



Evaluating the Impact of a Psychoeducation Program on Knowledge of Caregivers for Stroke Survivors: A Longitudinal Study

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Abstract: This study assesses the effectiveness of a psychoeducation program designed to improve the knowledge of caregivers of stroke survivors. The program focuses on educating caregivers about stroke management, risk factors, and rehabilitation strategies. Using a pre-assessment, post-assessment, and follow-up design, the study measured changes in caregivers' knowledge. Results show significant improvements in caregivers' understanding post-intervention, with partial retention of knowledge in the follow-up.

Keywords: psychoeducation, stroke, caregivers, knowledge assessment, intervention, follow-up

I. Introduction:

Background:

Stroke remains a leading cause of disability worldwide, with millions of survivors requiring long-term care from family members and other informal caregivers (Feigin et al., 2021). Caregivers of stroke survivors face unique challenges, including the physical, emotional, and cognitive impairments of the stroke survivor, as well as their own stress, fatigue, and lack of resources (Bakas et al., 2014). This burden can be alleviated through structured support systems, such as psychoeducation programs, which aim to equip caregivers with the necessary knowledge and skills to provide effective care.

Despite the growing recognition of the role of caregivers, few educational interventions exist that comprehensively address the multifaceted needs of these caregivers (Miller et al., 2018). Psychoeducation programs not only increase caregivers' knowledge but also help improve patient outcomes by enhancing adherence to treatment

plans and reducing caregiver stress (Tsai et al., 2020; Visser-Meily et al., 2006). A review by Sit et al. (2020) highlights that structured training improves caregivers' coping strategies and reduces emotional distress, demonstrating the need for programs targeted at caregiver support.

Objectives:

The primary objective of this study is to evaluate the impact of a structured psychoeducation program on caregivers' knowledge of stroke management, risk factors, and rehabilitation strategies. Specifically, this study aims to:

Assess the baseline knowledge of caregivers before the intervention.

Evaluate the knowledge gains immediately after the intervention.

Measure the retention of knowledge at a follow-up period post-intervention.

II. Methodology:

Participants:

The study included 35 caregivers of stroke survivors recruited from the inpatient services of Neurological Rehabilitation centre in Bengaluru, India. Caregivers were eligible if they were the primary caregiver for a stroke survivor and were willing to attend the psychoeducation program. Table 1 provides a breakdown of the caregivers' sociodemographic characteristics, such as age, gender, relationship with the stroke survivor, educational background, and caregiving experience.



Sociodemographic Characteristics:

The average age of the stroke survivors was 47 years, with caregivers ranging in age from 28 to 50 years.

Most caregivers were either spouses (40%) or children (30%) of the stroke survivors.

The majority of the caregivers (80%) had a high school education or lower, with only a few (20%) having completed higher education.

In terms of family income, a significant proportion (60%) of the caregivers had a household income below rupees 10,000 per month.

Study Design:

This study employed a longitudinal design, measuring caregivers' knowledge at three distinct points:

Pre-assessment (baseline): Caregivers completed a basic knowledge assessment before attending the psychoeducation program. The average baseline score was 3.6 out of 10.

Post-assessment: Immediately after completing the program, caregivers were reassessed to evaluate the immediate impact of the intervention. The average post-intervention score rose to 5.2.

Follow-up assessment: Caregivers were reassessed [3 months] after the program to evaluate retention of knowledge, with scores slightly decreasing to 4.8.

Intervention (Psychoeducation Program):

The psychoeducation program consisted of four sessions, each lasting 30 to 45 minutes. The topics covered included:

Understanding stroke: Causes, symptoms, and treatment options.

Immediate care during a stroke: Recognizing symptoms and acting quickly.

Stroke risk factors and lifestyle changes: Focus on smoking cessation, diet, and exercise.

Rehabilitation and long-term care: Supporting recovery and adapting to cognitive or physical impairments.

Caregivers were actively engaged in discussions and group activities, where they could share experiences and learn from one another.

Assessment Tools:

A structured questionnaire was developed to assess caregivers' knowledge. The questionnaire included both multiple-choice questions and short-answer questions covering topics related to stroke symptoms, treatment, risk factors, and caregiving

strategies. Scores ranged from 0 to 10, with higher scores indicating better knowledge.

III. Results:

Sociodemographic Analysis:

Table 1 provides an overview of the sociodemographic characteristics of the caregivers. The majority of the caregivers were female (60%) and ranged in age from 28 to 50 years. The most common relationship with the stroke survivor was spouse (40%) or child (30%). Educational levels varied, with most caregivers having completed up to high school, reflecting the rural or semi-urban background of the participants. Most caregivers reported household incomes of less than rupees 10,000 per month, indicating financial strain, which may have impacted their access to stroke-related resources prior to the intervention.

| Table 1: Sociodemographic characteristics of caregivers | | --- | | Age of caregivers | 28 - 50 years | | Gender | 60% Female, 40% Male | | Relationship with stroke survivor | 40% Spouse, 30% Child, 20% Sibling, 10% Other | | Educational background | 80% High School or Lower, 20% Graduate | | Household income | 60% Below \$10,000/month, 40% Above \$10,000/month |

Knowledge Assessment:

Baseline Knowledge: Caregivers exhibited a limited understanding of stroke management at baseline, with an average score of 3.6. The areas where knowledge gaps were most prevalent included stroke risk factors and recognizing early symptoms.

Post-Intervention Knowledge: Following the psychoeducation program, caregivers demonstrated a significant improvement in their understanding of stroke care, with average scores increasing to 5.2. The greatest improvement was observed in knowledge about recognizing stroke symptoms and understanding stroke risk factors, such as smoking and hypertension.

Follow-Up Knowledge: At the follow-up assessment conducted three months after the intervention, caregivers retained much of the knowledge gained during the program. Although there was a slight decline in scores to an average of 4.8, caregivers remained well-informed about stroke symptoms and treatment options, highlighting the program's effectiveness in fostering long-term knowledge retention.



Statistical Analysis:

The knowledge scores were analyzed using paired t-tests to compare the differences between the pre-assessment, post-assessment, and follow-up scores. A significant increase in knowledge was observed between the pre- and post-intervention assessments ($p < 0.01$), and knowledge retention was confirmed in the follow-up assessment ($p < 0.05$). The results indicate that the psychoeducation program had a lasting impact on caregivers' knowledge.

IV. Discussion:

Interpretation of Findings:

This study demonstrates the effectiveness of psychoeducation programs in significantly enhancing caregivers' knowledge of stroke care. The increase in scores from baseline to post-intervention suggests that caregivers were able to quickly absorb and apply the information provided. These findings are consistent with other studies, such as those conducted by Bakas et al. (2014) and Tsai et al. (2020), which found that structured educational programs for caregivers improved both knowledge and caregiving outcomes.

Knowledge Retention:

Despite a slight decline in scores during the follow-up assessment, the retention of core knowledge three months after the intervention is encouraging. Similar results have been reported in studies by Miller et al. (2018), indicating that while there may be a drop-off in knowledge over time, caregivers are likely to retain the most essential information related to stroke care.

Sociodemographic Influence:

The sociodemographic data suggest that caregivers with higher educational levels tended to have better knowledge retention, consistent with findings in previous research (Bakas et al., 2014). This highlights the need for tailored interventions that account for caregivers' educational backgrounds and learning styles (Visser-Meily et al., 2006).

V. Limitations:

This study is limited by its relatively small sample size and lack of a control group. Future research should consider larger, randomized controlled trials to better understand the long-term effects of psychoeducation programs on caregiver knowledge and outcomes (Sit et al., 2020).

VI. Conclusion:

The psychoeducation program significantly improved caregivers' knowledge of stroke management, and this knowledge was largely retained during follow-up. These findings suggest that psychoeducation is a valuable tool for equipping caregivers with the necessary skills to provide better care for stroke survivors. Further research should explore the long-term impact of these programs and consider additional support for caregivers to sustain knowledge over time.

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