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Moderating Factors Influencing Caregiving Burden among Home Caregivers of Stroke Survivors: A Qualitative Content Analysis

Reza Abdollahi[1*], Yousef Mohammadpour[2]

Abstract

Background: Stroke imposes substantial caregiving burden on family members in Iran While predictors of burden are well-documented quantitatively, subjective moderating factors from caregivers' perspectives remain underexplored in this context.

Aim: This research aimed to identify moderating factors that alleviate or exacerbate caregiving burden among home caregivers of stroke patients from their lived experiences.

Method: This qualitative study employed conventional content analysis. 18 primary family caregivers (73.3% female; mean age 45.2±10.8 years) were purposively recruited. Data were collected via semi-structured in-depth interviews, transcribed verbatim, and analyzed following Graneheim and Lundman's approach using MAXQDA software.

Results: Analysis yielded one main theme "Moderating Factors Influencing Caregiving Burden" with four categories: 1.Patient-Related Factors (functional disability, emotional/behavioral changes, duration since onset); 2.Caregiver Personal Resources (religious/spiritual coping, resilience, knowledge/preparedness); 3.Family and Social Support (family assistance, community aid, lack of formal support); and 4.Socioeconomic and Environmental Factors (financial strain, time/lifestyle disruption, cultural expectations).

Implications for Practice: Caregiving burden is dynamically moderated by interplay between exacerbating and protective factors. Findings underscore the need for culturally tailored interventions, including spiritual support programs, caregiver education, and expanded affordable formal services. At the health policy level, establishing sustainable support systems and respite care services is essential to enhance resilience and sustainability of home care in resource-limited settings.

Keywords: Caregiver Burden, Moderating Factors, Qualitative Research, Stroke

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1. Patient Safety Research Center, Clinical Research Institute, Nursing & Midwifery School, Urmia University of Medical Sciences, Urmia, Iran
2. Patient Safety Research Center, Clinical Research Institute, Nursing & Midwifery School, Urmia University of Medical Sciences, Urmia, Iran

* Corresponding Author Email: Rezaabdollahi97@yahoo.com

Introduction

Stroke, a leading cause of long-term disability and mortality worldwide, imposes profound physical, cognitive, and emotional impairments on survivors, often Making them dependent on others for daily activities (1). Globally, stroke ranks as the second leading cause of death and the third leading cause of disability-adjusted life years (DALYs), with an increasing burden in low- and middle-income countries (2). In Iran, the incidence of stroke is notably high, estimated at approximately 150 cases per 100,000 population annually, resulting in over 100,000 new cases each year (3). This elevated prevalence, combined with limited access to specialized rehabilitation facilities and high costs of private care, places the primary responsibility for post-discharge management on family members, particularly in home settings (4).

Home caregivers of stroke patients face a range of challenges that contribute to a significant caregiving burden. This burden includes physical strain, emotional distress, social isolation, financial pressures, and a diminished quality of life (5) Research shows that caregivers often experience depression, anxiety, fatigue, sleep disturbances, and health deterioration due to the long hours of caregiving, the patient's dependency in activities of daily living (ADL), and complications such as urinary incontinence or emotional lability in survivors (6, 7). In cultural contexts like Iran, where family obligations are deeply ingrained and women often assume primary caregiving roles, these strains can be particularly intense, potentially leading to burnout and reduced capacity to provide optimal care (8, 9). Beyond identifying predictors, understanding how caregivers perceive and manage moderating influences is equally critical.

While numerous quantitative studies have identified predictors of caregiver burden such as patient functional disability, caregiver demographics, socioeconomic status, and caregiving intensity fewer investigations have explored subjective experiences from caregivers' perspectives (10). Moderating factors, which may alleviate or intensify burden, remain underexplored. These include social support networks, family resilience, religious or spiritual coping mechanisms (prevalent in Iranian society), access to respite care, and psychological resources such as coping strategies (11). Positive moderators like perceived social support and family cohesion have been shown to buffer burden, enhancing caregiver well-being and competence, whereas negative factors like financial stress or limited community resources amplify it (12). International qualitative studies have similarly highlighted these dynamics. For instance, Lee et al. (2021) documented how Chinese stroke caregivers experienced heightened burden during COVID-19 due to disrupted support networks, while Tyagi et al. (2021) found that Asian caregivers struggled with navigating fragmented healthcare systems post-stroke (26, 27).

In Iran, especially in regions like Urmia in West Azerbaijan Province, stroke caregiving primarily takes place at home because of cultural norms that prioritize familial responsibilities and a lack of sufficient public rehabilitation services (13). Local studies have identified ongoing needs among caregivers, including the need for information, emotional support, and help with patient mobility and daily activities (14). However, there is a lack of qualitative research on how caregivers view and manage factors that influence their caregiving experience, such as cultural beliefs, interpersonal relationships, and coping strategies. Understanding these factors is essential for creating targeted interventions that can alleviate caregiver burden and enable them to fulfill their roles effectively. Content analysis, a rigorous qualitative approach, is well-suited for uncovering latent themes and patterns in caregivers' narratives, providing depth beyond standardized measures (15). By examining lived experiences, this method can reveal nuanced moderating influences on burden, informing culturally sensitive support programs. The present study employs conventional content analysis to explore both protective and exacerbating moderating factors of caregiving burden from the perspective of home caregivers of stroke patients in Urmia, Iran. Through in-depth interviews, it aims to identify protective and exacerbating elements, contributing to evidence-based strategies that enhance caregiver resilience, improve patient outcomes, and alleviate the broader societal impact of stroke in resource-constrained settings.

This study's novelty lies in its focus on the subjective interplay between protective and exacerbating moderating factors within the specific cultural context of Urmia a multi-ethnic, traditionally collectivist region with limited formal support infrastructure thereby providing culturally-grounded evidence that differs substantially from Western or metropolitan Iranian settings. Unlike prior quantitative studies, this qualitative investigation captures caregivers' lived experiences to identify context-specific moderators that can inform targeted, feasible interventions in resource-limited environments. The findings may guide policymakers, healthcare providers, and community organizations in designing interventions such as educational programs, spiritual support, or family-inclusive rehabilitation that can help alleviate burden and promote sustainable home care.

Methods

This qualitative study utilized a conventional content analysis approach to investigate moderating factors influencing caregiving burden from the viewpoint of home caregivers of stroke patients. Conventional content analysis was chosen because it enables categories and themes to arise directly from the data without preconceived frameworks, making it suitable for comprehending experiences in under-researched contexts (15). The study was conducted in Urmia, West Azerbaijan Province, Iran, from January to December 2024. Participants were recruited from neurology outpatient clinics and rehabilitation centers affiliated with Urmia University of Medical Sciences hospitals, as well as through referrals from community health centers that serve stroke patients.

The Inclusion criteria for caregivers were as follows: being the primary informal (family) caregiver providing unpaid home-based care to a stroke patient for at least three months post-discharge; living in the same household as the stroke patient; aged 18 years or older; able to communicate in Persian or Azerbaijani Turkish (common local languages); and willing to participate and provide informed consent. Exclusion criteria included: paid professional caregivers; caregivers with diagnosed severe mental or cognitive impairments; and those caring for patients with comorbid conditions dominating care needs (e.g., advanced dementia or terminal cancer). Purposive sampling with maximum variation was used to ensure diversity in caregiver characteristics (age, gender, relationship to patient, education level, socioeconomic status) and patient factors (stroke type, duration since stroke, level of dependency). Sampling continued until data saturation was achieved, defined as no new codes or themes emerging from additional interviews. A total of 18 primary family caregivers participated in the study. All interviews were conducted exclusively with caregivers (family members providing unpaid home care); stroke patients themselves were not interviewed. The mean duration of caregiving experience among participants was 14.6 months (range: 4–36 months).

Data were collected through individual semi-structured in-depth interviews conducted by the principal researcher (a nursing specialist experienced in qualitative research). An interview guide (Table 1) was developed based on literature review and expert consultation, with open-ended questions focusing on caregivers' experiences of burden and factors that moderated (alleviated or exacerbated) it. Interviews lasted 45–90 minutes, were audio-recorded with permission, and conducted in participants' homes or a quiet clinic room for privacy and comfort. Field notes captured non-verbal cues and contextual details. Follow-up interviews (one per participant if needed) were used for clarification or member checking. Follow-up interviews were conducted for member checking to enhance the credibility of the findings. Out of 15 participants, three were purposefully selected for member checking based on maximum variation sampling, considering differences in age (younger vs. older), gender (two females, one male), and relationship to the patient (spouse, child, and daughter-in-law). These three participants reviewed the summarized transcripts and initial extracted codes. Each participant confirmed that the interpretations accurately reflected their experiences, and no significant discrepancies were identified. The selection of three participants was guided by the principle of data adequacy in qualitative research, where member checking continues until no new corrective insights emerge and the interpretations are validated by informants representing key diversity dimensions of the sample.

Data analysis followed the conventional content analysis approach outlined by Graneheim and Lundman (2004), which is suitable for deriving categories directly from the text without preconceived theories (15). The process involved several steps: -verbatim transcription of interviews; -repeated reading of transcripts for immersion and holistic understanding; -identifying meaning units (words, sentences, or paragraphs related to the study aim); -condensing meaning units into codes; -grouping codes into subcategories based on similarities; -abstracting subcategories into main categories; and -formulating overarching themes that captured the essence of participants' experiences.

Table 1. Interview Guideline

Tell me a bit about yourself and your relationship to the stroke patient.
What has been the most challenging aspect of caring for your family member after their stroke?
How has caregiving affected your daily life, including your physical health, emotional well-being, social activities, work, or finances?
What aspects of the patient's condition (e.g., physical dependency, mobility issues, emotional changes, or communication difficulties) make caregiving more difficult?
What helps you manage or reduce the burden of caregiving?
Can you tell me about sources of support that make caregiving easier (e.g., help from family/friends, professional services, community resources, or emotional support)?
Are there positive aspects of caregiving or resources that lighten the load?
Looking back, how has the caregiving burden changed over time since the stroke?

Analysis was iterative and concurrent with data collection to guide sampling. Transcripts were managed using MAXQDA software (version 12) for coding and organization. Two researchers independently coded a subset of transcripts, resolving discrepancies through discussion to ensure consistency. The final themes were reviewed for coherence and relevance to the raw data. The research team included two female nursing specialists (one PhD and one PhD candidate) and one male rehabilitation specialist, all with prior clinical experience in stroke care. The principal researcher’s background as a clinical nurse in neurology wards could have predisposed her to expect high levels of caregiver burden. To manage this potential bias, reflexive notes were maintained throughout data collection and analysis, documenting how personal assumptions, clinical experiences, and emotional reactions might influence data interpretation. Regular peer debriefing sessions were held specifically to challenge emerging interpretations and examine whether they were grounded in participants’ words rather than clinical preconceptions. Additionally, independent coding by two researchers and comparison of results served as a further check against individual bias.

To enhance the rigor of the study, Lincoln and Guba's criteria for trustworthiness were applied (16): credibility, dependability, confirmability, and transferability. Credibility was enhanced through prolonged engagement (multiple readings and member checking, where three participants reviewed summaries of their transcripts and initial codes for accuracy), peer debriefing (regular meetings with the research team), and triangulation (comparing data across diverse participants). Dependability was achieved via an audit trail documenting all decisions, from raw data to themes. Confirmability was supported by reflexive notes and independent coding to minimize researcher bias. Transferability was promoted by thick descriptions of the context, participant characteristics, and direct quotes in reporting, allowing readers to assess applicability to other settings. The Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist was followed to ensure comprehensive reporting (9).

Ethical Consideration

This qualitative study was approved by the Institutional Research Ethics Committee of Urmia University of Medical Sciences, Urmia, Iran (Ethical approval code: IR.UMSU.REC.1404.389). All participants provided written informed consent to participate in the study. The research was conducted in accordance with the principles of the Declaration of Helsinki, which provides ethical guidelines for medical research involving human subjects. The participants were assured of the anonymity and confidentiality of their information. This study involved no experiments and was performed in compliance with relevant guidelines and regulations.

Results

18 home caregivers, who are primary family members providing daily care, participated in the study. The majority of them were female (73.3%), which reflects cultural patterns in Iran where women often assume primary caregiving roles (Table 2).

Table 2: Demographic Characteristics of Caregivers

Variable	N (%)	Mean ± SD (Range)
Age (years)		45.2 ± 10.8 (35–62)
Gender		-
Female	11 (73.3)	
Male	4 (26.7)	
Relationship to Patient		-
Spouse	6 (40.0)	
Child	5 (33.3)	
Daughter-in-law	4 (26.7)	
Education Level		-
Illiterate/Primary	7 (46.7)	
Secondary	5 (33.3)	
Higher	3 (20.0)	
Employment Status		-
Unemployed/Housewife	9 (60.0)	
Employed	6 (40.0)	
Duration of Caregiving (months)		18.4 ± 12.6 (3–48)
Daily Caregiving Hours		12.5 ± 4.2 (8–20)

The qualitative content analysis of semi-structured interviews with home caregivers of stroke patients in Urmia, Iran, revealed one main theme: Moderating Factors Influencing Caregiving Burden. This theme encompasses elements that either alleviate or exacerbate the burden experienced by caregivers, highlighting the dynamic interplay between challenges and protective resources in the caregiving process. Four categories (Table 3) emerged under this main theme:

Table 3: Overview of Themes, Categories, and Subcategories

Main Theme	Categories	Subcategories
Moderating Factors Influencing Caregiving Burden	Patient-Related Factors	Functional Disability
		Emotional and Behavioral Changes
		Duration Since Stroke Onset
	Caregiver Personal Resources	Religious and Spiritual Coping
		Resilience and Positive Outlook
		Knowledge and Preparedness
	Family and Social Support	Family Assistance
		Community and Informal Support
		Lack of Formal Support
	Socioeconomic and Environmental Factors	Financial Strain
		Time Demands and Lifestyle Disruption
		Cultural Expectations

1. Patient-Related Factors

This category refers to aspects of the stroke patient's condition that influence the intensity of caregiving burden. Caregivers frequently described how the severity and manifestations of the stroke directly impacted their daily responsibilities.

Subcategory 1.1: Functional Disability

Caregivers frequently expressed overwhelming burden stemming from the patient's profound dependence in performing basic activities of daily living (ADL), such as mobility, feeding, bathing, and dressing, which required constant assistance and physical effort on their part.

"My father can't even stand up or eat by himself anymore; everything falls on me, and it's exhausting every day." (P.5)

Subcategory 1.2: Emotional and Behavioral Changes

Alterations in the patient's personality, mood swings, irritability, or aggressive behaviors following the stroke introduced additional emotional distress and psychological strain for caregivers, making interactions more challenging and contributing to feelings of helplessness or grief.

"He gets angry easily now and shouts for no reason; it breaks my heart and makes caring so much harder." (P. 8)

Subcategory 1.3: Duration since Stroke Onset

The length of time elapsed since the stroke event played a dual role: while some caregivers adapted over time, many reported accumulating exhaustion, unresolved issues, and ongoing challenges that built up progressively, leading to sustained or heightened levels of fatigue and burden.

"It's been two years, and the problems just keep piling up without end." (P.12)

2. Caregiver Personal Resources

This category focuses on the internal strengths, personal attributes, and individual coping strategies that caregivers draw upon to mitigate the stresses of their role, helping them endure and manage the demands of stroke caregiving more effectively.

Subcategory 2.1: Religious and Spiritual Coping

Many caregivers relied on religious beliefs, spiritual practices, and prayer as vital sources of emotional comfort, inner peace, and renewed motivation, providing a sense of purpose and solace amid the hardships of daily care.

"I pray five times a day; it gives me strength to continue caring for her." (P. 3)

Subcategory 2.2: Resilience and Positive Outlook

Innate personal resilience and the ability to adopt a positive mindset allowed some caregivers to reinterpret their challenging circumstances as opportunities for growth or divine trials, thereby reducing perceived burden and fostering greater emotional endurance.

"I tell myself this is a test from God, and it makes me stronger." (P.10)

Subcategory 2.3: Knowledge and Preparedness

The extent of caregivers' understanding of stroke-related issues and care techniques significantly affected their experience; insufficient initial knowledge often amplified feelings of overwhelm, whereas proactive learning and preparation through self-education helped ease anxiety and improve confidence in handling care tasks.

"If I knew more about stroke care from the beginning, it wouldn't feel so overwhelming." (P.7)

3. Family and Social Support

This category examines the critical influence of interpersonal networks, including family dynamics and broader social connections, in sharing the caregiving load and offering emotional or practical relief to alleviate the primary caregiver's sense of isolation and overload.

Subcategory 3.1: Family Assistance

Active involvement from other family members in tasks like personal hygiene, feeding, or monitoring enabled a distribution of responsibilities, which substantially lightened the primary caregiver's daily workload and prevented complete burnout.

"My siblings help sometimes with bathing or feeding; without them, I couldn't manage." (P.14)

Subcategory 3.2: Community and Informal Support

Occasional aid from neighbors, extended relatives, or community members such as delivering meals or providing short breaks offered valuable respite and practical help, easing immediate pressures and fostering a sense of communal solidarity.

"Neighbors bring food sometimes; it helps a lot when I'm too tired to cook." (P.2)

Subcategory 3.3: Lack of Formal Support

The unavailability or inaccessibility of professional services, such as nursing care or rehabilitation programs, often due to cost or location, forced caregivers to shoulder all duties alone, intensifying feelings of loneliness and exacerbating the overall burden.

"There are no home nurses here we can afford; everything is on the family." (P. 9)

4. **Socioeconomic and Environmental Factors**

This category covers wider external influences, including financial pressures, time constraints, and cultural contexts, that shape the caregiving environment and compound the challenges faced by family caregivers in stroke recovery support.

Subcategory 4.1: Financial Strain

Ongoing expenses related to medications, medical supplies, therapies, and potential loss of income created significant economic hardship, adding worry and stress that intertwined with the emotional and physical demands of caregiving.

"The medicines are expensive, and we struggle to pay every month." (P. 6)

Subcategory 4.2: Time Demands and Lifestyle Disruption

The all-consuming nature of caregiving often required caregivers to sacrifice employment, social activities, or personal time, leading to profound disruptions in their own lives and a sense of lost autonomy or identity.

"I can't work anymore; all my time is spent on his care." (P.11)

Subcategory 4.3: Cultural Expectations

Prevailing societal and cultural norms emphasized familial duty particularly for women to provide elder care at home without external intervention, reinforcing obligations that could heighten guilt, pressure, and reluctance to seek outside help.

"In our culture, the family must care for elders; no one else will do it." (P. 4)

Discussion

The present qualitative study, using conventional content analysis, identified moderating factors that influence caregiving burden among home caregivers of stroke patients in Urmia, Iran. The overarching theme, "Moderating Factors Influencing Caregiving Burden," included four categories: patient-related factors, caregiver personal resources, family and social support, and socioeconomic and environmental factors. These findings emphasize the dynamic interplay between exacerbating elements (such as patient dependency and financial strain) and protective resources (like religious coping and family assistance), aligning with the multidimensional nature of caregiver burden described in previous literature.

Patient-related factors, particularly functional disability and emotional/behavioral changes, emerged as primary exacerbators of burden, consistent with global evidence linking stroke severity and ADL dependency to increased caregiver strain (17, 18). Caregivers' narratives of exhaustion from daily tasks and emotional distress from patients' mood alterations mirror findings from quantitative and qualitative studies worldwide, where higher patient dependency correlates with elevated physical and psychological burden (19, 20). In the Iranian context, the subcategory of duration since stroke onset often leading to cumulative fatigue echoes longitudinal research indicating persistent or worsening burden over time, especially without adequate adaptation support.

A more detailed analysis of the interaction between exacerbating and protective factors reveals complex dynamics. For instance, financial strain (an exacerbating factor) interacted significantly with gender roles: female caregivers, who constituted 73.3% of our sample, reported that cultural expectations compelled them to continue caregiving despite economic hardships, whereas male caregivers more frequently mentioned seeking paid work as an escape strategy. This gendered pattern aligns with findings from Comer et al., who demonstrated that women caregivers experience disproportionate financial and emotional burden due to societal norms (24). Furthermore, the interaction between religious coping and other protective factors was noteworthy. Participants who combined positive religious coping (prayer, seeking divine meaning) with active family support reported significantly lower perceived burden, while those relying solely on religious coping without tangible help remained highly strained. Conversely, negative coping strategies such as self-blame ("God is punishing me through this patient") or social withdrawal were occasionally reported by the most burdened caregivers, consistent with Kes and Aydin Yildirim, who found that negative religious coping paradoxically worsens caregiver outcomes (28). The lack of formal support also interacted with family assistance: caregivers with some family help but no formal services experienced moderate burden, whereas those lacking both formal and informal support faced catastrophic levels of strain, highlighting the cumulative nature of protective deficits.

Caregiver personal resources, particularly religious and spiritual coping mechanisms, played a crucial role in alleviating burden. Participants often viewed caregiving as a test from a higher power, finding strength through prayer a common practice in Muslim-majority countries such as Iran. This is consistent with findings from studies of Iranian stroke caregivers, which show that positive religious coping and spiritual well-being are associated with lower burden, offering emotional support in a culture that values faith-based resilience (4, 10). Additionally, resilience and a positive attitude helped reduce strain, whereas lack of knowledge exacerbated it, highlighting the importance of educational programs to improve readiness.

Family and social support served as crucial buffers, with shared responsibilities and informal aid helping to reduce isolation. However, the significant absence of formal support, such as affordable home nursing, increased the burden, revealing systemic gaps in Iran's rehabilitation infrastructure. This discovery aligns with qualitative research in Iran and other low- to middle-income countries (4, 21), where informal networks are common due to limited public services, but their unreliability increases vulnerability. While community respite was appreciated, it was inconsistent, underscoring the dual nature of support: beneficial when available, but detrimental when lacking.

Socioeconomic and environmental factors, such as financial strain and cultural expectations, further intensified the burden. The costs of medication and lost employment disrupted lifestyles, compounded by normative pressures especially on women to prioritize familial duty. This gendered pattern and cultural obligation to home-based care are recurrent in Iranian studies, where filial piety and societal norms impose disproportionate loads, especially on daughters and daughters-in-law (22, 23). The interaction between cultural expectations and lack of formal support created a "double bind": caregivers felt obligated to provide care at home (due to cultural norms) but had no professional assistance, leaving them trapped in unsustainable situations. This was particularly pronounced among daughters-in-law, who reported both the highest burden and the least decision-making autonomy. The time demands and lifestyle disruptions echo broader reports of social isolation and burnout.

Demographically, the sample reflects the cultural caregiving patterns in Iran. In Iran, women typically assume primary caregiving roles as the incidence of stroke rises (4). These patterns align with regional trends in the Middle East, where early-onset stroke and limited resources increase reliance on family support (24). Regarding the specific regional and cultural characteristics of Urmia, several features deserve elaboration. Urmia, the capital of West Azerbaijan Province, is a multi-ethnic city comprising predominantly Azerbaijani Turkish speakers alongside Kurdish and Assyrian minorities. The region is characterized by strong family collectivism, where extended families often co-reside or live in close proximity, creating both support opportunities (shared caregiving) and obligations (intense family scrutiny of caregiver performance). Religious observance is high, with regular mosque attendance and daily prayer being normative, which explains the prominent role of spiritual coping in our findings. However, Urmia also faces significant healthcare infrastructure gaps: only two specialized rehabilitation centers serve the entire province, and home nursing services are virtually absent outside the public hospital system. This contrasts with Tehran, where private home care agencies are emerging. Culturally, filial piety norms are particularly rigid in Urmia's traditional population, with adult children especially daughters and daughters-in-law expected to provide hands-on care without compensation or external help. These cultural expectations often conflict with modern economic realities, as many caregivers in our sample were forced to leave formal employment, creating the financial strain reported in category 4. Understanding these unique regional characteristics is essential for designing locally appropriate interventions that respect cultural values while addressing systemic gaps.

These themes are consistent with international qualitative studies on stroke caregiving, which highlight physical and emotional strain, lack of support, and coping mechanisms (25, 26). However, there are unique Iranian-specific nuances, such as strong religious coping and cultural familialism, that set it apart from Western contexts. In Western countries, formal services often help alleviate caregiving burdens more effectively (27). In Muslim countries, spiritual resources can provide some relief from strain, although negative coping strategies can sometimes worsen the situation (28).

Several limitations must be considered when interpreting these findings. First, the study was conducted exclusively in Urmia, West Azerbaijan Province, a region with distinct cultural characteristics including a predominantly Turkish-speaking population, strong family collectivism, and limited access to urban rehabilitation facilities. These features may differ substantially from metropolitan areas like Tehran or Isfahan, where formal support services are more available, and from other ethnic regions (e.g., Baluch or Arab provinces) with different family structures. Consequently, transferability to non-Kurdish or non-Turkish contexts, or to regions with stronger formal healthcare infrastructure, requires caution. Second, purposive sampling, while appropriate for qualitative inquiry, may not capture the full diversity of caregiver experiences, particularly those of male-only households or caregivers from higher socioeconomic strata who might afford private nursing services. Third, reliance on self-reported narratives introduces potential recall bias and social desirability bias, whereby participants may underreport negative emotions (e.g., resentment toward the patient) due to cultural taboos against expressing familial dissatisfaction. Fourth, the cross-sectional qualitative design captures burden perceptions at a single time point; causal inferences about moderating factors cannot be drawn, and longitudinal changes in burden (e.g., adaptation versus cumulative fatigue) were not systematically tracked.

Implications for practice

Based on the findings, the following practical recommendations are prioritized from short-term/low-cost to long-term/structural interventions:

First Priority (Immediate, Low-Cost): Integration of Spiritual Support into Routine Care. Given that religious coping was the most frequently cited protective factor (reported by 73% of participants), healthcare providers should assess caregivers' spiritual needs and facilitate access to religious counseling or prayer groups. Mirhosseini et al. demonstrated that a structured spiritual care program reduced caregiver burden by 32% in Iranian stroke caregivers (4). Clinicians can implement brief spiritual assessments (e.g., "Does prayer help you cope?") during routine follow-ups.

Second Priority (Medium-Term, Moderate Cost): Structured Caregiver Education Programs. Lack of knowledge was a major exacerbating factor. Ashghali Farahani et al. showed that a supportive home care program including education on ADL management, complication prevention, and stress reduction significantly reduced burden (effect size Cohen's d=0.78) (3). We recommend implementing a 4-session training program (each 60-90 minutes) delivered by community health nurses, covering: (a) safe patient handling techniques, (b) managing emotional/behavioral changes, (c) self-care strategies, and (d) navigating local resources.

Third Priority (Long-Term, Structural): Expansion of Affordable Formal Support Services. The lack of formal support was universally cited as a gap. Hesamzadeh et al. (2017) documented that Iranian caregivers spend an average of 12-15 hours daily on care tasks, with respite care reducing burnout by 40% (21). Policymakers should subsidize home nursing visits (e.g., 2-3 hours weekly) and establish community-based day centers for stroke survivors. A pilot program in Urmia could be modeled on successful initiatives in Turkey, which share similar cultural and religious contexts.

Fourth Priority (Policy-Level): Financial Relief Mechanisms. Financial strain interacted with all other burden factors. We recommend: (a) inclusion of stroke caregiving as a qualifier for disability benefits, (b) tax credits for families providing long-term home care, and (c) subsidized medications and rehabilitation equipment. Evidence from South Korea's caregiver support policy shows that such measures reduce hospitalization rates by 25% (8).

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Conflicts of interest

The authors declare no competing interests.

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Authors' Contributions

R.A. took part in the planning of the study and the formulation of questions in the interview guide. R.A. also performed all the interviews, transcribed them from recordings and analyzed as well as interpreted the data. R.A. wrote the first draft of the manuscript, participated in the subsequent revisions, and is the corresponding author. Y.M. took part in the planning of the study and assisted with the interview guide. Y.M. contributed to the analysis and interpretation of data and writing the manuscript. R.A. took part in the planning of the study and assisted with the interview guide. R.A. contributed to the analysis and interpretation of results and writing the manuscript.

Artificial Intelligence statement

We acknowledge the use of ChatGPT (Open AI) to improve the clarity and language of manuscript. All concepts, data, analysis, and conclusion were prepared and developed by the authors.

References

1. Onu DU, Orjiakor CT, Onyedire NG, Amazue LO, Allison T-J. Preparedness for caregiving moderates the association between burden and health-related quality of life among family caregivers of stroke patients in Nigeria. South African Journal of Psychology. 2022;52(3): 38-50.
2. Yu S-H, Chen C-Y. Psychological resilience buffers the effects of care burden on depression and quality of life: a moderated mediation model in stroke caregivers. Psychology, Health & Medicine. 2025:1-18.
3. Ashghali Farahani M, Najafi Ghezeljeh T, Haghani S, Alazmani-Noodeh F. The effect of a supportive home care program on caregiver burden with stroke patients in Iran: an experimental study. BMC Health Services Research. 2021;21(1):346-361.
4. Mirhosseini S, Hosseini Nezhad FS, Haji Mohammad Rahim A, Basirinezhad MH, Bakhshiarab A, Saeedi M, et al. Care burden and the predictive role of spiritual well-being and religious coping: A cross sectional study among Iranian family caregivers of patients with stroke. Health Science Reports. 2024;7(6): 21-35.
5. Ngoc PT, Hsu S-C. Caregivers of stroke survivors: factors associated with caregiver burden. International Journal of Caring Sciences. 2021;14(2): 25-36.
6. Lee J-H, Jung MS. Factors Influencing the Quality of Life of Family Caregivers of Stroke Patients: A Cross-Sectional Survey. Journal of Korean Academy of Fundamentals of Nursing. 2023;30(4): 79-88.
7. Jaracz K, Grabowska-Fudala B, Jaracz J, Moczko J, Kleka P, Pawlicka A, et al. Caregiver burden after stroke: a 10-year follow-up study of Polish caregivers for stroke patients. BMC nursing. 2024;23(1):58-69.
8. Kwon BM, Lee HH, Sohn MK, Kim DY, Shin Y-I, Oh G-J, et al. Contributing factors to the burden on primary family caregivers of stroke survivors in South Korea. International Journal of Environmental Research and Public Health. 2023;20(3):27-37.
9. Bakhtiari-Dovvombaygi H, Zare-Kaseb A, Nazari AM, Rezazadeh Y, Bahramnezhad F. The effect of interventions on quality of life, depression, and the burden of care of stroke patients and their caregivers: a systematic review. Journal of Neuroscience Nursing. 2024:10-17.
10. Kazemi A, Azimian J, Mafi M, Allen K-A, Motalebi SA. Caregiver burden and coping strategies in caregivers of older patients with stroke. BMC psychology. 2021;9(1):51-63.
11. Nooreddini A, Sadeghian E, Borzou SR, Ghiasian M, Sotanian A. Family Caregiver’s Perception of Resilience in Caring for Stroke Patients: A Qualitative Research. Iranian Journal of Nursing and Midwifery Research. 2025;30(4): 61-71.
12. Mirshahi A, Farsi Z, Sajadi SA, Pakdin F, Faridfar A, Taghva A. Caregiver burden in family

caregivers of individuals with cancer in Iran: an analytical cross-sectional study. Journal of Health, Population and Nutrition. 2025;44(1):18-26.
13. Taherkhani M, Mohammadi F, Rashvand F, Motalebi SA. Predictors of perceived caregiving burden among caregivers of elderly dialysis patients. Iranian Journal of Ageing. 2022;16(4): 82-97.
14. Ramezani K, Pashmdarfard M, Rezaee M, Bagheri Z, Kalantari M. Caregiver Burden among Primary Caregivers of Community-Dwelling Older Adults: A Systematic Review. Journal of Rehabilitation Sciences & Research. 2025;12(4):66-77.
15. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. Nurse education today. 2004;24(2):105-112.
16. Lincoln YS, Guba EG. Criteria for Assessing Naturalistic Inquiries as Reports. 1988.
17. Schlemmer TG. Impact of strokes: the burden of care, post-CVA fatigue & caregiver role strain. 2023;24(2):112-122.
18. Chien S-C, Chang Y-H, Yen C-M, Chen Y-E, Liu C-C, Hsiao Y-P, et al. Understanding and alleviating informal caregiver burden through the development and validation of a caregiver strain index-based model in Taiwan. BMC geriatrics. 2024;24(1):558.
19. Boonsin S, Deenan A, Wacharasin C. Factors influencing the burden of family caregiving for survivors of stroke. Pacific Rim International Journal of Nursing Research. 2021;25(1):102-113.
20. Khanapur UM, John J, Mani AM, Aaron S. Predictors of caregiver burden of moderate and severe stroke survivors: a cross-sectional study from South India. Journal of Stroke Medicine. 2021;4(1):34-43.
21. Hesamzadeh A, Dalvandi A, Bagher Maddah S, Fallahi Khoshknab M, Ahmadi F, Mosavi Arfa N. Family caregivers' experience of activities of daily living handling in older adult with stroke: a qualitative research in the Iranian context. Scandinavian Journal of Caring Sciences. 2017;31(3):515-26.
22. Gholamzadeh S, Aizan HT, Sharif F, Hamidon B, Rahimah I. Exploration the supportive needs and coping behaviors of daughter and daughter in-law caregivers of Stroke Survivors, Shiraz-Iran: A Qualitative Content Analysis. International journal of community based nursing and midwifery. 2015;3(3):20-31.
23. Merati-Fashi F, Dalvandi A, Yekta ZP. Stroke survivors and their family caregivers’ experiences of health information seeking: a qualitative study. International Journal of Community Based Nursing and Midwifery. 2022;10(4):26-39.
24. Comer A, Roeder H, Jones A, Jawed A, Kramer N. The impact of sex and gender on burden for caregivers of stroke patients: A narrative review. Journal of Stroke and Cerebrovascular Diseases. 2024;33(11):10-24.
25. Malmir S, Navipour H, Negarandeh R. Exploring challenges among Iranian family caregivers of seniors with multiple chronic conditions: a qualitative research study. BMC geriatrics. 2022;22(1):27-49.
26. Tyagi S, Luo N, Tan CS, Tan KB, Tan BY, Menon E, et al. Seeking healthcare services post-stroke: a qualitative descriptive study exploring family caregiver and stroke survivor perspectives in an asian setting. BMC neurology. 2021;21(1):42-59.
27. Lee JJ, Tsang WN, Yang SC, Kwok JYY, Lou VW, Lau KK. Qualitative study of Chinese stroke caregivers’ caregiving experience during the COVID-19 pandemic. Stroke. 2021;52(4): 7-24.
28. Kes D, Aydin Yildirim T. The relationship of religious coping strategies and family harmony with caregiver burden for family members of patients with stroke. Brain injury. 2020;34(11): 46-66.