ความพร้อมในการดูแลและภาระของผู้ดูแลผู้ที่ได้รับการฟอกเลือดด้วยเครื่องไตเทียม

Caregiving Preparedness and Burden Among Caregivers of Persons Receiving Hemodialysis

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บทคัดย่อ

ผู้ที่ได้รับการฟอกเลือดด้วยเครื่องไตเทียมจำเป็นต้องได้รับการดูแลอย่างใกล้ชิดและต่อเนื่อง ส่งผลให้ผู้ดูแลต้องเผชิญปัญหาทั้งด้านร่างกาย จิตใจ อารมณ์ สังคม และเศรษฐกิจ ซึ่งก่อให้เกิดภาระในการดูแล การวิจัยเชิงพรรณนาครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความพร้อมในการดูแล ภาระของผู้ดูแล และความสัมพันธ์ระหว่างความพร้อมในการดูแลกับภาระของผู้ดูแลที่ได้รับฟอกเลือดด้วยเครื่องไตเทียม กลุ่มตัวอย่างประกอบด้วยผู้ดูแลจำนวน 144 คน ที่ได้รับการคัดเลือกแบบเจาะจงจากโรงพยาบาลในมณฑลกว่างซี ประเทศจีน เก็บรวบรวมข้อมูลโดยใช้แบบสอบถามข้อมูลทางสังคมประชากร เครื่องมือวัดความพร้อมในการดูแล (C-PCS) และแบบประเมินภาระผู้ดูแล (C-ZBI) เครื่องมือทั้งสองแสดงให้เห็นถึงความตรงเชิงโครงสร้างที่ยอมรับได้ (C-PCS = 0.71; C-ZBI = 0.73) และมีความเชื่อมั่นในระดับสูง โดยค่า Cronbach's alpha ของ C-PCS เท่ากับ 0.92 และของ C-ZBI เท่ากับ 0.87 วิเคราะห์ข้อมูลด้วยสถิติเชิงพรรณนาและสัมประสิทธิ์สหสัมพันธ์ของสเปียร์แมน ผลการศึกษาพบว่าผู้ดูแลมีภาระในการดูแลในระดับค่อนข้างมาก ($\overline{X}$= 50.25, SD = 17.65) และมีความพร้อมในการดูแลอยู่ในระดับต่ำ ($\overline{X}$= 14.21, SD = 5.24) นอกจากนี้ยังพบความสัมพันธ์เชิงลบระดับปานกลางอย่างมีนัยสำคัญระหว่างความพร้อมในการดูแลกับภาระการดูแลโดยรวม ($r = -0.474$, $p < 0.01$) รวมถึงภาระในแต่ละด้าน ได้แก่ ความสัมพันธ์ อารมณ์ สังคมและครอบครัว การเงิน และการสูญเสียการควบคุมชีวิต ผลการศึกษานี้สามารถใช้เป็นข้อมูลพื้นฐานในการส่งเสริมความพร้อมของผู้ดูแลเพื่อลดภาระการดูแล

คำสำคัญ: ความพร้อมในการดูแล ภาระของผู้ดูแล ผู้ที่ได้รับการฟอกเลือดด้วยเครื่องไตเทียม

Abstract

Patients undergoing hemodialysis require close and continuous care, which causes caregivers to face challenges in physical, psychological, emotional, social, and economic aspects, leading to a significant caregiving burden. This descriptive research aimed to examine caregiving preparedness, caregiver burden, and their relationship among those caring for patients receiving hemodialysis. The sample consisted of 144 caregivers purposively selected from hospitals in Guangxi, China. Data were collected using a sociodemographic questionnaire, the Preparedness for Caregiving Scale (C-PCS), and the Zarit Burden Interview (C-ZBI). Both instruments demonstrated acceptable validity (C-PCS = 0.71; C-ZBI = 0.73) and high reliability,

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with Cronbach's alpha coefficients of 0.92 for the C-PCS and 0.87 for the C-ZBI. Data were analyzed using descriptive statistics and Spearman's correlation coefficient. The results revealed that caregivers experienced a relatively high level of burden ($\bar{X}$= 50.25, SD = 17.65) and a low level of caregiving readiness ($\bar{X}$= 14.21, SD = 5.24). Furthermore, a significant moderate negative correlation was found between caregiving preparedness and overall caregiver burden (r = -0.474, p < 0.01), including burden across multiple domains: relational, emotional, social and family, financial, and loss of control over life. The findings of this study may serve as fundamental information for developing interventions to enhance caregiving readiness and reduce caregiver burden.

Keyword: Caregiving Preparedness, Burden Among Caregivers, Persons Receiving Hemodialysis

Introduction

Hemodialysis (HD) is a therapeutic procedure that utilizes a dialysis machine and a special filter known as an artificial kidney or dialyzer to continuously remove excess waste products, fluids, and toxins from the body. This renal replacement therapy helps individuals with end-stage renal disease (ESRD) maintain acid-base balance, fluid and electrolyte homeostasis, and blood pressure control[1]. In China, the use of HD has increased markedly, with a 269% growth from 2012 to 2023, totaling 916,647 cases across 7,512 treatment centers, although regional disparities in access remain pronounced[2]. In Guangxi, a socioeconomically diverse province in southern China, 468 of 850 hospitals were equipped to provide HD services as of 2022, highlighting a growing demand for dialysis care[3].

Living with ESRD places a heavy burden on patients undergoing maintenance hemodialysis (MHD), negatively impacting their physical, psychological, emotional, financial, and social well-being. Common complications include fatigue, pruritus, anemia, sleep disturbances, and gastrointestinal issues, all of which contribute to significant distress. Furthermore, emotional challenges such as depression and anxiety often strain family relationships and intensify the need for long-term caregiving support. Financially, the cost of HD is considerable, with Chinese patients incurring up to ¥1,027,000 in treatment expenses over an eight-year period[4].

Family caregivers play an essential role in the day-to-day management of ESRD patients receiving HD. However, the responsibilities associated with caregiving often result in stress and burden, as the role disrupts caregivers' social life, family roles, and financial stability. Caregiving preparedness is defined as the perceived readiness of individuals to take on caregiving tasks across eight domains[5]. Low to moderate levels of preparedness have been associated with increased psychological distress, including anxiety and depression. Preparedness is influenced by several factors, such as education level, income, healthcare access, and cultural context.

Caregiver burden refers to the extent to which caregivers perceive their emotional, physical, social, and financial well-being as being negatively impacted by the caregiving role[6]. This burden is typically evaluated across five domains and can vary depending on the intensity and duration of care required. In China, the caregiving experience may differ significantly from that in Western countries. One study of 120 informal caregivers found that 67.5% reported moderate to high levels of burden[7]. Another study revealed that most primary caregivers are spouses (28.69%) or children (20.25%), with 65%

providing care alone. Most caregivers are women (66.24%), and 37.55% are under the age of 45[8]. Among caregivers of palliative patients, the average time spent on caregiving tasks is 8.3 hours per day, with 25.3% providing care for over 13 hours daily[9]. In Guangxi, the lack of structured healthcare systems, training opportunities, and medical resources for family caregivers contributes to increased caregiver stress and feelings of inadequacy.

Despite the increasing prevalence of HD in Guangxi, research into caregiving preparedness and burden remains limited. While some studies have addressed related issues, their findings are incomplete. For example, one study focused primarily on physical and mental strain[7], while another examined overall burden and preparedness but found only a weak correlation between the two (rs = -0.283), without analysis of the five domains of caregiver burden[10]. Additionally, the COVID-19 pandemic added new layers of complexity, affecting 22.4% of HD patients with trauma-related symptoms and psychological distress[11]. The resulting economic downturn has further intensified caregiving challenges in the post-pandemic era.

Currently, there is a notable research gap regarding caregiving preparedness and burden in underdeveloped regions such as Guangxi. This study seeks to fill that gap by focusing on outpatient family caregivers of individuals receiving MHD. By doing so, it aims to provide a comprehensive understanding of the caregiving challenges in this population and inform the development of supportive strategies tailored to their specific needs.

Objectives

1. To explore caregiving preparedness and burden among family caregivers for persons undergoing MHD in Guangxi, China.

2. To examine the relationship between caregiving preparedness and burden.

Framework

The conceptual framework based on literature review, revealed that Individuals receiving MHD face multiple challenges, as functional dependency, physical symptoms, psychological stress, social isolation, and financial difficulties, which significantly burden their family caregivers. Caregiver burden encompasses relational, emotional, social, financial, and personal control domains. Caregiving preparedness defined as perceived readiness to provide physical, emotional, logistical, and emergency care, and to access support, moderates this burden. Higher preparedness increases confidence, problem-solving ability, and situational control, thereby reducing burden. This framework highlights the importance of improving preparedness to mitigate caregiver burden and enhance outcomes.

Methodology

This descriptive correlational study targeted family caregivers of persons undergoing MHD in a provincial HD center in Guangxi, China. The desired sample size was calculating using Yamane's formula (1973)[12] (α=0.05), with a total of 144 family caregivers were selected via convenience sampling based on recruitment criteria: a) Primary family caregivers with caring time ≥ 6 months; b) Longest caregiving hours daily, or designate a main caregiver who is responsible for management if multiple ones; c) No salary or any payment; d) Proficient in Chinese; and e) voluntarily participate and sign the informed consent. Additionally, informal caregivers who dropped out during the study process were excluded to ensure data completeness and consistency.

The data was analyzed using Statistical Package for Social Science (SPSS) 19.0 (α=0.05). Normality distribution was tested by using the

Kolmogorov-Smirnov (KS) for all variables, with both preparedness and burden were normally distributed. Descriptive and inferential statistics were applied. The Spearman's correlation coefficient was used to assess the correlations between preparedness and burden, as well as five domains of burden.

Protection of Research Participants' Rights

This study received ethical approval from the Research Ethics Committee of Faculty of Nursing, Chiang Mai University and the Institutional Review Board (2022-EXP078, November 17, 2022).

Research Tool and Instrument Quality

This study applied three questionnaires, including a sociodemographic form, the Chinese version of Preparedness for Caregiving Scale (C-PCS), and the Chinese version of Zarit Burden Interview (C-ZBI). The sociodemographic data form designed by the researcher based on literature review.

The CPCS was originally developed by Archbold et al.[5] and adapted by Shyu et al.[13] to measure perceived preparedness across eight caregiving domains. The questionnaire has overall score ranges from 0 to 32, while higher scores indicate greater preparedness. It has good validity, with each item and total score was 0.706 to 0.839 ($P<0.01$)[14], and high reliability previously reported as 0.92[15], and 0.83 in this study.

The CZBI was developed by Zarit[6] and held rights by Mapi Research Trust to evaluate caregivers' burden faced though 22 items categorized into five domains. The total score ranges from 0 to 88, reflecting the cumulative experienced burden. There are no universal cut-off scores but best to assess the variability within a sample and changes over time. The higher reported score refers to greater experienced caregiver burden. The CZBI has shown good validity, as correlation with other measures are 0.53-0.73 ($p <0.01$)[15] and high reliability of 0.87[16] previously and 0.94 in this study.

Data collection

Data were collected from December 2022 to February 2023 at the Hemodialysis Center of Guangxi Hospital,China. Ethical approval was obtained. Permission was granted by GuangXi Hospital.

The researcher, following all protocols, explained the study to family caregivers in the waiting area and obtained written informed consent. Participants then completed the sociodemographic form, C-ZBI, and C-PCS independently. Instructions and clarifications were provided as needed. The process took approximately 20 minutes per group. Completed questionnaires were reviewed for accuracy, and appreciation was expressed to both patients and caregivers.

Results

In this study, we found among the 144 participants, most family caregivers were female (62.50%), married (97.22%), and identified as parents (50.00%). Approximately 52 caregivers were older adults (36.11%), with a mean age of 52.38 years (SD =14.23), ranging from 21 to 79 years, as detailed in Table 1.

Table 1: Demographic Characteristics of Caregivers of Persons Receiving HD in Guangxi, China (n=144)

Sociodemographic Characteristics	Frequency(n)	Percentage (%)
Age (years)		
($\overline{X}$ = 52.38 SD = 14.23 Range 21-79)		
20-39 years old	30	20.83
40-59 years old	62	43.06
60-79 years old	52	36.11
Gender		
Male	54	37.50
Female	90	62.50
Marital Status		
Married	140	97.22
Widowed	3	2.08
Divorced	1	0.70
Relationship to patient		
Spouse	1	0.69
Child	4	2.78
Parent	72	50.00
Sibling	51	35.42
Grandchildren	13	9.03
Other relatives	3	2.08
Employment Status		
No	51	35.42
Yes	15	10.42
Retired	21	14.58
Part-time (20 hours/week)	57	39.58
Educational Level		
No formal education	16	11.11
Primary school	31	21.53
Junior middle school	41	28.48
Senior middle school/ polytechnic middle school	28	19.44
Bachelor degree/ polytechnic high school	28	19.44
Monthly income (1 USD = 7.00 CNY)		
None	14	9.72
≤2,000 CNY	40	27.78
2,000-5,000 CNY	69	47.92
5,000-10,000 CNY	16	11.11
>10,000 CNY	5	3.47
Weekly frequency of transportation for patient to hemodialysis center		
One	8	5.55
Two	26	18.06
Three	108	75.00
Four	2	1.39

Table 1: Demographic Characteristics of Caregivers of Persons Receiving HD in Guangxi, China (n=144)

Sociodemographic Characteristics	Frequency(n)	Percentage (%)
Duration been a caregiver (months)		
($\overline{X}$ = 36.31 SD = 35.58 Range 6-156)		
<12 months	41	28.47
12-23 months	25	17.36
24-47 months	53	36.81
≥48 months	25	17.36
Daily caring hours (hours)		
($\overline{X}$ = 17.65 SD = 7.98 Range 4-24)		
<5 hours/day	3	2.08
5-14 hours/day	55	38.19
≥ 15 hours/day	86	59.73
Chronic disease(s) status		
Yes	45	31.25
No	99	68.75
Type of the insurance for the patient		
None	2	1.39
Provincial one	40	27.78
Municipal one	50	34.72
The New Rural Cooperative Insurance (NRCI)	52	36.11
Co-morbidities beyond ESRD of the patient		
Yes	103	71.53
No	41	28.47
The number of dependents		
0	12	8.33
1	71	49.31
2	38	26.39
3	14	9.72
4	6	4.17
>4	3	2.08

Regarding employment, 39.58% worked part-time (20 hours/week), while 35.42% were unemployed. Educational levels varied, 28.48% had completed junior middle school, and 21.53% had finished primary school. Most caregivers (47.92%) earned ¥2,000 – ¥5,000 monthly. In caregiving, 75% transported patients to MHD thrice weekly, spending over 15 hours per week (59.73%). Half (54.17%) had been caregivers for over 24 months. Regarding healthy status, 68.8% reported good health, and most caregivers cared for one (49.31%) dependent. Additionally, 71.53% of patients had comorbidities beyond ESRD, and 98.61% had insurance coverage. Detailed data are presented in Table 1.

Table 2: The Caregiving Preparedness Among Caregivers of Persons Receiving Hemodialysis

Item	Mean (SD)	Not at all n(%)	Not too well n(%)	Somewhat well n(%)	Pretty well n(%)	Very well n(%)
1. Prepared providing physical needs	2.15(1.02)	7(4.86)	29(20.14)	58(40.28)	35(24.31)	15(10.42)
2. Prepared providing emotional needs	1.88(0.88)	8(5.56)	36(25)	69(47.92)	26(18.06)	5(3.47)
3. Prepared offering related services	1.95(1.22)	12(8.33)	51(35.42)	36(25)	22(15.28)	23(15.97)
4. Prepared about stress management	1.62(0.95)	15(10.42)	53(36.81)	50(34.72)	23(15.97)	3(2.08)
5. Prepared activities for entertainment	2.06(0.98)	7(4.86)	32(22.22)	62(43.06)	31(21.53)	12(8.33)
6. Prepared managing emergencies	1.18(1.02)	40(27.78)	59(40.97)	24(16.67)	20(13.89)	1(0.69)
7. Prepared getting help and information from the healthcare system	1.59(0.88)	12(8.33)	59(40.97)	50(34.72)	21(14.58)	2(1.39)
8. Overall preparedness	1.77(0.79)	1(0.69)	56(38.89)	68(47.2)	13(9.03)	6(4.17)
Total CPCS $\overline{X}$ =14.24 SD = 5.24 Median=14.50 Actual Range =1-26						

The perceived preparedness score ranged from 1 to 26, with a mean of 14.24 (SD = 5.24). Regarding physical care, 20.14% of caregivers (n=29) felt unprepared and 40.28% (n=58) felt somewhat prepared. For emotional needs, 47.92% (n=69) felt somewhat prepared, while 36.81% (n=53) and 34.72% (n=50) felt unprepared or only somewhat prepared for stress management. In offering related services, 35.42% (n=51) felt unprepared, and 43.06% (n=62) were somewhat prepared for entertainment activities. About 40 caregivers felt unprepared for emergencies, with 40.97% (n=59) feeling unprepared to seek help from the healthcare system. Among the eight domains, caregivers reported most prepared for "providing physical care" (mean = 2.15, SD = 1.02) and least prepared for "handling emergencies" (mean = 1.18, SD = 1.02). Detailed data are provided in Table 2.

Table 3: Burden Among Caregivers of Persons Receiving Hemodialysis

Five Domains / Overall Burden	Actual Range	Possible Range	Total Score Mean± SD	Total Score Median	Sub-items Mean± SD
Burden in relationship	2-23	0-24	13.33±5.45	13.38	2.22±0.91
Emotional well-beings	0-25	0-28	14.97±6.07	15.00	2.14±0.87
Social and family life	0-16	0-16	7.67±4.37	8.00	1.92±1.09
Finances	0-4	0-4	2.91±1.29	3.00	2.91±1.29
Loss of control over one's life	1-16	0-16	11.38±3.34	12.00	2.84±0.84
Overall burden CZBI	7-80	0-88	50.25±17.65	53.00	-------

In this study, we found burden scores ranged from 7 to 80 with a mean of 50.25±17.65. Regarding about the five domains, the mean scores were as follows: Burden in relationship (13.33±5.45), Emotional well-beings (14.97±6.07), Social and family life (7.67±4.37), Finances (2.91±1.29) and Loss of control over one's life (11.38±3.34). Ranking the domains by sub-items, caregivers reported the highest burden in Finances, and lowest in Social and family life, as shown in Table 3

Table 4: The Correlation between Preparedness and Burden in Nanning City, Guangxi, China

Five Domains / Overall Burden	Preparedness (CPCS)	
	r	p-value
Burden in relationship	-.37 **	.001
Emotional well-beings	-.44 **	.001
Social and family life	-.43 **	.001
Finances	-.43 **	.001
Loss of control over one's life	-.36 **	.001
Overall Burden CZBI	-.47 **	.001

** p <.01.

The correlations between preparedness and burden in each including burden in relationship, emotional well-being, social and family life, finances, loss of control over one' s life, and overall burden are r = -0.37, r = -0.44, r = -0.43, r = -0.43, r = -0.36 and r = -0.47, (P<0.01) respectively, as shown in Table 4. These results indicated a moderate negative relationship between caregiving preparedness and burden among caregivers of persons receiving HD.

Discussion

Part I: Caregiving Preparedness Among Caregivers of Persons Receiving Hemodialysis

Caregiving preparedness plays a critical role in ensuring the quality and continuity of care for individuals with ESRD. MHD undergoing maintenance hemodialysis ESRD. MHD In this study, the mean ± SD of the overall C-PCS score was 14.24 ± 5.24, indicating a relatively low level of preparedness among family caregivers. Only 4 caregivers (2.78%) reported feeling "very well prepared," while more than half (54.86%) felt only "somewhat prepared." The lowest preparedness was observed in managing emergencies ($\overline{X}$ = 1.18, SD = 1.02), with 40 caregivers (27.78%) feeling "not at all" and 59 (40.97%) "not too well prepared." Conversely, caregivers felt most prepared in addressing physical needs ($\overline{X}$ = 2.15, SD = 1.02), with 108 (75%) reporting moderate to high preparedness.

This trend suggests that while caregivers are relatively confident in managing routine care, they are less equipped to handle complex or unpredictable medical situations. Studies have shown that when caregivers feel adequately prepared, they are more likely to support patients'self-care maintenance, which positively influences patients' well-being[17]. Similar findings have been reported in studies conducted in other Asian populations, including caregivers of ESRD stroke[18], and cancer patients[19]. In contrast, studies among Western caregivers for heart failure patients reported even lower preparedness scores (2.13 and 2.11, respectively)[17, 21,] suggesting that cultural values, past caregiving experience, and healthcare professional support may explain these variations.

Certain caregiving characteristics appeared to influence preparedness levels. In this study, 78 caregivers (54.17%) had provided care for more than 24 months, 86 (59.73%) provided over 15 hours of care daily, and 110 (76.39%) accompanied patients to the hospital more than three times per week. These factors may contribute to greater caregiving experience and perceived confidence. Demographically, most caregivers were married (97.20%) and female (62.50%).

Being a female parent, spending fewer hours weekly on care, and having a higher education level were all associated with greater preparedness. Female caregivers may be culturally and socially expected to assume caregiving roles, potentially leading to increased experience and confidence. However, despite their involvement, only a small fraction of caregivers felt "very well prepared," emphasizing that experience alone is insufficient without structured education and support.

Older caregivers (aged 60–79, 36.11%) and those with chronic illnesses themselves (31.25%) reported more difficulty with emergency preparedness, consistent with previous research in stroke caregiving in China [22]. Educational background also played a crucial role, with 72% of caregivers having less than a bachelor's degree and 11.10% having no formal education. Prior research has demonstrated that higher education enhances caregiver confidence and preparedness, particularly in high-stakes or emergent situations[23]. The complexity and unpredictability of ESRD, especially in patients with multiple comorbidities (71.53%), further exacerbated caregivers' psychological stress and diminished their emergency response confidence.

Part II: Burden Among Caregivers of Persons Receiving Hemodialysis

Caregiver burden is a multidimensional concept encompassing emotional, physical, social, and financial stress. In this study, self-reported burden scores ranged from 7 to 80, with a mean of 50.25 ± 17.65. Financial burden was the most prominent ($\overline{X}$ = 2.91, SD = 1.29), while social and family burden was least reported ($\overline{X}$ = 1.92, SD = 1.09). For overall burden (Item 22), the mean score was 3.05 (SD = 1.05), with 104 caregivers (72.22%) reporting a high burden level 64 caregivers (44.44%) indicating "Always" and 40 (27.78%) "Often."

These findings reflect structural issues within the healthcare financing system. Previous Chinese studies found that many caregivers were unemployed or worked part-time, with monthly household incomes below 1,990 CNY [7, 24]. Although national health insurance covers 50–90% of dialysis-related expenses[25], this support remains inadequate, especially in regions like Guangxi, where HD subsidies are capped at 220,000 CNY annually[26]. With each dialysis session costing approximately 400–600 CNY and patients requiring 12–16 sessions per month, the out-of-pocket expenses for medications, transportation, special diets, and home care add to the already substantial burden. These financial strains have worsened in the post-COVID-19 era, during which household incomes declined, especially in families dealing with chronic illness.

Interestingly, the lowest burden reported was related to social and family life. The majority of caregivers were married (97.22%) and benefited from the national insurance system (98.61%) through direct billing, potentially mitigating family-related stress. A similar trend was observed in a South China study, which found moderate to strong family functioning in middle-aged and younger patients ($p < .05$) [27]. In such contexts, perceived social support plays a mediating role between caregiver burden and positive coping strategies.

Part III: Relationship Between Burden and Caregiving Preparedness

A key finding of this study was the moderate negative correlation between caregiving preparedness and caregiver burden ($r = -0.474$, $p < .01$), suggesting that better-prepared caregivers experienced lower levels of burden. Among the 95 caregivers who reported low preparedness, 16 (11.11%) had total scores between 1 and 8, and 79 (54.86%) scores between 9 and 16. These results highlight a broad range of preparedness levels and their inverse relationship with burden.

Demographic and contextual factors appeared to moderate this association. Most caregivers were married and often responsible for multiple family roles, increasing their stress. In Guangxi, cultural norms and expectations, particularly among ethnic minority populations, shape caregiving attitudes, coping strategies, and role perceptions. While cultural resilience may help some caregivers cope, it may also increase the emotional toll when individuals feel unprepared or unsupported.

This finding is consistent with international studies. For example, a study in a Turkish palliative care unit found a significant negative correlation between preparedness and burden ($p < .01$)[28]. Similarly, a multicenter cross-sectional study involving caregivers of patients with stroke, spinal cord injuries, or traumatic brain injuries reported a significant negative correlation ($rs = -0.512$, $p < .001$)[29]. In the present study, caregiving preparedness was negatively correlated with all five burden domains: relationship ($r = -0.373$), emotional distress ($r = -0.444$), social and family impact ($r = -0.430$), financial strain ($r = -0.427$), and loss of control over life ($r = -0.361$). These findings emphasize the protective role of preparedness against caregiver burden.

Support systems such as accessible healthcare services, community-based resources, social and familial support, and financial assistance can buffer emotional and financial strain while enhancing caregiver confidence[30]. In contrast, a study among caregivers of patients with traumatic brain injuries found no significant correlation ($p > .05$)[29], possibly due to limited resources and lack of emergency preparedness. This underscores the importance of culturally appropriate interventions that enhance caregiver readiness, particularly in under-resourced areas like Guangxi, where informal caregiving is the backbone of chronic illness management.

Summary and Explanation

This study revealed that family caregivers of individuals undergoing MHD in Guangxi experienced low levels of caregiving preparedness and high levels of caregiver burden. Financial burden was the most significant concern, while preparedness for managing emergencies was the weakest domain. A moderate negative correlation was identified between caregiving preparedness and caregiver burden, suggesting that increased preparedness can help alleviate stress and improve caregiver outcomes. These findings underscore the urgent need for structured support systems to enhance caregiver preparedness and reduce burden, particularly in socioeconomically disadvantaged regions.

Suggestions

Suggestions Based on the Research Findings: Healthcare providers should develop programs to enhance caregiving preparedness, as it is linked to reduced caregiver burden. Nurses should incorporate assessment tools into routine care to identify and support high-burden caregivers.

Suggestions for Future Research: Future studies should explore intervention strategies, include more diverse populations, and consider longitudinal or qualitative approaches to better understand caregiver experiences and outcomes.

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