Original Article

Examination of the Relationship Between the Perceived Social Support, Loneliness, and Hope Levels of Caregivers of Patients Receiving Hemodialysis Treatment: A Cross- Sectional Study

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Abstract
Objective: The present study aimed to investigate the relationship between the perceived social support, loneliness, and hope levels of caregivers of patients receiving hemodialysis (HD) treatment.
Methods: Cross-sectional descriptive research. Caregivers of patients receiving hemodialysis treatment. The research was conducted with caregivers of patients receiving HD treatment in a state hospital between October and December 2022. Fifty-seven caregivers took part in the cross-sectional trial. The Descriptive Characteristics Form, Multidimensional Scale of Perceived Social Support, De Jong Gierveld Loneliness Scale, and Continuous Hope Scale were used to collect data regarding caregivers.
Results: The total MSPSS score of caregivers was 41.77±18.26, the total DJGLS score was 31.36±6.08, and the total CHS score was 35.84±12.24. A significant difference was found between the perceived social support family subscale and the caregiver's age (p=.028) and education level (p=.001). There was a significant difference between education level, perceived income level, and loneliness (p=.031). A significant difference was revealed between the caregiver's age and social loneliness subscale (p=.031). There was a significant difference between gender and the social loneliness subscale (p=.045). Perceived social support had a moderate negative correlation with loneliness and a weak positive correlation with hope. The regression analysis results elucidated that 34% of perceived social support was explained by loneliness and 11% by hope in caregivers.
Conclusions: It was found that some characteristics of caregivers were significant with perceived social support, loneliness, and hope level. The perceived social support can be said to negatively affect loneliness and positively affect the hope level. According to this process, screenings for caregivers can be performed.

Keywords: Hemodialysis, Hope, Social Support, Loneliness

Introduction

Caregivers consist of close friends or family members who provide unprofessional healthcare services to individuals with a disease or older adults free of charge (Hejazi et al., 2021). Caregivers provide care regarding diet preparation, medication control, oral care, and bathing (Hejazi et al., 2022). A high level of care burden may adversely impact the well-being of caregivers and make them more susceptible to mental problems (Cloutier et al., 2020). Hence, the support provided to improve the well-being of caregivers is necessary to alleviate the difficulties experienced by caregivers (Hasanpour et al., 2020).

Social support refers to social resources, including official and unofficial aid. Perceived social support, on the other hand, refers to the availability and adequacy of the support when needed (Tao et al., 2023). Types of social support and dimensions of perceived social support may impact the relationship between social support and loneliness.

Perceived social support is reported to influence individuals' mental health (Coumoundouros et al., 2024). Social support is a significant factor that can effectively reduce loneliness (Xin and Xin, 2016). Family members and caregivers of dialysis patients act together with the patient during the treatment process. Duties such as taking the patient to the hemodialysis center and staying with him/her during the treatment process and taking the patient to a doctor's appointment may prevent caregivers from dealing with their personal work and themselves (Jordaan et al., 2016).

Loneliness is an unpleasant experience that emerges when individuals' social relationships are inadequate qualitatively or quantitatively for a long time. It is a multidimensional phenomenon that can significantly hinder individuals' well-being (Hill et al., 2023). Therefore, the lack of social relationships and chronic loneliness experiences reported by caregivers should be considered an important public health problem.

Hope is a dynamic force that empowers the individual to adapt to the future. Hope supports a positive approach and can help people maintain their relationships with others (Pasyar et al., 2023). The illness of a family member can impact the lives of every member in the family, increasing their sadness and reducing their hopes (Shek et al., 2023). In the literature review conducted by the researchers, no study examining the relationship between perceived social support, loneliness, and hope in caregivers was encountered. This study aims to determine the relationship between the perceived social support, loneliness, and hope levels of caregivers of HD patients.

Method

Type of Research, Place and Time of Research

The research is of cross-sectional type. The research was carried out in the HD unit of a public hospital between October and December 2022.

Population and Sample of the Research

Eight of the 74 patients registered in the center where the study was conducted had no caregivers. Therefore, the study population consisted of 66 caregivers accompanying their patients during the HD process. In the study, the entire population was attempted to be reached without employing any sample selection method. Five caregivers did not want to take part in the study. One of the caregivers discontinued answering the questions. Two caregivers were not included in the study since they had a psychiatric diagnosis. The research was completed with 57 caregivers.

Inclusion Criteria

- Being responsible for the patient's care
- Being open to communication and cooperation

Exclusion Criteria from Research

- Those under 18 years of age

Data Collection Forms

Introductory Specifications Form: This form prepared by the researchers consisted of statements regarding the caregiver's age, gender, marital status, education level, employment status, perceived income level, duration of caregiving, and the degree of kinship with the individual provided with care.

Multidimensional Scale of Perceived Social Support: It was developed by Zimet et al. (1988) (Zimet et al., 1988). The study on the use of the scale in Turkey was conducted by Eker and Arkar (1995). In 2001, Eker et al. studied the "Factor Structure, Validity and Reliability of the Revised Form of the Multidimensional Scale of Perceived Social Support." This scale has 12 items and 3 subscales. Each of the 3 subscales (family, friends, and significant others) consists of 4 sub-statements. Statements 3, 4, 8, and 11 belong to the family subscale, statements 6, 7, 9, and 12 belong to the friends subscale, and statements 1, 2, 5, and 10 belong to the significant others subscale. The scale is of a 7-point Likert type. As the scores received from the scale increase, the level of social support perceived by the individual also increases. Cronbach's α internal consistency coefficient obtained from the adaptation study of the scale was found to be $\alpha = 0.89$ for the overall scale, $\alpha = .85$ for the family subscale, $\alpha = 0.88$ for the friends subscale, and $\alpha = 0.92$ for the significant others subscale (Eker et al., 2001). In this study, Cronbach's α internal consistency coefficient was found to be $\alpha = .95$ for the overall scale, $\alpha = .89$ for the family

subscale, α = .92 for the friends subscale, and α = .93 for the significant others subscale.

De Jong Gierveld Loneliness Scale: The scale measures individuals' loneliness levels in terms of social and emotional dimensions. It was developed by De Jong-Gierveld and Kamphuis (1985) (De Jong-Gierveld and Kamphuis, 1985). Cavdar et al. (2015) performed its adaptation to Turkish. The 4-point Likert scale has 11 statements and two subscales, namely Social Loneliness and Emotional Loneliness. In the study by Cavdar et al., Cronbach's α value was found to be .87 (Cavdar et al., 2015). In this study, Cronbach's α value was determined to be .80.

Continuous Hope Scale: The scale developed by Snyder et al. (1991) is used to identify the continuous hope levels of individuals aged fifteen years and over (Snyder at al., 1991). The scale was adapted to Turkish by Tarhan and Bacanli (Tarhan and Bacanli, 2015).

The eight-point Likert CHS consists of 12 statements and two subscales. Each of the subscales of Alternative Ways of Thinking and Actual Thinking contains four statements. Of these four statements, one statement refers to the past, two statements refer to the present, and one statement refers to the future. The other four statements are filler statements not related to hope. Filler statements are not scored in the scale scoring. The total score of the Continuous Hope Scale can be obtained by summing the scores of the Alternative Ways of Thinking subscale and the Actual Thinking subscale. The lowest score that can be received from the scale is 8, and the highest score is 64 (Tarhan and Bacanli, 2015). The internal consistency coefficients of the scale were found to be between 0.71 and 0.76 for the Actual Thinking component, between .63 and .80 for the Alternative Ways of Thinking component, and between .74 and .84 for the overall scale. In this study, Cronbach's α value was determined to be .92 for the overall CHS, .92 for the Alternative Ways of Thinking subscale, and 0.79 for the Actual Thinking subscale.

Data Collection: The data were collected by conducting face-to-face interviews with caregivers of patients receiving HD treatment in a state hospital between October and December 2022. An interview with a caregiver took approximately 20 minutes.

Analysis of Data: IBM-SPSS Statistics 23.0 software was used for data analysis. $P<0.05$ was considered significant for the research. Cronbach's α coefficient was used in the internal consistency analysis of the scales. The Kolmogorov-Smirnov and Shapiro-Wilk tests were conducted to examine the normality distribution. The t-test and ANOVA tests were performed on the normally distributed data. The Mann-Whitney U test and Kruskal-Wallis tests were used for non-normally distributed data. Moreover, Pearson's correlation test was carried out to reveal the correlation between the scales.

Ethical Considerations: Before starting the research, ethical approval (E-33117789-044-74757) was obtained from Bingol University Health Sciences Scientific Research and Publication Ethics Committee. Verbal and written information about all treatments and procedures was given by the first author. It was announced that participation was voluntary and that they could withdraw from the study at any time. The total number of questionnaires collected was stored.

Results

The results obtained from the research are shown in tables. The caregivers' total MSPSS score was 41.77±18.26, DJGLS total score was 31.36±6.08, and DHS total score was 35.84±12.24 (Table 1). It was determined that there was a significant difference between caregiver age and MSPSS Family Sub-Dimension (p=0.028) and DJGLS Social Loneliness Sub-Dimension (p=0.031). A significant difference was found between caregiver gender and DJGIS Social Loneliness Sub-dimension (p=0.045). It was determined that there was a statistically significant difference between the education level of the caregiver and the MSPSS Family Sub-Dimension (p=0.001), Total DJGLS (p=0.031) and DJGLS Social Loneliness Sub-Dimension (p=0.040). It was determined that there was a significant difference between the income level perceived by the caregiver and the Total DJGLS (p=0.004) and DJGLS Emotional Loneliness Sub-Dimension (p=0.001). A significant difference was found between the duration of care and the MSPSS Friend Sub-dimension (p=0.031) (Table 2). It was determined that there was a moderate negative relationship between caregivers' perceived social support and loneliness, and a

weak positive relationship with hope (Table 3). The results of the regression analysis determined that 34% of the perceived social support in caregivers was explained by loneliness and 11% by hope (Table 4).

Table 1. Scores of caregivers from MSPSS, DJGLS, and DHS Scales and Sub-Dimensions

SCALE	AVERAGE	STANDARD DEVIATION
MSPSS Total	41.77	18.26
MSPSS Family Sub-Dimension	15.56	6.57
MSPSS Friend Sub-Dimension	13.19	6.79
MSPSS A Special Human Sub-Dimension	13.01	6.83
DJGLS Total	31.36	6.08
DJGLS Social Loneliness Sub-Dimension	14.49	3.60
DJGLS Emotional Loneliness Sub-Dimension	16.87	3.36
DHS Total	35.84	12.24
DHS Alternative Paths Sub-Dimension	17.00	7.16
DHS Acting Thoughts Sub-Dimension	18.84	5.52

Table 2. Scores of Caregivers from the MSPSS, DJGLS, and DHS Scales and Sub-Dimensions According to their Descriptive Characteristics

Feature	Number (n)	Percentage (%)	Total MSPSS	MSPSS Family Sub-Dimension	MSPSS Friend Sub-Dimension	MSPSS A Special Human Sub-Dimension	Total DJGLS	DJGLS Social Loneliness Sub-Dimension	DJGLS Emotional Loneliness Sub-Dimension	Total DHS	DHS Alternative Paths Sub-Dimension	DHS Acting Thoughts Sub-Dimension
			$\bar{x}$±SS	$\bar{x}$±SS	$\bar{x}$±SS	$\bar{x}$±SS	$\bar{x}$±SS	$\bar{x}$±SS	$\bar{x}$±SS	$\bar{x}$±SS	$\bar{x}$±SS	$\bar{x}$±SS
Age												
18-25	7	12.3	56.57±20.54	20.71±5.90	18.28±10.02	17.57±7.41	28.71±6.72	13.00±3.65	15.71±3.94	43.71±13.18	21.85±8.43	21.85±5.11
26-35	10	17.5	44.20±14.32	16.40±4.32	13.50±4.88	14.30±7.30	32.50±2.87	15.00±2.26	17.50±2.46	35.80±12.55	16.50±7.26	19.30±5.41
36-45	13	22.8	40.46±20.52	15.53±8.25	12.92±6.70	12.00±6.83	29.15±7.19	13.15±4.43	16.00±3.82	38.00±16.46	18.23±9.31	19.76±7.45
46-55	15	26.3	44.00±18.73	15.93±6.19	14.46±7.09	13.60±7.41	30.66±5.17	14.06±3.39	16.00±2.38	33.06±9.94	15.53±6.09	17.53±4.42
56-65	7	12.3	34.71±4.42	14.28±4.02	9.14±2.19	11.28±3.40	33.28±5.82	15.42±2.69	17.85±3.80	31.71±7.38	14.71±3.14	17.00±5.09
66 and above	5	8.8	22.80±9.85	7.40±3.57	8.00±3.08	7.40±3.57	38.00±6.12	19.00±1.41	19.00±4.74	33.40±7.19	15.60±4.61	17.80±3.83
Analyzes			Kruskal W=9.528	Kruskal W=12.549	Kruskal W=7.880	Kruskal W=7.131	Anova=2.278	Anova=2.698	Anova=.945	Kruskal W=4.045	Kruskal W=3.158	Kruskal W=4.624
Gender			P=.090	**P=.028**	P=.163	P=.211	P=.060	**P=.031**	P=.460	P=.543	P=.676	P=.463
Woman	36	63.2	44.61±18.99	16.16±6.95	14.11±7.26	14.33±7.25	30.38±6.31	13.77±3.86	16.61±3.38	35.94±12.35	16.91±7.27	19.02±5.61
Man	21	36.8	36.90±16.22	14.52±5.87	11.61±5.73	10.76±5.52	33.04±5.40	15.71±2.77	17.33±3.36	35.66±12.34	17.14±7.15	18.52±5.48
Analyzes			Mann-W U=-1.598	Mann-WU=-.871	Mann-WU=-1.154	Mann-WU=-1.779	T-Test=1.947	T-Test=4.229	T-Test=.000	Mann-W U=-.008	Mann-W U=-.265	Mann-W U=-.464
Marital status			P=110	P=.384	P=.248	P=.075	P=.169	**P=.045**	P=.983	P=.993	P=.791	P=.642
Married	33	57.9	38.15±17.08	14.39±6.14	12.03±6.38	11.72±6.35	32.21±5.98	15.18±3.27	17.03±3.51	35.39±11.30	16.75±6.41	18.63±5.41

Single	17	29.8	46.64±20.75	17.17±7.14	14.52±8.00	14.94±7.82	30.11±6.47	13.58±4.16	16.52±3.50	39.29±14.92	19.00±8.99	20.29±6.26
Divorced	7	12.3	47.00±15.41	17.14±6.93	15.42±4.96	14.42±5.99	30.42±5.79	13.42±3.35	17.00±2.58	29.57±6.55	13.28±3.98	16.28±3.14
Analyzes			Kruskal	Kruskal	Kruskal	Kruskal	Anova=.752	Anova=1.470	Anova=.126	Kruskal	Kruskal	Kruskal
			W=3.117	W=2.275	W=2.406	W=2.516				W=2.318	W=2.134	W=2.752
Education level			P=.210	P=.321	P=.300	P=.284	P=.476	P=.239	P=.882	P=.314	P=.344	P=.253
Illiterate	9	15.8	28.77±15.01	8.66±4.18	10.00±6.04	10.11±6.48	35.88±7.50	17.00±3.96	18.88±4.45	30.55±10.05	13.00±4.55	17.55±6.26
Primary-Secondary Education	36	63.2	42.75±17.32	16.52±6.24	13.05±6.42	13.16±6.61	31.00±5.25	14.33±3.31	16.66±2.90	36.86±12.14	17.66±7.03	19.19±5.47
College and above	12	21.1	48.58±19.70	17.83±5.95	16.00±7.75	14.75±7.61	29.08±6.08	13.08±3.50	16.00±3.46	36.75±13.90	18.00±8.54	18.75±5.42
Analyzes			Kruskal	Kruskal	Kruskal	Kruskal	Anova=3.723	Anova=3.405	Anova=2.174	Kruskal	Kruskal	Kruskal
			W=5.504	W=13.131	W=3.745	W=2.289				W=1.937	W=2.389	W=.608
Working status			P=.064	**P=.001**	P=.154	P=.318	**P=.031**	**P=.040**	P=.124	P=.380	P=.303	P=.738
Working	16	28.1	42.00±19.85	16.06±6.55	12.87±6.79	13.06±7.82	30.81±5.64	13.87±3.20	16.93±3.06	35.06±13.35	16.56±8.24	18.50±5.29
Not Working	41	71.9	41.68±17.86	15.36±6.65	13.31±6.87	13.00±6.51	31.58±6.30	14.73±3.75	16.85±3.51	36.14±11.94	17.17±6.80	18.97±5.66
Analyzes			Mann-WU=-.240	Mann-WU=-.374	Mann-WU=-.178	Mann-WU=-.393	T-Test=.328	T-Test=.858	T-Test=.765	Mann-WU=-.658	Mann-WU=-.944	Mann-WU=-.356
Perceived income level			P=.810	P=.708	P=.859	P=.695	P=.569	P=.358	P=.385	P=.511	P=.345	P=.722
Bad	18	31.6	34.55±13.91	13.11±5.87	11.00±4.74	10.44±4.78	35.00±4.83	15.77±2.62	19.22±2.83	32.38±9.26	15.16±547	17.22±4.37
Medium	34	59.6	43.47±18.06	16.29±6.49	13.64±7.16	13.52±6.90	30.05±5.58	14.23±3.75	15.82±2.86	36.85±12.50	17.44±7.27	19.41±5.71
Good	5	8.8	56.20±25.25	19.40±7.79	18.00±8.71	56.20±25.25	27.20±8.16	11.60±4.21	15.60±4.50	41.40±18.51	20.60±11.01	20.80±7.52
Analyzes			Kruskal	Kruskal	Kruskal	Kruskal	Anova=6.103	Anova=3.055	Anova=7.996	Kruskal	Kruskal	Kruskal
			W=4.193	W=3.755	W=3.592	W=4.334				W=1.860	W=1.008	W=2.322

Time taken care (years)			P=.123	P=.153	P=.166	P=.115	**P=.004**	P=.055	**P=.001**	P=.395	P=.604	P=.313
1-5	24	42.1	49.29±20.07	17.54±7.20	15.83±7.34	15.91±7.24	31.08±6.48	14.33±3.65	16.75±3.74	36.45±11.09	16.83±6.54	19.62±5.18
6-10	17	29.8	37.17±16.12	14.35±6.43	11.58±5.22	11.23±5.97	32.47±6.36	14.82±3.81	17.64±3.21	35.29±12.03	16.82±7.22	18.47±5.12
11-15	6	10.5	44.00±17.33	16.00±5.01	15.33±8.28	12.66±7.63	29.33±4.36	13.33±2.65	16.00±2.75	43.00±17.48	21.33±10.40	21.66±7.28
16-20	6	10.5	34.00±4.38	13.50±4.46	9.50±2.66	11.00±3.74	30.50±5.24	14.33±2.87	16.16±3.25	30.83±7.19	15.33±3.66	15.50±3.61
21 and above	4	7.0	24.50±10.87	11.25±6.29	6.50±3.31	6.75±3.77	32.75±7.50	10.00±5.47	16.75±3.50	31.25±17.34	14.75±9.91	16.50±7.85
Analyzes			Kruskal W=8.876	Kruskal W=4.446	Kruskal W=10.601	Kruskal W=9.334	Anova=.384	Anova=.364	Anova=.384	Kruskal W=3.039	Kruskal W=1.828	Kruskal W=4.995
Proximity to caregiver			P=.064	P=.349	**P=.031**	P=.053	P=.819	P=.833	P=.819	P=.551	P=.767	P=.288
Wife	11	19.3	33.81±17.35	12.45±7.32	10.45±5.00	10.90±6.12	34.90±6.90	17.18±2.52	17.72±5.04	37.00±10.22	17.00±5.49	20.00±5.51
Child	14	24.6	43.50±16.44	14.92±6.05	14.28±6.71	14.28±6.42	29.85±6.15	13.35±3.99	16.50±2.56	30.50±9.75	13.85±5.66	16.64±4.55
Mom or dad	25	43.9	43.84±20.75	16.96±6.96	13.24±7.40	13.64±7.59	30.24±5.48	13.88±3.62	16.36±2.98	39.28±14.12	19.28±8.20	20.00±6.24
Relative	7	12.3	43.42±12.58	16.71±3.45	15.14±7.17	11.57±6.13	32.85±5.27	14.71±2.36	18.14±2.96	32.42±9.37	15.14±6.41	17.28±3.30
Analyzes			Kruskal W=2.384 P=.496	Kruskal W=4.086 P=.252	Kruskal W=2.880 P=.410	Kruskal W=2.074 P=.557	Anova=2.065 P=.116	Anova=3.064 **P=.036**	Anova=.811 P=.493	Kruskal W=5.306 P=.151	Kruskal W=4.945 P=.176	Kruskal W=4.596 P=.204

Table 3. MSPSS, DJGLS ve DHS Correlation of Scales

	Analyzes	Total MSPSS	Total DJGLS	Total DHS
Total MSPSS	Pearson Correlation	1	-.589	.331
	Sig. (2- tailed)		.000	.012
	N	57	57	57
Total DJGLS	Pearson Correlation	-.553	1	-.472
	Sig. (2- tailed)	.000		.000
	N	57	57	57
Total DHS	Pearson Correlation	.331	-.472	1
	Sig. (2- tailed)	.012	.000	
	N	57	57	57

Table 4. MSPSS, DJGLS ve DHS Regression of Scales

MSPSS	**R**	**R^2**	**Beta**	**t**	**F**	**p**
DJGLS	.589	.347	-.589	-5.411	29.274	**.000**
DHS	.331	.110	.494	2.605	6.784	**.012**

Discussion

The present study found that perceived social support was close to the moderate level in caregivers. In the studies conducted by Ersin et al., (2022) with caregivers of palliative care patients and Karimollahi et al., (2022) with caregivers of cancer patients, it was revealed that social support was at a high level in caregivers (Ersin et al., 2022; Karimollahi et al., 2022). In the study performed with caregivers of patients receiving hemodialysis treatment, Tao et al. (2023) found that the social support perceived by caregivers was at a moderate level (Tao et al., 2023). The cultural fulfillment of routines such as housework, childcare, and patient care by women in the environment where this study was conducted and most participants were married women may have caused the social support perceived by female caregivers to be at a low level. Furthermore, the fact that the official support provided to caregivers is limited to financial support supports this result.

This study elucidated that the loneliness levels of caregivers were above the moderate level. According to the results of the study by Hajek et al., (2021), who systematically examined the loneliness levels of caregivers, caregivers were found to experience a high level of loneliness (Hajek et al., 2021). In their studies on caregivers, Zwar et al. (2020) and Gallagher and Wetherell (2020) determined that caregivers experienced different levels of loneliness (Zwar et al., 2020; Gallagher and Wetherell, 2020).

In this case, the high level of loneliness in caregivers can be explained by the fact that caregiving limits social contacts. The fact that there are caregivers over the age of 65 in this study and some participants are divorced may cause the loneliness levels of caregivers to increase. A study examining the loneliness of caregivers of Alzheimer's patients revealed that living with the cared patient was an important factor in the development of loneliness in caregivers (Bramboeck et al., 2020). The fact that the fully dependent patients in this study require caregivers to live with them may also increase the level of loneliness. The fact that the majority of caregivers are female and the family responsibilities, gender role expectations, and

socialization are not equal may influence this result.

This study determined that caregivers had moderate levels of hope. In the studies conducted by Al-Rawashdeh et al. (2020) with caregivers of patients receiving HD treatment and Clari et al., (2022) with caregivers of patients with schizophrenia, caregivers were found to have moderate levels of hope (Al-Rawashdeh et al., 2020; Clari et al., 2022). In this study, in which all caregivers were Muslims, the participants expressed that they continued to be hopeful with the effect of their religious beliefs.

In the current study, a negative correlation was determined between perceived social support and loneliness. According to the results of the study performed by Sahin and Tan (2012) with caregivers of cancer patients, there was a significant negative correlation between the social support received from the family and loneliness of caregivers (Sahin and Tan, 2012). The results of the study carried out with different groups suggested that there was a negative correlation between perceived social support and loneliness (Chrostek et al., 2016; Czaja et al., 2018). A study (2016) revealed that social support was an important factor that could effectively reduce loneliness (Xin and Xin, 2016). The culture of living in an extended family is common in the region where the study was performed. Therefore, caregivers spend all day with the patient and his/her family. The fact that caregiving limited communication with friends or the outer environment may have increased loneliness and reduced perceived social support. Moreover, the fact that the education levels of caregivers were generally low and their financial conditions were not sufficiently good can be said to have impacted this situation.

In this study, a weak positive correlation was found between perceived social support and hope. A positive correlation between social support and hope is an expected result. An increase in the social support of caregivers can positively impact caregiving. In this region, where the belief of fatalism is common among the caregivers participating in the study, the fact that the participants frequently expressed the phrase, "One should never lose hope from Allah" to the researchers and considered their experiences as fate may have affected their levels of hope.

A study examining hopelessness and coping strategies in caregivers of cancer patients elucidated that there was a negative correlation between hopelessness and problem-oriented coping strategies such as optimistic approach and seeking social support, and caregivers with high levels of hope could seek more social support (Tokem et al., 2015). In the research conducted by Bilgin and Yildirim with caregivers of cancer patients, it was revealed that the levels of hopelessness decreased as the social support perceived by caregivers increased (Bilgin and Yildirim, 2017). A study on caregivers of patients with gynecological cancer (2019) determined that perceived social support had a significant effect on caregivers' levels of hopelessness (Uslu-Sahan et al., 2019).

Furthermore, gender (male) and age (older) are important predictors of loneliness in caregivers. Caregivers who were male and older were found to experience a significant level of loneliness in the social loneliness subscale. In their study on caregivers of advanced-stage Alzheimer's patients, Bramboeck et al. found that caregivers who were male and older had high levels of loneliness (Bramboeck et al., 2020). Considering that women are more likely to actively participate in direct care in our society, it is natural for men to experience difficulties fulfilling their caregiver role.

Conclusion: An investigation of the potential regulatory factors behind the correlation between social support, hope, and loneliness may contribute to developing studies to reduce caregivers' loneliness. It is recommended to conduct studies to evaluate the factors that affect hope in improving the hopes of caregivers of patients receiving HD treatment. Furthermore, in future research, we recommend a simultaneous examination and comparison of factors related to hope in caregiving families and individuals provided with care.

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References

Al-Rawashdeh, S., Alshraifeen, A., Rababa, M., & Ashour, A. (2020). Hope predicted quality of

life in dyads of community-dwelling patients receiving hemodialysis and their family caregivers. *Quality of life research:an international journal of quality of life aspects of treatment, care and rehabilitation*, *29*(1), 81–89. https://doi.org/10.1007/s11136-019-02378-4

Bilgin N, Yildirim E. (2017). Investigation of the Relationship Between the Perceived Social Support and Hopelessness Levels of Cancer Patients' Relatives. *Aydin Health Journal,* 3 (2),33-49. Retrieved from https://dergipark.org.tr/tr/pub/asder/issue/45925/579317

Bramboeck, V., Moeller, K., Marksteiner, J., & Kaufmann, L. (2020). Loneliness and Burden Perceived by Family Caregivers of Patients With Alzheimer Disease. *American journal of Alzheimer's disease and other dementias*, *35*, 1533317520917788. https://doi.org/10.1177/1533317520917788

Cavdar D, Bagci V, Corbaci EC, Saritas S. Tasdelen MK. (2015). Adaptation of De Jong Gierveld Loneliness Scale into Turkish. *International Journal of Humanities and Social Science. 5*(9).

Chrostek, A., Grygiel, P., Anczewska, M., Wciórka, J., & Świtaj, P. (2016). The intensity and correlates of the feelings of loneliness in people with psychosis. *Comprehensive Psychiatry*, *70*, 190–199. https://doi.org/10.1016/j.comppsych.2016.07.015

Clari, R., Headley, J., Egger, J., Swai, P., Lawala, P., Minja, A., Kaaya, S., & Baumgartner, J. N. (2022). Perceived burden and family functioning among informal caregivers of individuals living with schizophrenia in Tanzania: a cross-sectional study. *BMC Psychiatry*, *22*(1), 10. https://doi.org/10.1186/s12888-021-03560-0

Cloutier, M., Manceur, A. M., Guerin, A., Aigbogun, M. S., Oberdhan, D., & Gauthier-Loiselle, M. (2020). The societal economic burden of autosomal dominant polycystic kidney disease in the United States. *BMC Health Services Research*, *20*(1), 126. https://doi.org/10.1186/s12913-020-4974-4

Coumoundouros, C., Farrand, P., Sanderman, R., von Essen, L., & Woodford, J. (2024). "Systems seem to get in the way": a qualitative study exploring experiences of accessing and receiving support among informal caregivers of people living with chronic kidney disease. *BMC Nephrology*, *25*(1), 7. https://doi.org/10.1186/s12882-023-03444-3

Czaja, S. J., Boot, W. R., Charness, N., Rogers, W. A., & Sharit, J. (2018). Improving Social Support for Older Adults Through Technology: Findings From the PRISM Randomized Controlled Trial. *The Gerontologist*, *58*(3), 467–477. https://doi.org/10.1093/geront/gnw249

de Jong-Gierveld, Jenny & Kamphuis, Frans. (1985). The development of a Rasch-type loneliness scale. Applied Psychological Measurement, 9, 289-299. doi:10.1177/014662168500900307

Eker D, Arkar H, Yaldiz H. (2001). Factor Structure, Validity and Reliability of the Revised Form of the Multidimensional Scale of Perceived Social Support. *Turkish Journal of Psychiatry,* 12(1):17-25.

Ersin F, Cadirc D, Kilic Dedeoglu G. (2022). Investigation of mental well-being and social support levels of individuals who care for patients in a palliative care clinic. *Aegean Medical Journal,* 61(3): 379-386.

Gallagher S, Wetherell MA. (2020). Risk of depression in family caregivers: unintended consequence of COVID-19. *BJPsych open*, *6*(6), e119. https://doi.org/10.1192/bjo.2020.99

Hajek A, Kretzler B, Konig HH. (2021). Informal Caregiving, Loneliness and Social Isolation: A Systematic Review. *International Journal of Environmental Research and Public Health*, *18*(22), 12101. https://doi.org/10.3390/ijerph182212101

Hasanpour Z., Jafari-Koulaee A., Bagheri Nesami M. (2020). Depression and its associated factors in the caregivers of hospitalized patients with cancer. *WCRJ,* 7: e1611 DOI: 10.32113/wcrj_20207_1611

Hejazi, S. S., Hosseini, M., Ebadi, A., & Alavi Majd, H. (2022). Development and psychometric properties evaluation of caregiver burden questionnaire in family caregivers of hemodialysis patients. *BMC nursing*, *21*(1), 246. https://doi.org/10.1186/s12912-022-01025-7

Hejazi, S. S., Hosseini, M., Ebadi, A., & Majd, H. A. (2021). Development and Psychometric Evaluation of" Caregiver Burden Questionnaire for Family Caregivers of Patients Undergoing Hemodialysis": A Protocol for A Sequential Exploratory Mixed-Method Study. *Iranian Journal of Psychiatry*, *16*(4), 471. https://doi.org/10.18502/ijps.v16i4.7235

Hill, P. L., Olaru, G., & Allemand, M. (2023). Do associations between sense of purpose, social support, and loneliness differ across the adult lifespan?. *Psychology and Aging*, *38*(4), 345–355. https://doi.org/10.1037/pag0000733

Jordaan S, Michelow P, Richter K, Simoens C, Bogers J (2016) A Review of Cervical Cancer in South Africa: Previous, Current and Future.

Health Care Current Reviews 4: 180. doi: 10.4172/2375-4273.1000180

Karimollahi M, Abazari M, Tazakori Z, Ramazanzadeh N. (2022). Caregiving burden and social support in family caregivers of patients with cancer: A cross-sectional study. *International Journal of Care Coordination*, 25(4):115-123. doi:10.1177/20534345221121067

Pasyar, N., Jowkar, M., & Rambod, M. (2023). The predictive role of hope and social relational quality in disability acceptance among Iranian patients under hemodialysis. *BMC Nephrology*, *24*(1), 101. https://doi.org/10.1186/s12882-023-03161-x

Sahin ZA, Tan M. (2012). Loneliness, depression, and social support of patients with cancer and their caregivers. *Clinical Journal of Oncology Nursing*, *16*(2), 145–149. https://doi.org/10.1188/12.CJON.145-149

Shek Nam Ng, M., Kwok Wei So, W., Chow Choi, K., Chen, J., Sze Ho Wong, S., Hui, Y. H., Kin Hung Chan, A., Hau Sim Ho, E., & Wing Han Chan, C. (2023). Hope, quality of life, and psychological distress in patients on peritoneal dialysis: A cross-sectional study. *Journal of Health Psychology*, *28*(13), 1238–1249. https://doi.org/10.1177/13591053231176262

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., Yoshinobu, L., Gibb, J., Langelle, C., & Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology, 60*(4), 570–585. https://doi.org/10.1037/0022-3514.60.4.570

Tao, Y., Liu, T., Zhuang, K., Fan, L., Hua, Y., & Ni, C. (2023). Perceived stress, social support, and insomnia in hemodialysis patients and their family caregivers: an actor-partner interdependence mediation model analysis. *Frontiers in Psychology*, *14*, 1172350. https://doi.org/10.3389/fpsyg.2023.1172350

Tarhan S, Bacanli H. (2015). Adaptation of the Continuous Hope Scale into Turkish: Validity and reliability study. *The Journal of Happiness & Well-Being, 3*(1), 1-14.

Tokem Y, Ozcelik H, Cicik A. (2015). Examination of the Relationship Between Hopelessness Levels and Coping Strategies Among the Family Caregivers of Patients With Cancer. *Cancer nursing*, *38*(4), E28–E34. https://doi.org/10.1097/NCC.0000000000000189

Uslu-Sahan, F., Terzioglu, F., & Koc, G. (2019). Hopelessness, Death Anxiety, and Social Support of Hospitalized Patients With Gynecologic Cancer and Their Caregivers. *Cancer nursing*, *42*(5), 373–380. https://doi.org/10.1097/NCC.0000000000000622

Xin, S., & Xin, Z. (2016). Birth cohort changes in Chinese college students' loneliness and social support: One up, as another down. *International Journal of Behavioral Development, 40*(5), 398–407. https://doi.org/10.1177/0165025415597547

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment, 52*(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2

Zwar L, Konig HH, Hajek A. (2020). Psychosocial consequences of transitioning into informal caregiving in male and female caregivers: Findings from a population-based panel study. *Social Science & Medicine. (1982)*, *264*, 113281. https://doi.org/10.1016/j.socscimed.2020.113281