

Stroke Rehabilitation Knowledge Among Family Caregivers of Stroke Survivors: A Hospital-Based Cross-Sectional Study

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Abstract

Background: Stroke is a leading cause of long-term disability worldwide and often results in significant physical, cognitive, and functional impairments. Caregivers play a crucial role in supporting stroke survivors during rehabilitation and recovery. Adequate knowledge regarding stroke rehabilitation is essential for caregivers to provide effective care and facilitate optimal patient outcomes. This study aimed to assess the knowledge regarding stroke rehabilitation among caregivers of stroke patients in selected hospitals of Kollam District, Kerala, with a view to develop an information booklet.

Methods: A quantitative approach with a descriptive cross-sectional research design was adopted. The study was conducted among 100 caregivers of stroke patients admitted to selected hospitals in Kollam District, Kerala. Participants were selected using a purposive sampling technique. Data were collected using a structured demographic proforma and a structured knowledge questionnaire comprising 30 multiple-choice questions related to stroke rehabilitation. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to analyze the data. Chi-square test was employed to determine the association between knowledge levels and selected demographic variables.

Results: The findings revealed that 49% of caregivers had average knowledge, 36% had good knowledge, and 15% had poor knowledge regarding stroke rehabilitation. The mean knowledge score was 18.67 ± 4.82 . A statistically significant association was found between knowledge level and relationship to the patient ($p < 0.05$). No significant association was observed between knowledge level and age, gender, educational status, duration of caregiving, or daily caregiving hours.

Conclusion: The study concluded that a substantial proportion of caregivers possessed only average knowledge regarding stroke rehabilitation. The findings highlight the need for structured educational interventions to enhance caregivers' understanding and skills related to stroke rehabilitation. The development and dissemination of an information booklet may serve as an effective strategy to improve caregiver knowledge and support the rehabilitation process of stroke survivors.

Keywords: Stroke Rehabilitation, Caregivers, Knowledge, Stroke Patients, Information Booklet, Rehabilitation Care.

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I. Introduction

Stroke is a major public health concern globally, with significant implications for morbidity, mortality, and long-term disability. According to the World Health Organization (WHO), stroke is the second leading cause of death and the third leading cause of disability worldwide¹. The most recent Global Burden of Disease (GBD) estimates reveal that in 2019, approximately 12.2 million new cases of stroke occurred globally, resulting in 143 million disability-adjusted life-years (DALYs) lost and 6.6 million deaths. A systematic review on the incidence and prevalence of stroke in India (2017) reported that the cumulative incidence of stroke ranged from 105 to 152 per 100,000 people per year, while the crude prevalence varied from 44.29 to 559 per 100,000 people across different regions of the country. These figures exceed those reported in high-income countries.²

Stroke rehabilitation is an individualized and multidisciplinary process designed to promote recovery, functional independence, and community reintegration for individuals affected by stroke. By addressing the complex physical, cognitive, and emotional needs of stroke survivors, rehabilitation enables them to maximize their potential, enhance their quality of life, and regain control over their daily activities. The road to recovery is

long and challenging, requiring a comprehensive rehabilitation program that includes physical, cognitive, and emotional interventions.

Caregivers play a vital role in supporting stroke survivors throughout this process, providing essential care and assistance with daily activities. The impact of stroke extends beyond the affected individuals to their families and caregivers, who are responsible for providing physical, emotional, and practical support. Effective stroke rehabilitation is essential for improving functional outcomes and independence among stroke survivors. Rehabilitation encompasses physical, occupational, and speech therapies, aiming to enhance the recovery of motor skills, cognitive functions, and communication abilities³

Most stroke survivors receive long-term care at home, with informal caregivers, such as family members, providing the majority of this care. Caregivers assume the primary responsibility for meeting the physical, emotional, nursing, and psychological needs of stroke patients⁴. However, the burden of long-term caregiving can be overwhelming, often leading to physical, emotional, and financial stress. Given that most stroke survivors rely on domiciliary care, caregivers play a crucial role in post-stroke rehabilitation and overall patient well-being.

Need for the Study

Home-based care plays a significant role in the recovery of stroke patients, with family members, relatives, or close friends serving as primary caregivers. However, continuing proper care at home after discharge poses a significant challenge, as many caregivers lack the necessary knowledge, skills, and experience⁵. First-time caregivers, in particular, often experience anxiety and uncertainty regarding their ability to provide adequate care. This lack of preparedness can lead to significant physical and psychological stress, ultimately affecting both the caregiver and the stroke survivor⁶.

Several studies have highlighted the essential role of caregivers in stroke rehabilitation. To enhance patient outcomes, it is crucial to provide caregivers with adequate training and support, enabling them to manage the challenges associated with home-based stroke care effectively. The researcher believes that structured educational interventions tailored to caregivers' needs could significantly benefit both stroke survivors and their families⁷.

Understanding caregivers knowledge levels regarding stroke rehabilitation is essential for developing targeted educational interventions that address knowledge gaps and improve caregiving competency. By equipping caregivers with accurate and comprehensive information, they can be better prepared to provide high-quality care, ultimately improving patient outcomes and quality of life⁸.

The fundamental caregiving skills required for stroke rehabilitation include assisting with basic activities of daily living, such as feeding, mobilization, toileting, bathing, and dressing. Additionally, caregivers must develop more advanced skills, including medication administration, wound care, managing medical equipment, handling healthcare appointments, arranging transportation, and advocating for the patient^{9,10}.

In clinical practice, the researcher has observed that many caregivers lack vital information about rehabilitation strategies, adversely impacting patient outcomes. This observation forms the basis for the present study, which aims to assess caregivers' knowledge and identify specific areas requiring educational enhancement.

This study employs a descriptive design to evaluate caregiver's knowledge of various aspects of stroke rehabilitation. The findings will inform the development of an educational booklet designed to equip caregivers with essential knowledge and skills, thereby improving the quality of home-based stroke care and overall patient outcomes.

II. Material And Methods

Research Approach

In the study, a quantitative research approach was used to assess the knowledge regarding stroke rehabilitation among caregivers of stroke patients in selected hospitals.

Research Design

The research design used for this study was a non-experimental descriptive research design.

Research Variables

Dependent variable

In this study, the knowledge regarding stroke rehabilitation among the caregivers of stroke patients was the dependent variable.

The setting of the study

The setting of the present study was conducted in a selected hospital in Kollam.

Population

The population of the study consisted of caregivers of stroke patients admitted to the neurology department of the selected hospital in Kollam.

Sample

In this study, the sample consisted of 100 caregivers of stroke patients admitted to the neurology department at the selected hospital in Kollam.

Sampling technique

In the study, a purposive sampling technique was used.

Criteria for selection of sample:

Inclusion criteria

Primary caregivers of stroke patients (spouse, children, or other relatives) admitted to the neurology department

Age group of 20- 80 years

Willing to participate in the study.

Exclusion criteria:

Caregivers with prior professional training in stroke rehabilitation.

Professional healthcare providers

Tools/instruments

The tool for data collection consists of two sections.

Section A: Demographic Proforma

This section was prepared after an extensive review of the literature. Participants were instructed to indicate their responses by placing a tick mark next to the appropriate option. The variables included: age, categorized as 20–35, 36–50, 51–65, and 66–80 years; gender, specified as male or female; educational status, divided into primary, high school, degree/diploma, and postgraduate degree; relationship to the patient, listed as spouse, child, sibling, or other relatives; duration of care, segmented into less than 6 months, 6–12 months, 1–2 years, or More than 2 years; and hours of care provided, classified as Less than 4 hours, 4–8 hours, 8–12 hours, or More than 12 hours.

Section B: Structured Knowledge Questionnaire

This section comprised 30 multiple-choice questions designed to assess caregivers' knowledge of stroke rehabilitation in a selected hospital in Kollam.

Scoring procedure

The questionnaire contained 30 multiple-choice questions, each carrying one mark for a correct answer and zero marks for an incorrect answer, with a maximum score of 30.

The scores were categorized as follows:

SL NO	SCORE	LEVEL OF KNOWLEDGE
1	0-10	POOR KNOWLEDGE
2	11-20	AVERAGE KNOWLEDGE
3	21-30	GOOD KNOWLEDGE

Content validity

For obtaining content validity, the demographic proforma and the structured knowledge questionnaire on stroke rehabilitation were reviewed by five experts: one neurologist, one physiotherapist, one speech and language therapist, and two experts from the nursing field.

Data Collection

The main study was conducted at selected hospitals from 7 December 2024 to 28 January 2025. Formal permissions were obtained from the Institutional Ethics Committee. Before data collection, the study's purpose was explained to the participants. A total of 100 caregivers, aged between 20 and 80, were selected using a purposive sampling technique based on predefined inclusion and exclusion criteria. Informed consent was obtained from all participants, ensuring the confidentiality of the collected data. Participants were then asked to complete the structured questionnaire. The data collection process was concluded by the investigator expressing their gratitude to the subjects for their cooperation. The data was collected and prepared for data analysis.

Data analysis

The data obtained from the sample were organised, tabulated, and analysed using descriptive and inferential statistics, based on the study's objectives.

Section A: Descriptive statistics (frequency and percentage distribution) were used to assess the knowledge regarding stroke rehabilitation among the caregivers of stroke patients.

Section B: Inferential statistics (chi-square test) was used to find out the association between the knowledge regarding stroke rehabilitation among the caregivers of stroke patients and selected demographic variables.

III. Result

SECTION A: Assess the knowledge regarding stroke rehabilitation among the caregivers of stroke patients.

TABLE 1: Frequency and percentage distribution of knowledge regarding stroke rehabilitation among the caregivers of stroke patients. (N=100)

SCORE RANGE	RATING	FREQUENCY	PERCENTAGE
0-10	Poor Knowledge	15	15%
11-20	Average Knowledge	49	49%
21-30	Good knowledge	36	36%

The data presented in Table 1 shows that out of 100 samples, 49% of caregivers had average knowledge, 36% had good knowledge, and 15% had poor knowledge regarding stroke rehabilitation.

SECTION B: Association between knowledge regarding stroke rehabilitation among caregivers of stroke patients and selected demographic variables.

TABLE 2: Association between knowledge regarding stroke rehabilitation among the caregivers of stroke patients and selected demographic variable

Demographic variables	Level of knowledge			χ^2	df	P value
	Poor	Average	Good			
Age in years	4	5	8	9.6849	6	0.139
20-35	3	18	16			
36-50	8	15	8			
51-65	4	9	2			
66-80						
Gender	8	24	15	0.6077	2	0.738
Male	11	23	19			
Female						
Education	1	3	1	1.8048	6	0.937
Primary	11	24	15			
Highschool/	6	17	15			
Higher Secondary	1	3	3			
Degree/Diploma						
Post graduate degree						
Relationship with the patient	13	14	8	14.8137	6	0.022
a) Spouse	3	18	16			
b) Children	2	9	3			
c) Sibling	1	6	7			
d) Other Relatives						
Duration of care	5	17	12	4.387	6	0.625
a) Less than 6 months	7	8	8			
b) 6-12 months	5	10	7			
c) 1-2 years	2	12	7			
d)More than 2 years						
Hours of care provided	6	12	6	11.1674	6	0.834
a)Less than 4 hours	3	17	12			
b)4-8 hours	8	7	5			
c)8-12 hours	2	11	11			
D)More than 12 hours						

The data in Table 2 shows that the association between the knowledge of stroke rehabilitation among caregivers and selected demographic variables, computed using the chi-square test. The analysis revealed that there was no significant association between knowledge and demographic variables such as age ($\chi^2 = 9.685$, $p = 0.139$), gender ($\chi^2 = 0.608$, $p = 0.738$), education ($\chi^2 = 1.805$, $p = 0.937$), duration of care ($\chi^2 = 4.389$, $p = 0.625$), and hours of care provided per day ($\chi^2 = 11.167$, $p = 0.834$), as the p-values were greater than 0.05. However, the relationship with the patient showed a significant association ($\chi^2 = 14.814$, $p = 0.022$), indicating that the caregiver's relationship with the patient plays a crucial role in their knowledge of stroke rehabilitation.

IV. Discussion

The present study reveals that 49% of caregivers had average knowledge of stroke rehabilitation, 36% of caregivers had good knowledge and 15% of caregivers had poor knowledge. The study findings are supported by a quantitative study with a non-experimental approach conducted to assess the knowledge of homecare management of stroke patients among caregivers in the selected wards of Mavoor Panchayath, Kozhikode. A self-reporting technique was used for data collection. Fifty caregivers who had provided care for more than one week after discharge were selected. The majority of caregivers were aged 40 to 59 years (62%), with 82% females and 18% males, and 28% had primary-level education. A structured knowledge questionnaire was used to collect the data. The results showed that 48% of caregivers had an average level of knowledge, while 32% had a good level of knowledge¹¹.

The association was analyzed using the Chi-square test. The findings indicated that there was no significant association between knowledge regarding stroke rehabilitation among caregivers of stroke patients and demographic variables such as age, gender, education, duration of care, and hours of care provided per day. However, a significant association was found between caregivers' knowledge and their relationship with the patient.

A cross-sectional study conducted at the China Rehabilitation Research Center investigated the knowledge, attitude, and practice (KAP) of 517 family members of stroke patients regarding stroke rehabilitation. The study found significant positive correlations between knowledge and attitude ($r = 0.501$, $P < 0.001$), knowledge and practice ($r = 0.471$, $P < 0.001$), and attitude and practice ($r = 0.441$, $P < 0.001$). However, the study did not report significant associations between demographic variables such as age, gender, education, and the KAP scores. These findings highlight the need for targeted educational interventions to enhance caregivers' understanding of stroke rehabilitation, aligning with the present study's aim of assessing knowledge among caregivers in selected hospitals to develop an information booklet¹².

V. Conclusion

The present study assessed stroke rehabilitation knowledge among family caregivers of stroke survivors attending a selected tertiary care hospital in Kollam, Kerala. The findings revealed that nearly half of the caregivers possessed average knowledge regarding stroke rehabilitation, while a smaller proportion demonstrated good knowledge. A significant association was observed between caregivers' knowledge and their relationship with the patient. The results highlight the need for structured educational interventions to enhance caregivers' knowledge and preparedness for home-based stroke rehabilitation. Strengthening caregiver education may contribute to improved caregiving practices, better rehabilitation outcomes, and enhanced quality of life for stroke survivors and their families.

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