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Review Article

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Quality of life in family caregivers of stroke patients: narrative review

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Abstract

Patient safety is a fundamental component of healthcare quality, with nurses playing a critical role in maintaining safe clinical practice. However, excessive workload, inadequate staffing, and workplace stressors may contribute to burnout and compromise patient safety. This scoping review aimed to synthesize empirical evidence on the associations between nursing workload, burnout, and patient safety and identify relevant organizational factors. A literature search was conducted in the Scopus database using the Population–Concept–Context (PCC) framework, with study selection guided by predefined eligibility criteria and PRISMA-ScR guidelines. Five studies met the inclusion criteria. The findings indicated that high nursing workload and inadequate nurse-to-patient ratios were associated with increased stress and burnout. Burnout was also associated with adverse events, medication and patient identification errors, and reduced clinical performance. Organizational factors, including staffing adequacy, communication, teamwork, and institutional support, were identified as important determinants of patient safety. These findings highlight the interconnected relationships between nursing workload, burnout, and patient safety. Strengthening staffing management, organizational support, interprofessional communication, teamwork, and patient safety culture may promote safer nursing practice. Further research is needed to evaluate the effectiveness of organizational interventions in reducing burnout and improving patient safety outcomes.

INTRODUCTION

Stroke is one of the leading causes of death and long-term disability worldwide, imposing a substantial health, social, and economic burden. In Indonesia, the prevalence of stroke is 8.3 per 1,000 population and it remains a major public health problem requiring comprehensive management [1]. The increasing life expectancy of stroke patients has resulted in a growing number of survivors living with various physical, cognitive, and psychological limitations, thereby requiring long-term care at home. This condition places family members as the primary providers of daily care for patients with stroke [2].

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Family caregivers play a crucial role in the continuity of care for stroke patients after returning home. In addition to assisting with daily activities, caregivers are responsible for managing medications, supporting rehabilitation, monitoring patients' health status, providing emotional support, and serving as a link between patients and healthcare professionals. Numerous studies have shown that stroke caregivers are at higher risk of experiencing stress, anxiety, depression, and caregiver burden, all of which negatively impact their quality of life, particularly in the psychological and environmental domains [3,4]. The quality of life of caregivers is influenced by various factors, including the level of patients' functional dependence, duration of caregiving, availability of social support, economic conditions, coping ability, self-efficacy, as well as patients' cognitive and emotional impairments that increase the complexity of care [2,5]. The decline in caregivers' quality of life not only affects their own well-being but may also reduce the quality of care provided to patients and hinder the success of long-term rehabilitation.

Although numerous studies have examined the quality of life of family caregivers of stroke patients, the findings still show variations regarding the most influential factors affecting caregivers' quality of life as well as the effectiveness of different interventions in improving their well-being. Moreover, the available scientific evidence remains scattered across various aspects, such as caregiver burden, social support, coping, caregiver readiness, patient conditions, and nursing interventions, thereby failing to provide a comprehensive picture of the quality of life of family caregivers of stroke patients. Therefore, a synthesis of evidence is needed to integrate these findings and offer a more holistic understanding.

This narrative review offers a comprehensive synthesis of the quality of life of family caregivers of stroke patients, the factors influencing it, and various nursing interventions that have been reported to improve caregivers' well-being. Unlike recent systematic reviews that have primarily concentrated on caregiver burden or patient cognition, this review distinguishes itself by integrating determinants of caregivers' quality of life with evidence on nursing interventions. Such integration provides added value by not only identifying the multidimensional factors associated with caregivers' quality of life but also highlighting practical, caregiver-centered strategies that can be implemented in nursing practice to enhance their well-being.

METHODS

Study Design

This study employed a narrative review design to synthesize scientific evidence regarding the quality of life of family caregivers of stroke survivors, factors associated with their quality of life, and nursing interventions aimed at improving caregiver well-being. A narrative review was chosen because it enables the integration of findings from studies with diverse research designs, providing a comprehensive understanding of the topic. The literature search was conducted from November 2025 to January 2026 using three electronic databases (Scopus, PubMed, and ScienceDirect). Articles were screened systematically following PRISMA guidelines, with predefined inclusion and exclusion criteria applied at each stage.

Literature Search

The literature search was conducted between November 2025 and January 2026 in three electronic databases: Scopus, PubMed, and ScienceDirect. In PubMed, the keywords "family caregiver," "stroke," and "quality of life" were applied to titles and abstracts. In Scopus, the search string was TITLE-ABS-KEY("family caregiver" AND stroke AND "quality of life"). In

ScienceDirect, the same combination of keywords was applied to titles, abstracts, and keywords, with minor adjustments to match the database's indexing system. The search was limited to publications published between January 2000 and January 2026 and restricted to articles written in English.

Study Selection

The selection process of articles in this narrative review was conducted in a structured manner to ensure that the studies analyzed were aligned with the research objectives. Although not a systematic review, the search strategy followed systematic principles to enhance transparency. The process was illustrated using a PRISMA flow diagram (Figure 1). All articles retrieved from Scopus, PubMed, and ScienceDirect were compiled and checked for duplicates using Mendeley Reference Manager. Duplicate records were removed, and the remaining articles underwent initial screening based on titles and abstracts. At this stage, studies were selected independently according to their relevance to the research focus, namely the quality of life of family caregivers of stroke survivors. Any disagreement in the selection process were discussed and resolved. Articles deemed relevant were then examined in greater depth through full-text review.

During the full-text assessment, each study was evaluated against predefined inclusion and exclusion criteria. Studies that did not meet the requirements such as those failing to clearly report caregiver quality of life or employing unsuitable research designs were excluded. The entire selection process was conducted step by step until eligible articles were identified for further analysis, as depicted in the PRISMA diagram.

The population consisted of published studies investigating the quality of life of family caregivers of stroke survivors. Eligible studies were original research articles published in English between 2000 and 2025, available in full text, involving family caregivers of stroke survivors, and reporting caregiver quality of life as an outcome. Review articles, editorials, conference proceedings, theses, dissertations, and studies that did not meet the review objectives were excluded. Ultimately, 13 studies met the inclusion criteria and were included in the final synthesis.

Data Extractions

Study selection was performed through identification, title and abstract screening, and full-text review according to the predefined inclusion and exclusion criteria. The selection process was documented using a PRISMA flow diagram to provide a clear overview of identification, screening, and eligibility stages.

Data extracted from each study included the author and publication year, country, study design, participant characteristics, quality-of-life measurement instruments, factors associated with caregiver quality of life, nursing interventions when applicable, and the main findings. Information was organized using a standardized data extraction form developed in Microsoft Excel.

Screening and data extraction were primarily conducted by one reviewer. To enhance accuracy, the process was supported by another reviewer who helped verify extracted information and check consistency. As the work was not performed in duplicate by two independent reviewers, disagreements were resolved through discussion between the main reviewer and the assisting reviewer until consensus was reached.

Data Analysis

The included studies were analyzed using a narrative synthesis approach. Findings were grouped according to study characteristics, caregiver quality of life,

associated factors, and nursing interventions. The evidence was then compared and interpreted to identify common themes, similarities, and differences across studies.

Ethical Considerations

This study was based exclusively on secondary data obtained from published scientific articles. Therefore, ethical approval and informed consent were not required.

RESULTS

The literature search was conducted from November 2025 to January 2026 using three electronic databases: Scopus, PubMed, and ScienceDirect. A total of 67 articles were identified. After removing 7 duplicates, 60 articles remained for screening. Title and abstract screening excluded 24 articles, leaving 36 for full-text review. Of these, 15 articles were inaccessible or unavailable in full text. The remaining 21 articles were assessed for eligibility, and 8 articles were excluded (irrelevant population, n=5; irrelevant topic, n=3). Ultimately, 13 studies met the inclusion criteria and were included in the final synthesis (Figure 1).

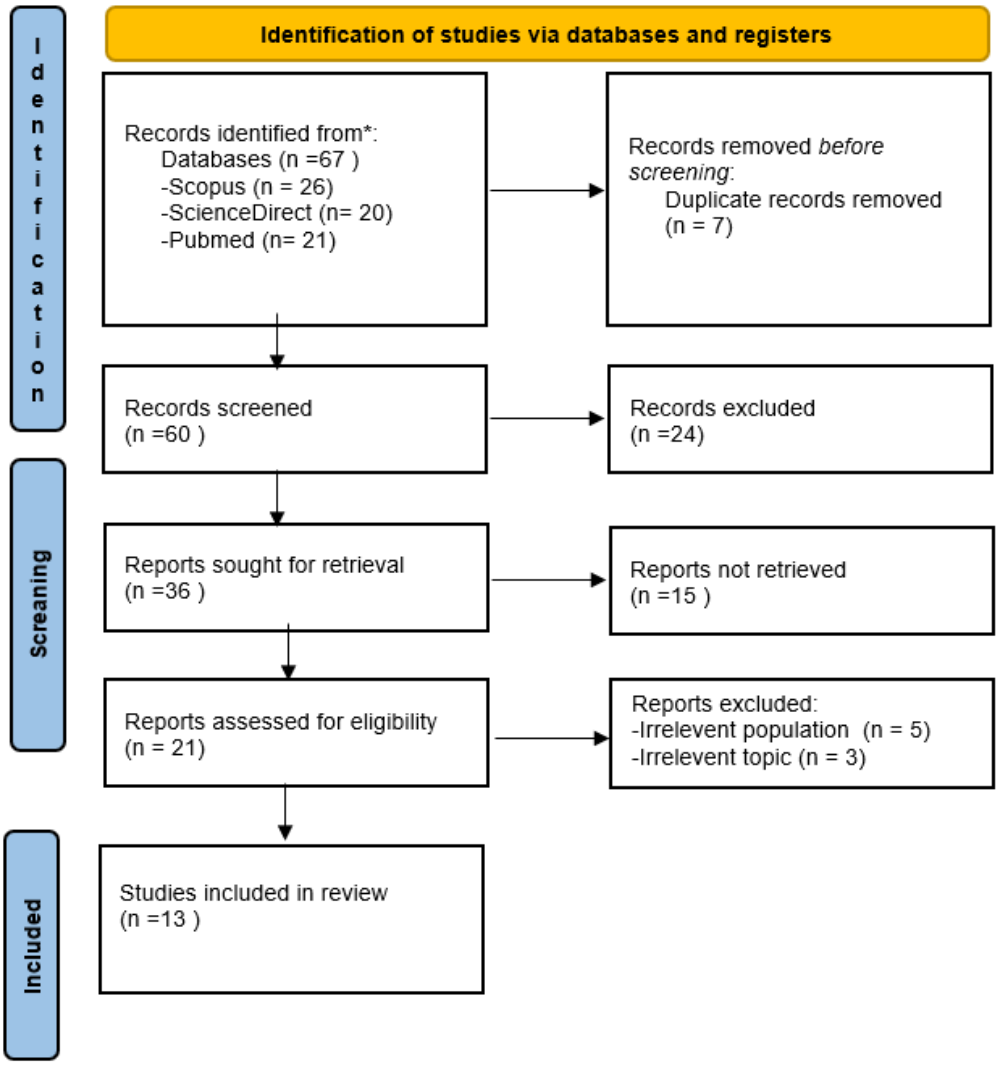


Figure 1
PRISMA diagram

Characteristics of Included Studies

Several instruments were used to assess caregivers' quality of life. The WHOQOL-BREF was the most frequently used instrument (n=6), followed by the Adult Carer Quality of Life Questionnaire (AC-QoL) (n=2) and the Stroke-Specific Quality of Life Scale-12 (SSQoL-12) (n=2). Other instruments included the Veterans RAND 12-Item Health Survey (VR-12), the 12-Item Short Form Health Survey (SF-12), and the Scale of Quality of Life of Caregivers (SQLC), each used in one study.

The selection process of articles in this narrative review was conducted systematically following the PRISMA flow to ensure alignment with the research objectives. A total of 67 articles were initially identified from Scopus (n=26), ScienceDirect (n=20), and PubMed (n=21). After removing 7 duplicates, 60 articles remained for screening. Title and abstract screening excluded 24 articles, leaving 36 articles for full-text review. Of these, 15 articles were inaccessible or unavailable in full text. The remaining 21 articles were assessed for eligibility. A total of 8 articles were excluded (irrelevant population, n=5; irrelevant topic, n=3). Ultimately, 13 studies met the inclusion criteria and were included in the final synthesis.

The 13 included studies originated from diverse countries: United States (n=1), Taiwan (n=1), Luxembourg (n=1), Myanmar (n=1), Ghana (n=1), Brazil (n=1), Thailand (n=1), Korea (n=1), China (n=2), Iran (n=2), and Indonesia (n=1), with the majority conducted in Asia. Most studies employed cross-sectional designs or their variations (correlational, comparative, descriptive, psychometric), totaling 9 studies. In addition, 3 randomized controlled trials and 1 quasi-experimental study were identified, indicating that cross-sectional designs were the most dominant in research on caregiver quality of life.

All studies involved family caregivers of stroke survivors, with sample sizes ranging from 30 to 409 participants, yielding a total of 2,076 caregivers. The largest study was conducted in China (n=409), while the smallest was in Brazil (n=30).

A variety of instruments were used to assess caregiver quality of life. The WHOQOL-BREF was the most frequently applied, appearing in 6 studies. Other instruments included AC-QoL (2 studies), SSQoL-12 (2 studies), and one study each using VR-12, SF-12, and SQLC. This demonstrates that WHOQOL-BREF was the most dominant tool for evaluating the quality of life of family caregivers of stroke survivors.

Quality of Life of Family Caregivers

Based on the synthesis of the 13 journals analyzed, the quality of life of family caregivers of stroke patients is generally at a low to moderate level. This conclusion is derived from several observational studies reporting that the average quality-of-life scores of caregivers have not reached the “good” or “high” category. Studies employing the WHOQOL-BREF instrument [2,3,6–8], consistently indicate that caregivers’ quality of life tends to fall within the moderate range, with a tendency toward lower scores in certain domains. Meanwhile, studies using the Adult Carer Quality of Life (AC-QoL) instrument reported that the quality of life of family caregivers of stroke patients was at a low level [9].

The most pronounced decline in quality of life was observed in the psychological domain. This domain consistently reported the lowest scores compared to other domains, reflecting the high levels of stress, anxiety, and emotional exhaustion experienced by caregivers [2]. Furthermore, caregiver burden has been shown to have a significant negative association with quality of life, particularly in the psychological domain [3,6]. Depression among caregivers was also

found to be negatively correlated with quality of life [7]. Assessments using the VR-12 instrument, which measures health-related quality of life across physical and mental components, revealed that caregivers' mental component scores were lower than their physical component scores [10]. These findings indicate that the impact of caring for stroke patients is more pronounced in the psychological aspects of caregivers, particularly in relation to emotional stress and mental health, than in physical aspects.

Beyond the psychological domain, caregiver quality of life in the environmental domain was also found to be low to moderate. Financial constraints, lack of rest, and limited opportunities for recreation were reported as contributing factors to lower environmental scores [2]. These findings are supported by studies showing that caregiving burden and limited resources negatively affect caregivers' environmental conditions and their access to health services and support [6,8].

In the physical domain, caregiver quality of life was generally moderate. Most caregivers were able to perform daily activities but experienced physical fatigue due to long-term caregiving demands [3]. Physical component scores were relatively better than mental component scores [10]. Intervention studies further demonstrated improvements in caregivers' physical quality of life following self-care support programs, indicating that their initial physical condition was moderate and amenable to enhancement [11].

In the social domain, caregiver quality of life tended to be moderate and relatively better than psychological and environmental domains. Social support was positively associated with caregiver quality of life [3,7]. Family involvement and social networks also helped caregivers maintain interpersonal relationships, although social quality of life remained vulnerable to decline among those experiencing social isolation or lacking support [4].

Consistent with these findings, [12] reported that the quality of life of stroke caregivers was at a moderate to low level, with the most significant declines occurring in the psychological and environmental domains. Similarly [7] found that the quality of life of family caregivers of stroke patients was lower than that of non-caregivers across multiple domains, including physical, psychological, social, and environmental. In addition, [9] reported that caregiver quality of life was low when measured using the AC-QoL, an instrument proven to be valid and reliable.

Overall, these findings consistently reinforce that the quality of life of family caregivers of stroke patients is generally low to moderate, with the greatest impact observed in the psychological and environmental domains. In contrast, physical and social domains are relatively better but remain suboptimal. The synthesis of 13 studies further indicates that the most consistent risk factors associated with reduced caregiver quality of life include caregiver burden, depression, and patients' cognitive and emotional impairments. Conversely, protective factors such as social support and adaptive coping strategies are associated with improved caregiver quality of life.

Factors Associated with Caregivers' Quality of Life

These findings are reinforced by several studies [3] in Myanmar reported that *caregiver burden* is the most dominant factor contributing to the decline in caregivers' quality of life. The burden, encompassing physical, emotional, social, and economic aspects, was significantly associated with lower quality-of-life scores across multiple domains, particularly psychological and social. In addition, caregiver depression and patients' cognitive and emotional impairments were also

found to negatively affect caregivers' quality of life. Conversely, protective factors such as social support, adaptive coping strategies, self-efficacy, and resilience were shown to play a crucial role in helping caregivers maintain their quality of life. [3].

In Ghana, [7] demonstrated that social support has a significant positive association with caregiver quality of life. Caregivers who received emotional, instrumental, and informational support tended to report better quality of life, as such support helped reduce stress and mitigate perceptions of caregiving burden.[7].

In Brazil [8] and [6] in Thailand consistently emphasized that *caregiver burden* is negatively correlated with caregiver quality of life and even represents the strongest determinant. High caregiving burden was reported to result in physical exhaustion, prolonged stress, financial constraints, and reduced personal time, thereby lowering quality of life, particularly in the physical and psychological domains. [6,8].

In Korea [4] found that patients' functional dependence and low levels of family support were significantly associated with reduced caregiver quality of life. The greater the patients' dependence in daily activities, the higher the caregiving demands, which in turn increased the physical and emotional strain experienced by caregivers. [4].

In Ghana [7] reported that caregiver depression was significantly negatively correlated with quality of life. Caregivers experiencing depressive symptoms demonstrated declines across multiple domains, particularly psychological, which subsequently affected physical and social aspects as well [7].

Overall, the synthesis indicates that the quality of life of stroke caregivers is shaped by the interaction between risk factors such as caregiver burden, depression, and patients' clinical conditions and protective factors, notably social support and adaptive coping strategies, which play a crucial role in sustaining caregiver well-being.

Nursing Interventions

From the total of 13 articles analyzed, four employed interventional designs, namely *randomized controlled trials* (RCTs) and *quasi-experimental studies*. These studies evaluated nursing interventions aimed at improving the quality of life of family caregivers of stroke patients. [13] reported that education based on *Roy's Adaptation Model*, delivered over eight weeks through structured educational sessions and continuous mentoring, significantly improved caregivers' quality of life. [11] demonstrated that the *self-care support program*, delivered over six weeks, not only improved caregivers' quality of life in both physical and mental components but also strengthened their resilience. [14] found that the *nurse-led health coaching intervention* during the transition from hospital to home, delivered over 12 weeks, significantly improved caregivers' quality of life while simultaneously reducing caregiver burden. [15] using a quasi-experimental design, reported that a *caregiver empowerment program* based on the adaptation model, implemented over six months, was effective in improving caregivers' quality of life, particularly in the psychological and social domains.

Overall, the synthesis indicates that nursing interventions focusing on education, self-care, health coaching, and the enhancement of adaptive capacity have proven effective in improving the quality of life of stroke caregivers. Although the duration of interventions varied from six weeks to six months, all studies consistently reported positive outcomes, demonstrating significant improvements in caregivers' quality of life.

These findings are further supported by the specific characteristics and mechanisms of each intervention. In study [13], a

randomized controlled trial (RCT) involving 104 caregivers employed the AC-QoL instrument to measure changes in quality of life. The intervention focused on enhancing adaptive capacity across four modes of adaptation physiological, self-concept, role function, and interdependence, enabling caregivers to better adjust to their new roles and manage emotional stress. In study a randomized controlled trial (RCT) involving 80 caregivers utilized the SF-12 instrument to assess changes in quality of life. The intervention emphasized the importance of self-care through stress management, relaxation techniques, and structured rest, which proved effective in enhancing caregivers' emotional stability. In study [14] a randomized controlled trial (RCT) involving 140 caregivers using the SSQoL-12 instrument demonstrated that a collaborative and sustained health coaching approach enhanced caregivers' care skills and self-confidence. Meanwhile study, [15] conducted with 80 caregivers in Indonesia, reported that an empowerment program based on the adaptation model improved caregivers' mental readiness, caregiving competence, and adaptive coping abilities.

Thus, the integration of findings from these four studies reinforces that nursing interventions which are structured, theory-based, and oriented toward caregiver empowerment consistently yield positive impacts on the quality of life of family caregivers of patients with stroke.

Table 1.
synthesis table of review findings

Author & Year	Country	Study Design	Population	Instrument	Main Findings Related to Caregiver Quality of Life
Freytes et al., 2021 [10]	Amerika Serikat	Cross-sectional (secondary data analysis)	109 family caregivers pasien stroke	VR-12 (Veterans RAND 12 Item Health Survey)	Cognitive and emotional deficits in stroke patients have been shown to significantly impair caregivers' mental quality of life, whereas motor deficits are not significantly associated with caregivers' quality of life
Li, C.-C. (2024) [2]	Taiwan	Cross-sectional	210 caregivers	WHOQOL-BREF, ZBI	Caregivers' quality of life is generally reported at a moderate to low level, and high caregiver burden is significantly associated with reduced quality of life.
Baumann et al., 2012 [16]	Luxembourg	Retrospective dan cross-sectional survey	62 family caregivers pasien stroke	WHOQOL-BREF	Memory impairment in stroke patients is associated with decreased life satisfaction and reduced quality of life among family caregivers.
Ba et al., 2022 [3]	Myanmar	Cross-sectional correlational study	303 family caregivers pasien stroke	WHOQOL-BREF	Caregiver burden is the most dominant factor reducing caregivers' quality of life, whereas social support and adaptive coping are associated with improvements in caregivers' quality of life.
Abeasi, 2020 [7]	Ghana	Cross-sectional comparative study	50 family caregivers pasien stroke	WHOQOL-BREF	Family caregivers of stroke patients have a lower quality of life compared to non-caregivers, and social support is positively associated with caregivers' quality of life.

Author & Year	Country	Study Design	Population	Instrument	Main Findings Related to Caregiver Quality of Life
Caro et al., 2018 [8]	Brazil	Cross-sectional descriptive correlational study	30 family caregivers pasien stroke	WHOQOL-BREF	Caregiver burden is negatively correlated with caregivers' quality of life, particularly in the physical and environmental domains.
Kongkar et al., 2019 [6]	Thailand	Cross-sectional study	300 family caregivers pasien stroke	WHOQOL-BREF	The study found that caregiver burden was most strongly associated with lower quality of life among family caregivers of patients with stroke.
Lee & Jung, 2023 [4]	Korea	Cross-sectional survey	199 family caregivers pasien stroke	SQLC	Patients' functional dependence and low family support are associated with reduced quality of life among caregivers.
Mei et al., 2017 [9]	China	Cross-sectional (psychometric study)	409 family caregivers pasien stroke	AC-QoL	The quality of life of family caregivers of stroke patients is generally low, and the AC-QoL instrument has been demonstrated to be valid and reliable.
Monjezi et al., 2025 [13]	Iran	Randomized Controlled Trial	104 family caregivers pasien stroke	AC-QoL	Education based on Roy's Adaptation Model significantly improves the quality of life of family caregivers of stroke patients.
Nooreddini et al., 2024 [11]	Iran	Randomized Controlled Trial	80 family caregivers pasien stroke	SF-12	Self-care support programs enhance caregivers' quality of life and resilience.
Lin et al., 2022 [14]	China	Randomized Controlled Trial	140 family caregivers pasien stroke	SSQoL-12	Nurse-led health coaching improves caregivers' quality of life and reduces caregiver burden.
Dharma et al., 2018 [15]	Indonesia	Quasi-experimental study	80 family caregivers pasien stroke	SSQoL-12	Caregiver empowerment programs based on adaptation models have been shown to improve the quality of life of family caregivers of stroke patients.

DISCUSSION

This review highlights that caregiver burden is the most consistent determinant of reduced quality of life among family caregivers of stroke patients. The most significant decline occurs in the psychological and environmental domains, as confirmed by recent systematic reviews [17]. Key risk factors include older caregiver age, longer caregiving duration, and patients with high dependency or cognitive and emotional impairments. Protective factors such as social support, adaptive coping, physical activity, adequate sleep, and shared caregiving responsibilities have been shown to improve caregiver quality of life [3,5,18].

Compared with previous studies, the findings of this review are consistent with evidence showing that patients' cognitive and emotional impairments are important determinants of caregiver outcomes. Recent evidence further indicates that post-stroke cognitive impairment may have a greater impact on caregiver burden and quality of life than motor deficits, highlighting the importance of addressing cognitive impairment in stroke rehabilitation [5].

The scientific implication of these results is that caregiver well-being is not only shaped by physical demands but also by the patient's cognitive and emotional status. Cognitive and emotional changes in stroke survivors lead to communication difficulties, interpersonal conflict, and sustained emotional strain, which explains why the psychological domain is most vulnerable.

The implications for nursing science and practice are clear: nursing interventions must adopt a multidimensional approach to support caregivers. Clinical practice should integrate education, nurse-led coaching, and empowerment programs to strengthen coping and resilience. Nursing education should emphasize family-centered care to prepare future nurses for the strategic role of caregivers. From a management and policy perspective, expanding access to rehabilitation, counseling, and community-based support programs is essential to improve patient safety and caregiver well-being [14,19].

The strengths of this review include the broad temporal coverage (2000–2025), which allows the synthesis to capture shifts in caregiver care models and health system developments over the past two decades. This wide window enhances the relevance of findings by reflecting both earlier approaches and more contemporary practices, as well as diverse cultural contexts that improve generalizability. The limitations lie in the narrative review design, which does not allow for quantitative synthesis such as meta-analysis, making it impossible to statistically compare effect sizes across studies. Variations in quality-of-life measurement instruments (e.g., WHOQOL-BREF, SF-36) and heterogeneity of respondents and health systems across countries also limit full generalization to the Indonesian context.

CONCLUSION

This narrative review demonstrates that the quality of life of family caregivers of stroke patients is generally low to moderate, with the greatest decline observed in the psychological and environmental domains. Caregiver burden consistently emerges as the strongest determinant of reduced quality of life, while depression, patients' functional dependence, and cognitive and emotional impairments further exacerbate caregiver strain. Conversely, protective factors such as social support, adaptive coping, self-efficacy, and resilience contribute to better caregiver outcomes. Evidence from intervention studies highlights the effectiveness of nursing strategies including adaptation-based education, self-care support, nurse-led health coaching, and empowerment programs, in improving caregiver well-being and quality of life. These findings underscore the need for structured, multidimensional, and caregiver-centered nursing interventions to strengthen caregiver resilience, enhance their quality of life, and ultimately support comprehensive stroke care.

BIBLIOGRAPHY

[1] KEMENKES RI. Cegah Stroke dengan Aktivitas Fisik 2024. https://kemkes.go.id/eng/cegah-stroke-dengan-aktivitas-fisik (accessed June 7, 2026).

[2] Li CC, Tsai SJ, Tai JC, Wu TJ, Tsai SM, Kao SC, et al. Association Between Family Functioning and Health-related Quality of Life in Stroke Survivor–Informal Family Caregiver Dyads. Asian Nurs Res (Korean Soc Nurs Sci) 2024;18:141–7. https://doi.org/10.1016/J.ANR.2024.04.006.

[3] Ba MS, Monkong S, Leelacharas S, Satitvipawee P. Factors Explaining Quality of Life among Family Caregivers of People with Stroke in Myanmar: A Cross-sectional Study. Pac Rim Int J Nurs Res Thail 2022;26:355–69.

[4] Lee JH, Jung MS. Factors Influencing the Quality of Life of Family Caregivers of Stroke Patients: A Cross-Sectional Survey. Journal of the Korean Academy of Fundamentals of Nursing

2023;30:479–88. https://doi.org/10.7739/jkafn.2023.30.4.479.

[5] Stolwyk RJ, Mihaljcic T, Wong DK, Hernandez DR, Wolff B, Rogers JM. Post-stroke Cognition is Associated with Stroke Survivor Quality of Life and Caregiver Outcomes: A Systematic Review and Meta-analysis. Neuropsychol Rev 2024;34:1235–64. https://doi.org/10.1007/s11065-024-09635-5.

[6] Kongkar R, Pinyopasakul W, Pongthavornkamol K, Dajpratham P, Orathai P. The determinants of quality of life in Thai family caregivers of stroke survivors. Siriraj Med J 2019;71:290–3. https://doi.org/10.33192/Smj.2019.44.

[7] Abeasi D. Depression and quality of life among family caregivers of Stroke Survivors in Ghana: The role of social support. Archives of Mental Health 2020;21:83–9. https://doi.org/10.4103/AMH.AMH_21_19.

[8] Caro CC, Costa JD, Cezar Da Cruz DMC. Burden and Quality of Life of Family Caregivers of Stroke Patients. Occup Ther Health Care 2018;32:154–71. https://doi.org/10.1080/07380577.2018.1449046.

[9] Mei Y, Lin B, Li Y, Ding C, Zhang Z. Validity and reliability of Chinese version of Adult Carer Quality of Life questionnaire (AC-QoL) in family caregivers of stroke survivors. PLoS One 2017;12. https://doi.org/10.1371/journal.pone.0186680.

[10] Freytes IM, Sullivan M, Schmitzberger M, LeLaurin J, Orozco T. Types of stroke-related deficits and their impact on family caregiver's depressive symptoms, burden, and quality of life. Disabil Health J 2021. https://doi.org/10.1016/j.dhjo.2020.101019.

[11] Nooreddini A, Sadeghian E, Borzou SR, Ghiasian M, Soltanian AR. Effectiveness of Self-care Support Program on the Quality of Life and Resilience of Family Caregivers of Stroke Patient; A Randomized Controlled Trial. Iran J Psychiatry Behav Sci 2024;18. https://doi.org/10.5812/ijpbs-148594.

[12] Villa-García L, Salvat-Plana M, Slof J, de la Ossa NP, Abilleira S, Ribó M, et al. Care-related quality of life of informal caregivers of stroke survivors: Cross-sectional analysis of a randomized clinical trial. PLoS One 2024;19. https://doi.org/10.1371/journal.pone.0307930.

[13] Monjezi A, Karampourian A, Khazaei S, Khazaei M. Improving the quality of life and resilience of family caregivers of stroke survivors through education based on the Roy's adaptation model: a randomized controlled trial. Aging Clin Exp Res 2025;37. https://doi.org/10.1007/s40520-025-03096-3.

[14] Lin S, Xiao LD, Chamberlain D, Ullah S, Wang Y, Shen Y, et al. Nurse-led health coaching programme to improve hospital-to-home transitional care for stroke survivors: A randomised controlled trial. Patient Educ Couns 2022;105:917–25. https://doi.org/https://doi.org/10.1016/j.pec.2021.07.020.

[15] Dharma KK, Damhudi D, Yardes N, Haeriyanto S. Increase in the functional capacity and quality of life among stroke patients by family caregiver empowerment program based on adaptation model. Int J Nurs Sci 2018;5:357–64. https://doi.org/10.1016/j.ijnss.2018.09.002.

[16] Baumann M, Couffignal S, Le Bihan E, Chau N. Life satisfaction two-years after stroke onset: The effects of gender, sex occupational status, memory function and quality of life among stroke patients (Newsqol) and their family caregivers (Whoqol-bref) in Luxembourg. BMC Neurol 2012;12. https://doi.org/10.1186/1471-2377-12-105.

[17] Tziaka E, Tsiakiri A, Vlotinou P, Christidi F, Tsiptsios D, Aggelousis N, et al. A Holistic Approach to Expressing the Burden of Caregivers for Stroke Survivors: A Systematic Review. Healthcare (Switzerland) 2024;12. https://doi.org/10.3390/healthcare12050565.

[18] de Oliveira Tavares ML, Pimenta AM, García-Vivar C, Beinner MA, Montenegro LC. Determinants of quality of life decrease in family caregivers of care-dependent patients: a longitudinal study. Quality of Life Research 2025;34:365–75. https://doi.org/10.1007/s11136-024-03814-w.

[19] Jammal M, Liu KPY, George ES, Kolt GS. The impact of providing care for stroke survivors on caregiver health and wellbeing: Developing stronger support mechanisms. Disabil Health J 2025;18. https://doi.org/10.1016/j.dhjo.2025.101912.