Wang PP, 2019, Research on Psychosocial Adaptation of Young and Middle-Aged Acute Myocardial Infarction Patients with Type D Personality and Its Intervention Model, thesis, Zhengzhou University.

[11] Li QY, Ding R, Bai JY, et al., 2022, A Qualitative Study of Psychological Status and Nursing Care Needs of Maintenance Hemodialysis Patients. Chinese Journal of Modern Nursing, 28(24): 3256–3259.

[12] Farrokhi F, Abedi N, Beyene J, et al., 2014, Association Between Depression and Mortality in Patients Receiving Long-Term Dialysis: A Systematic Review and Meta-Analysis. Am J Kidney Dis, 63(4): 623–635. https://doi.org/10.1053/j.ajkd.2013.08.024

[13] Shimizu U, Aoki H, Sakagami M, et al., 2018, Walking Ability, Anxiety and Depression, Significantly Decrease

EuroQol 5-Dimension 5-Level Scores in Older Hemodialysis Patients in Japan. Arch Gerontol Geriatr, 78: 96–100. https://doi.org/10.1016/j.archger.2018.06.006

[14] Yang H, Wu QW, Yin JH, 2012, Survey and Analysis of Factors Influencing the Self-Perceived Burden of Maintenance Hemodialysis Patients. China Nursing Management, 12(10): 69–72.

[15] Wang XX, Ding L, Fu SH, et al., 2022, Effects of Cognitive Appraisal and Coping Styles on Post-Traumatic Growth of Hemodialysis Patients and Their Caregivers. Journal of Nursing, 29(8): 59–65.

[16] Lee JY, Jin DC, 2020, Patient Characteristics According to Rehabilitation and Employment Status in Korean Hemodialysis Patients. Kidney Res Clin Pract, 39(3): 356–364. https://doi.org/10.23876/j.krcp.20.040

[17] Erickson KF, Zhao B, Ho V, et al., 2018, Employment among Patients Starting Dialysis in the United States. Clin J Am Soc Nephrol, 13(2): 265–273. https://doi.org/10.2215/CJN.06470617

[18] Lakshmi BS, Kumar ACV, Reddy HK, et al., 2017, Employment Status of Patients Receiving Maintenance Dialysis - Peritoneal and Hemodialysis: A Cross-Sectional Study. Indian J Nephrol, 27(5): 384–388. https://doi.org/10.4103/ijn.IJN_151_16

[19] Ying JP, Ying YY, Cai GL, et al., 2021, Study on the Current Status of Social Regression of Maintenance Hemodialysis Patients and Its Influencing Factors. Nursing and Rehabilitation, 20(4): 25–29.

[20] Zhao CY, 2022, Application of Disease Adaptation Intervention Program in Young and Middle-Aged Hemodialysis Patients. Contemporary Nursing (Zhongdian), 29(5): 25–28.

[21] Lin CC, Han CY, Pan IJ, 2015, A Qualitative Approach of Psychosocial Adaptation Process in Patients Undergoing Long-Term Hemodialysis. Asian Nurs Res (Korean Soc Nurs Sci), 9(1): 35–41. https://doi.org/10.1016/j.anr.2014.10.007

[22] Lee KS, Kim HY, Lee MH, 2019, Factors Influencing Psychosocial Adjustment in Hemodialysis Patients. Korean Journal of Adult Nursing, 31(1): 38–49. https://doi.org/10.7475/kjan.2019.31.1.38

[23] Hou Y, Li X, Yang L, et al., 2014, Factors Associated with Depression and Anxiety in Patients with End-Stage Renal Disease Receiving Maintenance Hemodialysis. Int Urol Nephrol, 46(8): 1645–1649. https://doi.org/10.1007/s11255-014-0685-2

[24] Ye LQ, Zhou Y, Zhang HL, et al., 2018, A Study on the Impact of Debility and Its Phenotype on Quality of Life in Maintenance Hemodialysis Patients. Chinese Journal of Nursing, 53(9): 1072–1077.

[25] Tang XL, 2018, Analysis of Anxiety and Depression and Influencing Factors in Maintenance Hemodialysis Patients, thesis, Anhui Medical University.

[26] Kimmel PL, 2001, Psychosocial Factors in Dialysis Patients. Kidney Int, 59(4): 1599–1613. https://doi.org/10.1046/j.1523-1755.2001.0590041599.x

[27] Li X, Hao W, Li ZY, et al., 2017, A Study on the Correlation Between Self-Perceived Burden and Self-Esteem and Family Care of Maintenance Hemodialysis Patients. Chinese Family Medicine, 20(S3): 474–476.

[28] Luo SD, Dang XJ, Yang ZH, 2022, Effects of Behavioral Change Theory Model Intervention on Self-Perceived Burden and Social Regression in Maintenance Hemodialysis Patients. International Journal of Nursing, 41(19): 3590–3593.

[29] Zhu T, Zeng TX, 2021, Application of the Adaptation Model in the Care of Uremic Hemodialysis Patients. Chinese Community Physician, 37(9): 165–166.

[30] Wang L, Liang LF, Niu J, et al., 2020, Application of the Adaptation Model in the Care of Uremic Hemodialysis Patients. China Drugs and Clinics, 20(11): 1914–1915.

[31] Song RR, He EX, Li NN, 2022, Application of Staged Education and Graded Follow-Up in Uremic Maintenance Hemodialysis Patients. Henan Medical Research, 31(11): 2097–2100.

[32] Tao WW, Zhang RZ, 2015, Research on Caregivers' Family Adaptability of Maintenance Hemodialysis Patients and

Their Influencing Factors. China Nursing Management, 15(12): 1468–1471.

[33] Derogatis LR, 1986, The Psychosocial Adjustment to Illness Scale (PAIS). J Psychosom Res, 30(1): 77–91. https://doi.org/10.1016/0022-3999(86)90069-3

[34] Yao JJ, 2013, Cross-Sectional Investigation of Adaptation Level of Cancer Patients and Its Predictor Analysis, thesis, Second Military Medical University.

[35] Zhang YX, Yang L, Li JY, et al., 2022, Analysis of Psychosocial Adaptation of Nasopharyngeal Cancer Patients and Its Influencing Factors. Nursing Research, 36(5): 896–901.

[36] Xiao LY, Wu PX, An XH, et al., 2022, Chain-Mediated Effects of Psychological Flexibility and Coping Styles Between Stress Perception and Psychosocial Adjustment in COPD Patients. Journal of Nursing, 29(16): 55–60.

[37] Chen HN, Jiang JL, Liu WX, et al., 2021, Survey on Psychosocial Adjustment Level of Ischemic Stroke Patients. Journal of Nursing, 36(14): 8–11.

[38] Tang Q, Bai XL, Lou T, et al., 2022, Analysis of Psychosocial Adaptation Level and Its Influencing Factors in Young and Middle-Aged Patients with Acute Myocardial Infarction. Journal of Advanced Nursing Studies, 37(5): 390–393 + 445.

[39] Zhang RF, Ma SH, Li SX, 2021, Mediating Effects of Family Care on Stress and Psychosocial Adjustment in Patients with Type 2 Diabetes Mellitus. Chinese Journal of Gerontology, 41(16): 3564–3566.

[40] Wu XH, 2014, Effects of Peer Education on Psychosocial Adjustment in Early Hemodialysis Patients. China Metallurgical Industry Medical Journal, 31(5): 581–582.

[41] Kılıç HF, Alpar SE, 2016, The Effect of Group Training Implemented on Hemodialysis Patients for Their Stress Management, Psychosocial Adjustment and Self-Care Strength. International Journal of Human Sciences, 13(1): 754–767.