ARAŞTIRMA MAKALESİ / *RESEARCH ARTICLE*

Relationship between Caregiver Burden and Depression among Primary Caregivers of Stroke Patients: A Descriptive Study

İnme Hastalarına Birincil Bakım Verenlerde Bakım Yükü ile Depresyon Arasındaki İlişkinin İncelenmesi: Tanımlayıcı Bir Araştırma

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ABSTRACT

Aim: *This research investigates the levels of burden and depression experienced by primary caregivers of stroke survivors and analyzes their association.*

Material and Method: *This descriptive investigation enrolled 92 primary caregivers of stroke patients receiving care in a university hospital setting, specifically its neurology intensive care unit (ICU), stroke center, and outpatient clinic, between March 2021 and September 2022. Participant data was gathered using a Sociodemographic Data Form, the Zarit Caregiver Burden Interview (ZCBI), and the Beck Depression Inventory (BDI).*

Results: *Caregivers' mean ZCBI and BDI scores were 41.02±10.12 and 25.59±10.32, respectively. Statistical analysis revealed no significant correlation between Zarit Caregiver Burden Interview (ZCBI) and Beck Depression Inventory (BDI) scores. Sociodemographic factors (excluding kinship) showed no significant association with burden or depression (p>0.05). However, kinship degree influenced ZCBI and BDI scores (p<0.05): non-family caregivers reported lower burden. Caregivers exhibiting minimal depressive symptoms reported significantly lower burden scores (ZCBI) than those with higher levels of depression. (p<0.05).*

Conclusion: *Primary caregivers exhibited moderate burden and depression levels, but no causal connection between these phenomena was identified. However, lower depression levels were correlated with reduced caregiving burden. Notably, kinship –rather than other sociodemographic factors– significantly influenced outcomes, highlighting the critical role of emotional and relational dynamics in caregiving. These findings underscore the need for psychosocial support programs that address relationship-specific challenges and integrate routine depression screenings. By advancing the understanding of how caregiver burden and depression interact –and emphasizing kinship's unique impact– this study calls for further exploration of relational factors to tailor interventions effectively.*

Key words: *caregiving; care burden; depression; stroke*

ÖZET

Amaç: *Bu çalışmanın amacı, inmeli hastaların birincil bakım verenlerinin bakım yükü ve depresyon düzeylerini ölçmek ve aralarındaki ilişkiyi araştırmaktır.*

Materyal ve Metot: *Bu tanımlayıcı çalışma, Mart 2021 – Eylül 2022 tarihleri arasında bir üniversite hastanesindeki nöroloji yoğun bakım ünitesi, inme merkezi ve nöroloji kliniğinde yatan, inme tanısı almış 92 hastanın birincil bakım verenleri ile yürütülmüştür. Sosyodemografik Veri Formu, Bakım Verme Yükü Ölçeği ve Beck Depresyon Envanteri ile veri toplanmıştır.*

Bulgular: *Bakım vericilerin ZCBI (Zarit Bakım Verici Yükü Ölçeği) ve BDI (Beck Depresyon Envanteri) puan ortalamaları sırasıyla 41,02±10,12 ve 25,59±10,32 olarak bulunmuştur. Yapılan istatistiksel analizlerde, ZCBI ve BDI puanları arasında anlamlı bir korelasyon saptanmamıştır. Akrabalık ilişkisi dışındaki sosyodemografik faktörler ile bakım yükü ve depresyon düzeyleri arasında anlamlı bir ilişki bulunmamıştır (p>0,05). Ancak, akrabalık derecesi ZCBI ve BDI puanlarını etkilemiştir (p<0,05); aile bireyi olmayan bakım vericiler daha düşük bakım yükü bildirmiştir. Ayrıca, minimal düzeyde depresif semptomlar gösteren bakım vericilerin ZCBI puanları, daha yüksek depresyon düzeyine sahip olanlara göre anlamlı düzeyde daha düşük bulunmuştur (p<0,05).*

Sonuç: *Bu çalışma, birincil bakım verenler, orta düzeyde bakım yükü ve depresyon deneyimlemiş olsa da, ikisi arasında doğrudan bir nedensel ilişki bulunamamıştır. Bununla birlikte, düşük depresyon düzeylerinin azalmış bakım yükü ile ilişkili olduğu gözlemlenmiştir. Özellikle, diğer sosyodemografik faktörlerden ziyade akrabalık ilişkisinin sonuçları önemli ölçüde etkilediği ve bakım sürecindeki duygusal/ilişkisel dinamiklerin kritik önemini vurgulamaktadır. Bu bulgular, ilişkiye özgü zorlukları ele alan ve rutin depresyon taramalarını entegre eden psikososyal destek programlarının gerekliliğini ortaya koymaktadır. Bakım verenin yükü ile depresyon arasındaki etkileşimi anlama noktasında ilerleme sağlayan ve akrabalığın benzersiz rolünü vurgulayan bu çalışma, müdahalelerin etkinliğini artırmak için ilişkisel faktörlerin derinlemesine incelenmesi önermektedir.*

Anahtar kelimeler: *bakım; bakım yükü; depresyon; inme*

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Introduction

The WHO (World Health Organization) predicts that fifteen million people have a stroke annually, of whom five million become permanently incapacitated and five million pass away[1]. In Türkiye, 96,778 individuals died due to cerebrovascular diseases in 2019[2]. Stroke is the second leading cause of death globally and the third leading cause of disability-adjusted life years[3]. Stroke causes individuals to experience deficiencies in physical, psychological, and social areas[4]. Stroke has significant socioeconomic and emotional impacts on both patients and their families[3].

Caregiving is an experience that is perceived by caregivers and encompasses different dimensions. Caregiving isn't limited to just assistance, but also includes physical, financial, or emotional support[5]. In the Turkish Language Association dictionary, care is defined as "the act of meeting and providing for someone's needs, such as dressing and feeding"[6]. Care is a concept that relies on mutual relationships and trust, has moral and emotional dimensions, and requires scientific knowledge and special psychomotor skills[7]. During the care process, caregivers may face emotional, physical, and economic difficulties that can negatively affect their health. Caregivers may experience feelings of inadequacy and loss of control, leading to depression[8–11]. The literature indicates that the caregiving burden is lower in the early stages of stroke, but increases in later stages. As the caregiving duration increases, factors such as fatigue and loss of physical strength can result in a high level of physical burden for caregivers[12]. Both the characteristics of the caregiver and the caregiving situation can affect the caregiving burden[13]. The presence of chronic illnesses, such as stroke, in family members can lead to a burden on family members and disruptions in family relationships. This burden can result in social and financial problems for caregivers, psychological and physical health issues, and disruptions in family communication[10]. The post-stroke caregiving process imposes a significant physical and psychological burden not only on patients but also on caregivers. Research indicates a correlation between increased caregiving burden and a decline in caregivers' quality of life; this effect is often intensified by insufficient social support[14]. A stroke can create a crisis for relatives, and if not addressed, it can lead to anxiety, depression, and burnout syndrome in caregivers. The incidence of depression is high among caregivers, and as the caregiving burden increases, so does the level of depression[9,15,16].

The primary objective of this research is to assess the burden of care and depression among individuals who are the main caregivers for stroke patients. There are not enough studies examining the relationship between caregiving burden and depression in primary caregivers of stroke patients. This study is designed to fill the gap in the literature. The purpose of this study is to investigate how the caregiving burden correlates with depression levels in primary caregivers of stroke patients. The following research questions will guide this investigation:

1. What is the current level of caregiving burden among primary caregivers of stroke patients?

2. What are the depression levels observed in primary caregivers of stroke patients?

3. Is there an association between the caregiving burden and the depression levels of primary caregivers of stroke patients?

Materials and Methods

Study Design

This is a descriptive study research design.

Setting and Participants

The study included primary caregivers of stroke patients admitted to the hospital in the **neurology intensive care unit (ICU), stroke center, and outpatient clinic** of Süleyman Demirel University Research and Application Hospital between March 2021 and September 2022. The required sample size was determined using the **G*Power 3.1.9.7 program**. A power analysis, anticipating a potentially **lower effect size** (r=0.3), indicated that a minimum of **82 participants** would be necessary to achieve a **95% confidence level** and **80% power.** This study employed a **convenience sampling method.** A hundred and thirty patients applied during the research period. Of these, relatives of 130 patients met the study's inclusion criteria and consented to participate. However, due to incomplete completion of 38 questionnaire forms, the sample of the study consisted of 92 patients. The inclusion criteria for the study were: being the primary caregiver of stroke patients, having no communication barrier, being able to speak Turkish, being over 18 years old, and being willing to participate in the study. "The post-hoc power analysis conducted in this study highlighted that while some analyzes had sufficient power, the

results should be interpreted with caution, particularly due to the low power in the correlation analysis. It was recommended that future studies aim for larger sample sizes, balanced groups, and effect sizes consistent with the literature. A post-hoc power analysis was also conducted to assess the adequacy of statistical power in the main tests used."

Data Collection

Data was collected through survey questionnaires. Participants received information regarding the study's purpose and content. After obtaining written and verbal consent from volunteers, data collection forms were distributed and then gathered. Participants completed these forms independently, a process that took approximately 10 minutes per form.

Data Collection Tools

Sociodemographic data form: It includes information such as gender, age, education level, occupation, marital status, social security, income level, degree of kindship, and presence of chronic illness[10,17,18].

Zarit Caregiver Burden Interview (ZCBI): The Zarit Caregiver Burden Interview was first developed by Zarit and colleagues in 1990 to assess the caregiving burden of individuals caring for patients with dementia (Zarit and Zarit, 1990)[19]. The scale evaluates the problems and caregiving burden experienced by individuals providing care to those in need. The scale consists of 22 items, each rated on a 0–4 (never, rarely, sometimes, often, or almost always) Likert-type and unidimensional scale. There are no reverse scored items. A total score on this instrument, ranging from 0 to 88, indicates caregiving burden, with higher scores reflecting a heavier burden. The Turkish version of the Zarit Caregiver Burden Interview was validated and its reliability assessed by Inci and Erdem in 2008[17]. They reported an internal consistency coefficient of 0.95, whereas for this study, the coefficient was determined to be 0.81.

Beck Depression Inventory (BDI): Created by Beck and colleagues in 1961, the Beck Depression Inventory is comprised of 21 items, each rated on a 4-point Likert scale (0–3). The overall score, from 0 to 63, serves as an indicator of depression levels, with higher scores denoting increased severity[20]. Classification of scores is as follows: 0–9 for minimal depression, 10–16 for mild, 17–29 for moderate, and 30–63 for severe depression. The scale does not include any reverse-scored items. The Turkish version's validity and reliability were established by Hisli (1989), who determined an internal consistency coefficient of 0.80[21]. For this study, the calculated coefficient was 0.76.

Data Analysis

For numerical variables, descriptive statistics are presented as mean and standard deviation, while categorical variables are described using frequencies and percentages. The Shapiro-Wilk test assessed the normality of scale score distributions, confirming a normal distribution ($p<0.05$). To compare scale scores across demographic characteristics, an independent samples t-test was employed for categorical variables with two groups, and Analysis of Variance (ANOVA) for those with three or more groups. Tukey's multiple comparison test identified specific group differences. Furthermore, Pearson correlation analysis explored the relationship between scale scores. All analyses were conducted using IBM Statistical Package for Social Sciences (SPSS) program version 22.0, with statistical significance set at $p<0.05$.

Ethical Considerations

The Non-Interventional Clinical Research Ethics Committee of Pamukkale University granted ethical clearance for the study (dated 05.02.2021, with number E-60116787-020-14428), and the study's conducting institution provided written consent. The Helsinki Declaration was followed when conducting the study. Participants gave their written and verbal consent, and the authors gave their approval for the use of data collecting instruments.

Results

This study examines the relationship between the depression levels and caregiving burden of primary caregivers of stroke patients. Post-hoc power analysis for this study showed that the risk of Type II error was high due to the low power of the relationship between ZCBI and BDI in the correlation analysis (17.6%), meaning that even if there was a relationship, there was a high probability of not detecting it. In the ANOVA analysis, the power to detect differences between depression classes was found to be sufficient (88.1%), but the sample imbalance between the groups limited generalizability. In the t-Test analysis, the power remained at a moderate level (63.2%) due to the small sample size of the "caregiver/other" group, which affected statistical reliability.

Table 1. *Sociodemographic characteristics of caregivers (n=92)*

Variables		n	%
Age (mean ± SD)			44.25±15.70
Gender	Female	68	73.91
	Male	24	26.09
Marital status	Single	25	27.17
	Married	67	72.83
Education level	Illiterate	4	4.35
	Primary school	16	17.39
	Middle school	7	7.61
	High school	27	29.35
	University	38	41.30
Occupation	Worker	15	16.30
	Civil servant	33	35.87
	Retired	14	15.22
	Freelancer	6	6.52
	Housewife	21	22.83
	Other	3	3.26
Social security	Yes	81	88.04
	No	11	11.96
Income	Less than expenses	31	33.70
	Equal to expenses	44	47.82
	More than expenses	17	18.48
Degree of kindship	Spouse	19	20.65
	Child	13	14.13
	Father	17	18.48
	Mother	14	15.22
	Relative	22	23.91
	Caregiver/other	7	7.61
Chronic illness	Yes	22	23.91
	No	70	76.09

The sociodemographic characteristics of participants are presented in Table 1: the average age is 44.25±15.70 years, 73.91% are female, 72.83% are married, and 41.30% are university graduates.

The average depression and caregiving burden scores of the caregivers are 25.59±10.32 and 41.02±10.12, independently. According to the score orders of the BDI, 3.26 of the actors have minimum depression, 18.48 have mild depression, 31.52 have severe depression, and 46.74 have moderate depression. According to the BDI, there's a statistically significant correlation between the average caring burden score and the caregivers' depression classes ($p<0.05$). Caregivers with minimum depression situations have lower average caregiving burden scores compared to those in other depression scores (Table 2).

There were no significant differences between caregiving burden and depression scores according to chronic illness, gender, education level, occupation, social security or income status, and marital status ($p>0.05$). However, according to the kinship degree, there was a significantly lower average caregiving burden score in caregivers/caregivers-other ($p<0.05$). There was no significant association between caregiving burden and depression. This result implies that the impact of caregiving burden on depression level is not direct and that other factors (such as factors related to the individual and environment) may exert a stronger influence on depression (Table 3).

Discussion

The objective of this research was to determine the extent of **caregiving burden** and **depression** among primary caregivers of stroke patients, as well as to evaluate the association between these two factors. The mean caregiving burden score for participants was 41.02±10.12, with nearly 50% of the caregivers reporting moderate depression. The post-hoc power analysis conducted in this study highlighted that while some

Table 2. *The caregiving burden and depression score averages for caregivers (n=92)*

Scales	N	%	x ± SS	Min-Max	F and p value
ZCBI	92	100	41.02±10.12	14–59	**4.096**
BDI	92	100	25.59±10.32	1–49	**0.009***
Minimal	3	3.26	4.67±4.04	1–8	
Mild	17	18.48	13.76±2.08	11–15	
Moderate	43	46.74	23.47±3.84	19–27	
Severe	29	31.52	37.83±5.13	32–49	

* $p<0.05$: analysis of variance (ANOVA).

Table 3. *Comparison of caregiver burden and depression score averages based on the sociodemographic characteristics of caregivers*

Variables		ZCBI	Statistic	BDI	Statistic
Gender	Female	41.21±9.74	t -0.292 p 0.771	25.54±10.53	t 0.067 p 0.947
	Male	40.50±11.36		25.71±9.91	
Marital status	Single	39.96±12.34	t -0.612 p 0.542	26.64±9.82	t 0.596 p 0.553
	Married	41.42±9.24		25.19±10.54	
Education level	Illiterate	48.00±3.37	F 0.849 p 0.498	30.25±3.95	F 0.744 p 0.565
	Primary school	39.75±12.04		22.31±8.90	
	Middle school	40.43±10.28		24.00±12.70	
	High school	42.63±10.05		25.74±8.57	
	University	39.79±9.73		26.66±11.91	
Occupation	Worker	43.27±11.29	F 0.525 p 0.757	26.47±10.05	F 1.780 p 0.125
	Civil servant	41.33±9.16		27.33±12.39	
	Retired	38.50±8.57		26.93±7.89	
	Freelancer	39.67±12.91		30.33±7.39	
	Housewife	40.24±11.55		20.10±7.50	
	Other	46.33±8.08		24.67±11.06	
Social security	Yes	41.57±9.74	t -1.412 p 0.161	25.83±10.37	t 0.604 p 0.547
	No	37.00±12.37		23.82±10.23	
Income	Less than expenses	43.77±10.79	F 2.079 p 0.131	27.19±9.11	F 0.592 p 0.555
	Equal to expenses	40.25±9.67		24.57±10.67	
	More than expenses	38.00±9.34		25.29±11.66	
Degree of kinship	Spouse	40.79±9.94[a]	F 2.446 p 0.040*	26.32±8.88	F 1.116 p 0.358
	Child	42.15±9.02[a]		21.46±8.98	
	Father	42.35±9.97[a]		26.82±10.86	
	Mother	43.64±10.26[a]		24.14±10.62	
	Relative	41.59±8.91[a]		28.59±10.95	
	Caregiver/other	29.29±11.80[b]		21.71±11.80	
Chronic illness	Yes	40.09±11.95	t test 0.492 p 0.624	22.64±8.05	t test 1.550 p 0.125
	No	41.31±9.56		26.51±10.82	
Scales		41.02±10.12	r 0.104 p 0.326	25.59±10.32	r 0.104 p 0.326

T: t test, F: analysis of variance (ANOVA), *p<0.05: analysis of variance (ANOVA), [a,b]: different letters signify the difference between groups (Tukey test).

analyzes had sufficient power, the results should be interpreted with caution, particularly due to the low power in the correlation analysis. It was recommended that future studies aim for larger sample sizes, balanced groups, and effect sizes consistent with the literature. In a study, 3.8 % of caregivers exhibited severe depression symptoms, 13.5% moderate, 34.6% minimal, and 48.1% showed no signs of depression[22].

In a study conducted in 2018, it was found that psychologically healthy caregivers had minimal levels of caregiving burden[23]. Stroke is a disease that limits individuals' physical abilities, negatively impacting their quality of life and restricting their level of physical activity. This situation brings various responsibilities and burdens to those who care for the individual at home or in the hospital. These responsibilities can negatively

affect the caregiver's mental state and lead to caregiving burden due to the physical and emotional changes experienced from providing care.

The study's results demonstrated no significant relationship between overall depression scores and caregiving burden. Nevertheless, it was observed that caregivers experiencing mild depression reported a lesser caregiving burden than those in more elevated depression groups. This finding differs from Hu's (2018) research, which concluded there was a significant association between caregiving burden and depression scores in caregivers of stroke patients. Their study indicated that increased duration of caregiving and caregiving burden are associated with higher depression scores[24]; Similarly, Denno (2013) found that greater caregiving burden elevates the risk of experiencing anxiety and depression[25]. Loh (2016) concluded from their meta-analysis that caregivers had a significant global prevalence of depression and anxiety symptoms. They proposed that mental health screenings be undertaken for both stroke sufferers and their caregivers[26]. The results of this study may be related to the sample size and diversity. No significant association was found between the sociodemographic characteristics of primary caregivers of stroke patients –such as gender, age, presence of chronic illness, education level, occupation, social security, and income status– and their average caregiving burden or depression scores. However, when examining the degree of kinship, it was found that caregivers classified as caregiver/other had lower caregiving burden score averages, yet there was a significant difference in terms of depression score averages. In the 2017 study by Yilmaz and Ata, it was found that 76.6 % of caregivers were family members, while 23.4% were caregivers/other health personnel. The study also determined that the caregiving burden for family members was at a moderate level[27].

Dağdeviren and colleagues conducted a study that found no statistically significant relationship among caregivers' degree of kinship to the patient, their caregiving duration, and the burden they experienced[28]. It is thought that the lack of a special social or blood bond between caregivers and the person they care for may lead to this situation. A study found that the caregiving burden is influenced by the caregiver's employment status and profession, increases as the patient's level of dependency increases, and is affected by the caregiver's health perception[29].

Similar studies in the literature have generally found that female caregivers have a higher caregiving burden[27,30]. However, this study found no difference in caregiving burden between female and male caregivers. Additionally, it has been judged that individuals with lower education levels have higher depression levels, while income level does not affect caregiving burden or depression levels[15,31–33]. A systematic review indicated that 46.2%-92.5% of caregivers for stroke patients are women, and 20%-83% of caregivers are either a spouse or partner of the patient[30]. Caregivers of individuals with neurological diseases showed a gender disparity, with a study determining that women reported a higher caregiving burden than men. This could be due to the belief that women see caregiving as their duty and feel the need to meet societal expectations regarding this role[24].

In the study by Arca and Ceylan (2020), it was found that the depression experienced by relatives of patients did not vary with age, marital status, gender, occupation, or degree of kinship; However, individuals with a primary school education had higher levels of depression. This could be due to the characteristics of the sample. Relatives of patients with higher education levels may be more knowledgeable about managing the stress they experience. When examined in terms of income level, there are differences in the findings of various studies[22]. In the study by Azizi (2020), it was concluded that a low income level could increase the caregiving burden by raising unmet treatment and care expenses. However, in this study, it was found that income level did not affect caregiving burden and depression scores[34].

Stroke is a disease that restricts individuals' physical abilities, diminishes their quality of life, reduces physical activity levels, and imposes significant responsibilities and burdens on caregivers in home or hospital settings[35]. Caregivers primarily function to identify and fulfill the care needs of the patient precisely. This role can lead to a caregiving burden that directly affects the quality of life of both the individual receiving care and the caregiver themselves[35]. Research from 2019 highlighted a significant association between a heavier caregiving burden and elevated rates of depression and anxiety[36]. Thus, impartially evaluating the caregiving burden is an essential prerequisite for crafting interventions that improve the psychosocial health of both patients and caregivers.

According to a 2019 study that looked at the connection between anxiety, depression, and caregiving load, depression levels climb in tandem with caring stress[36].

In another study examining the depression levels of caregivers for patients, it was found that 3.8 % of caregivers exhibited severe depression symptoms, 13.5%

moderate, 34.6% mild, and 48.1% showed no signs of depression[37]. In our research, it was concluded that 3.26% of participants had minimal depression, 18.48% mild, 31.52% severe, and 46.74% moderate levels of depression. This is most likely due to sample differences, and this study found no significant relationship between caregiving burden and the average depression scores. A notable finding from Imarhiagbe's (2017) study was that around one-fifth of caregivers expressed a desire to be free of their caregiving responsibilities, and about one-third reported a negative impact of the caregiving burden on their health. Interestingly, for those who felt caregiving affected their health, no statistically significant differences in caregiving burden were observed based on gender, age, education level, or duration of caregiving, when compared to caregivers who reported no such health impact[32]. In their study, Zhu and Jiang (2018) stated that caregivers with good mental health experience less caregiving burden[23].

Caregivers are frequently viewed as the second victims of any disease, having taken on this role under unexpected and difficult conditions, with little preparation and little counsel or assistance from the healthcare system. In a qualitative study involving caregivers of patients with stroke, it was noted that the caregiver's distress began almost immediately after assuming their caregiving role and lasted for more than a year post-stroke. Additionally, caregivers reported 2.5 times more psychological distress compared to non-caregivers[38].

Findings from a different study indicated that while the caregiving burden intensified as the care recipient moved towards the end of life, many family members in caregiving roles **failed to recognize this heightened burden as a concern.** They expressed that caring for a family member who had previously taken care of them felt like a rewarding experience[13].

Study Limitations and Strengths

This study examined the levels of caregiver burden and depression experienced by caregivers and found no significant relationship between them. The findings indicate the need to evaluate the burden felt by caregivers and implement interventions to reduce this burden. Such interventions are critical for the prevention and treatment of depression. The findings of the study can be used to guide programs to improve the quality of life of caregivers.

The study had some limitations. One of them was that the study was conducted in only one hospital. Additionally, the data was based on self-reporting from participants. Since the study was conducted as part of a master's thesis, there was a time limit. The results of the study were sample-based and cannot be generalized. Another one is that the factors that may affect the caregiver burden of individuals caring for stroke patients (caregiver care duration, level of ability to meet the physical needs of the stroke patient, number of time the patient has lived with this condition, use of invasive devices necessary to meet the patient's needs, etc.) were not examined in this study. Researchers may be advised to conduct studies examining the effects of these factors on caregiver burden and the effects of interventions aimed at improving this situation.

Conclusion

This study revealed that caregivers of stroke patients exhibited a moderate level of caregiver burden and variable levels of depression. No statistically significant relationship was found between caregiver burden and depression; however, individuals with moderate and severe depression levels perceived a higher caregiver burden. A significant difference was found between caregiver burden and depression levels based on the degree of kinship, with those classified as "caregiver/other" experiencing a lower caregiver burden.

These findings highlight the critical importance of evaluating stroke patients and their caregivers through a holistic approach, determining caregiver burden and depression levels, and referring them to relevant professionals based on the results to preserve their quality of life. Furthermore, studies examining the long-term effects of caregiver burden and depression could provide valuable insights for future research and clinical practice.

Based on these findings, support programs should be developed and implemented for caregivers of stroke patients. In particular, regular monitoring of caregivers' depression levels and providing psychological support when necessary may help reduce the caregiving burden. Furthermore, identifying the varying needs of caregivers based on their degree of kinship and offering personalized support is of great importance.

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References

1. World Health Organization; 2022. https://www.emro.who.int/health-topics/stroke-cerebrovascular-accident/index.html [Accessed 01.03.2025].
2. TUİK Ölüm Nedeni İstatistikleri. https://data.tuik.gov.tr/Bulten/Index?p=Olum-Nedeni-Istatistikleri-2018–30626;2022 [Accessed 13.12.2022].
3. Çetinkaya N, Dönmez E. (2023). İnmeli Hastalara Bakım Verenlerde Bakım Yükü, Anksiyete ve Depresyon Düzeyinin İncelenmesi. Sağlık Akademisyenleri Dergisi. 2023;10(1):49–59.
4. Alankaya N. İnme Sonrası Yeti Yitimi ve Rehabilitasyonda Hemşireliğin Rolü. Yoğun Bakım Hemşireliği Dergisi. 2019;23(3):195–201.
5. Kalınkara V, Kalaycı I. Yaşlıya Evde Bakım Hizmeti Veren Bireylerde Yaşam Doyumu, Bakım Yükü ve Tükenmişlik. Yaşlı Sorunları Araştırma Dergisi. 2017;10(2):19–39.
6. Akalın ŞH. Türkçe Sözlük. Türk Dil Kurumu Yayınları. Ankara:2011.
7. Sağlam Z, Koç Z, Çınarlı T, Korkmaz M. Altmış Beş Yaş ve Üzeri Bireylere Bakım Veren Hasta Yakınlarının Bakım Verme Yükü ile Etkileyen Faktörlerin Belirlenmesi. Samsun Sağ Bil Der. 2016;1(2):40–60.
8. Er F, Yıldırım Ş. İnme Sonrası Hasta ve Bakım Verenlerin Aile İçi İlişkilerinin Değerlendirilmesi. Celal Bayar Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi. 2019;6(3):182–9.
9. Ennis E, Bunting BP. Aile Yükü, Aile Sağlığı ve Kişisel Ruh Sağlığı. BMC Public Health. 2013;13(255):2–9.
10. Aşiret GD, Kapucu S. İnmeli Hastalara Bakım Veren Hasta Yakınlarının Bakım Yükü. Hemşirelikte Araştırma Geliştirme Dergisi. 2012;14(2):73–80.
11. Atagün Mİ, Balaban ÖD, Atagün Z, Elagöz M, Özpolat AY. Kronik Hastalıklarda Bakım Veren Yükü. Psikiyatride Güncel Yaklaşımlar. 2011;3(3):513–52.
12. Cotrim H, Pereira G. Impact Of Colorectal Cancer On Patient And Family: Implications For Care. Eur J Oncol Nurs. 2008;12(3):217–26.
13. Bijnsdorp FM, Onwuteaka Philipsen BD, Cecile RL, Beek AJ, Pasman HRW. Caregiver's Burden At The End Of Life Of Their Loved One: Insights From A Longitudinal Qualitative Study Among Working Family Caregivers. BMC Palliative Care. 2022;21(142):1–22.
14. Fertelli TK, Tuncay FÖ. İnmeli Bireye Bakım Verenlerde Bakım Yükü, Sosyal Destek ve Yaşam Kalitesi Arasındaki İlişki. Jaren. 2019;5(2), 107–15.
15. Eğici MT, Can MK, Toprak D, Öztürk GZ, Esen ES, Özen B, et al. Palyatif Bakım Merkezlerinde Tedavi Gören Hastalara Bakım Veren Bireylerin Bakım Yükleri ve Tükenmişlik Durumları. Journal of Academic Research In Nursing. 2019;5(2):123–31.
16. Kafes AY. Depresyon ve Anksiyete Bozuklukları Üzerine Bir Bakış. Humanistic Perspective. 2021;3(1):186–94.
17. İnci FH, Erdem M. Bakım Verme Yükü Ölçeği' nin Türkçe' ye Uyarlanması Geçerlilik ve Güvenilirliği. Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi. 2008;11(4):85–95.
18. Topçu S, Oğuz S. İnme Sonrası Öz Etkililik ve Yaşam Kalitesi. Journal of Human Sciences. 2017;14(2):1388–96.
19. Zarit SH, Zarit JM. The Memory and Behavior Problems Checklist and The Burden Interview. University Park, PA. Pennsylvania State University Gerontology Center. 1990.
20. Beck AT, Ward C, Mendelson M. Beck Depression Inventory (BDI). Arch Gen Psychiatry. 1961;4:561–71.
21. Hisli N. Beck Depresyon Envanterinin Üniversite Öğrencileri için Geçerliliği, Güvenilirliği. Psikoloji Dergisi. 1989;7(23):3–13.
22. Arca M, Ceylan A. İnme Tanısı İle Hastaneye Yatırılan Hastalara Bakım Verenlerin Depresyon Durumu ve Yaşam Kalitesi Algıları. Mersin Üniversitesi Sağlık Bilimleri Dergisi. 2020;13(1):45–54.
23. Zhu W, Jiang Y. A Meta-analytic Study of Predictors for Informal Caregiver Burden in Patients With Stroke. Journal of Stroke and Cerebrovascular Diseases. 2018;27(12):3636–46.
24. Hu P, Yang Q, Kong L, Hu L, Zeng L. Relationship between the anxiety/depression and care burden of the major caregiver of stroke patients. Medicine. 2018;97(40):1–6.
25. Denno MS, Gillard PJ, Graham GD, DiBonaventura MD, Goren A, Varon S, et al. Anxiety and Depression Associated With Caregiver Burden in Caregivers of Stroke Survivors With Spasticity. Archives of Physical Medicine and Rehabilitation. 2013;94:1731–6.
26. Loh AZ, Tan JS, Zhang MW, Ho RC. The Global Prevalence of Anxiety and Depressive Symptoms Among Caregivers of Stroke Survivors. JAMDA. 2016;18(2):111–6.
27. Yılmaz EB, Ata EE. Nörolojik Hastalığı Olan Bireylerin Bakım Vericilerinin Bakım Veren Yükü İle Stresle Başa Çıkma Biçimleri Arasındaki İlişkinin Belirlenmesi. Journal of Psychiatric Nursing. 2017;8(3):145–9.
28. Dağdeviren TS, Demir N, Adahan D, Dağdeviren M, Tekin O. Evde Sağlık Hizmeti Alan Hastaların Bakım Verenlerinde Bakım Yükü. TJFMPC. 2020;14(2):186–95.
29. Zaybak A, Güneş Ü, İsmailoğlu EG, Ülker E. Yatağa Bağımlı Hastalara Bakım Veren Bireylerin Bakım Yüklerinin Belirlenmesi. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi. 2011;15(1):8–54.
30. İnci FH, Temel AB. İnmeli Hastaya Bakım Veren Aile Bireylerinin Gereksinimleri: Sistematik İnceleme;Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi. 2016;3(3):28–43.
31. Wan-Fei K, Hassan STS, Sann LY, Ismail SIF, Raman RA, Ibrahim F. Depression, Anxiety And Quality Of Life In Stroke Survivors And Their Family Caregivers: A Pilot Study Using An Actor/Partner Interdependence Model. Electron Physician. 2017;9(8):4924–33.
32. Imarhiagbe FA, Asemota AU, Oripelaye BA, Akpekpe JE, Owolabi AA, Abidakun AO, et al. "Burden of informal caregivers of stroke survivors: validation of the Zarit burden interview in an African population." Annals of African Medicine. 2017;16(2):46–51.
33. Menon B, Salini P, Habeeba K, Conjeevaram J, Munisusmitha K. Female Caregivers and Stroke Severity Determines Caregiver Stress in Stroke Patients. Ann Indian Acad Neurol. 2017;20(4):418–424.
34. Azizi A, Khatiban M, Mollai Z, Mohammadi Y. Effect of Informational Support on Anxiety in Family Caregivers of Patients with Hemiplegic Stroke. Journal of Stroke and Cerebrovascular Diseases. 2020;29(9):1–5.
35. Akosile CO, Banjo TO, Okoye EC, Ibikunle PO, Odole AC. Informal caregiving burden and perceived social support in an acute stroke care facility. Health and quality of life outcomes. 2018;16(1):1–7.
36. Mollaoğlu M, Tuncay FÖ, Fertelli, TK. İnmeli Hasta Bakım Vericilerinde Bakım Yükü ve Etkileyen Faktörler. DEUHYOED. 2011;4(3):125–30.
37. Oni OD, Olagunju AT, Okpataku CI, Erinfolami AR, Adeyemi JD. Predictors of caregiver burden after stroke in Nigeria: Effect on psychosocial well-being. Indian J Psychiatry. 2019;61(5):457–64.
38. Ain QU, Dar NZ, Ahmad A, Munzar S. Yousafzai AW. Caregiver stress in stroke survivor: data from a tertiary care hospital -a cross sectional survey. BMC Psychology. 2014;2(49):1–7.