

BMJ Open Utilisation of follow-up rehabilitation services for stroke survivors: a scoping review protocol

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ABSTRACT

Introduction Stroke is a leading cause of death and disability and has been identified as a significant public health problem. Residual functional deficits negatively affect the stroke survivor's functional independence and quality of life. Rehabilitation is necessary for them to regain lost skills, relearn tasks and be independent again.

Methodology and analysis A scoping review will be conducted to map available literature on factors influencing utilisation of follow-up rehabilitation services for stroke survivors. Databases including PubMed, LISTA(EBSCO), Web of Science (Clarivate), Google Scholar, Scopus and Science Direct will be searched using keyword searches for articles. The review will include studies presenting evidence on outpatient stroke rehabilitation services, studies undertaken and published in English, including grey literature. Title and abstract screening will be done simultaneously. Two reviewers will independently conduct the abstract and full-text article screening as well as pilot the data extraction form. Thematic analysis will be used to analyse the findings.

Ethics and dissemination This scoping review is part of a larger study approved by the University of KwaZulu Natal Biomedical Research Ethics Committee (Reference no. BREC/00000660/2019). The results will be disseminated through publication.

BACKGROUND

Stroke has been recognised as a growing public health problem.¹ Globally, stroke is ranked third among the leading causes of death and disability-adjusted life years. Approximately 40% of stroke survivors remain with functional impairments that require ongoing outpatient rehabilitation on discharge from the hospital.² Stroke causes physical and functional limitations to the patients and taxes the economies. It is accountable for almost 4% of direct healthcare costs in developed nations. The cost includes not only medical expenses but also includes informal care and productivity loss related costs.³ This burden also affects the family caregivers who often have to give up their lives to care for the stroke survivor.^{4,5}

Rehabilitation services are essential following a stroke, and it is vital to start early

Strengths and limitations of this study

- A clear methodology and transparent process will be achieved by using Arksey and O'Malley's framework to guide the literature search.
- Findings from this study will highlight the gaps in the utilisation of follow-up rehabilitation services for patients who had a stroke. This will aid in planning for access to follow-up rehabilitation services.
- This review may not include all articles published in this research area, as some studies may not be accessible to the researchers.
- Another limitation will be that this study will only include articles published in English.

to maximise functional outcomes.⁶ Stroke rehabilitation services are delivered by healthcare professionals, such as physiotherapists, speech therapists and occupational therapists. The services focus on achieving optimal physical, cognitive, communicative, emotional and social levels of function for stroke survivors.⁶ Utilisation of rehabilitation services post stroke is crucial for survivors to improve functional outcomes. In the first-year post stroke, mortality can be as high as 41%.⁷⁻⁹ Stroke survivors have reported high levels of immobility-related complications, such as falls, contractures, pain and pressure sores.¹⁰ In addition, many unmet needs, including mood, communication and health provision after discharge and managing stroke-related problems, have been reported up to 5 years post stroke.¹¹

Rehabilitation cannot undo the damage done to the brain by the stroke, but it can help stroke survivors regain lost skills, relearn tasks and work independently again.¹² Early rehabilitation ensures maximum functional independence. The utilisation of rehabilitation services is influenced by several factors such as quality of care, accessibility, efficiency, equity, volume, continuity, comprehensiveness of care and healthcare expenses.¹³ Moreover, factors such as demographics, the



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Table 1 Population, concept and context framework

| Population | Stroke survivors |
|------------|--|
| Concept | Utilisation of rehabilitation services by stroke survivors |
| Context | Global |

physical and psychological state might influence how stroke survivors use healthcare services.^{14 15} Utilisation is higher in urban areas and areas serving populations with higher socioeconomic status. Lack of transport, physical and geographical challenges in rural settings that are not conducive to a wheelchair are some of the factors that contribute to low utilisation of follow-up services post stroke.¹² Low utilisation may also be due to inadequate knowledge, poor referral systems from hospital to community, or prohibitive healthcare costs in resource-constrained populations.^{12 16}

Stroke survivors face a range of issues, and rehabilitation services should address poor functional outcomes and the complications that increase the burden of care and disability. The potential for recovery is most significant in the first year after stroke. It is critical for survivors to access rehabilitation services during that time.^{12 17} Utilisation may be affected by access, and the challenges to access are varied.^{14 18–20} This scoping review aims to map the available literature on factors influencing the utilisation of follow-up rehabilitation services by stroke survivors to identify gaps in access to services post discharge. This is a study with a novel approach as no similar scoping reviews on this subject were found by the investigators.

METHODS

This scoping review is part of a larger study aiming to establish a model for follow-up rehabilitation services for stroke survivors. It will be based on the Arksey and O'Malley framework,²¹ which includes the following stages:

- Identifying the research questions.

- Identifying relevant studies.
- Study selection.
- Charting the data using the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) Extension for Scoping Reviews Guidelines.²²
- Collating, summarising and reporting the results.

Stage 1: identifying the research question

What are the factors influencing the utilisation of follow-up rehabilitation services for stroke survivors?

The subquestions are:

1. What are the barriers influencing the utilisation of rehabilitation services by stroke survivors?
2. What are the facilitating factors influencing the utilisation of rehabilitation services by stroke survivors?

Eligibility criteria

Inclusion criteria are studies that present evidence on:

- ▶ Outpatient rehabilitation services—any or all of either physiotherapy, occupational therapy and speech therapy.
- ▶ Grey literature in the form of unpublished empirical research papers, theses and dissertations will also be included.
- ▶ All primary study designs.

Exclusion criteria are

- ▶ Studies not published in English.

The elements of the population, concept and context criteria will be used to map studies (table 1).

Stage 2: identifying relevant studies

A library will be created on EndNote V.X9.3.3 for this scoping review search. A form will be created on Google Forms, and each document will be used to record the topic of the selected study from the EndNote library, the author and the date. The form will serve as a review questionnaire. The databases PubMed, LISTA (EBSCO), Google Scholar, Web of Science (Clarivate), Scopus and Science Direct will be searched for eligible articles. In addition, research gate, social media platforms and

Table 2 A pilot search conducted for this review

| Keywords searched | Date of search | Search engine used | Number of publications retrieved |
|---|-----------------|--------------------|----------------------------------|
| (((((("Stroke" [MeSH Terms] AND "rehabilitation" [MeSH Terms]) AND "rehabilitation" [MeSH Subheading]) AND "stroke" [Title] AND "stroke" [Abstract] AND "rehabilitation" [Abstract] AND "utilization" [Abstract] OR "access stroke rehabilitation" [Abstract] AND "English" [Language]) | 1 November 2020 | PubMed | 216 |
| ((("Stroke rehabilitation" [Keywords] OR "follow up stroke rehabilitation" [Keywords] OR "utilization of stroke rehabilitation" [Keywords]) OR "stroke" [Abstract] OR "follow up stroke rehabilitation" [Abstract] OR "utilization of stroke rehabilitation" [Abstract]) | 1 November 2020 | LISTA (EBSCO) | 410 |
| "Post discharge stroke rehabilitation." [Title] | 1 November 2020 | Google Scholar | 49 |

MeSH, Medical Subject Headings.

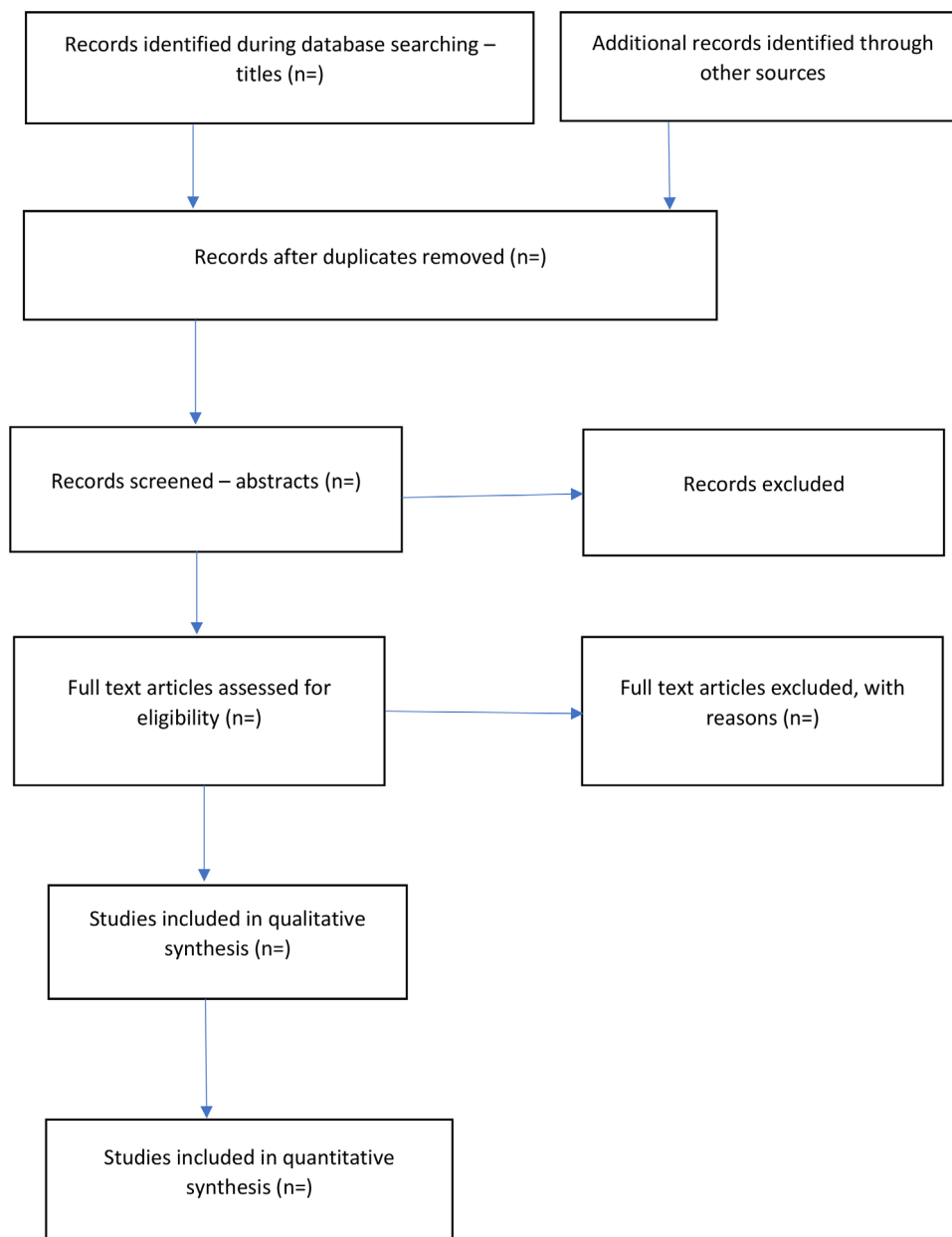


Figure 1 The Preferred Reporting Items for Systematic Reviews and Meta-Analyses 2009 flow diagram to update screening. Source: Moher *et al.*²³

university databases will also be searched for relevant literature. Medical Subject Headings terms “stroke” and “rehabilitation” will be included in the search. Keywords such as “stroke rehabilitation”, “follow up stroke rehabilitation” and “utilization of stroke rehabilitation” will be used. The terms AND and OR will be used to separate the keywords. The search will be focused through the introduction of a language filter. It will include all studies published in English up to the year 2020 (see [table 2](#)).

Stage 3: study Selection

The principal investigator will run the search and will screen all studies with eligible titles and abstracts simultaneously. These studies will be exported to the EndNote library V.X9.3.3. All identified duplicates will be removed. Two reviewers will independently conduct the abstract

and full-text article screening. Full articles of selected abstracts will be obtained. References for eligible studies will also be checked, and relevant articles will be sourced. In cases where the full articles cannot be readily obtained, the authors will be contacted and requested to provide the full article. Full article screening will then be done. A third reviewer will settle disputes between the two reviewers. The findings will be summarised using the PRISMA chart ([figure 1](#)).

Quality appraisal

The Mixed Methods Appraisal Tool (MMAT) Version 2018 will be used to evaluate the methodological quality of the included primary study designs (randomised controlled trials, non-randomised controlled studies, quantitative descriptive studies, qualitative studies and

**Box 1 Data extraction table****Study citation details**

- ▶ Title
- ▶ Author/s
- ▶ Date
- ▶ Journal
- ▶ Volume
- ▶ Issue pages

Study population

- ▶ Age
- ▶ Gender

Methodology

- ▶ Country
- ▶ Study type
- ▶ Study design

Data collection

- ▶ Data collection tools
- ▶ Data collection methods

Sampling

- ▶ Sampling methods

Model details

- ▶ Type of service (physiotherapy, Occupational Therapy, speech therapy)
- ▶ Outpatient service setting (Community Health Centre, Primary Healthcare Clinic, district hospital, regional hospital, private sector)

Data analysis

- ▶ Data analysis type

Results

- ▶ Most important finding
- ▶ Other findings

Conclusion

- ▶ Study limitations and recommendations

mixed-methods studies). The different sections of the tool will be applied to different types of studies. For each study, the MMAT will be used as a guide to determine the appropriateness of the aim of the study, the study selection, data analysis, and presentation of results, the discussions, and conclusions.

Stage 4: data extracting/charting

A table with the components of the proposed data extraction form for this study is shown in [box 1](#). All variables that will assist in answering the research question will be included in the extraction form. The form will be charted on an excel spreadsheet. The data extraction form will be piloted by two independent reviewers using a random sample of 10% of the included studies to ensure consistency and accuracy. The data extraction form will be adjusted as required based on feedback from the two independent reviewers. Data extraction will take the form of an iterative process. If necessary, the data extraction tool will be continually reviewed as part of this process.

Stage 5: collating, summarising and reporting results

Thematic content analysis will be used to analyse a narrative account of the data extracted. Data relating to follow-up rehabilitation models or services will be analysed, and emerging themes will be identified and coded. The identified codes will be categorised, and a schematic representation of the data will be presented. Any key patterns and subthemes will be identified, and the data will then be summarised and synthesised and conclusions drawn from it. The identified themes will be related to the research question, and implications of the findings will be examined and used in the aim of the broader study, which is to develop a model of follow-up stroke care.

Ethics and dissemination

The study is part of a larger study. Ethics approval has been obtained for the whole research, including this scoping review, from the University of KwaZulu Natal Biomedical Research Ethics Committee (Reference no. BREC/00000660/2019). The study will be disseminated using print and electronic media.

DISCUSSION

This scoping review aims to map the available literature on the factors influencing the utilisation of follow-up rehabilitation services by patients who had a stroke. Understanding the factors that facilitate utilisation or present barriers for utilisation will help identify gaps in current service. It will show which services are being used most or least and allude to reasons for utilisation trends. In turn, this will direct where more action is needed in helping stroke survivors to access follow-up care. Evidence gained from this review will also provide useful insights for the broader study. The review will include all primary study designs, randomised controlled trials, non-randomised controlled studies, quantitative descriptive studies, qualitative studies and mixed-methods studies. In addition, it will also include grey literature such as unpublished empirical research papers, theses and dissertations. It is essential to study the current situation in terms of the utilisation of rehabilitation services by stroke survivors in order to improve the delivery of rehabilitation services and ultimately improve long-term outcomes for stroke survivors.

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