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Toward a Conceptual Framework for Family Resilience in Stroke Caregivers

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Abstract

Background: Stroke is the second leading cause of death and the third leading cause of disability worldwide. Survivors of strokes are typically associated with varying degrees of disability, which often places significant burdens on the primary caregivers. Furthermore, the financial and psychological toll of stroke can also affect family members. Enhancing family resilience can facilitate caregivers' adaptation to changes in family structure, which can ultimately contribute to positive family adjustment.

Methods: PubMed, Embase, Scopus, Web of Science, and CNKI were searched for literature on factors influencing family resilience and family stress modeling. By extracting and summarising the retrieved literature, the main factors influencing family resilience and the theoretical framework of this study were identified. On this basis, the conceptual framework of this study was established.

Results: Care burden, coping, and social support influence family resilience. The FAAR model can be used as an effective framework for conceptualizing the stressful processes experienced by family caregivers of stroke survivors. A conceptual framework for the core elements of care burden, social support, coping, and family resilience was developed on this basis.

Conclusion: A conceptual framework was constructed using the FAAR model as a theoretical framework to explore the relationship between family resilience, care burden, social support, and coping among stroke caregivers. This framework will guide the development of interventions to enhance family resilience among stroke caregivers.

Keywords: Stroke; Caregivers; Family Resilience; Influencing Factors; FAAR; Framework.

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1. Introduction

Stroke represents a significant global public health concern, characterized by the 'four highs' of high incidence, high recurrence, high disability, and high mortality rates (Feigin *et al.*, 2022). According to the 2019 Global Burden of Disease, Injury and Risk Factors Study (GBD), stroke is the second leading cause of death and the third leading cause of disability in the world, with 1 in 4 people over the age of 25 having a stroke. According to the American Heart Association (AHA) Heart Disease and Stroke Statistics (2018 edition), there are approximately 795,000 new stroke cases each year, which will exceed 10.5 million by 2030. Between 1990 and 2019, the number of stroke cases increased by 70.0% and the prevalence of stroke increased by 85.0%. There was a 43.0 percent increase in deaths and a 32.0 percent increase in disability as a result (GBD 2019 Stroke Collaborators, 2021).

Stroke survivors are usually associated with varying degrees of disability, mainly in the form of limb paralysis, speech disorders, swallowing disorders, cognitive deficits, and a range of negative emotions. As a result, disabled stroke survivors rely heavily on their primary caregivers to support them in their daily lives, placing a heavy burden on the primary caregivers (Kumar *et al.*, 2022). The provision of long-term care can also exert a considerable psychological and financial toll on family members, potentially impacting the well-being and functioning of the family unit (Wang *et al.*, 2020).

Family resilience is a force that helps families achieve good adjustment to maintain family stability (Walsh, 2016). Increasing the level of family resilience can facilitate caregivers' adaptation to changes in family structure, leading to good family adjustment (Lahaije *et al.*, 2024). Therefore, identifying the factors influencing family resilience is essential for providing targeted interventions to facilitate the realization of family adjustment.

The known influences on family resilience include social support, caregiving burdens, coping, etc., but little research explains whether these influences interact with each other to ultimately influence family resilience. The entire family is under stress whenever a family has a stroke patient, based on which we used a family stress model, the Family Adjustment and Adaptive Response (FAAR) model, as a theoretical framework to construct a conceptual framework explaining how the influences on family resilience in stroke caregivers interact with each other to ultimately affect family resilience.

2. Methods

A comprehensive search was conducted in major literature databases (including PubMed, Embase, Scopus, Web of Science, and CNKI) using the search terms 'family resilience', 'influencing factors', and 'theoretical frameworks'. The literature was then extracted and summarised to identify the factors influencing family resilience and the theoretical framework for this study. Following this, clear meanings were assigned to each of the core concepts in the theoretical framework, and a conceptual framework for this study was developed.

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3. Results

3.1Factors Influencing Family Resilience

Numerous studies have identified factors influencing the family resilience of stroke survivors, including caregiving burden, coping ability social support, etc. Fitryasari *et al.* (2018) conducted interviews with caregivers of 15 schizophrenia patients and found that home caregivers with maladaptation reported having an excessive burden of self-care, which affected their family adjustment; Yuli *et al.* (2018) and others pointed out in their research on families' tenacity of people with breast cancer that the burden of care not only seriously affects their family resilience level, but also reduces the quality of life of patients. Sim *et al.*'s research on families of disabled patients pointed out that family pressure hurts family resilience. The greater the family pressure, the weaker the family resilience (Sim *et al.*, 2013).

Both Ahlert *et al.* (2012) and Hall *et al.* (2012)in their studies suggested that problem-solving and coping abilities play a crucial role in enhancing family resilience. Wong (2015) and his colleagues conducted a narrative analysis on a family selected from a group of 27 dementia patients who initially participated in communal dining. Their findings suggest that positive coping strategies like shared dining, recalling memories, humor, and continuous learning and adaptation can facilitate the growth of family resilience. Liu *et al*.'s study highlighted that employing negative problem-solving and coping methods, like refraining from consulting healthcare professionals, could disrupt family life, cause instability, and be an impediment to forming family resilience (Liu *et al.*, 2022). Cui *et al*.'s survey of 1238 teenage epilepsy patients from 9 tertiary hospitals in China found a meaningful constructive association between family resilience and coping approaches (r-0.450, P-0.01). Coping styles play a moderating role in family resilience and self-care status (Cui *et al.*, 2022). Positive coping styles aid families in withstanding crises and support the healthy restoration of family resilience. Social support offers material and emotional assistance to patients and their families, greatly influencing family management and stress coping. According to research on family stress theory, families should assess stressful events, identify coping strategies, and access resources. The greater the family's resources, the higher their ability to cope (Elloker *et al.*, 2018). It is believed that providing families with opportunities to receive social assistance can help them re-establish control and enhance their resilience. The experience of receiving assistance and support from friends, family, and other social groups—whether actual or perceived—is known as social support. Zhang *et al.* (2023) conducted a cross-sectional survey of first-time stroke patients one-month post-stroke and found that social support was a significant predictor of family resilience. Stroke is a stressful occurrence for not only patients but also their families, so they need resources inside as well as outside to handle it. Those who have greater levels of social support obtain more shielding and are better equipped to deal with the hardships faced by individuals and families when confronting stroke, leading to an improvement in coping and adaptation to stressful scenarios. Martin (2015) and colleagues investigated the factors that influence family resilience in elderly populations. The results reveal that social support,

personal beliefs about life and illness, family financial and social resources, coordination among family members, and emotional communication all help foster the growth of family resilience.

3.2 Relationship between care burden, social support and coping

3.2.1 Care Burden and Coping

Azar Kazemi *et al.* (2021) in a cross-sectional study of 110 caregivers of elderly patients who had suffered from stroke found that caregivers with higher caregiving burdens used more negative coping strategies, Lida Menati *et al.* (2020) in a cross-sectional survey of caregivers of 130 hemodialysis patients concluded that avoidant strategies had a significant positive correlation with total caregiving burden and all its subscales. Baharudin (2019) similarly used the methodology of a cross-sectional study among 202 caregivers of persons with family disabilities, and the results showed that active coping mediated the relationship between psychological symptoms and caregiver burden. Caga (2021) recruited 55 patient-caregiver dyads from specialized amyotrophic lateral sclerosis ALS and frontotemporal dementia FTD clinics and conducted a cross-sectional survey study with them, concluding that problem-centered strategies were significant predictors of caregiver burden. Based on these findings, it can be assumed that caregiving burden and coping are correlated.

3.2.2 Care burden and social support

Christopher Olusanjo Akosile *et al.*(2018) conducted a cross-sectional survey of informal caregivers of stroke survivors in Southern Nigeria revealing that perceived social support was significantly associated with the caregiving burden. Similar findings were reported by Lanying He *et al.* (2023) who conducted a cross-sectional survey with ischemic stroke (IS) survivors and their caregivers, and the results of the multiple linear regression statistics showed that caregivers' social support and caregiving burden were significantly correlated. Kavga *et al.* (2022) investigated the relationship between patient and caregiver characteristics, burden and depression, and social support received by caregivers of stroke patients in Greece. The results of the study likewise showed that greater perceived support was significantly associated with lower caregiving burdens. Based on the above findings, it can be concluded that social support and caregiving burden are correlated.

3.3 The FAAR model

The Family Adjustment and Adaptation Response Model (FAAR), as revised by Patterson in 1988, serves as the theoretical foundation for this investigation. (Patterson, 1988). The FAAR process model describes the manner in which families achieve pre-crisis adjustment and post-crisis adaptation. The theory has been widely used in the study of family stress and adaptation in chronic illness. The Family Adjustment and Adaptation Response (FAAR) model, consists of two phases, adjustment and adaptation.

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For most stressors and strains that arise in family life, families can return to a state of balance and harmony by simply adjusting to them, and therefore, families only need to go through the adjustment phase; however, when families are faced with a major traumatic or catastrophic stressful event, or When confronted with a multitude of stressful occurrences concurrently, familial units must undergo a process of familial adaptation, during which the family unit itself undergoes a profound alteration. The purpose of this adaptation is to equip the family unit with the requisite resilience to navigate and adapt to these changes. To achieve this resilience, families can gain dynamic equilibrium through the acquisition of novel adaptive resources and coping behaviors, the reduction of the demands they are required to confront, and the alteration of their situational perspective.

The Family Adjustment and Adaptation Response Model posits that demands may be classified into two categories: stressors and strains. Stressors are defined as life events, such as death and natural disasters, that elicit a physiological response. Strains, on the other hand, are defined as a state of feeling stressed, which is related to the need or desire to change something. The state of tension may have three sources. The first may be unresolved tension associated with a previous stressor. A second source of stress may arise from ongoing roles in which individuals experience tension due to discrepancies between their own and others' expectations regarding role performance. A third source of stress may emerge as a consequence of familial efforts to adjust and adapt. As demands are managed and equilibrium is achieved within the body, patterns of behavior emerge and stabilize at the individual and family levels. In some instances, these patterns serve to maintain equilibrium within the family system, albeit at the expense of the physical or psychological development of individual family members. These stable yet maladaptive patterns contribute to the family system in the form of stresses that become integrated into the demand pile.

Adaptive capabilities can be defined as the capacity of a family unit to address its internal and external needs, encompassing the utilization of both tangible and intangible resources. In essence, families possess three primary sources of resources, namely: individual family members; the family unit itself; and the broader community. Resources may be either tangible or intangible. In the FAAR model, coping behavior is defined as the specific efforts of individuals and families to reduce or manage the demand placed upon them.

The meanings that a family gives to a crisis or stressor are called meanings. and include both situational and global levels of definition, often with meanings that transcend the event itself, leading to changes in perceptions of the family system, and even to changes in worldviews. The FAAR model is illustrated in the Figure 1.

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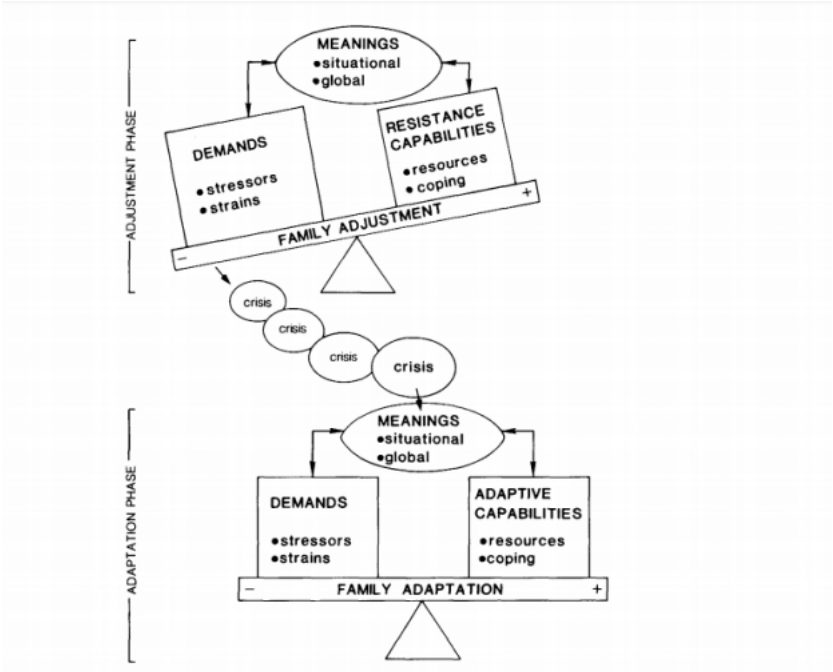

Figure 1. The Family Adjustment and Adaptation Response Model （FAAR）(Patterson, 1983)

When a family member experiences a stroke, this stressor is usually significant and requires adaptation rather than adjustment. The family system requires significant institutional changes to accommodate the disability of the injured family member, which contributes to the family crisis. This crisis is followed by the adaptation phase.

The FAAR model can serve as an effective framework for conceptualizing the stressful process experienced by stroke survivors and their family caregivers. Perceived stress, coupled with resources and coping, has an impact on the level of family resilience. This conceptual framework is the basis of this study. Each element of the model highlights essential components of the adaptation process that can be examined in the context of the impact of stroke on families.

3.4 Definition of the connotations of the FAAR model on the elements of the model of factors influencing family resilience in stroke caregivers

In previous studies, the FAAR model has been employed as a framework for understanding the mental health and quality of life of families of children who are sick or individuals with disabilities who are exposed to highly challenging environments. (C. Jenaro *et al.*, 2020; V. Lee *et al.*, 2021). This study used the FAAR model as a valid framework for conceptualizing the stressful processes experienced by stroke survivors and their families. The buildup of stressors, coupled with the family's adaptive capacities, contributes to the degree of positive adaptation or maladaptation. This conceptual framework is the basis of this study. Each factor of the model highlights a fundamental component of the adaptation process that can be examined in the

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context of the impact of stroke survivors on their families. In light of the aforementioned considerations, this study seeks to extend the existing body of knowledge by developing a conceptual framework that elucidates the factors influencing family resilience in caregivers of stroke survivors. Caregiving burden as opposed to demands is a source of stress, social support and coping are the family's adaptive capacities as a mediator of stress, and family resilience corresponds to adaptation as an outcome of stress.

Families and family members of long-term care patients will initially go through several stressful situations as well as changes in family dynamics, physiology, psychology, and social interactions. The regular functioning of the family and the process of family adaptation are impacted by the accumulation and impact of these stressors. These stressors include the physical strain of caring for ill family members, the caregiver's sacrifice of personal time, and the ongoing physical and mental exhaustion that exacerbates physical wear and tear and increases the burden of illness(Fitryasari *et al.*, 2018). Furthermore, sickness has the potential to lower the income of both patients and family caregivers since it puts a significant financial strain on the family to pay for the patient's daily living expenditures, nursing charges, and medical expenses. As a result, the stress of providing care has grown significantly for the families of caregivers. Stressors also include the bad feelings that caregivers experience, stigma, conflict in the family, and social disengagement. Caregiving load is included in the model as a caregiver stressor since it is the issue that family caregivers of stroke survivors report and acknowledge the most.

Adaptive capabilities include two aspects, namely resources and coping. Resources include internal family support and external support. In the event of a family member being affected, patients and caregivers will implement the necessary adjustments. The resilience of the family unit is protected by the adaptable distribution of resources within the family and the assistance provided by family members. The findings of the external support survey revealed that nearly all respondents thought that social support was a useful protective element. Caregivers stated that family adjustment improved with greater social support. The enhancement of family resilience is significantly impacted not just by family support but also by friend support, with the impact being greater for younger patients. A network of relationships and support from friends, family, and the community helps the patient adjust on an individual basis and the family as a whole. Therefore, this study uses social support to represent resources, and we will include three dimensions of family, friends, and other support when measuring social support. Coping behavior is defined as a specific effort by an individual or family to reduce or manage needs. Coping consists of both positive and negative dimensions.

The outcome of stress is the development of family resilience, which consists of three dimensions: family communication and problem-solving, utilizing social resources, and maintaining a positive outlook. The following hypothesis was proposed regarding the relationship between these variables: care burden significantly predicts family resilience. The

correlation between nursing burden and family resilience is mediated by social support and coping mechanisms, as shown in Figure 2.

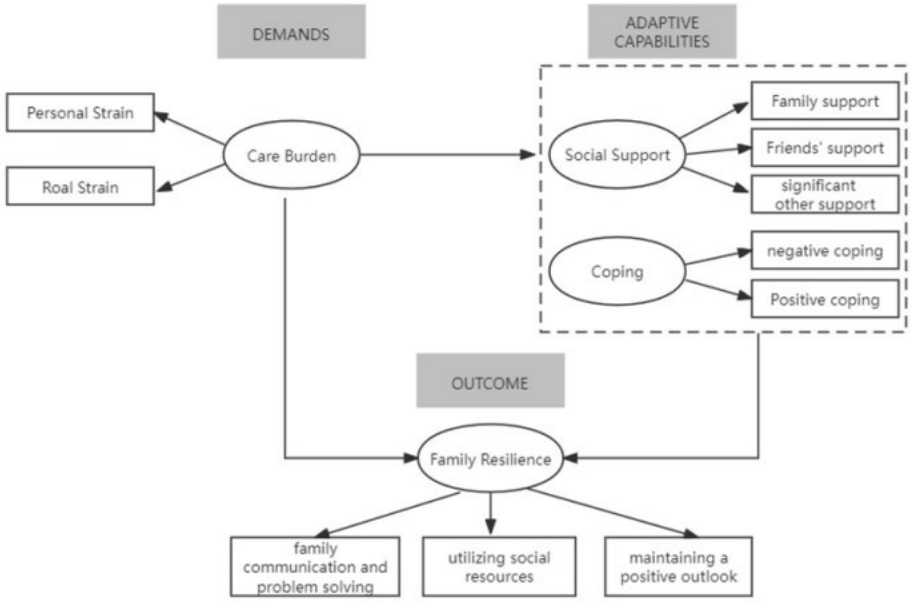

Figure 2. Hypothesized model for the relationship between care burden, social support, coping, and family resilience

4. Conclusion

The concept of family resilience is shaped by a multitude of factors. To investigate the interplay between these influences and their ultimate effect on family resilience, the FAAR model, a well-established paradigm of family stress, was selected as a theoretical foundation upon which to construct a conceptual framework. This framework aims to elucidate the interrelationship between family resilience, care burden, social support, and coping among individuals who have experienced a stroke. Ultimately, this framework seeks to inform the development of interventions that can enhance family resilience among stroke carers. It can help stroke families amid adversity to stimulate their potential, utilize the strengths of internal and external resources, avoid the threats of internal and external risk factors, adapt to changes in the internal and external environments, and achieve a well-adapted state to promote the successful growth and development of each member of the family.

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Declaration of Competing Interest

The authors declare no conflict of interest.

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