

Use of Self-management Module via Video-Based Education for Stroke Survivors and Their Caregivers: A Narrative Review of Literature

Roshni G. Kachhadiya¹, Vivek H. Ramanandi², Rumana Khatun A. Pathan³,
Hemanshi N. Vekariya⁴

^{1,3,4}Post graduate Student, SPB Physiotherapy College, Veer Narmad South Gujarat University, Surat, India.

²Associate Professor, SPB Physiotherapy College, Veer Narmad South Gujarat University, Surat, India.

Corresponding Author: Dr. Vivek H. Ramanandi

DOI: <https://doi.org/10.52403/ijhsr.20240309>

ABSTRACT

Background: Stroke survivors and their caregivers often report unmet educational needs in all aspects of stroke care. Patient as well as caregiver education is crucial to reduce risks to their own physical and mental health and to prevent complications and promote patients' recovery. Educational videos have been shown to be an effective tool in improving self-management strategies. The present study aims to review the literature regarding use of video-based education for self-management strategies among the stroke survivors and their caregivers.

Methodology: Different articles published in English language between 2011 and 2022 were searched from various online databases. Out of total 45 search results, 19 full texts articles were screened & 8 were selected for review based on selection criteria. In this review randomized controlled trial, pre-test/post-test study, pilot study, non-randomized trials were included.

Result: The review of these studies suggested that all studies reported significant effect of video based self-management modules for patients and caregivers.

Conclusion: Based on this review, it can be concluded that video based self-management module for education of patients and caregivers is a safe intervention. It affects patients' independence and quality of life in positive way and helps in decreasing caregivers' stress and burden. Video based self-management modules shall be implemented on regular basis for improved patient care.

Keywords: Caregivers, education, self-management, stroke, video.

INTRODUCTION

According to the World Health Organization (WHO), stroke is defined as "acute neurologic dysfunction of vascular origin with sudden (within seconds) or at least rapid (within hours) occurrence of symptoms and sign corresponding to the involvement of focal area in the brain".¹ According to global stroke fact sheet 2022 issued by world stroke organization, incidence of stroke per year is 12.2 million and therefore global prevalence is so high that approximately more than 101 million people are currently living who have experienced stroke.² Stroke remains the

second-leading cause of death and the third-leading cause of death and disability combined in the world.³

Recent stroke survivors and their caregivers often report unmet educational needs in all aspects of stroke care including causes of stroke, stroke prevention and stroke recovery.⁴ Caregiver education is crucial to reduce risks to their own health and to prevent complications and promote patient recovery. Most of the caregivers and patients having lack of knowledge in dealing with the sequelae.⁵ The WHO recognizes that patient education is essential for improving patient

participation in disease management.⁶ International stroke guidelines have recommended that “All patients should be offered training in self-management skills, including active problem solving and individual goal setting”. Thus, in recent years, self-management has become part of the stroke care pathway.³ Stroke recovery and rehabilitation can continue for years post-stroke, meaning it is critical that stroke survivors are provided with and have access to a range of support options and evidence-based information. Supporting healthy recovery and preventing recurrent stroke can reduce disability and costs and improve QOL.⁷

With the advance of information technologies (IT), numerous studies have investigated the feasibility and effectiveness of new IT tools and their design towards the purpose of facilitating education after stroke.⁸ The goals of self-management programs are to activate and inform stroke survivors and their caregivers, with growing evidence that achieving these goals leads to better health outcomes and better quality of life for them.⁹ Previous research by Denham AM et al (2018) has found that patients and caregivers mostly prefer to take help of various online resources and social media for self-care.¹⁰ Educational videos have been shown to be more effective than written materials at increasing knowledge.⁴ They provide both visual and auditory information, have the potential to reach a large number of people, and provide consistent message in a cost effective manner.⁶

The goal of this review is to summarize studies which uses self-management programs engaging stroke participants in their self-care activities actively, to help and improve stroke patients and their caregiver’s education.

MATERIALS & METHODS

• Search strategy:

A systematic search of papers in English, published in peer-reviewed journals between January 2011 and December

2022, was carried out using MEDLINE, CINAHL, EMBASE, Google Scholar, and PubMed electronic databases. Key words and abstracts were searched, using the following descriptors: “stroke,” “caregivers,” “education,” “self-management,” and “video.” The idea was to focus on the most recent and relevant research accessible in digital format.

• Selection criteria:

✓ Inclusion criteria:

- i. Study design: pre-test/ post-test study, randomized controlled trial, pilot study, non- randomized trial.
- ii. Full text articles are available

✓ Exclusion criteria:

- i. Any other languages than English
- ii. Any study conducted prior to 2011
- iii. Study including other than stroke patients and/or their caregivers

• Screening and data extraction:

The full texts of articles considered relevant by both the reviewers were obtained and analysed. In addition, the reference lists of included papers were examined to identify any additional articles that might have been missed by the search strategy. Out of total 45 search results, 19 full texts were screened and 8 were selected for review based on selection criteria (Figure-1).

It was considered more appropriate to conduct a descriptive analysis rather than a critical appraisal of the work. The information was tabulated after being properly cross-checked by two authors independently.

RESULT

Table-1 presents an overview of the 8 empirical articles that were analysed. It highlights the type of study, purpose, population, grouping and intervention, total duration of intervention and follow up, the variables and measures of the studies, and the main findings. Most of them (n=3) were experimental studies, one was randomized controlled trial, and one was pilot study.

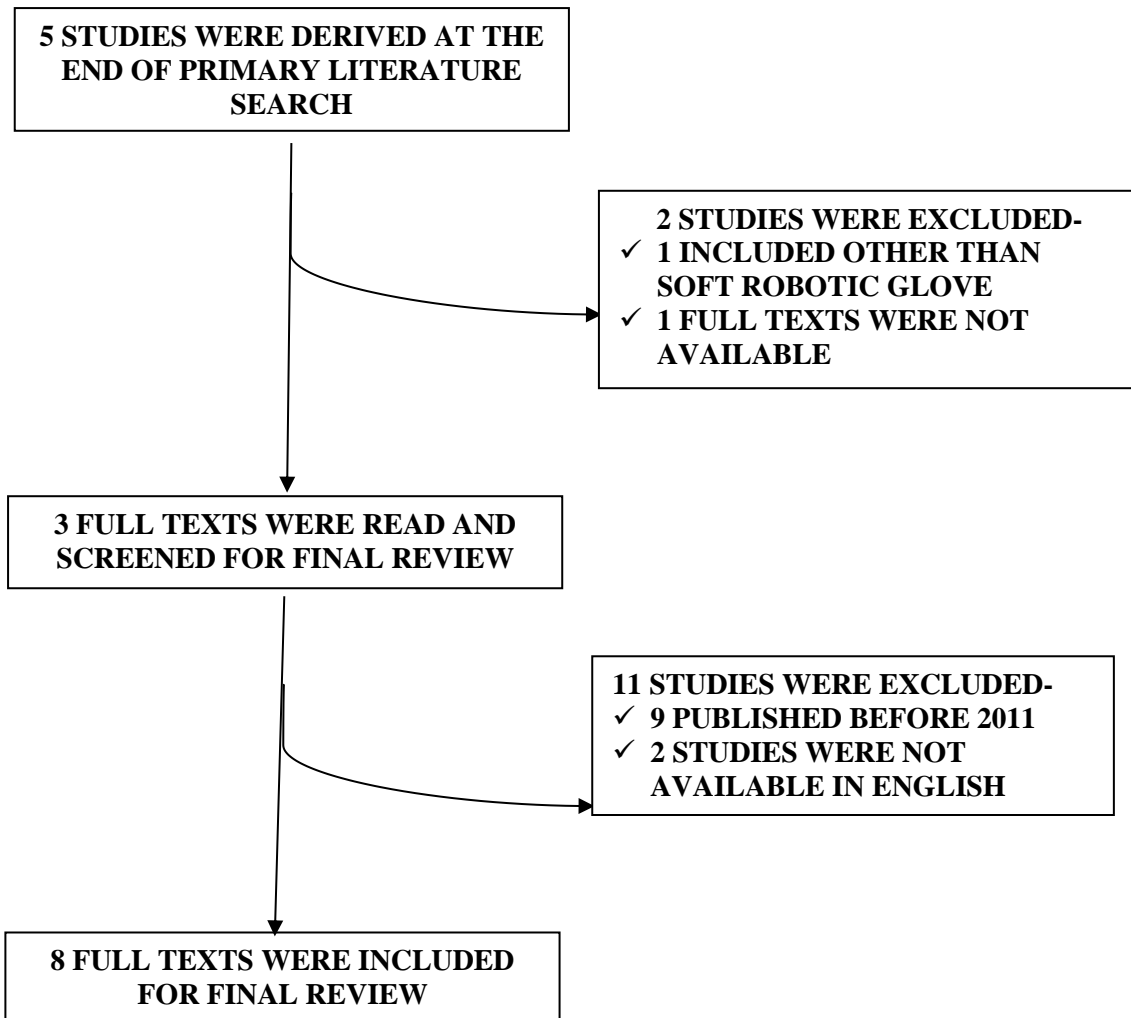


Figure 1: Process of Screening & Selection of Articles

Table: 1 Summary Characteristics of the Reviewed Studies (n=8)

Author, Year	Study design	Population	No. of participants (mean age in years)	Grouping and intervention	Total duration	Outcome measures used	Findings
Sanchez CM et al, 2021 ⁵	Pre-test/post-test study	Caregivers of stroke patients	10 (44.6±12.5)	8 educational videos related to positioning, mobilizations, and transfers	3 days	Caregiver measurement: Practical skills, Knowledge level, satisfaction	Improved practical skills, and knowledge level of informal stroke caregivers
Maisarah Z et al, 2019 ¹¹	Randomized controlled pilot study	Stroke patients	30 EG: 15 (59.4±9.44) CG: 15 (60.2±8.30)	EG: Educational videos+ conventional care CG: verbal health education+ pamphlets+ conventional care	5 weeks	Modified BI, QoL questionnaire, Stroke knowledge questionnaire	Video based intervention provide better understanding compared to pamphlets
Jones KM et al, 2018 ¹²	Randomized controlled pilot study	Stroke patients & their caregivers	66 EG: 34 (61.82±13.06) CG: 32 (64.34±11.20)	EG: instructional & educational stroke DVD+ standard usual care CG: standard usual care	2 months	Modified Rankin scale, EQ-5D, general health questionnaire by center for epidemiologic studies- depression, and CSI	Individualized program meets peoples changing needs during stroke recovery as generalized education approach cannot fully meet their needs and/or expectations
Denham AM et al, 2018 ¹⁰	A pre-post pilot study	Stroke patients	19 (68.89±12.72)	Online secondary prevention program (prevent 2 nd stroke)/ (Web-based P2S program)	2 weeks	EQ-5D, Goldin-leisure time exercise questionnaire, AUDIT-C, PHQ-4	Online programs are an acceptable way to address health outcomes

Chung BPH et al, 2018 ¹³	A pilot study	Caregivers of Stroke patients	EG: 24 (71.6) CG: 26 (70.4)	EG: Virtual therapist (13 videos) CG: Traditional caregiver training + educational booklets	2 months	Knowledge score, Skill performance score, Perceived competence score, direct therapist contact time in caregiver training (%)	It enhances knowledge, skills, and perceived competence of caregivers & reduces % of therapists' time for caregiver training
Denny MC et al, 2017 ⁴	Pre-test/post-test study	Hospitalized Stroke patients	102 (62.9±14.9)	5-minute stroke education video	30 days	10-item questionnaire (1-8 stroke knowledge, 9-10 self-efficacy & satisfaction)	Improved stroke knowledge, self-efficacy in recognizing stroke symptoms
Kim Ji et al, 2013 ¹⁴	A Pilot randomized controlled trial study	Stroke patients and their caregivers	Stroke patients: 36 EG:18 (67.4±7.3) CG:18 (63.9±7.4) Caregivers: 36 EG:18 (49.8±14.8) CG:18 (57.3±11.5)	EG: Web based program+ conventional care CG: conventional care	3 months	Blood chemistry, Health behavior, Sense of control, Health motivation, Caregiver mastery	Feasible & potentially effective intervention Enhances lifestyle modification & sense of control & mastery
Redzuan NS et al, 2012 ¹⁵	A randomized controlled trial	Acute Stroke patients	90 EG:44 (64.7±12) CG:46 (59.4±11)	EG: self - instructional audiovisual DVD+ conventional care CG: conventional care	3 months	Primary: Modified BI Secondary: Incidence of post-stroke complication, CSI	Video-based therapy at home for post-acute stroke patients is safe, does not negatively impact independence, and is not stressful for caregivers
Here, <ul style="list-style-type: none"> • EG: Experimental Group • CG: Control Group • BI: Barthel Index • QoL: Quality of Life DVD: Digital Video Disc 				<ul style="list-style-type: none"> • EQ-5D: EuroQoL-5 Dimension • AUDIT-C: Alcohol use disorders identification test-consumption • PHQ-4: Patient health questionnaire-4 CSI: Caregiver strain index 			

DISCUSSION

The result of the studies reviewed were positive indicating the potential benefits of video as an educational tool offers the benefits of providing standardized content across learners, being less resource intensive than written material.⁴ As suggested by Redzuan NS et al (2012), video based education for caregivers is an excellent alternative to hospital based conventional therapy and can reduce burden on healthcare providers as well as the patients.¹⁵ Sanchez CM et al (2021) in their recent study reported that the main advantages of the video-based education is that they are practical, inexpensive tools and after once being produced many people can access the videos at the same time without a healthcare professional necessarily being present.⁵ It was emphasized in more than one studies, that the favourable outcomes noted in the groups who received video-based education are probably due to family support, initiation

of early rehabilitation, the ability to perform therapy at their own pace and in their home environment, and favourable effects of less stressed caregivers.^{11,13-16} Adequate training in caregiving tasks, such as positioning, mobilizations and transfers to informal caregivers through video based education can promote recovery and maximize patient function through modulation of muscle tone, adequate sensory information, enhanced spatial perception, stabilization of body segments and neuromuscular activation, provide comfort and prevent complications such as respiratory problems, pressure ulcers, pain and contracture.^{4,5,7,9} Stroke education videos were associated with improve stroke knowledge, self-efficacy, quality of life, practical skills, lifestyle modification among stroke survivors and their caregivers.⁷⁻⁹ Jones KM et al (2018) mentioned that the most common barrier to accessing video based intervention was a misalignment between the needs of the

survivors of stroke with the content of their intervention and potential barriers that impede learning may include cognitive, language, cultural and hearing deficits.¹²

CONCLUSION

Based upon the findings of this review, it can be concluded that video based self-management module for education of patients and caregivers is a safe intervention. It affects patients' independence and quality of life in positive way and helps in decreasing caregivers' stress and burden. Video based self-management modules shall be implemented on regular basis for improved patient care.

Declaration by Authors

Ethical Approval: Not Applicable

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

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How to cite this article: Roshni G. Kachhadiya, Vivek H. Ramanandi, Rumana Khatun A. Pathan, Hemanshi N. Vekariya. Use of self-management module via video-based education for stroke survivors and their caregivers: a narrative review of literature. *Int J Health Sci Res*. 2024; 14(3):51-56.
DOI: <https://doi.org/10.52403/ijhsr.20240309>
