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Research Article/Araştırma Makalesi

Investigation of the Associations Among Spirituality, Psychological Well-Being, and Caregiver Burden Among Family Caregivers of Hemodialysis Patients

Hemodiyaliz Hastalarına Evde Bakım Veren Aile Bireylerinde Maneviyat, Psikolojik İyi Oluş ve Bakım Yükü Arasındaki İlişkilerin İncelenmesi

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ABSTRACT

Background/ Objective: Family caregivers providing home care for hemodialysis patients experience significant physical and psychosocial challenges during the caregiving process. This study aimed to investigate the associations among spirituality, psychological well-being, and caregiver burden and to examine the factors associated with caregiver burden among family caregivers.

Materials and Methods: This cross-sectional analytical study was conducted with 223 family caregivers providing home care for patients receiving hemodialysis at a university hospital. Data were collected using the Personal Information Form, the Spiritual Orientation Scale, the Psychological Well-Being Scale, and the Primary Caregiver Burden Scale for Patients Receiving Hemodialysis. Data were analyzed using descriptive statistics, correlation analysis, and hierarchical multiple linear regression analysis.

Results: A significant positive correlation was found between caregiver burden and spirituality ($r=0.406$, $p<0.001$), as well as between caregiver burden and psychological well-being ($r=0.407$, $p<0.001$). Hierarchical regression analysis showed that spiritual orientation remained significantly associated with caregiver burden after adjustment for sociodemographic characteristics ($\beta = 0.150$, $p < 0.001$), whereas psychological well-being was not independently associated with caregiver burden ($p > 0.05$). In addition, age, employment status, relationship to the patient, and duration of caregiving were significantly associated with caregiver burden.

Conclusion: Spiritual orientation was independently associated with caregiver burden among family caregivers of hemodialysis patients. Considering spiritual, psychosocial, and sociodemographic characteristics together in the assessment of family caregivers may contribute to the early identification of individuals at risk and the planning of supportive interventions.

Keywords: Hemodialysis; family caregivers; caregiver burden; spirituality; psychological well-being.

ÖZ

Giriş/Amaç: Hemodiyaliz hastalarına evde bakım veren aile bireyleri bakım sürecinde önemli fiziksel ve psikososyal güçlüklerle karşılaşmaktadır. Bu çalışmada, aile bakım verenlerinde maneviyat, psikolojik iyi oluş ve bakım yükü arasındaki ilişkilerin incelenmesi ve bakım yükü ile ilişkili faktörlerin incelenmesi amaçlandı.

Gereç ve Yöntem: Kesitsel ve analitik tipteki araştırma, bir üniversite hastanesinde hemodiyaliz tedavisi gören hastalara evde bakım veren 223 aile bireyi ile gerçekleştirildi. Veriler Kişisel Bilgi Formu, Manevi Yönelim Ölçeği, Psikolojik İyi Oluş Ölçeği ve Hemodiyaliz Tedavisi Alan Hastada Birincil Bakım Veren Yükü Ölçeği kullanılarak toplandı. Veriler tanımlayıcı istatistikler, korelasyon analizi ve hiyerarşik çoklu doğrusal regresyon analizi ile değerlendirildi.

Bulgular: Bakım yükü ile manevi yönelim ($r=0.406$, $p<0.001$) ve psikolojik iyi oluş ($r=0.407$, $p<0.001$) arasında pozitif yönde anlamlı ilişki bulundu. Regresyon analizinde manevi yönelim, sosyodemografik özellikler kontrol edildikten sonra bakım yükü ile anlamlı düzeyde ilişkili kalırken ($\beta = 0.150$, $p < 0.001$), psikolojik iyi oluş bakım yükü ile bağımsız olarak ilişkili değildi ($p > 0.05$). Yaş, çalışma durumu, bakım verilen kişiyle yakınlık derecesi ve bakım verme süresi bakım yükü ile anlamlı ilişkili bulundu.

Sonuç: Manevi yönelim, hemodiyaliz hastalarına bakım veren aile bireylerinde bakım yükü ile bağımsız olarak ilişkili bulundu. Bakım verenlerin değerlendirilmesinde manevi, psikososyal ve sosyodemografik özelliklerin birlikte ele alınması, risk altındaki bireylerin belirlenmesine ve destekleyici girişimlerin planlanmasına katkı sağlayabilir.

Anahtar Kelimeler: Hemodiyaliz; aile bakım veren; bakım yükü; maneviyat; psikolojik iyi oluş.

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1. Introduction

Chronic kidney disease (CKD) is a major public health problem due to its increasing prevalence, the need for long-term treatment, and the burden it imposes on healthcare systems. Hemodialysis, one of the most commonly used renal replacement therapies for individuals with end-stage kidney disease, affects not only patients but also family members who actively participate in the caregiving process. Owing to regular dialysis sessions, medication use, dietary and fluid restrictions, and the need for daily living support, family members become an integral part of the caregiving process (Kovesdy, 2022; Francis et al., 2024).

Family caregivers of hemodialysis patients may experience various physical, psychological, social, and economic challenges due to the continuous nature of caregiving. This multidimensional strain is defined as caregiver burden. Caregiver burden among individuals caring for patients with end-stage kidney disease has been shown to be influenced by numerous sociodemographic and psychosocial factors (Alshammari et al., 2021). Furthermore, caregiver burden has been reported to negatively affect quality of life, increase depressive symptoms, and reduce overall well-being (Skoulatou et al., 2024; Askaryzadeh Mahani et al., 2023). In addition, caregiver burden has been reported to be common and to occur at moderate-to-high levels among family caregivers of hemodialysis patients (Azeez & Ambatipudi, 2024; Al Maqbali et al., 2024).

The caregiving process involves more than providing physical care alone. Caregivers also meet the emotional needs of patients and support their adherence to treatment. The caregiving experience has been reported to be perceived by family members as both a source of threat and an opportunity for adaptation (Ebadi et al., 2021). Moreover, informal caregivers have been shown to play a critical role in dialysis care; however, this role has substantial effects on caregiver burden, quality of life, and patient outcomes (Driehuis et al., 2024; Tong et al., 2013).

In recent years, interest in psychosocial factors associated with caregiver burden has increased. One of these factors is spirituality, a broad concept encompassing individuals' search for meaning, purpose, hope, and connection when coping with life challenges. Related constructs, including spiritual well-being and religious coping, have been examined in previous caregiver studies. For example, spiritual well-being has been reported to be significantly associated with caregiver burden, while spiritual well-being and religious coping have also been identified

as relevant factors in caregivers' responses to demanding care situations (Rafati et al., 2020; Mirhosseini et al., 2024). Although these constructs are conceptually related, they are not interchangeable. In the present study, spirituality was specifically operationalized as spiritual orientation, as measured by the Spiritual Orientation Scale. Accordingly, the term "spiritual orientation" is used when referring to the variable examined in the present study, whereas "spiritual well-being" and "religious coping" are retained only when describing findings from studies that specifically assessed these constructs.

Another important factor thought to be associated with caregiver burden is psychological well-being. Psychological well-being encompasses positive psychological functioning, including finding meaning in life, establishing positive relationships, coping effectively with environmental challenges, and experiencing life satisfaction. Long-term caregiving responsibilities are known to challenge individuals' psychological resources. Caregivers' quality of life has been reported to be influenced by caregiving duration and socioeconomic factors, while family resilience has been shown to play an important role in caregiver burden (Zimbudzi et al., 2024; Zhang et al., 2024). These findings indicate that psychological well-being and family psychosocial resources are closely associated with caregiver burden.

Although previous studies have examined caregiver burden in relation to spiritual well-being, psychological well-being, and other psychosocial factors, these relationships have commonly been investigated in separate or more limited conceptual models (Rafati et al., 2020; Bakır et al., 2026; Prima et al., 2023). Evidence simultaneously examining spiritual orientation, psychological well-being, caregiver burden, and relevant sociodemographic characteristics within the same analytical framework among family caregivers of hemodialysis patients remains limited. Therefore, examining these psychosocial and sociodemographic factors together may provide a more comprehensive understanding of the characteristics associated with caregiver burden. Variables such as age, educational level, employment status, income level, relationship to the care recipient, and duration of caregiving may be associated with caregiver burden. Therefore, investigating psychosocial and sociodemographic factors associated with caregiver burden together may contribute to the identification of caregivers at risk and the development of more effective support programs.

This study aimed to investigate the relationships among spiritual orientation, psychological well-being, and caregiver burden among family caregivers

providing home care for hemodialysis patients and to examine the sociodemographic and psychosocial factors associated with caregiver burden.

Research Questions

1. What are the levels of caregiver burden, spirituality, and psychological well-being among family caregivers providing home care for hemodialysis patients?
2. Are spirituality, psychological well-being, and sociodemographic characteristics significantly associated with caregiver burden?
3. Are spiritual orientation and psychological well-being independently associated with caregiver burden after controlling for sociodemographic variables?

2. Methods

Study Design

This study was conducted using a cross-sectional analytical design to investigate the relationships among spirituality, psychological well-being, and caregiver burden among family caregivers providing home care for hemodialysis patients. The study also aimed to examine the associations between spirituality, psychological well-being, and caregiver burden while considering sociodemographic characteristics. The study was reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional studies (von Elm et al., 2007).

Study Setting and Participants

The study was conducted between April 2026 and June 2026 with family caregivers providing home care for patients receiving treatment at the hemodialysis unit of a tertiary university hospital. The study population consisted of family caregivers of patients receiving treatment at the unit during the data collection period. No sampling method was employed; instead, all eligible family caregivers who met the inclusion criteria during the study period were invited to participate. The study was completed with 223 family caregivers who voluntarily agreed to participate.

The minimum sample size was calculated using G*Power version 3.1. Based on multiple linear regression analysis with 14 predictors, a medium effect size ($f^2 = 0.15$), a statistical power of 95% ($1-\beta = 0.95$), and a significance level of 5% ($\alpha = 0.05$) were assumed. According to the power analysis, the minimum required sample size was 197 participants. The study was completed with 223 family caregivers, indicating that the achieved sample size was sufficient for the planned analyses. Individuals were eligible for inclusion if they were 18 years of age or older, had

been providing home care for a patient receiving hemodialysis treatment for at least three months, were able to read and understand Turkish, and voluntarily agreed to participate in the study. Individuals with a diagnosed psychiatric disorder or cognitive or sensory impairments that could interfere with their ability to understand or complete the questionnaire were excluded.

Data Collection Instruments

Data were collected using the Personal Information Form, the Spiritual Orientation Scale, the Psychological Well-Being Scale, and the Primary Caregiver Burden Scale for Patients Receiving Hemodialysis.

Personal Information Form

The Personal Information Form was developed by the researchers based on the relevant literature. The form includes questions regarding the caregivers' age, sex, educational level, marital status, employment status, income level, relationship to the care recipient, duration of caregiving, and daily caregiving time.

Spiritual Orientation Scale

The Spiritual Orientation Scale was used to assess the participants' level of spirituality (Kasapoğlu, 2015). The scale consists of 16 items rated on a 7-point Likert scale. The items assess the fundamental dimensions of spirituality, including belief in a higher power, the search for meaning in life, and prayer/meditation. Higher scores indicate a higher level of spiritual orientation. In the original study, the Cronbach's alpha coefficient of the scale was reported as 0.87. In the present study, Cronbach's alpha coefficient was 0.994, indicating high internal consistency.

Psychological Well-Being Scale

The Psychological Well-Being Scale was used to assess the participants' level of psychological well-being (Diener et al., 2010). The scale was adapted into Turkish by Telef (2013). It consists of eight items rated on a 7-point Likert scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). All items are positively worded. Total scores range from 8 to 56, with higher scores indicating a higher level of psychological well-being. In the original study, the Cronbach's alpha coefficient was reported as 0.80. In the present study, Cronbach's alpha coefficient was 0.991, indicating high internal consistency.

Primary Caregiver Burden Scale for Patients Receiving Hemodialysis

The Primary Caregiver Burden Scale for Patients Receiving Hemodialysis was used to assess caregiver

burden among family caregivers of hemodialysis patients (Koşar Şahin et al., 2024). The scale consists of 34 items and four subscales: self-management support, psychological support, caregiver symptoms, and individual coping. Items are rated on a 4-point Likert scale. Higher scores indicate a higher level of caregiver burden. In the original study, the Cronbach's alpha coefficient of the total scale was reported as 0.95. In the present sample, internal consistency was high across the four subscales, with Cronbach's alpha coefficients of 0.988 for self-management support, 0.939 for psychological support, 0.981 for caregiver symptoms, and 0.983 for individual coping.

Data Collection Procedure

Data were collected between April 2026 and June 2026 using an online data collection method. Potential participants were identified among family caregivers of patients receiving treatment at the hemodialysis unit and were assessed for eligibility according to the predefined inclusion criteria. Eligible caregivers were informed about the study, and the Google Forms survey link was shared with those who agreed to participate via WhatsApp and e-mail. The first page of the online questionnaire provided information about the purpose and scope of the study, the voluntary nature of participation, and confidentiality. Participants were required to provide electronic informed consent before accessing the questionnaire. To prevent missing data, all questions were set as mandatory. No personally identifiable information was requested, and all data were analyzed anonymously. Completion of the questionnaire required approximately 10–15 minutes.

Ethical Considerations

Ethical approval for the study was obtained from the Institutional Scientific Research and Publication Ethics Committee (Approval No: 243241; Date: April 14, 2026). The study was conducted in accordance with the principles of the Declaration of Helsinki. Electronic informed consent was obtained from all participants through the online questionnaire prior to their participation in the study.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics software. Descriptive statistics were presented as frequency, percentage, mean, and standard deviation. The internal consistency of the scales was assessed using Cronbach's alpha coefficient. The normality of the data was evaluated by examining skewness and kurtosis values.

An independent samples t-test was used for comparisons between two groups, whereas one-way

analysis of variance (ANOVA) was used for comparisons involving more than two groups. Homogeneity of variances was assessed using Levene's test. When the homogeneity of variance assumption was violated, Games–Howell post-hoc comparisons were performed following statistically significant one-way ANOVA results. The relationships among spirituality, psychological well-being, and caregiver burden were evaluated using Pearson's correlation analysis.

Prior to the regression analyses, the assumptions of multiple linear regression were evaluated. Linearity and homoscedasticity were assessed by examining residual plots, normality was evaluated using skewness and kurtosis values and the distribution of residuals, and the independence of residuals was assessed using the Durbin–Watson statistic. Multicollinearity was evaluated using correlation coefficients, tolerance values, and variance inflation factors (VIFs). Robust standard errors were used to reduce sensitivity to potential heteroscedasticity.

To examine factors independently associated with caregiver burden, multiple linear regression analysis with robust standard errors was performed. The first model included sociodemographic variables. In the second model, spirituality was added to the sociodemographic variables. In the third model, psychological well-being was added to the sociodemographic variables. Multicollinearity was assessed using correlation coefficients, tolerance values, and variance inflation factors (VIFs). A very high correlation was observed between spirituality and psychological well-being ($r = 0.995$), with a tolerance value of 0.011 and a VIF of 93.51 when both variables were considered simultaneously. These findings indicated severe multicollinearity. Therefore, spirituality and psychological well-being were not entered simultaneously into the same regression model and were instead evaluated in separate hierarchical models.

3. Result

Table 1. Descriptive Statistics of the Study Variables

Variable	n	Mean	SD	Min	Max
Spiritual Orientation	223	4.779	1.435	2.375	7.000
Psychological Well-Being	223	4.512	1.750	1.500	7.000
Caregiver Burden	223	2.568	0.050	2.412	2.676

The relationships among caregiver burden, spirituality, psychological well-being, and sociodemographic

characteristics of family caregivers providing home care for hemodialysis patients were investigated in this study. The findings are presented below.

Table 2. Correlation Analysis Results Among the Study Variables

Variables	Caregiver Burden	Spiritual Orientation	Psychological Well-Being
Caregiver Burden	1.000		
Spiritual Orientation	0.406**	1.000	
Psychological Well-Being	0.407**	0.995**	1.000

Note: ** $p < 0.01$.

Table 1 presents the descriptive statistics of the main study variables. The mean Spiritual Orientation score was 4.779 ± 1.435 , the mean Psychological Well-Being score was 4.512 ± 1.750 , and the mean Caregiver Burden score was 2.568 ± 0.050 . Sociodemographic characteristics are presented according to their respective categories in the subsequent tables.

Table 2 presents the correlations among the main study variables. Caregiver burden was significantly and positively correlated with spiritual orientation ($r = 0.406$, $p < 0.01$) and psychological well-being ($r = 0.407$, $p < 0.01$). A very strong positive correlation was also observed between spiritual orientation and psychological well-being ($r = 0.995$, $p < 0.01$).

Table 3. Results of Hierarchical Multiple Linear Regression Analysis

Variables	Model 1 β	Model 2 β	Model 3 β
Age	-0.085***	-0.219***	-0.090***
Gender	0.009	0.018	0.010
Education Level	0.012*	0.005*	0.011
Marital Status	0.003	0.017	0.005
Employment Status	-0.100***	-0.185***	-0.103***
Income Level	-0.012	-0.016	-0.010
Degree of Relationship	0.035**	0.063***	0.035**
Caregiving Duration	0.119***	0.082***	0.117***
Spiritual Orientation	—	0.150***	—
Psychological Well-Being	—	—	0.006
Constant	2.346***	2.072***	2.341***
R ²	0.425	0.474	0.425
F	35.28***	34.69***	33.46***

Note: Robust standard errors were used. Daily caregiving hours (CHRS) was excluded from the regression models because of severe multicollinearity, particularly its very high correlation with caregiving duration (CDUR; $r = 0.984$). * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Abbreviations: β , standardized regression coefficient; R², coefficient of determination; CHRS, daily caregiving hours; CDUR, caregiving duration

Table 3 presents the results of the hierarchical multiple linear regression analysis. All three regression models were statistically significant ($p < 0.001$).

In Model 1, age ($\beta = -0.085$; $p < 0.001$), educational level ($\beta = 0.012$; $p < 0.05$), employment status ($\beta = -0.100$; $p < 0.001$), degree of relationship to the patient ($\beta = 0.035$; $p < 0.01$), and caregiving duration ($\beta =$

0.119; $p < 0.001$) were significantly associated with caregiver burden.

In Model 2, after adding spirituality to the model, SPIRIT was found to be positively and significantly associated with caregiver burden ($\beta = 0.150$; $p < 0.001$). The explanatory power of this model was $R^2 = 0.474$.

In Model 3, psychological well-being was not significantly associated with caregiver burden ($\beta = 0.006$; $p > 0.05$). Age, employment status, degree of relationship to the patient, and caregiving duration remained significant across all models. Daily caregiving hours (CHRS) was excluded from the regression models because of severe multicollinearity, particularly its very high correlation with caregiving duration (CDUR; $r = 0.984$).

Table 4. Comparison of Caregiver Burden Scores According to Binary Sociodemographic Variables

Variable	n	Mean $\pm$ SD	t	p
Gender				
Female	112	2.572 ± 0.037	1.019	0.310
Male	111	2.565 ± 0.060		
Marital Status				
Married	138	2.580 ± 0.044	4.555	< 0.001
Single	85	2.550 ± 0.054		
Employment Status				

Working	107	2.564 ± 0.061	-1.156	0.249
Not Working	116	2.572 ± 0.036		

Table 4 presents the results of the independent samples *t*-test. Caregiver burden scores did not differ significantly according to gender ($p = 0.310$) or employment status ($p = 0.249$). In contrast, caregiver burden scores differed significantly according to marital status ($t = 4.555$; $p < 0.001$). Married participants had higher mean caregiver burden scores than single participants.

Table 5 presents the results of the one-way ANOVA. Caregiver burden scores differed significantly according to age group ($F = 18.62$; $p < 0.001$), educational level ($F = 13.79$; $p < 0.001$), degree of relationship to the patient ($F = 57.14$; $p < 0.001$),

caregiving duration ($F = 69.56$; $p < 0.001$), and daily caregiving hours ($F = 75.33$; $p < 0.001$). However, no significant difference in caregiver burden scores was found according to income level ($F = 1.17$; $p = 0.314$).

Games–Howell post-hoc analyses indicated significant pairwise differences among several categories of age, educational level, relationship to the patient, caregiving duration, and daily caregiving hours. In particular, the lowest age category differed significantly from the other age categories, while for relationship to the patient, category 4 differed significantly from categories 2 and 3. Multiple significant pairwise differences were also observed across educational level, caregiving duration, and daily caregiving-hour categories.

Table 5. Comparison of Caregiver Burden Scores According to Multicategory Sociodemographic Variables

Variable	Number of Groups	Mean ± SD Range	F	p
Age Group	4	2.537 – 2.590	18.62	< 0.001
Education Level	5	2.545 – 2.587	13.79	< 0.001
Income Level	3	2.565 – 2.582	1.17	0.314
Degree of Relationship	3	2.476 – 2.580	57.14	< 0.001
Caregiving Duration	6	2.476 – 2.608	69.56	< 0.001
Daily Caregiving Hours	5	2.499 – 2.609	75.33	< 0.001

Note: Results are based on one-way ANOVA analyses. Games–Howell post-hoc tests were performed for variables with statistically significant overall differences because the homogeneity of variance assumption was not met.

4. Discussion

This study investigated the relationships among spirituality, psychological well-being, and caregiver burden among family caregivers providing home care for hemodialysis patients. The findings demonstrated significant positive relationships between spirituality, psychological well-being, and caregiver burden. Hierarchical regression analysis further showed that spiritual orientation remained significantly associated with caregiver burden after adjustment for sociodemographic variables, whereas psychological well-being was not independently associated with caregiver burden. In addition, age, employment status, degree of relationship to the patient, and caregiving duration were identified as factors associated with caregiver burden.

The positive association observed between spirituality and caregiver burden in the present study is noteworthy. Previous studies have reported significant relationships between spiritual well-being and caregiver burden among family caregivers of hemodialysis patients; however, the direction of this relationship has varied across studies. A study conducted among caregivers of hemodialysis patients

demonstrated a significant association between spiritual well-being and caregiver burden (Rafati et al., 2020). In contrast, a recent study conducted in Türkiye among family caregivers of hemodialysis patients reported a significant negative association between spiritual well-being and caregiver burden (Bakır et al., 2026). Similarly, studies involving caregivers of individuals with other chronic diseases have shown that spiritual well-being may reduce caregiver burden and strengthen coping abilities (Türkben Polat & Kıyak, 2023; Çevik Özdemir et al., 2025). However, the positive relationship identified in the present study should not be interpreted as indicating that spirituality increases caregiver burden. Rather, it may suggest that individuals experiencing greater caregiving responsibilities are more likely to seek spiritual resources. The fact that this study was conducted in eastern Türkiye, where family ties are generally strong and caregiving is often perceived as a cultural, moral, and religious responsibility, may represent an important contextual factor influencing these findings. Furthermore, the relatively common presence of extended family structures and the tendency for caregiving responsibilities to be undertaken primarily by close family members rather than shared among

relatives may also help explain this result. In this context, spirituality may also function as a coping resource through which caregivers seek meaning, hope, and emotional support in response to increasing caregiving demands. Religious and spiritual coping may become particularly salient when caregiving is perceived as a familial, moral, or religious responsibility. Therefore, the positive association observed in this study may reflect greater reliance on spiritual resources among caregivers experiencing higher levels of burden rather than a burden-enhancing effect of spirituality.

Although psychological well-being was significantly correlated with caregiver burden, it was not independently associated with caregiver burden in the multivariable analysis. This finding suggests that psychological well-being is associated with caregiver burden; however, this relationship may weaken when considered together with variables such as sociodemographic characteristics, caregiving duration, degree of relationship to the patient, and spirituality. Previous studies have demonstrated that caring for patients undergoing hemodialysis imposes substantial physical and psychological challenges on caregivers, reduces their quality of life, and increases the need for psychosocial support (Ebadi et al., 2021; Driehuis et al., 2024; Azeez & Ambatipudi, 2024; Pio et al., 2022). In addition, family resilience has been reported to mediate caregiver burden, while caregivers' quality of life has been shown to be associated with socioeconomic conditions and caregiving-related factors (Zhang et al., 2024; Zimbudzi et al., 2024; Gray et al., 2019). Similarly, self-care behaviors have been identified as strong predictors of psychological well-being among patients receiving chemotherapy, emphasizing that psychological well-being is a multidimensional construct influenced by numerous individual and environmental factors (Yiğit et al., 2025). Therefore, the relationship between psychological well-being and caregiver burden should not be regarded as unidirectional and direct but rather as a multidimensional phenomenon shaped by caregivers' personal, familial, and social resources. The very high correlation observed between spiritual orientation and psychological well-being ($r = 0.995$) indicates substantial empirical overlap between these constructs in the present sample. Although spiritual orientation and psychological well-being are theoretically distinct constructs, responses to these measures may have been closely aligned in this caregiver population, potentially reflecting shared dimensions related to meaning, purpose, positive functioning, and coping. Given the unusually strong magnitude of this association, the item-level data, scoring procedures, and calculation of the scale

scores were rechecked, and the reported correlation was confirmed. Nevertheless, this finding should be interpreted cautiously and may reflect substantial construct overlap or sample-specific response patterns. Consistent with this finding, multicollinearity diagnostics indicated a tolerance value of 0.011 and a VIF of 93.51 when both variables were considered simultaneously. Therefore, to avoid unstable coefficient estimates resulting from severe multicollinearity, spiritual orientation and psychological well-being were evaluated in separate regression models.

In the present study, caregiving duration, degree of relationship to the patient, age, and employment status were significantly associated with caregiver burden. These findings indicate that caregiver burden is associated not only with individual psychological characteristics but also with the duration and intensity of caregiving and the caregiver's social role. Systematic reviews have reported caregiving duration, caregiving intensity, patients' symptom burden, caregivers' sociodemographic characteristics, and social support as major factors associated with caregiver burden (Alshammari et al., 2021; Skoulatou et al., 2024). Similarly, informal caregivers involved in dialysis care have been shown to experience moderate-to-high levels of caregiver burden, which is closely related to patients' symptom burden, treatment dependency, and quality of life (Driehuis et al., 2024; Al Maqbali et al., 2024). Likewise, a study conducted among family caregivers of patients with cancer reported that caregiver burden was closely associated with quality of life and that the caregiving process negatively affected caregivers' physical and psychosocial well-being (Yiğit & Erci, 2023). Furthermore, caregiver burden has also been reported to be influenced by age, caregiving duration, caregiving intensity, and financial difficulties (Azeez & Ambatipudi, 2024; Pio et al., 2022). These findings support the notion that caregiver burden is influenced not only by caregivers' internal resources but also by the objective conditions of caregiving.

The findings of the present study also highlight the importance of supportive interventions for family caregivers. Educational interventions promoting health-related behaviors have been shown to reduce caregiver burden among family caregivers of hemodialysis patients (Hayati et al., 2023). Likewise, stress management training programs have been reported to be effective in reducing perceived stress and caregiver burden among family caregivers (Khouban-Shargh et al., 2024). In addition, psychoeducational interventions, coping skills training, and family-centered support programs have been shown to improve caregivers' quality of life, psychological adjustment, and adaptation to the

caregiving process (Shukri et al., 2020; Hoang et al., 2019; Tong et al., 2013). Therefore, approaches focusing solely on the patient may be insufficient in hemodialysis care; family caregivers should also be regularly assessed and supported.

Our findings indicate that the assessment of family caregivers should encompass not only caregiver burden but also their spiritual and psychosocial needs. Such an approach may contribute to the early identification of caregivers at risk and facilitate the development of individualized supportive interventions.

Strengths and Limitations

This study has several strengths. One of its main strengths is the simultaneous evaluation of spiritual orientation, psychological well-being, caregiver burden, and relevant sociodemographic characteristics among family caregivers providing home care for hemodialysis patients. The use of validated measurement instruments and an adequate sample size further supports the methodological rigor of the study. In addition, robust standard errors were used in the regression analyses to reduce sensitivity to potential heteroscedasticity.

Nevertheless, this study has several limitations. Owing to its cross-sectional design, causal inferences cannot be made regarding the relationships among the study variables. The data were collected online using self-report questionnaires; therefore, response bias and the influence of social desirability cannot be completely ruled out. Furthermore, the online data collection method may have introduced selection bias, as caregivers with limited internet access or lower digital literacy may have been underrepresented in the study sample. In addition, because the study was conducted at a single hemodialysis center in eastern Türkiye, the generalizability of the findings to caregiver populations with different cultural and sociodemographic characteristics may be limited. Future multicenter, longitudinal, and interventional studies conducted in different regions are recommended to confirm these findings.

5. Conclusions

This study demonstrated that caregiver burden among family caregivers providing home care for hemodialysis patients was significantly associated with spiritual orientation, psychological well-being, and various sociodemographic characteristics. Spiritual orientation remained significantly associated with caregiver burden after adjustment for sociodemographic characteristics, whereas psychological well-being was not independently associated with caregiver burden in the multivariable analysis. In addition, age, employment status, degree

of relationship to the patient, and caregiving duration were significantly associated with caregiver burden. These findings suggest that caregiver burden may be better understood by considering the social, cultural, spiritual, and psychosocial dimensions of the caregiving process together. In clinical practice, family physicians, nurses, nephrology teams, and dialysis professionals may consider incorporating assessments of caregiver burden and psychosocial and spiritual needs into the routine follow-up of families of patients receiving hemodialysis. Caregivers with greater support needs may subsequently be referred to appropriate psychosocial, social, or spiritual support services within a multidisciplinary care approach. Given the cross-sectional and single-center design of this study, these clinical implications should be interpreted cautiously and confirmed in future multicenter and longitudinal studies.

Conflict of Interest

The authors declare no conflict of interest.

Author Contributions

Conceptualization/Design: MU, MFY; Data Collection: MFY; Data Analysis and Interpretation: MU, MFY, TA; Drafting of the Manuscript: MU, TA; Critical Revision of the Content: MU, MFY, TA; Final Approval and Accountability: MU, MFY, TA; Technical and Material Support-Supervision: MU, MFY, TA.

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Conference Presentation

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Reference

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