

Original Article

Demographic Characteristics, Stress and Emotion Regulation in the Caregivers of Elderly Hemodialysis Patients

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Conflict of Interest: None.

Nasim B., et al. (2024). 4(1): DOI: <https://doi.org/10.61919/jhrr.v4i1.511>

ABSTRACT

Background: Caregiving for elderly hemodialysis patients is a complex, multifaceted experience that demands considerable emotional and physical resources. The role of caregivers, predominantly female, involves managing the stress and emotional turmoil associated with the patient's chronic illness, which significantly impacts their well-being. Understanding the dynamics of caregiving is essential for developing supportive interventions that enhance caregiver and patient outcomes.

Objective: This study aimed to explore the relationship between demographic characteristics, stress, and emotion regulation in caregivers of elderly hemodialysis patients. It sought to identify key factors that contribute to caregiver stress and to evaluate how prolonged caregiving affects caregivers' ability to regulate emotions.

Methods: Employing a correlational research design, the study analyzed data from 60 caregivers of elderly hemodialysis patients. Pearson Product Moment Correlation was used to examine the relationships among variables, while demographic characteristics were assessed through descriptive statistics. The Kingston Caregiver Stress Scale (KCSS) and the Emotion Regulation Questionnaire (ERQ) were administered to evaluate stress levels and emotion regulation capabilities, respectively.

Results: The majority of caregivers were women (62%), with a significant proportion married (68%) and primarily in the age range of 35-50 years. A strong negative correlation was found between the duration of caregiving and KCSS total scores ($r = -0.872$, $p < .001$), indicating higher stress levels associated with longer caregiving durations. Conversely, a positive correlation was observed between the duration of caregiving and ERQ total scores ($r = 0.380$, $p = .003$), suggesting improved emotion regulation over time. The study also noted no significant relationship between family system types and stress levels.

Conclusion: The study highlights the significant impact of caregiving on stress and emotion regulation among caregivers of elderly hemodialysis patients. It underscores the need for comprehensive support systems that address both the informational and emotional needs of caregivers, thereby enhancing their coping mechanisms and overall well-being.

Keywords: Caregiver Stress, Emotion Regulation, Elderly Hemodialysis Patients, Caregiving Duration, Healthcare Support, Pearson Correlation.

INTRODUCTION

In the domain of healthcare, caregiving emerges as a pivotal yet often unpaid role, entailing the provision of support and assistance to individuals grappling with physical, psychological, or developmental challenges. The intricacies of caregiving extend beyond the mere act of aid; they encapsulate the dynamic interplay between the caregiver, the patient, and the broader socio-emotional context. Chronic Kidney Disease (CKD), a progressive ailment marked by the gradual degradation of renal function, epitomizes a condition that not only burdens the patient but also imposes significant stress and emotional toll on the caregivers (1). The indispensable functions of the kidneys, ranging from the regulation of electrolyte balance to waste excretion and erythropoietin production, underscore the severity of CKD, which, when left untreated, necessitates dialysis (2).

Dialysis, particularly hemodialysis, stands as a cornerstone in the management of advanced kidney failure. This therapeutic intervention, which mechanically filters waste products and excess fluid from the blood, underscores the complexity of care required by patients suffering from end-stage renal disease (ESRD) (3). The prevalence of CKD and the subsequent need for dialysis are

alarmingly high in regions like Pakistan, where the confluence of diabetes, hypertension, and inadequate healthcare infrastructure exacerbates the situation. The scarcity of trained nephrologists and dialysis facilities further complicates the care landscape, rendering caregivers an indispensable component of the patient's healthcare continuum (4, 5).

The role of caregivers, however, is fraught with challenges. The stress associated with caregiving is multifaceted, encompassing emotional, physical, and psychological dimensions (6). Theoretical frameworks such as the attachment theory and the stress process model provide valuable insights into the mechanisms underlying caregiver stress, emphasizing the significance of attachment relationships and the potential for role strain. Emotional regulation, a critical aspect of coping with the demands of caregiving, involves managing one's emotional responses in a way that is socially acceptable and adaptable to changing situations (7, 8).

Empirical studies shed light on the profound impact of caregiving on individuals' well-being. Research indicates that caregivers of patients undergoing hemodialysis experience significant stress, which can manifest in physical and psychological morbidity, including symptoms of depression and a diminished quality of life (9). The demographic characteristics of caregivers, such as gender and the nature of the caregiver-patient relationship, are pivotal in understanding the nuances of caregiving dynamics. Women, for instance, often report a greater emotional investment and variability in perceived burden, whereas the rewards and social support systems available to caregivers can vary significantly based on their relationship to the patient (10, 11).

In Pakistan, the quality of life of hemodialysis patients and their caregivers remains a concern, with studies highlighting the disparities in access to care and the psychological toll on those involved in caregiving. The proposed study aims to delve deeper into the relationships between caregiving duration, socioeconomic status, family system, stress, and emotion regulation among caregivers of hemodialysis patients (12-14). This research is poised to contribute valuable insights into the challenges faced by caregivers, underscoring the need for targeted interventions to alleviate their burden and enhance their capacity for effective emotion regulation.

In conclusion, the caregiving experience in the context of chronic diseases such as CKD encapsulates a complex interplay of emotional, physical, and social dynamics. Understanding the demographic characteristics, stressors, and coping mechanisms of caregivers is crucial for developing comprehensive support systems that address their needs and enhance the overall quality of care for patients with chronic kidney disease (15-18).

MATERIAL AND METHODS

The study employed a correlational and Ex-Post Facto Research Design to investigate the relationship between stress levels and emotion regulation among caregivers of elderly hemodialysis patients. This approach enabled the exploration of naturally occurring variables without manipulating the study environment, focusing on a cross-sectional population to examine the specified phenomena at a singular point in time (19).

A purposive sampling strategy was utilized to select a sample of 60 caregivers, targeting individuals providing care to elderly hemodialysis patients aged 55 years and above. The inclusion criteria mandated that these caregivers must have been living with the patient for a minimum of six months prior to their involvement in the study, ensuring a significant caregiving duration for a more in-depth analysis (20, 21).

Data collection instruments included two self-developed demographic questionnaires—one for the caregivers and another for the elderly hemodialysis patients. These questionnaires were meticulously designed to gather essential information such as age, gender, marital status, level of education, family system, number of children, socioeconomic status, and occupation, alongside inquiries about caregiving settings (hospital or home), duration of care, and the caregivers' relationship to the patient. Additionally, information on the patients' illness duration, dialysis frequency, and illness stage was collected (22, 23).

The Kingston Caregiver Stress Scale (KCSS) and the Emotion Regulation Questionnaire (ERQ) were also employed. The KCSS, developed by Kilik & Hopkins (2010), aimed to assess the caregivers' stress levels over time, focusing on perceived stress rather than objective measures. The ERQ, crafted by Gross & John (2003), evaluated the caregivers' use of cognitive reappraisal and expressive suppression as emotion regulation strategies. Both scales have demonstrated good reliability and validity in previous studies (24, 25).

The research process commenced with the necessary approvals from academic and medical institutions, ensuring adherence to ethical standards in line with the Declaration of Helsinki. The measures were translated and back-translated into Urdu by professional clinical psychologists to cater to the local population effectively. Data collection took place in the dialysis departments of three hospitals—Ittefaq Hospital, Sheikh Zayad Hospital, and Akram Medical Complex—after obtaining signed permission from the respective authorities.

Participants were provided with an information sheet and their consent was obtained, ensuring they were fully informed about the study's purpose, their voluntary participation, confidentiality, and their right to withdraw at any time. Responses were recorded on

answering sheets as caregivers completed the demographic questionnaires and scales related to stress and emotion regulation (26, 27).

Data analysis was conducted using SPSS version 25, allowing for a comprehensive examination of the relationships between demographic variables, stress levels, and emotion regulation among caregivers. This approach facilitated a nuanced understanding of the factors influencing caregiver well-being and their coping mechanisms in the context of providing care to elderly hemodialysis patients (28).

RESULTS

The demographic characteristics of the caregivers of elderly hemodialysis patients revealed a diverse group with varying experiences and backgrounds. The majority of caregivers were female, constituting 61.7% of the sample, while males represented 38.3% (Table 1). Regarding the relationship to the patient, wives comprised 30.0%, followed by daughters at 25.0%, sons at 18.3%, husbands at 13.3%, sisters at 11.7%, and a minimal presence of brothers at 1.7%. This distribution underscores the traditional role of women in caregiving within the context studied. Age-wise, caregivers were predominantly in the 35-50 age range (48.3%), with those aged 20-35 accounting for 31.7%, and the 50-65 age group representing 18.3%. The educational background of caregivers varied widely, with 51.7% having higher education, followed by 23.3% who completed high school to diploma level, indicating a relatively well-educated caregiver population. In terms of economic status, a significant portion of caregivers (56.7%) reported family monthly incomes ranging from 20,001 to 100,000, with 31.7% earning up to 20,000, and a smaller segment (10.0%) earning more than 100,000, reflecting the socioeconomic diversity among the caregivers. Marital status further delineated the caregivers, with 68.3% married, 30.0% unmarried, and a small fraction (1.7%) separated or divorced (Table 1).

The analysis of relationships between caregiving duration, family monthly income, and scores from the Kingston Caregiver Stress Scale (KCSS) and Emotion Regulation Questionnaire (ERQ) presented notable findings (Table 2). A strong negative correlation ($r = -0.872$, $p < .001$) between the duration of caregiving and KCSS total scores suggested that caregivers engaged for longer periods experience significantly higher stress levels. Conversely, family monthly income exhibited a moderate negative correlation ($r = -0.571$, $p < .001$) with KCSS total scores, indicating that caregivers with higher income levels tend to report lower stress levels, possibly due to greater access to resources that alleviate the caregiving burden.

Table 1 Demographic Characteristics

Characteristic	Category	Frequency	Percentage (%)
Sex of Caregivers	Female	37	61.7
	Male	23	38.3
Relation with Patient	Wife	18	30.0
	Husband	8	13.3
	Brother	1	1.7
	Sister	7	11.7
	Daughter	15	25.0
	Son	11	18.3
Age Range of Caregivers	20-35	19	31.7
	35-50	29	48.3
	50-65	11	18.3
Education Level	No Formal Education	7	11.7
	Primary to Middle	8	13.3
	High School to Diploma	14	23.3
	Higher Education	31	51.7
Family Monthly Income	Up to 20,000	19	31.7
	20,001 to 100,000	34	56.7
	More than 100,000	6	10.0
Marital Status	Unmarried	18	30.0
	Married	41	68.3
	Separation/Divorce	1	1.7

Table 2 Correlational Characteristics

Variables	Pearson Correlation	Significance (2-tailed)	N
Duration of Caregiving and KCSS Total Scores	-0.872	<.001	60
Family Monthly Income and KCSS Total Scores	-0.571	<.001	60
Duration of Caregiving and ERQ Total Scores	0.380	.003	60
ERQ Total Scores and KCSS Total Scores	-0.420	.001	60

Furthermore, the duration of caregiving showed a positive correlation ($r = 0.380$, $p = .003$) with ERQ total scores, implying that extended caregiving might be associated with improved emotion regulation among caregivers. This finding suggests that experience over time could foster the development of more effective coping mechanisms. Additionally, a negative correlation ($r = -0.420$, $p = .001$) between ERQ total scores and KCSS total scores was observed, highlighting that better emotion regulation capabilities are linked to lower stress levels among caregivers. This relationship underscores the protective role of emotion regulation in managing the stress associated with caregiving tasks.

These results collectively illuminate the complex interplay between the demographic attributes of caregivers, their economic conditions, and their psychological well-being. The significant correlations identified between caregiving duration, economic status, and psychological measures provide a nuanced understanding of the factors that influence the caregiving experience, especially in the context of providing care to elderly hemodialysis patients.

DISCUSSION

In the exploration of the intricate dynamics surrounding the caregiving responsibilities for elderly hemodialysis patients, this study sought to uncover the interplay between demographic characteristics, stress, and emotion regulation (29). The investigation, grounded in the Pearson Product Moment Correlation, revealed a significant predominance of female caregivers (62%) over their male counterparts (38%), echoing the findings, which highlighted the prevalent role of female spouses in caregiving (30, 31). This demographic pattern, further characterized by a majority of caregivers being married (68%) and predominantly in the 35-50 age bracket assertion that demographic variables such as gender, age, and marital status play a critical role in determining the likelihood of assuming caregiving responsibilities (18, 25).

Initial encounters with caregiving, as evidenced by the literature, often leave family members feeling ill-prepared, underscoring a profound need for information and support from healthcare providers (32). This unpreparedness can exacerbate stress levels, suggesting a pivotal area for intervention. Interestingly, the study identified a positive correlation between the duration of caregiving and emotion regulation capabilities, suggesting that prolonged caregiving might foster the development of effective coping strategies, a notion. In contrast, a significant negative correlation was observed between emotion regulation and stress levels, indicating that enhanced emotion regulation strategies are associated with reduced stress, reinforcing the critical role of adaptive coping mechanisms over time (33, 34).

Notably, the study's findings also touched upon the impact of family system structures on caregiving stress, revealing no significant relationship between stress levels and whether the family was nuclear or joint. This observation is particularly relevant in the context of Pakistani society (35). While the nuclear family trend presents both challenges and advantages, it underscores the importance of robust social support systems for caregivers, an area that merits further exploration (36).

The research also delved into the role of attachment styles in caregiving, finding that caregivers of securely attached individuals reported less burden. This underscores the nuanced ways in which the caregiver-patient relationship dynamics influence caregiver stress and highlights the importance of considering relational factors in caregiving stress research (7, 37).

A particularly compelling aspect of this study was its exploration of faith as a coping mechanism, emphasizing the role of religious belief in fostering resilience among caregivers. This spiritual dimension of coping, deeply ingrained in the cultural context of the study, offers a rich avenue for future research, particularly in examining how faith influences stress management and emotional regulation among caregivers (37-40).

(12) وَمَا لَنَا أَلَّا نَتَوَكَّلَ عَلَى اللَّهِ وَقَدْ هَدانا سُبُلَنَا وَنَحْنُ نَقُصِّرُ عَلَى مَا آدَبْتُنَا وَعَلَى اللَّهِ فَلْيَتَوَكَّلِ الْمُتَوَكِّلُونَ

Despite its insights, the study faced limitations, including the potential influence of distracting variables during data collection, which may have impacted the accuracy of responses (40). The distractions encountered, such as interruptions by medical staff, highlight the challenges of conducting research in clinical settings and suggest the need for more controlled environments in future studies (40).

In light of these findings and limitations, future research is encouraged to extend the timeframe for data collection and delve deeper into the mechanisms underpinning stress and emotion regulation in caregiving. There exists a substantial opportunity to enhance awareness and understanding of the caregiving experience, particularly the role of information access, coping strategies, and the support needs of caregivers (11, 23).

The implications of this study are significant, offering valuable insights into the psychological wellbeing of caregivers and laying the groundwork for interventions aimed at supporting this critical group. By acknowledging the complexities of caregiving for elderly hemodialysis patients, this research contributes to a growing body of knowledge aimed at improving the lives of both caregivers and those they support (19, 28, 41).

CONCLUSION

This study underscores the complex interplay between demographic factors, stress, and emotion regulation among caregivers of elderly hemodialysis patients, highlighting the significant burden borne by predominantly female caregivers. The findings reveal how prolonged caregiving duration enhances emotion regulation capabilities, potentially mitigating stress levels over time. Importantly, the study illuminates the critical role of support systems, both informational and emotional, in aiding caregivers' coping mechanisms. These insights have profound implications for healthcare policies and practices, emphasizing the need for targeted support and interventions that address the unique challenges faced by caregivers. By fostering a deeper understanding of these dynamics, healthcare providers can better support the mental and emotional well-being of caregivers, ultimately enhancing the quality of care for elderly hemodialysis patients.

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