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A Scoping Review on Interventions for Alleviating Suffering in Hemodialysis Patients

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Abstract

Objective: To systematically analyze the current status of interventions for alleviating existential distress in hemodialysis patients, explore the core components, outcome measures, and effectiveness of these interventions, and provide a theoretical basis for developing interventions targeting existential distress in this population. Methods: Following the methodology of scoping reviews, eight databases—PubMed, SinoMed, CHINA, Embase, Web of Science, CNKI, Wanfang, and VIP were systematically searched using computerized methods. The search period spanned from database inception to July 1, 2025. Key information was extracted from the included studies, including publication year, intervention methods, intervention duration, and outcome measures. Results: A total of 15 studies were included. Interventions related to concepts of existential distress in hemodialysis patients primarily included cognitive-behavioral therapy, emotional release therapy, and relaxation training. These interventions demonstrated positive effects on psychological distress, psychological crisis, demoralization, and quality of life among hemodialysis patients. Conclusion: Currently, there are no intervention studies specifically targeting existential distress in hemodialysis patients. Healthcare professionals should, in the future, draw upon interventions related to existential distress concepts—such as those addressing demoralization and psychological crisis to develop tailored intervention programs for alleviating existential distress in hemodialysis patients.

Keywords

Hemodialysis, End-stage renal disease, Existential distress, Intervention, Scoping review

1. Introduction

Chronic Kidney Disease (CKD) has become a major global public health challenge. Data show that, as of 2017, the number of CKD patients in China reached 130 million, ranking first globally[1]. CKD progresses progressively and irreversibly, and patients with End-Stage Renal Disease (ESRD) depend on dialysis to sustain life[2]. According to the latest data from the Chinese Renal Data System (CNRDS), by the end of 2022, the total number of dialysis patients in mainland China had exceeded one million, among whom 844,000 were undergoing hemodialysis (HD).

Hemodialysis treatment involves a long cycle and high frequency, requiring patients to undergo 2–3 sessions per week, each lasting approximately 4 hours, severely encroaching on their daily lives and making it difficult to maintain regular employment or fulfill family roles. Furthermore, disease-related complications, persistent physical fatigue, inadequate social support, and the accumulation of negative emotions such as anxiety and depression often lead to a loss of sense of life meaning and diminished self-worth[2]. existential distress (or distress) refers to a profound state of distress experienced by individuals due to the erosion of meaning in life and a sense of self-worth[3]. Numerous studies indicate that the majority of maintenance hemodialysis patients are experiencing moderate to severe existential distress.

Notably, current research on existential distress has primarily focused on cancer patient populations[4], with relatively insufficient attention given to hemodialysis patients. A systematic review of intervention strategies related to existential distress concepts for hemodialysis patients will not only deepen the understanding of this group's specific psychological and spiritual needs but also provide significant theoretical basis and practical guidance for developing targeted clinical psychological support and humanistic care interventions in the future.

2. Data and Methods

2.1 Defining the Research Questions

(1) What are the basic contents and intervention forms of suffering intervention for hemodialysis patients; (2) How effective is the intervention application.

2.2 Search Strategy

A comprehensive search will be conducted across eight databases: PubMed, SinoMed, CNK, Embase, Web of Science, Wanfang Data, and VIP, with the timeline extending from the inception of each database up to July 1, 2025. The search strategy employs a combination of subject headings and free-text keywords to ensure a thorough retrieval of relevant literature. The English search terms include "existential distress", "existential pain", "survival crisis", "spiritual pain", "self-blame", "stress-related growth", "demoralization", and "hemodialysis". Corresponding Chinese search terms

encompass “存在性痛苦”, “存在性折磨”, “生存危机”, “精神痛苦”, “自我责备”, “与压力相关的成长”, “丧失信心”, and “血液透析”. This approach aims to capture all pertinent studies concerning existential distress among hemodialysis patients and potential interventions.

2.3 Inclusion and Exclusion Criteria

Inclusion Criteria: (1) Study population: hemodialysis patients aged ≥18 years; (2) Study design: randomized controlled trials and quasi-experimental studies; (3) Outcome measures: assessment of survival suffering, psychological distress, demoralization, and mental distress; (4) Language: studies published in Chinese or English. Exclusion Criteria: (1) Duplicate publications; (2) Studies for which the full text is unavailable.

2.4 Literature Screening and Data Extraction

Reference management and deduplication were performed using NoteExpress Classic. Literature screening was conducted independently by two professionally trained reviewers. An initial screening was carried out by reviewing titles and abstracts, followed by a full-text review for further evaluation. Two reviewers independently extracted data from studies that met the inclusion criteria. Extracted information included: year of publication, country/region, study design, intervention methods, duration of intervention, and outcome measures. In the event of any disagreement during the screening or data extraction process, a third reviewer was consulted to resolve discrepancies through discussion.

3. Results

3.1 Literature Search Results

The initial search yielded 1,025 records. After screening titles, abstracts, and full texts, a total of 15 studies[5-19] were ultimately included in the analysis, of which 14 were published in Chinese[5-18] and 1 in English[19]. The flow chart shows the detailed literature selection process (Figure 1).

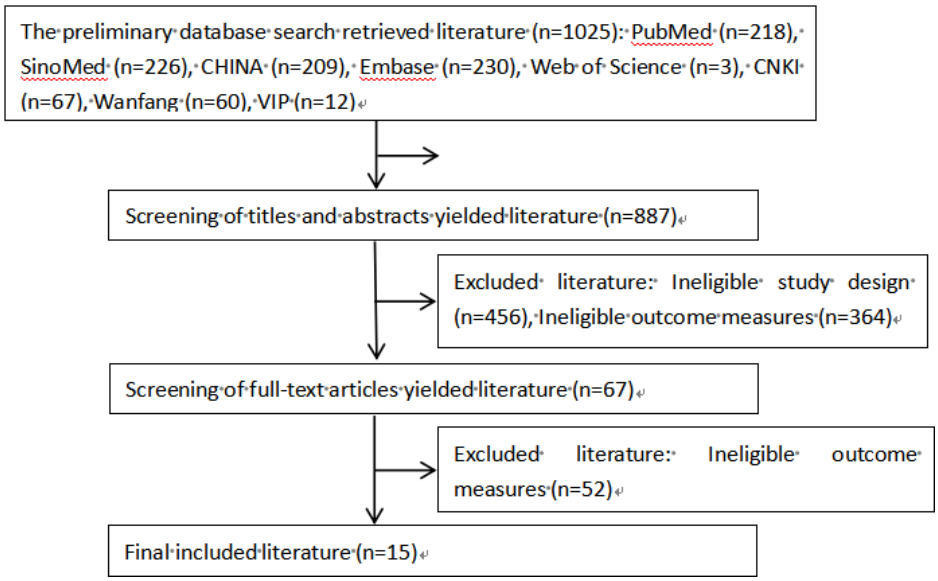

Figure 1. Flow Chart of Literature Screening

3.2 Basic Characteristics of Included Studies

Among the 15 included studies, 14 were conducted in China[5-18] and 1 in Pakistan[19]. 10 studies employed a randomized controlled trial (RCT) design[5, 7-9, 12, 13, 15, 17-19], and 5 were quasi-experimental studies[6, 10, 11, 14, 16]. Additional characteristics of the included studies, such as publication year, sample size, intervention details, and outcome measures, are summarized in Table 1.

Table 1. Basic Characteristics of the Included Literature (n=15)

Author	Publication Year	Publishing country	Research type	Sample size		Intervention method		Outcome indicators	Data collection period
				Experimental group	Control group	Experimental group	Control group		
Wang Na. et al	2021	China	RCT	50	50	① Emotional therapy ② Cognitive therapy ③ Behavioral therapy	Routine care	PP	①BI②AI
Xia Yingying. et al	2017	China	QRCT	45	45	Based on the cognitive behavioral theory, the ABC method of emotion management	Routine care	①NE②CM	①BI②AI
Wang Guannan. et al	2021	China	RCT	32	30	The gardening course intervention based on the stimulation of the "five senses"	Routine care	PD	①BI ② At 1 month of intervention ③AI
Zhao Luyu. et al	2025	China	RCT	49	49	Health Behavior Interaction Model	Routine care	①DS②HB③QL ④Complications	①BI②AI
Li Yanhua. et al	2023	China	RCT	47	46	Multivariate health education based on the feedback theory	Routine care	① SCA ② SCB ③ PS	①BI②AI
Shao Peng. et al	2017	China	QRCT	46	46	Based on The adaptive nursing model based on personality trait analysis intervention	Routine care	① NE ② Compliance	①BI②AI
Yin Yujie. et al	2024	China	QRCT	54	54	Family Participatory Acceptance and Commitment Therapy	Routine care	①PP②SA③HL④ SCSB	①BI②AI
Zhang Jiaona. et al	2022	China	RCT	45	45	Strengthening psychological care intervention	Routine care	①KA②Anxiety③ Depression ④ Compliance⑤NS	①BI②AI
Yang Kangyi. et	2024	China	RCT	44	44	Emotional release therapy consisting of four stages:	Routine care	① PP ② DS ③ Anxiety ④	①BI②AI

al						emotional focus, acupoint tapping, emotional desensitization, and feedback evaluation.		Depression	
Zhou Man. et al	2020	China	QRCT	56	56	Social support and psychological care	Routine care	① Anxiety ② Depression③PD④ HL⑤SE	①BI②AI
Zheng Lingfen. et al	2021	China	RCT	75	75	Social support and psychological care	Routine care	① Anxiety ② Depression③PD④ SE	①BI②AI
Wang Li. et al	2022	China	QRCT	40	40	Three-stage narrative nursing	Routine care	①SWCC②PP	①BI②AI
Zhang Hongna. et al	2021	China	RCT	50	50	Stress vaccination therapy + Saito therapy	Routine care	① Anxiety ② Depression③PP	①BI②AI
Jiang Wanfen. et al	2024	China	RCT	33	33	Self-disclosure Centralized group psychological intervention	Routine care	① Stigma ② PP ③ PS	①BI②AI
Amna. et al	2024	Pakistan	RCT	32	32	Rational Emotive Therapy	Routine care	①PD②WB	① BI ② AI

PP: Psychological pain; NE: Negative emotions; CM: Coping methods; PD: Psychological distress; DS: Demoralization state; HB: Health behaviors; QL: Quality of life; SCA: Self-care ability; SCB: Self-care behaviors; PS: Psychological state; SA: Social alienation; HL: Hope level; SCSB: Symptom clusters and symptom burden; KA: Knowledge awareness; NS: Nursing satisfaction; SE: Self-efficacy; SWCC: Sodium-water control compliance; WB: Well-being.

3.3 Content and Form of Intervention

Three studies employed group-based interventions[7, 11, 18], while 12 adopted individual interventions[5, 6, 8-10, 12-17, 19]. Among the delivery methods, three studies combined face-to-face sessions with online components[8, 13, 17]: healthcare professionals delivered interventions in person during dialysis sessions, and provided content via WeChat public accounts and answered questions in WeChat groups when patients were at home. One study used an entirely online intervention[9], and 10 studies relied solely on face-to-face interactions[6, 7, 10-12, 14-16, 18, 19]. Two studies conducted interventions for psychological distress in hemodialysis patients from the perspective of Traditional Chinese Medicine (TCM)[5]. Additionally, two studies aimed to alleviate patients' psychological distress by enhancing their social support[14, 15]. The content and format of the intervention are detailed in Table 2.

3.4 Frequency and Duration of Interventions

Seven studies reported the duration of each intervention session[6, 7, 9, 11, 13, 16, 18]: five of them indicated a session length of 30 minutes[6, 7, 9, 13, 16], one reported a duration of 40–60 minutes[18], and another reported 60–90 minutes[11]. Thirteen studies specified the intervention cycle[6-13, 15-19]: short-term interventions mostly lasted 3–4 weeks, while long-term interventions commonly lasted 3, 4, or 6 months. Nine studies reported the intervention frequency[6, 7, 9, 11, 13, 16-19], with four of them conducting sessions once per week[9, 11, 17, 18]. Details of intervention time and frequency are shown in Table 2.

Table 2. Specific Contents and Frequencies of the Intervention

Author	Intervention content	Intervention form	Intervention period(week)	Intervention frequency	Duration of intervention
Wang Na. et al	(1) Emotional Restraint Therapy: Using Emotions to Regulate Emotional Imbalance (2) Desire Fulfillment Therapy: Meeting Psychological Needs to Improve Depressive States (3) Psychological Comfort Therapy: In-Depth Communication to Build Trust and Guide Emotions (4) Mental Relaxation Therapy: Establishing Trust to Encourage Open Expression (5) Habituation Therapy: Repeated Emotional Reinforcement to Enhance Adaptability (6) Communication Therapy: Strengthening Doctor-Patient Interaction, Encouraging Socialization, and Boosting Self-Worth	/	/	/	/
Xia Yingying. et al	(1) Identifying Negative Emotions: Guide patients to express difficulties and concerns during treatment through dialogue, analyzing stressors (Factor A). (2) Eliminating Irrational Thoughts: Help patients uncover unreasonable beliefs and discuss case studies to recognize the impact of negative emotions (Factor B). (3) Adjusting Treatment Expectations: Correct misconceptions, guide patients to accept long-term dialysis, and cultivate positive cognition through uplifting readings. (4) Emotion Management Simulation Workshops: Organize patient discussions on coping strategies and use role-playing to learn positive peer responses.	Face to face	1	3 times per week	30 min
Wang Guannan. et	(1) Green World: Hospital garden tours, appreciating plants while listening to natural sounds (birds, rustling leaves, flowing water).	Face to face	12	Twice per week	30min

al	(2) Exotic Flora: Touching responsive plants like Mimosa pudica and observing their reactions. (3) Floral Poetry: Admiring miniature landscapes and floral art while listening to nature-themed music (e.g., Birdsong, Blossoms, Streams). (4) Tiny Seeds: Creating seed collages and sharing results. (5) Aromatic Garden: Identifying scents of lilies, roses, and other fragrant plants. (6) Harvest Corner: Preparing and tasting fruit/vegetable salads, sharing outcomes. (7) Botanical Art: Crafting plant-based handicrafts accompanied by nature music. (8) Course Summary: Reviewing activities via slideshows and photos. (9) Sharing Session: Encouraging patients and families to freely discuss their experiences.				
Zhao Luyu. et al	(1) Assessment Phase: ① Surveys on disease/complication/health behavior awareness. ② "Let It Out" group sessions (7 people/group, 45–60 mins) to explore emotions and motivations. ③ Nursing team meetings to identify core needs. (2) Health Education: ① Monthly expert lectures (kidney disease/dialysis/complication knowledge). ② Three weekly health updates (basic + cutting-edge) via WeChat groups. (3) Precision Management: ① Personalized diets (protein 1.2–1.4g/kg/day, salt <6g/day). ② Exercise: "Pyramid" tiered approach (walking → swimming → tai chi, 5x/week). (4) Complication Prevention: ① Infection control: Catheter hygiene + balanced nutrition. ② Hypotension management: Salt restriction + fasting during dialysis. ③ Thrombosis care: Fistula warm compresses + avoiding heavy lifting. (5) Psychological Support: ① Biweekly group activities (inspirational sharing + meditation/yoga). ② "Peer Support" groups to enhance compliance. (6) Dynamic Optimization: ① Scale assessments (psychological/behavioral/quality of life). ② Adjust plans based on complication data.	Face-to-face and online	24	/	
Li Yanhua. et al	(1) Team Formation: Establish a feedback teaching group with 1 hemodialysis physician, 1 head nurse, and 3 charge nurses. (2) Implementation Plan:	Face to face	12	Once per week	30min

	① Create a teaching WeChat group and public account for weekly online learning (Saturdays, 10:00–10:30). ② Use diverse formats (text, illustrations, videos, simple animations) for education. (3) Dynamic Management Mechanism: ① Collect real-time patient feedback on teaching content/methods. ② Guide patients to reiterate key points for reinforcement. (4) Effect Evaluation: ① Conduct regular knowledge quizzes. ② Adjust teaching focus based on feedback. (5) Continuous Follow-Up: Perform 3-month outpatient/telephone follow-ups.				
Shao Peng. et al	(1) Perfectionist Type: ① Demonstrate standardized, meticulous nursing skills. ② Explain the rationale and importance of the induction phase, clarifying precautions. ③ Emphasize that uremia is chronic; short-term fluctuations are normal to prevent undue anxiety. (2) Helper Type: ① Show full understanding of the patient. ② Create opportunities for them to assist others during care activities. (3) Achiever Type: Leverage their confidence, energy, humor, and ambition in nursing interactions. (4) Romantic Melancholic Type: ① Express care and empathy. ② Guide them to release pessimistic emotions. ③ Arrange peer education from patients who successfully adapted to dialysis. (5) Observer Type: ① Provide curated educational materials on kidney disease. ② Promptly answer their technical questions. (6) Skeptic Type: ① Accept their skepticism with patience. ② Offer detailed explanations of dialysis procedures and test results. ③ Involve senior staff for complex queries if needed. (7) Enthusiast Type: Acknowledge their optimism while educating them on treatment importance. (8) Protector Type:	Face to face	3	/	

	Respect their views; address misconceptions privately after preparation. (9) Peacemaker Type: Engage family members in care planning, tailoring approaches to household dynamics.				
Yin Yujie. et al	(1) Introduction: ① Patients and families introduce themselves. ② Show VCRs of success stories to inspire hope. (2) Present-Moment Awareness: ① Encourage patients to vocalize life changes pre/post-dialysis. ② Help them articulate emotions and identify improvement strategies. (3) Cognitive Restructuring: ① List existing concerns in a worksheet. ② Therapists explain thought-reality discrepancies to foster positive behaviors. (4) Embracing the Present: Address root causes of distress: fear of the future or fixation on the past. (5) Value Clarification: ① Gratitude exercises. ② Future visualization. ③ Play "Tomorrow Will Be Better." (6) Action Commitment: ① Set goals. ② Involve family in accountability.	Face to face	6	Once per week	60~90min
Zhang Jiaona. et al	(1) Psychological Assessment: ① Use HAMA/HAMD scales to gauge anxiety/depression levels. ② Develop tiered interventions based on results. (2) Mild Emotional Issues: ① Enhance nurse-patient communication through active listening. ② Explain dialysis in simple terms. ③ Build trust to improve compliance. (3) Moderate-Severe Emotional Issues: ① Provide positive guidance via staff 言行. ② Share educational videos and peer success stories. ③ Host peer exchange meetings. ④ Play soothing music during treatment. (4) Family Support System: ① Educate families on conditions/treatment plans.	Face to face	24	/	

	② Train them in daily care and emotional support. ③ Establish a family-medical alliance.				
Yang Kangyi. et al	(1) Emotional Focusing: ① Explore root causes of negative affect; help reframe with positive affirmations. ② Guide patients to rub the "hand knife point" while repeating affirmations 3x. (2) Acupoint Tapping: Sequence: ① Zanzhu ② Taiyang ③ Chengqi ④ Shuigou ⑤ Chengjiang ⑥ Shufu ⑦ Dabao⑧ Houxi (3) Emotional Desensitization: Tap Zhongzhu (TE3) while performing 9 movements to enhance release. (4) Feedback Evaluation: ① Have patients describe their experience.. ② Acknowledge progress.	Face-to-face and online	16	3 times per week, 5 times per week	15~30min
Zhou Man. et al	(1) Family Education: ① Teach families about emotion /behavioral impacts on the condition. ② Assist with financial aid/insurance applications. (2) Patient Empowerment: ① Encourage help-seeking behaviors with respect. ② Explain dialysis/transplant details in layman's terms. (3) Holistic Care: ① Assess the condition/family context for tailored plans. ② Recommend distraction techniques (TV/music). ③ Design preferred diets: balanced nutrition, low sodium, moderate exercise.	Face to face	/	/	
Zheng Lingfen. et al	(1) Health Education: Customize dialysis knowledge teaching per patient/family comprehension levels. (2) Communication Skills: ① Use warm language. ② Maintain smile service. ③ Offer consistent encouragement. (3) Personalized Care: ① Tailor diets (salt-restricted) and exercise plans. ② Promote immunity-boosting activities.	Face to face	2	/	
Wang Li. et al	(1) Initial Assessment (Within 24h of Admission): ① Narrative therapy 小组 conducts first intervention. ② Build rapport.	Face to face	2	Twice per week	20~30min

	③ Collect demographics: family/work/finances/hobbies. ④ Evaluate: disease knowledge, coping mechanisms, attitudes. (2) Narrative Guidance: ① Invite patients to share illness experiences. ② Explore psychological impacts, anxieties, and expectations. (3) Strengths-Based Reinforcement: ① Identify internal resources. ② Apply positive experiences to current challenges. ③ Establish the incentive mechanism.				
Zhang Hongna. et al	(1) Stress Inoculation Training: ① Explain SIT theory and disease 知识. ② Keep stress diaries (triggers/frequency). ③ Teach progressive muscle relaxation (arms/shoulders/chest/legs) and mindfulness (visualizing nature scenes). ④ Recommend tai chi/yoga/Baduanjin. ⑤ Follow up via WeChat/calls. ⑥ Reassess at 3 weeks. ⑦ Reflect on group a lecture effectiveness. (2) Morita Therapy: ① Accept illness/physical changes naturally; reduce fixation on finances/symptoms. ② Use light activities (origami/puzzles) and readings (Morita Therapy Practice) to correct maladaptive cognitions.	Face-to-face and online	4	Once per week	
Jiang Wanfen. et al	(1) Illness Cognition & Psychological Intervention: ① Assess patient understanding of the condition. ② Analyze MHD's impact on QoL. ③ Evaluate current emotional state. ④ Provide professional counseling via team support. (2) Emotional Guidance & Relaxation: ① Encourage expression of interpersonal experiences. ② Implement guided imagery and music therapy (singing).	Face to face	3	1 to 2 times per week	40~60min
Amna. et al	(1) Curriculum Design: ① Pre-test assessments; teach Ellis' ABC model (A-B-C linkages). ② Identify/challenge irrational beliefs; apply REBT techniques. ③ Practice real-world self-questioning strategies. (2) Outcome Tracking:	Face to face	16	Once every two weeks	

	① Use Mental Health Inventory (MHI). ② Deliver two follow-up sessions. ③ Post-test all participants.				

3.5 Outcome Measures

Six studies reported anxiety and depression status alongside psychological distress, demoralization, and mental distress[12-15, 17, 18]; six studies additionally reported outcome indicators related to self-management[9, 10, 12, 14-16]; two studies also reported hope levels[11, 14]; and one study further reported social alienation[11].

4. Discussion

Current research indicates that interventions targeting existential distress in hemodialysis patients remain underexplored, with most existing studies focusing primarily on cancer populations[20-22]. Yu et al. proposed that existential distress among hemodialysis patients encompasses four dimensions: sense of control, loneliness, guilt, and sense of meaning and value[23]. This suggests that future interventions could alleviate such suffering by strengthening patients' social support networks and enhancing their sense of self-worth. The majority of existing interventions employ conventional psychological approaches, such as cognitive behavioral therapy[6], mental health education[12], adaptation training[17], and relaxation therapy[17], which primarily aim to reduce negative emotions like anxiety and depression. Notably, only three studies reported improvements in both negative and positive emotional states[24]. These studies demonstrated that family-involved acceptance and commitment therapy, social support-oriented psychological nursing interventions, and rational emotive behavior therapy not only reduced psychological distress and suffering but also significantly enhanced patients' well-being and hope. A substantial body of clinical nursing evidence shows that interventions based on positive psychology can not only elevate patients' positive emotions but also strengthen their sense of meaning in life. According to the bipolar model of emotions, positive and negative emotions exhibit a linear negative correlation. This implies that healthcare professionals may effectively reduce patients' negative emotional experiences by fostering positive emotions from a positive psychology perspective. Therefore, for addressing existential distress in hemodialysis patients, intervention strategies grounded in the principles of positive psychology represent a promising and worthwhile direction for future research and clinical practice.

This study found that in interventions targeting existential distress among hemodialysis patients, the most commonly adopted session duration was 30 minutes, with face-to-face delivery being the predominant mode and a weekly frequency being the most frequent schedule. Hemodialysis patients typically undergo 2–3 treatment sessions per week, each lasting approximately 4 hours, and often experience significant fatigue and drowsiness. A 30-minute intervention duration not only helps ensure therapeutic effectiveness while minimizing patients' physical and psychological burden, but also better

aligns with healthcare providers' clinical workloads. During hemodialysis sessions, vital signs are routinely monitored every 30–60 minutes, creating a natural opportunity to integrate psychological interventions into the treatment process. Research indicates that the time commitment required for treatment is a key factor contributing to patients' negative emotional experiences[25]. Implementing weekly, face-to-face interventions allows optimal use of waiting or treatment time during dialysis, avoiding disruption to routine care and preventing additional encroachment on patients' rest or family time. This approach enhances both the accessibility of the intervention and patient adherence. These findings suggest that when designing future interventions for existential distress in hemodialysis patients, it is essential to fully consider patients' physical condition, treatment schedules, and time constraints. Careful selection of intervention timing and delivery methods, in coordination with standard clinical care workflows, can lead to more sustainable and clinically translatable psychological support strategies.

5. Conclusion

Currently, there is a lack of systematic and targeted intervention research addressing existential distress in hemodialysis patients. This significant research gap means that clinical practice lacks evidence-based guidance to effectively alleviate the core existential distress experienced by these patients. Given the conceptual similarities and overlaps between existential distress and related constructs such as demoralization, psychological distress, and psychological crisis, existing knowledge on these conditions provides a valuable foundation for healthcare professionals in developing future interventions for hemodialysis patients. By adapting, integrating, and innovating upon these existing intervention models—while taking into account the unique context of hemodialysis treatment, the patient's illness trajectory, and specific psychosocial needs—it may be possible to develop personalized, feasible, and culturally sensitive comprehensive interventions for existential distress. Such efforts could fill the current gap in clinical care and offer critical support in improving the overall quality of life and psychological well-being of this vulnerable population.

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