Factors Predicting Family Caregiver Burden in Older Adults with Stroke Patients in Wenzhou, China

Yuanyuan Cai, M.N.S.[1], Chanandchidadussadee Toonsiri, Ph.D.[2]*

Abstract

This study aimed to characterize the burden level experienced by family caregiver and to investigate the factors predicting family caregiver burden in older adults with stroke in Wenzhou, China. A simple random sampling method was used to recruit the sample of 101 patient-caregiver dyads in the Second Affiliated Hospital of Wenzhou Medical University. Research instruments included the Demographic questionnaire, the Zarit Burden Interview Scale, the Modified Barthel Index scale, A New Post-Stroke Depression Scale, Chinese version of the Social Support Rating Scale. Descriptive statistics and stepwise multiple regression analysis were used to analyze the data.

The results revealed that the sample had mean score of the family caregiver's burden at a moderate level (M = 44.97, SD = 18.43). The significant predictors of burden for family caregivers of older adults with stroke were activities of daily living (β = -0.400, P < 0.001), social support (β = -0.353, P < 0.001), and post-stroke depression (β = 0.188, P = 0.039). The caregiver-patient relationship: cousin (β = -0.177, P = 0.017) was a significant predictor, as opposed to being a spouse or child. These predictors could together explain 49.7% of the variance in burden for family caregivers of older adults with stroke. (R^2 = 0.497, p < 0.001)

Activities of daily living, post-stroke depression, social support, and caregiver-patient relationship are the significant predictors of burden for family caregivers of older adults with stroke. The results of this study serve as a reference for healthcare personnel should be developing the intervention based on the activities of daily, strengthening social suport systems, enhancing stroke outcomes, and improving the caregiver-patient relationship, thereby effectively reducing the burden of family caregivers.

Key words: Family Caregivers Burden, Older Adults with stroke, Activities of Daily Living, Social Support, Post-Stroke Depression, Caregiver-patient Relationship

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[1] Student of Master of Nursing Science Program (International Program), Adult Nursing Faculty of Nursing, Burapha University

[2] Faculty of Nursing, Burapha University

* Corresponding author e-mail: stoonsiri@yahoo.com

Introduction

Stroke is a chronic disease that seriously threatens human life and health. It is characterized by a high disability rate, high mortality rate, and high recurrence rate. According to epidemiological studies, the global prevalence of stroke is projected to rise to as much as 21.9% by 2030 (Martini, Ningrum, Abdul-Mumin, & Yi-Li, 2022). Age stands as an unchangeable risk factor for stroke, with the prevalence of stroke significantly increasing with age. Notably, about three-quarters of strokes occur in individuals over 65 years old. The incidence of stroke in China is rising, influenced by factors including an aging population, socioeconomic advancements, urbanization, lifestyle modifications, and a higher prevalence of specific risk factors (Wang et.,2020).

Studies show that 70% to 80% of stroke patients encounter difficulties in independent living due to disabilities, which notably affects family quality of life (Olver et al., 2021). The implications of a stroke can be enduring, resulting in diminished self-care capabilities, heightened dependence, restricted social interactions, and emotional and financial challenges. Family members often take on the role of primary caregivers, supporting the rehabilitation process, with the average duration of continuous care lasting over 2 years .

In the early 21st century, there was an increasing emphasis on examining the challenges encountered by family caregivers, especially those providing care for chronically ill, disabled, or elderly relatives. Caregiver burden is described as the stress and strain experienced by those tending to individuals with ongoing care needs. Family caregivers of stroke patients endure significant mental, social, health, and financial stress over prolonged periods, sacrificing personal time, social engagement, and adequate rest to cater to the needs of stroke patients (Kazemi et al., 2021).

Most informal caregivers are family members, such as spouses, children, or other relatives. Spouses are the primary informal caregivers for the majority of stroke patients. Research shows that the caregiver-patient relationship can influence the caregiver burden, with spouses experiencing significantly more stress than non-spousal caregivers (Oven Ustaalioglu, Acar, & Caliskan, 2018).

Approximately 37% of stroke demonstrate symptoms of depression, and in the study by Dong-Mei Dou (Dou, Huang, Dou, Wang, & Wang, 2018), that PSD is a significant independent predictor of the caregiver burden for stroke patients in China. Stroke patients depend significantly on family support. Post-stroke depression can impair the physical, cognitive, and social abilities of stroke patients, potentially hindering rehabilitation, extending recovery time, and increasing the caregiver's burden (Yuliana et al., 2023).

The severity of functional disability in stroke patients is closely associated with the degree of burden experienced by family caregivers. A study indicated that caregivers of stroke patients with moderate to severe functional disabilities were 3.7 times more likely to experience mild to moderate caregiver burden than those caring for stroke patients with non-functional disabilities (Achilike et al., 2020). Similarly, a meta-analysis found that family caregivers of stroke patients with severe dysfunction felt three times more burdened (Fadilah & Rahariyani, 2019).

The social support status of caregivers is a significant predictor of caregiver burden. Caregivers who perceive a strong support system often experience reduced emotional fatigue and anxiety, enabling them to maintain a healthier mental state and greater motivation throughout their nursing practice. Research has demonstrated that higher levels of perceived social support can significantly alleviate the burden on caregivers and enhance their capabilities (Xu, Ma, Zhang, & Gan, 2024). Even without in-home caregiver skills training, that pleasant, socially supportive phone conversations can alleviate caregiver stress and provide relief.

In China, traditionally, family members are responsible for caring for stroke patients. Once a patient experiences a stroke, they are typically urgently transported to the neurology department of a general hospital. Following 10 to 15 days of acute treatment, patients are transferred to a rehabilitation ward for a duration of 3 to 6 months. During this time, many patients heavily rely on long-term care provided by their families. The family caregiver's responsibility is to manage the dietary and physical needs of stroke patients, while sometimes providing 24-hour companionship in the hospital, preventing them from returning home to handle other family responsibilities. Family caregivers encounter numerous challenges when providing basic care and support to their loved ones. In particularly, the traditional values in the Wenzhou region, where caregivers demonstrate a heightened willingness to offer lengthy care to elderly relatives or spouses (Liu et al., 2022), has a great impact on the burden of caregivers, which gave special significance of our study.

While factors such as patients' activities of daily living, post-stroke depression, and social support are known predictors of caregiver burden. However, their interplay within the unique cultural and healthcare context of Wenzhou remains under-investigated. Therefore, this study aims to identify the key predictors of caregiver burden in this specific population to inform targeted local interventions.

Objectives of the Study

1. To describe the level of burden among family caregivers of older adults with stroke.

2. To explore the predictive effects of patient's activity of daily living, post-stroke depression, caregiver-patient relationship, and social support on family caregiver burden among caregivers of older adults with stroke in WenZhou, China.

Hypotheses of the Study

The following factors are significant predictors of family caregiver burden:

1. A lower level of patient's activities of daily living will predict a higher level of caregiver burden.

2. A higher level of patient's post-stroke depression will predict a higher level of caregiver burden.

3. A lower level of social support will predict a higher level of caregiver burden.

4. Caregiver-patient relationship will be a significant predictor of caregiver burden.

Conceptual Framework

        This research extends the framework established by Tsai et al. in their Middle-Range Theory of Caregiver Stress (Tsai, 2003). This theory has been successfully employed in the evaluation of caregiver's burden in for patients with dementia people (Lorito et al., 2024).This model describes three main stimuli: focal stimuli, contextual stimuli, and residual stimuli. The focal stimulus corresponds to the objective burden. The objective burden is the duties or tasks associated with caregiving of a person chronic disease, such as the total number of nursing hours provided and the complexity of nursing arrangements. These demands may trigger coping mechanisms and encourage family caregivers to pursue support. Social support is the perceived resources accessible to caregivers for addressing caregiving demands and improving their well-being. Support from family, relatives, or friends can alleviate caregiver stress.

        Contextual stimuli corresponds to Stressful life events, Stressful life events are alterations in life circumstances that challenge individuals and lead to distress. Many stroke patients experience long-term impairments in physical and post-stroke depression, that are formidable challenges to family caregive. Residual stimuli like the caregiver's demographics (race, age, gender) and their relationship with the care recipient also influence the impact of the focal stimulus.

        In Wenzhou, China, traditional Confucian education places the responsibility on family to manage all aspects of patient care. Caregivers there often exhibit a strong willingness to provide extended care for elderly relatives or spouses, This deeply traditional value system in Wenzhou significant impact the burden of caregivers, making our research of particularly significance. In this study, the patient's functional dependency and post-stroke depression are conceptualized as contextual stimuli; social support is treated as a focal stimulus influencing the caregiver's appraisal; and the caregiver-patient relationship is considered a residual stimulus.The relationships among all variables are present in Figure 1
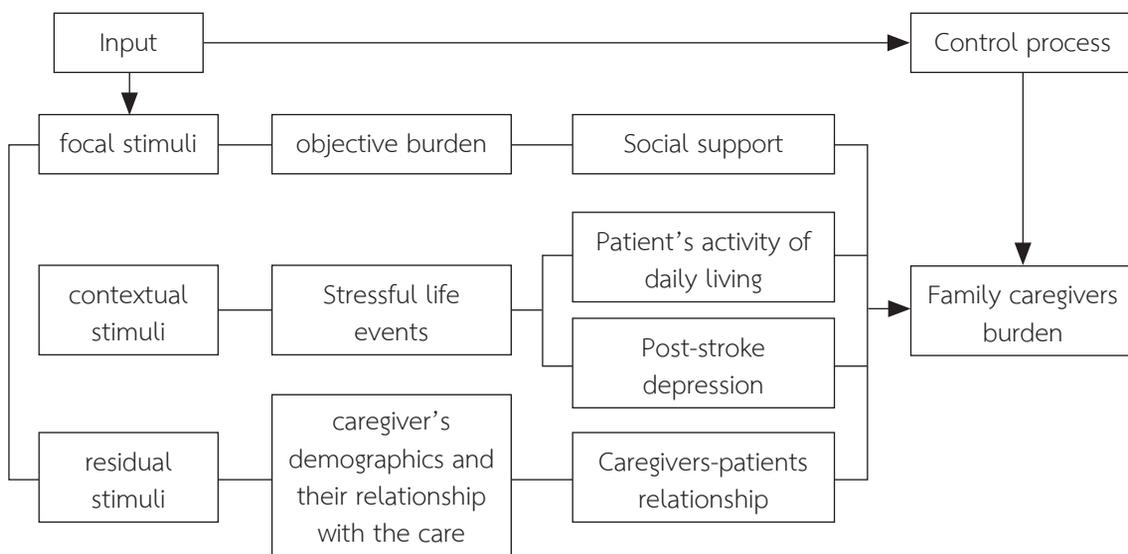
Figure 1 Study Framework

Methods

Research design

A cross-sectional research design was used in this study.

Population

The study focused on stroke patients aged 60 and older diagnosed by a medical professional and actively participating in rehabilitation inpatient at The Second Affiliated Hospital of Wenzhou Medical University. Individuals aged 18 and older were considered family caregivers, contingent upon their status as primary caregivers within familial or legal frameworks. Family caregivers, who are not paid professionals (such as paramedics) and do not have severe cognitive impairments or mental diseases, were inlcuded. The family caregivers must comprehend the questions, exhibit proficient communication skills, sustain a long-term caregiving relationship with the patient, convey a readiness to engage. Exclusion criteria included patients with significant underlying health conditions (such as heart, liver, or kidney diseases), mental health disorders, malignant tumors, or those who had been in the acute phase of illness for less than two weeks.

Sample and Sample size

The sample size was performed using G*Power 3.1.9.2. To investigate the influence of four predictors on the burden experienced by family caregivers of elderly stroke patients, a linear multiple regression analysis was employed. A sample size of 84 participants was determined using an alpha level of 0.05, a power of 0.8, and an estimated moderate effect size of 0.3 according to the previously published studies (Xu et al., 2024). An additional 20% was incorporated to address potential data loss, leading to a total required sample size of 101 participants.

Research instruments

1. Demographic questionnaire

The demographic questionnaire was used to collect detailed information from both patients and family caregivers. For patients, we gathered demographic data, including age, gender, education level, marital status, and payment arrangements, along with disease-specific details such as the duration of the illness. In contrast, the caregiver questionnaire included demographic information such as age, gender, relationship to the patient, educational background, marital status, employment status, and household monthly per capital income.

2. Zarit Burden Interview

This study assessed the burden on family caregivers using the Zarit Burden Interview (ZBI). This tool developed by Zarit (Bachner & O'rourke, 2007). This interview encompassed 22 items, each rated on a Likert 5-point scale, ranging from 0 (never) to 4 (almost always), with a total score ranging from 0 to 88. Increased scores reflect an elevated burden.The Chinese version of ZBI has been validated (Wang et al., 2008), which demonstrated strong reliability and validity in Chinese version. In addition, the tool has been successfully applied in the close region.Tthe reliability (Cronbach's alpha) of the Chinese version ranges from 0.88 to 0.94. In our study, the Cronbach's alpha of ZBI was calculated to be 0.875.

3. Modified Barthel Index

The Modified Barthel Index scale evaluates activities of daily living (ADL) across 10 items, including eating, dressing, and toileting, with a maximum score of 100 (Leung, Chan, & Shah, 2007). Scores are categorized as follows: below 24 indicates complete dependence; 25 to 49 implies severe dependence; 50 to 74 suggests moderate dependence; 75 to 99 indicates mild reliance; and a score of 100 signifies no dependence. The scale has high reliability and sensitivity, with test-retest reliability of 0.87 and interrater reliability of 0.95. In our study, the Cronbach's alpha of MBI was calculated to be 0.925.

4. A New Post-Stroke Depression Scale (PSDS)

A New Post-Stroke Depression Scale (PSDS) is a self-rating scale where subjects evaluate 8 items based on their feelings over the past 7 days,Each response is allocated a value of 0, 1, 2, or 3 according to the item's positivity or negativity. This tool developed and validated by Yue's group (Yue et al., 2015) . The PSDS is structured to assign higher scores to persons showing more depressed symptoms. The cumulative score, derived from the aggregation of individual item scores, spans from 0 to 24. The Cronbach's alpha of 0.79 indicated adequate internal consistency reliability. In our study, the Cronbach's alpha of PSDS was calculated to be 0.773.

5. Social Support Rating Scale (SSRS)

The Chinese version of the Social Support Rating Scale (SSRS) developed by Xiao Shuiyuan (Xiao, 1994) was used to measure social support. This self-report scale encompassing a total of ten items: objective support (support actually received), subjective support (perceived support or emotional support from patients), and support utilization (active use of social support by individuals). Items are evaluated using a 4-point Likert scale, resulting in a total score that spans from 12 to 66, where elevated values signify increased consumption of social support. The Social Support Rating Scale has shown good reliability and validity in Chinese populations. The Cronbach's α was 0.824 in this study.

Data collection procedure

The data was collected from September to October 2024. Simple random sampling was used to collect data. The list of participants was compiled from data retrieving from hospitalized patient-caregiver dyads in the rehabilitation department of the Second Affiliated Hospital of Wenzhou Medical University. The patient-caregiver dyads who met the inclusion criteria were assigned numerical identifiers and were randomly selected. Each day, 3 paies of participants who meet the inclusion criteria will be randomly selected each day to receive services, from 8:00 a.m. to 12:00 p.m. and from 1:30 p.m. to 4:30 p.m., Monday through Friday.

Ethical considerations

The study received approval from the Ethics Committee of Burapha University in Thailand (G-HS079/2566) and the Second Affiliated Hospital of Wenzhou Medical University in China (2023-K-227-02). All participants signed an informed consent form.

Data Analysis

Data was analyzed by IBM SPSS 26.0 software in this study. The level of statistical significance was set to < 0.05. Descriptive statistics include frequency, percentage, mean, and standard deviation were used to describe demographic data. Variable description was analyzed by range, mean, and standard deviation. Predictors of family caregiver burden among the participants were examined by a linear multiple regression analysis.

Results

Part 1 Demographic Characteristics of Old Stroke Patients and Family Caregivers

This study involved 101 stroke patients. The demographic profile of old stroke patients indicates a higher prevalence of males (72.28%) compared to females (27.72%). Participants ranged in age from 60 to 90 years, with an average age of 70.93 years. The majority (approximately 80.2%) belonged to the 60 to 79 age group. Regarding educational attainment, most participants, precisely 76.24%, had completed junior high school or lower. High school graduates comprised 14.85% of the population, whereas those with a university education represented only 6.93%. A minor percentage, 1.98%, indicated the absence of formal education. The vast majority of participants were married (93.07%). Regarding annual family income, most families were categorized within the middle to higher-income brackets (Table 1).

Table 1. The demographic characteristics of old adult with stroke (n = 101)

Characteristics	Number (n)	Percentage (%)
Gender		
Male	73	72.28
Female	28	27.72
Age		
60 - 79	81	80.20
80 - 90	20	19.80
Education background		
Junior high school and below	77	76.24
Senior high school	15	14.85
College and above	7	6.93
Other (illiteracy)	2	1.98
Marital status		
Single	2	1.98
Married	94	93.07
Other (Bereaved a spouse)	5	4.95

Table 1. (Cont.)

Characteristics	Number (*n*)	Percentage (%)
Annual family income		
CNY 10,000 and below	9	8.91
CNY 10,000 - 30,000	26	25.74
CNY 30,000 - 50,000	17	16.83
CNY 50,000 - 100,000	25	24.75
More than CNY 100,00	24	23.76
Employment situation		
Part-time employment	1	0.99
Do not work	35	34.65
Other (retired)	65	64.36
Medical expenses payment methods		
Labor insurance medical care	63	62.38
Free medical care	35	34.65
Cooperative and Commercial medical insurance	2	1.98
Fully self-funded	1	0.99
Hospitalization expenses		
Less than 10,000	10	9.90
CNY 10,000 - 30,000	82	81.19
CNY >30,000 - 100,000	8	7.92
More than CNY 100,000	1	0.99
Course of stroke		
≤ 1 Month	30	29.70
≤ 6 Months	52	51.49
≤ 12 Months	6	5.94
More than 12 Months	13	12.87
Disease cognition		
Don't know	54	53.47
Know some	44	43.56
Know a lot	3	2.97

This study involved 101 family caregivers of stroke patients, predominantly female, with 78 caregivers identified as such, in contrast to 23 male caregivers. No missing data were included in this study. The mean age of caregivers was 61.18 years, with the majority exceeding 40 years and two-thirds surpassing 60 years. 71.29% caregivers had completed junior high school. Most caregivers

were married (95.05%), with 66.34% being the patient's spouse. Approximately 81.19% of individuals were unemployed or retired, while 90.10% resided with the patients. Caregivers, on average, allocated 22.79 hours of care per day, with 89.11% offering continuous support. The mean duration of caregiving was 11.53 months, predominantly falling within the interval of 0.5 to 6 months (Table 2).

Table 2. The demographic characteristics of the family caregivers (n = 101)

Characteristics	Number (n)	Percentage (%)
Gender		
Male	23	22.77
Female	78	77.23
Age		
18 - 39	5	4.95
40 - 59	30	29.70
≥ 60	66	65.35
Education background		
Junior high school and below	72	71.29
Senior high school	15	14.85
College and above	13	12.87
Other (illiteracy)	1	0.99
Marital status		
Single	5	4.95
Married	96	95.05
Relationship with patients		
Spouse	67	66.34
Sons or daughters	28	27.72
Cousin	6	5.94
Employment situation		
Full-time employment	5	4.95
Part-time employment	14	13.86
Do not work	29	28.71
Other (retired)	53	52.48
Take care of alone		
No	55	54.46
Yes	46	45.54
Living with the patient		
Yes	91	90.10
No	10	9.90

Table 2. (Cont.)

Characteristics	Number (*n*)	Percentage (%)
Hour of care (day)		
≤ 12hr	5	4.95
12 - 23hr	6	5.94
24 hr	90	89.11
Month of care		
≤ 1 Month	30	29.70
≤ 6 Months	52	51.49
≤ 12 Months	6	5.94
More than 12 Months	13	12.87
Disease cognition		
Don't know	38	37.62
Know some	58	57.43
Fully understand	5	4.95

Part 2 Description of the study variables

1. Description of Family Caregivers' Burden in Old adult with Stroke

The stress faced by family caregivers was assessed using the ZBI, encompassing five dimensions: sacrifice, loss of control, embarrassment/anger, self-criticism, and dependency (Table 1). The mean burden score for caregivers in this sample reflected a moderate level of burden, with an average score of 44.97 (SD = 18.43) and a range from 4 to 86. The ZBI scores range from 0 to 88, with elevated scores indicating a higher load. Specifically, the average scores for each dimension were as follows: sacrifice scale score was 17.77 (SD = 7.08), loss of control scale score was 8.22 (SD = 3.91), embarrassment/anger scale score was 6.25 (SD = 3.30), self-criticism scale score was 3.69 (SD = 1.99), and dependency scale score was 5.91 (SD = 2.80).

Table 3. Description of family caregivers burden in old adult with stroke (n = 101)

Variables	Possible range	Actual range	Mean	SD	Level
Family Caregivers burden	0-88	4-86	44.97	18.43	moderate
Sacrifice	0-32	1-32	17.77	7.08	
Loss of control	0-16	0-16	8.22	3.91	
Embarrassment/angry	0-16	0-16	6.25	3.30	
Self-criticism	0-8	0-8	3.69	1.99	
Dependency	0-12	0-12	5.91	2.89	

2. Description of selected factors with family caregivers burden

This study investigated characteristics associated with the burden of family caregivers of elderly stroke patients, emphasizing activities of daily living, post-stroke depression, social support, and the caregiver-patient relationship. The findings indicated that the activities of daily living were at a moderate level (M = 54.13, SD = 25.40). The post-stroke depression score was comparatively modest (M = 6.17, SD = 4.20). The levels of social support were moderate (M = 36.42, SD = 8.46) (Table 2). Moreover, the analysis revealed that the Spouse accounted for 67 (66.3%) ; Sons or daughters accounted for 28 (27.7%) ; Cousin accounted for 6 (5.9%).

Table 4. Factors Associated with family caregivers burden (n = 101)

Variables	Possible range	Actual range	Mean	SD	Level
Activities of daily living	0-100	2-100	54.13	25.40	moderate
Social support	12-66	19-51	36.42	8.46	moderate
Post-stroke depression	0-24	0-16	6.17	4.20	low

Part 3 Factors Predicting the Burden of Family Caregivers

In this study was analyzed by a linear multiple regression to examine the burden that stroke patients' family caregivers face. Daily living activities, post-stroke depression, social support, and the interaction between the patient and caregivers were the main independent variables. The findings showed that the burden of family caregivers was typical, suggesting that the study sample was represented.

This study demonstrates that Activities of Daily Living (β = -0.400, p < 0.001) and social support (β = -0.353, p < 0.001) both exert significant negative effects on caregiver burden. Caregiver-patient relationship: cousin (β = -0.177, p= 0.017) was a significant predictor, as opposed to bing a spouse or child. However, post-stroke depression (β = 0.188, p = 0.039) is shown as a substantial positive predictor of caregiver burden. Overall, these characteristics account for 49.70% of the variance in caregiver burden, underscoring their significant influence on the caring experience (p < 0.001) (Table 3).

Table 5. Multiple linear regression analysis of caregiver burden (n = 101)

Independent variables	b	SE(b)	Beta (β)	t	p-value
Activities of daily living	-.290	.063	-.400	-4.623	< .001
Social support	-.768	.166	-.353	-4.630	< .001
Caregiver-patient relationship: Cousin	-13.699	5.659	-.177	-2.421	.017
Post-stroke depression	.823	.393	.188	2.091	.039
Constant	84.393	8.639		9.769	< .001
R^2 = 0.497, Adjusted R^2 = .476, $F_{(4, 96)}$ = 23.731, p-value < .001					

Discussion

Key factors, including activities of daily living, post-stroke depression, caregiver-patient relationships, and social support, are significant predictors of caregiver burden among older adults with stroke, according to a Middle-Range Theory of Caregiver Stress model framework. Collectively, these variables explain 49.7% of the variance, corroborated by theoretical and empirical evidence. The prevalence of stroke in older adults results in numerous challenges, including increased disability rates, diminished daily activity levels, and a decline in self-sufficiency. This research examines the effects of these challenges on family caregivers of old adult with stroke. The study highlights critical factors such as the patient's independence in daily activities, post-stroke depression, the caregiver-patient relationship, and social support, elucidating the contributors to caregiver burden in this context.

In this context, extensive study of the burden of the caregivers is necessary. This present study, involving 101 patient-caregiver dyads, revealed a mean family caregivers burden score of 44.97, indicating a moderate level of burden. This finding aligns with a previous study where the average burden score was 43.8 (SD = 13.4) (Fang, Dong, Fang, & Zheng, 2022). Interestingly, the present results show a higher burden compared to a study by Cao et al., which reported an average score of 27.2 among family caregivers of stroke patients (Cao et al., 2022). The disparity can be associated with rapid economic expansion and urbanization in coastal areas, which exacerbates the challenges encountered by aging populations and heightens the demand for support for family caregivers of individuals with long-term health conditions. These studies indicate that caregiver burden levels differ among countries, likely influenced by cultural factors that affect the perception and experience of burden and its outcomes (Kavga et al., 2021).

The average time that caregivers dedicated to the patients has also been examined in this study. This results revealed that family caregivers in Wenzhou dedicated an average of 22.79 hours daily to nursing, significantly surpassing previous literature report (Fauziah, Mayumi, Shogenji, Tsujiguchi, & Taniguchi, 2022). Family caregivers perceive it as a constant state, a responsibility that requires being available 24/7. This increased devotion can be attributed to the significant influence of traditional values in the region, where caregivers demonstrate a heightened willingness to offer lengthy care to elderly relatives or spouses, leading to tremendous physical and mental fatigue as well as substantial stress.

The evaluation of functional independence in ADL with the modified Barthel index revealed a moderate degree of dependency in stroke patients (M = 54.13, SD = 25.40). ADL performance in stroke patients significantly predicts the strain on family caregivers, demonstrating a pronounced negative connection between caregiver load and patients' ADL performance (β = -0.400, P < 0.001). In contrast to our findings, a study in Malaysia noted no substantial correlation between stroke patients' ADL and caregiver's burden, potentially due to our focus on older stroke patients with an average age of 70.93 years (Razali, Talib, Roslan, & Daud, 2020). With senior status of our participants, more devotion was needed from family members, which lead to a heavier burden for the family caregivers.

The current study identified PSD as a significant independent predictor of caregiver burden (β = 0.188, p = 0.039). PSD can significantly impair a stroke patient's physical, cognitive, and social functioning, disrupt rehabilitation efforts, and is linked to unfavorable patient outcomes (He et al., 2023). Family caregivers exhibited low post-stroke depression scores (M = 6.17, SD = 4.20), with the patient's depression status adversely affecting caregivers' ZBI scores, highlighting the substantial burden PSD places on family caregivers.

Whether the caregiver-patient relationship affects the caregivers burden has been the topic of our research. Our findings shed light on the caregiver-patient relationship type's impact on caregiver burden. The caregiver-patient relationship: Cousin (β = -0.177, p = 0.017) indicates that being a cousin is predicted with a lower caregiver burden compared to the reference category of spouse or child. This might be related to traditional Chinese education. once adult children marry and the intimate relationships network from the original family is severed, patients may anticipate increased support from their spouse or children. They are less inclined to share their illness with parents, siblings, or other relatives (Oven Ustaalioglu et al., 2018). However, while some studies have indicated that spouse caregivers experience lower stress levels than younger caregivers and daughters-in-law encounter higher stress levels, our data presents a contrasting perspective.

Perceived social support refers to an individual's subjective assessment of the assistance they receive from family, friends, neighbors, and other social networks. Studies have indicated that higher levels of perceived social support can significantly alleviate the burden on family caregivers and enhance their abilities (Xu et al., 2024). However, the role of perceived social support as a mediating factor in the context of stroke care still requires further investigation. This study identified a significant negative correlation between social support and caregiver burden (β = -0.353, p < 0.001), suggesting that increased social support is associated with reduced caregiver burden. This finding aligns with the current literature regarding caregiving burdens in stroke care settings (Cao et al., 2022). It has been proposed that enhancing the social support network can effectively alleviate the physical and mental strains experienced by family caregivers. These findings indicate that perceived social support can serve as strategies to alleviate the burden on family caregivers.

Limitations

Given that this study was conducted solely at the Second Affiliated Hospital of Wenzhou Medical University, it is important to recognize that the findings may not be generalizable to all Chinese populations. Future research studies should concentrate on diversifying sampling sources to enhance the reliability and inclusivity of the results. Response bias may be caused by self-reporting, as participants may underreport or overstate their experiences. Furthermore, limitations were identified concerning the selection of predictors in this study. Hence, in future research, it is imperative to comprehensively consider other social or environmental factors, especially a broader range of predictors to enhance the understanding of family caregiver burden in older adults caring for stroke patients.

Conclusions and Implementation

The results showed that family caregiver burden score in this sample reflected a moderate level. This study concluded that activities of daily living, post-stroke depression, social support, and the quality of the c.aregiver-patient relationship in older stroke patients are significant predictors of family caregiver burden. The findings emphasize that nursing professionals should prioritize skills-training programs for caregivers, focusing on safe patient handling, mobility assistance, and managing daily activities for patients with severe functional dependency. All family members and clinicians should proactively assess the family resilience and social support of family caregivers and implement interventions aimed at enhancing resilience and strengthening social support. This approach can help alleviate the burden on caregivers and improve the health status of stroke patients.

Acknowledgement

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