SYSTEMATIC REVIEW

Do Self-management Interventions Improve Self-efficacy and Quality of Life in Stroke Survivors? A Systematic Review

*Yurike Septianingrum[1], Siti Nurjanah[2], Ah. Yusuf[3], Moses Glorino Rumambo Pandin[3]

[1] Doctoral of Nursing, Faculty of Nursing, Universitas Airlangga, Jalan Dr. Ir. H. Soekarno, Mulyorejo, 60115 Surabaya, East Java, Indonesia

[2] Nursing Department, Faculty of Nursing and Midwifery, Universitas Nahdlatul Ulama Surabaya, Jalan SMEA No. 57 60237 Surabaya, East Java, Indonesia

[3] Nursing Department, Faculty of Nursing, Universitas Airlangga, Jalan Dr. Ir. H. Soekarno, Mulyorejo, 60115 Surabaya, East Java, Indonesia

ABSTRACT

Introduction: Self-management interventions in stroke patients are needed to control risk factors to prevent recurrent stroke. Objective: This study aimed to assess the effectiveness of self-management interventions on stroke survivors' self-efficacy and quality of life. **Methods:** Electronic databases (PubMed, CINAHL, Scopus, and Science Direct) were searched for relevant articles in English for limited last five years, from 2017 until 2021. Search results were refined to focus on randomized control trials (RTCs) focusing on stroke, self-management, self-efficacy, and quality of life. Study selection, critical appraisal, data extraction, and data synthesis were conducted according to the JBI methodology. **Results:** Eight studies (n= seven hundred forty-nine stroke survivors) were taken, and almost all participatory studies reported an increase in self-efficacy and quality of life after receiving the self-management intervention. **Conclusion:** Several forms of self-management interventions have a positive impact on the self-efficacy and quality of life of stroke patients. Future studies are expected to measure stroke patients' self-perceived burden and self-care.

Keywords: Self-efficacy; Self-management; Stroke rehabilitation; Quality of life.

Corresponding Author:
Yurike Septianingrum, S.Kep., Ns., M.Kep.
Email: yurike.septianingrum-2021@fkp.unair.ac.id
Tel: +6282137842072

INTRODUCTION

Stroke is one of the leading causes of death worldwide, the third leading cause of death, and one of the most expensive health problems in the world (1,2). Ischemic stroke (53.7%) was the more common type, and hypertension (76.8.3%) was the leading risk factor (3). Long-term disability resulting from stroke poses a substantial health care burden (4). The burden of health, economic and social costs have increased for stroke patients, their families, and the national health care system (5).

One of the interventions that can be applied to stroke patients is self-management intervention as a promotive and preventive effort to prevent recurrent stroke (6-8). Recurrent stroke prevention can be done through self-management interventions that involve patients in changing their health behavior.

Self-management refers to an individual's ability to manage the symptoms, medication, physical and psychosocial consequences, and lifestyle changes inherent in living with a chronic condition (6).

Several reviews have shown the effectiveness of improving self-management in patients with chronic diseases (7,8). According to research by Goldberg et al. (2013), self-management may help persons with mental illnesses better control chronic general medical conditions, improve functioning, and feel better (9). Self-management interventions are also applied to diabetic patients and are effective in increasing self-efficacy, motivation, self-management behavior, and HbA1c levels in diabetic patients (10). In contrast, reviews discussing self-management's effectiveness in stroke patients are still limited. A study conducted by Sakakibara et al. (2021) described self-management interventions used to improve risk factor control in stroke patients (6). In contrast, Pedersen et al. (2020) conducted a systematic review to determine the efficacy of self-management interventions for people with stroke over the age of 65 concerning their psychosocial

conditions (11). From all the literature reviews, no literature review describes the effectiveness of self-management intervention on self-efficacy and quality of life of stroke survivors.

Self-management provides clients with knowledge and skills that increase confidence, self-efficacy, and motivation to actively manage their ongoing recovery and rehabilitation (12). Many self-management programs are based on self-efficacy and social cognition theory, and there is a connection between self-efficacy and stroke patients' quality of life. (13). Self-management is a treatment approach that allows individuals to solve problems as they arise, practice new health behaviors, and gain emotional stability (14). Components of a self-management intervention after a stroke may include problem-solving, goal setting, decision making, self-monitoring, coping with the condition, or interventions that maintain or improve physical and psychological functioning field (15). This review aimed to assess the effectiveness of self-management interventions on stroke survivors' self-efficacy and quality of life.

METHODOLOGY

Study design

This literature design is a systematic review and following The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards were used for reporting the systematic review (16). There are seven steps, including writing a review question, defining eligibility criteria, conducting a comprehensive search strategy across multiple information sources, identifying potentially relevant studies, selecting relevant studies, assessing the quality of included studies, and synthesizing included studies (17).

Eligibility criteria

PICOS criteria (Population, Intervention, Comparison, Outcome, Study type) were used to develop eligibility criteria for study inclusion and exclusion in a randomized controlled trial review. (18). The criteria are:

P: (Population): adults with stroke
I: (intervention): self-management intervention (e.g., self-management education, self-management support, self-management empowerment)
C: (Comparison): usual care
**O:** self-efficacy and quality of life
S: randomized controlled trials

Search strategy

The literature search was carried out using an electronic database, limited to the last five years, from 2017 until 2021. Scopus, PubMed, CINAHL, and Science Direct were used to search for literature. Search is limited to the use of English. The keywords used in the literature search were stroke" OR "cerebrovascular accident" AND "self-management" OR "stroke self-management" AND "self-efficacy" AND "quality of life" AND "randomized controlled trial" OR "RCT". The same keywords were used in the literature search in each database. Boolean operators are used to combine keywords and index terms, and search results are refined using filters depending on each database.

Study selection and Data Extraction

The articles were screened by two of the authors (YS and SN). All citations retrieved during the search process are exported to Mendeley, and then the collected citations are filtered to remove duplicates. Notes are then filtered through titles and abstracts to exclude review articles and adjustments to the criteria. The article's feasibility study is carried out by reviewing full-text articles. Articles deemed appropriate by the reviewers were used in this literature review. The article selection process and results are presented in the PRISMA diagram (fig. 1). The first and last authors extracted the data, and the findings are presented in Table I. It includes the citation (authors, publication year, study design, and theory),
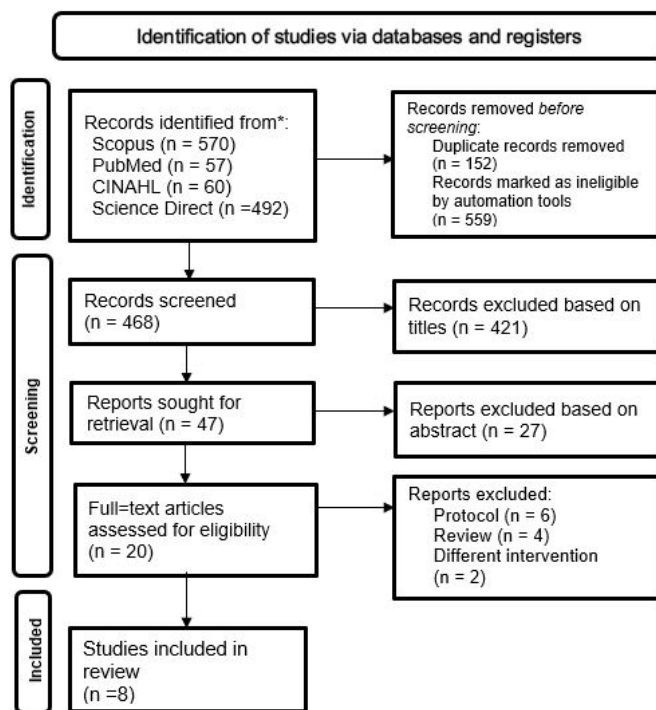
Figure 1 : PRISMA Flowchart of Literature Search and Screening Process.

Table I : Characteristics of the literature included in this review (n=8)

Author, year, design, theory	Sample size	Duration	Intervention	Control/usual care	Instrument	Outcome
(Chen et al., 2018) single-blinded RCT, Health empowerment	126 stroke survivors (intervention: 64; control: 62)	baseline (T0), on discharge (T1), 1-month post discharge (T2), and 3 months post discharge (T3)	patient-centered self-manage-ment empower-ment interven-tion (PCSMEI)	Conventional care: health education and post discharge medical follow-up	The Stroke Self-Efficacy Questionnaire (SSEQ)	Patients in the interven-tion group had significant improvements in self-efficacy compared with those in the control group at T1, T2, and T3.
(Harel-Katz et al., 2020) RCT, no theory mention	39 stroke survivors, intervention, (n=20), con-trol (n=19)	12 weeks	Improving Participation After Stroke Self-Manage-ment program (IPASS)	standard care	The Self-Effi-cacy for Man-aging Chronic Disease (SEM-CD) 6-Item Scale28 and the Participa-tion Strategies Self-Efficacy Scale (PS-SES)	Thirty-nine out of the sixty participants completed the pre-and post-intervention evaluations. Self-effica-cy showed no significant increase in the control group (p>0.1). The effect of time on PS-SES30 and group effect (difference between inter-vention and control) on all outcome measures was not significant. The interaction between groups and time was also not significant (p >.05).
(Lo et al., 2018) RCT, Bandura's self-efficacy theory	128 adult stroke survi-vors (64 per group)	8 weeks	stroke self-man-agement pro-grams (SESSMP)	Usual care	Stroke Self-effi-cacy Question-naire	The SESSMP significantly improved participants' self-ef-ficacy, outcome expectation, and satisfaction with perfor-mance of self-management behaviors at 8 weeks (one-month post-program).
(Sit et al., 2016) RCT, no theory mention	210 stroke survivors, intervention (n=105), control (n=105)	6 months	health em-powerment intervention for stroke-self management (HEISS)	Usual care	the Chinese Self-Manage-ment Behavior Questionnaire originally	A total of 210 (CG =105, IG =105) Hong Kong Chinese stroke survivors (mean age =69 years, 49% women, 72% ischemic stroke, 89% hemiparesis, and 63% tactile sensory deficit) were enrolled in the study. Those in the intervention group reported better self-efficacy in illness management 3-month (P=0.011) and 6-month (P=0.012) post-intervention
(Wolf et al., 2017), RCT, Bandura's self-efficacy theory	71 stroke survivors intervention (n=35), con-trol (n=36)	6 months	the Chronic Disease Self-Management Program (CDS-MP)	Usual care	The Chronic Disease Self Efficacy Scale (CDSES)	There were no differences be-tween groups in demograph-ics or baseline data with the exception of how participants felt they are able to manage their health in general (p = 0.05). At follow-up, effect sizes ranged from 0 to 0.35 (no effect to medium effect); however, while the treatment group reported improvements in several areas of health at follow-up, the results are not compelling when compared to the control group over the same time period.

(Kessler et al., 2017), RCT, no theory mention	21 stroke survivors, intervention (n=10), control (n=11)	16 weeks	Occupational Performance Coaching adapted for stroke survivors (OPC–Stroke)	Usual care	the Goals Systems Assessment Battery–Directive Functions Indicators (GSAB-DFI)	OPC–Stroke is a complex intervention designed to increase participation in valued activities. The findings of this study suggest that OPC–Stroke may help participants move toward achievement of individual participation goals while promoting cognitive abilities.
(Sajatovic et al., 2018), prospective randomized controlled trial, no theory mention	38 stroke survivors, intervention (n=19), control (n=19)	24 weeks	TargetEd MAnageMent Intervention (TEAM)	Usual care	the Stroke Impact Scale (SIS)	There is an increase in the self-efficacy of stroke survivors (not explained in detail)
(Sakakibara et al., 2021), RCT, no theory mention	98 stroke survivors, intervention (n=51), control (n=47)	6 months	Stroke Coach	Memory training	Health-related quality of life (HR-QoL)	Stroke Coach had a statistically significant increase in HR-QoL (Mental Component Summary) between 6 and 12 months (p=0.027) that was also significantly greater than Memory Training (p=0.014)

Table II : Quality appraisal of the studies

Author, year	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Total
(Chen et al., 2018)activities of daily living (ADL	v	v	v	v	v	v	v	v	v	v	v	v	x	12
(Harel-Katz et al., 2020)	v	v	v	v	v	v	v	v	v	v	v	v	v	13
(Lo et al., 2018)	v	v	v	v	v	v	v	v	v	v	v	v	v	13
(Sit et al., 2016)	v	v	v	v	v	v	v	v	v	v	v	v	v	13
(Wolf et al., 2017)	v	v	v	v	v	v	v	v	v	v	v	v	x	12
(Kessler et al., 2017)	v	v	v	v	v	v	v	v	v	v	v	v	x	12
(Sajatovic et al., 2018)	v	v	v	v	v	v	v	v	v	v	v	v	v	13
(Sakakibara et al., 2021)	v	v	v	v	v	v	v	x	v	v	v	v	x	11

country (of origin), sample size, duration, intervention/comparator, instrument, and outcomes. Only data that were published were taken out.

Data were extracted from included papers using a standardized data extraction tool for prevalence data available from The Joanna Briggs Institute (JBI) Critical Appraisal tools (19). Additionally, the overall risk of bias is evaluated. Studies were not excluded based on quality ratings; However, potential limitations of the study are highlighted. In cases of discrepancy between the first and second authors, the consensus was obtained through cooperation with the team of authors.

RESULTS

A search through four databases yielded 1.179 citations and then screening to remove duplicates yielded 468 records. A total of forty-seven records were selected based on title and abstract, then screened based on full text. A total of twenty full-

text articles were assessed for eligibility, and only eight RCT articles (n= seven hundred forty-nine stroke survivors) were included in this study. Twelve articles were excluded because they consisted of protocols, systematic reviews, and different interventions.

Risk of Bias
Estimates of the risk of bias across all included articles are presented in table 2. All articles were of good quality, but there were four articles that had bias due to the random sample, and resulting in data loss due to loss of follow-up.

Study characteristics
A total of 749 participants were included in this study, all of whom were adults (> 17 years), the sample size ranged from 21-210 participants, and the study design used a randomized controlled trial (RCT). Six articles discuss the effectiveness of self-management interventions focused on stroke on self-efficacy and quality of life (4,5,14,20–23), while one article discusses the effectiveness of chronic disease self-management interventions (24). For comparison interventions, six articles used the standard/ usual care (4,14,20–22,25), one article compared the health education (5), and one article used the memory training (23). For the outcome of the self-management intervention, seven articles measure self-efficacy (5,14,20–22,25,26) and one article measures the quality of life of stroke patients (23).

Intervention characteristics
Two articles discuss the application of self-management empowerment (5,26). All participants in the intervention group got post-discharge training information and a video disk with rehabilitation exercises on the day of discharge. Participants in the intervention and control groups received eight sessions of goal-oriented self-management intervention and control care, respectively, in the first month following discharge (5). In the study by Sit et al. (2016) the intervention was carried out in 2 stages, where the first stage was carried out for six weeks, and the second and third stages were carried out for four weeks each. Three articles discussed the application of stroke self-management programs which were implemented around eight weeks (21), twelve weeks (20), dan twenty-four weeks (14). Two articles discuss self-management coaching interventions conducted over 16 weeks (22) and 6 months (23), while one article discussed the application of self-management in chronic diseases in general which was carried out for six months (24).

DISCUSSION

Self-efficacy
This study focuses on stroke patients, where stroke patients experience a disability at risk of death (2). About fifteen million people suffer a stroke yearly, most of whom are ischemic due to modifiable risk factors (27). Stroke is the leading cause of long-term disability worldwide. Several studies have shown that stroke negatively affects participation, manifested by difficulty returning to meaningful daily activities several months and even years after the stroke. (20). The impacts of chronic diseases such as stroke include increased mortality, economic costs, use of health service resources, and reduced participation in care, thus impacting patient welfare (28). The lack of patient participation in the process of care and rehabilitation has an impact on ADL independence and the balance function of stroke patients (29). Efforts to increase knowledge of stroke patients in the form of health education have been studied by Eames et al. (2013), however, this intervention was less effective in increasing the self-efficacy and quality of life of stroke patients (30). Therefore, other interventions are needed to increase the self-efficacy and quality of life of stroke patients, such as self-management intervention.

A total of five of the eight articles discussed in this literature review show that self-management interventions positively affect the self-efficacy (4,20,21,24,31). This indicates that self-management plays an essential role in increasing self-efficacy. Stroke self-management empowerment program is proven to increase self-efficacy after 3-6 months (4), in line with this study, research by Chen et al (2018) which showed that self-management empowerment significantly increases self-efficacy 1-3 months post-discharge (5). So far, self-management interventions are identical to health education with Pender's health promotion model approach and increasing self-efficacy with Bandura's self-efficacy theory approach (21,24).

Several studies show the effectiveness of increasing self-management on self-efficacy (12,21) and the quality of life of stroke survivors (14,15,27). Self-efficacy is the belief, and confidence individuals feel in their ability to perform a particular task or action. Increased self-efficacy is the desired outcome of a self-management program (12). Several articles used Albert Bandura's concept of self-efficacy (21,24). According to Bandura (32), There are four main sources of self-efficacy: direct mastery experiences, vicarious experiences, verbal persuasion, and physiological states. Self-management of stroke

patients draws on the work of several authors and includes the following concepts: a self-management approach provides clients with knowledge and skills that enhance self-confidence, self-efficacy, and motivation to actively manage their ongoing recovery and rehabilitation (12).

Almost all studies discussed in this literature review state that self-management interventions can increase self-efficacy in stroke survivors. A premise of self-management is that individuals with a greater expectation that they are capable of performing a behavior to produce a given outcome are seen as having greater self-efficacy (33). Self-management interventions for people after a stroke that aim to increase individuals' abilities to solve problems, make decisions, and construct action plans for specific functional targets, could help prevent some of the difficulties that people with stroke face when discharged from the rehabilitative healthcare (34). The use of instruments to measure self-efficacy also varies, but only one article uses the Stroke Self-efficacy Questionnaire instrument that specifically measures self-efficacy in stroke survivors.

Quality of life
Approximately one-third of stroke survivors experience a mood disorder, most commonly depression and anxiety, and these conditions are the most stressful for families. Overall, these factors affect the quality of life (QoL) (15). Self-management is a treatment approach that allows individuals to solve problems as they arise, practice new health behaviors, and gain emotional stability (14). Quality of life can be improved by self-management interventions that accomplish more than a single change domain. The success of these interventions depends on participation levels, impairment of participants, health services use, health behavior, costs, participant satisfaction, and associated adverse events during the intervention period. However, these interventions are often complicated, time-consuming, and human resources intensive (27). In the control group, almost all provided the usual care intervention, and only two articles compared it with other interventions. The self-management intervention was superior to other interventions. This became an added value to the self-management intervention and could be applied to stroke patients to reduce the risk of stroke and improve their quality of life.

CONCLUSION

This literature study discusses the effectiveness of self-management interventions in stroke patients with several parameters, but the similarities throughout the literature refer to self-efficacy. Self-management interventions can be given to patients

when they come home from the hospital or when they are already at home. Stroke self-management led by nurses can increase self-confidence, making them willing and able to play an active role in managing their health and the effect of exercise on events that affect their lives during the stroke rehabilitation journey. It is hoped that the development of self-management coaching interventions can be integrated through a different theoretical approach, namely Meleis's Transitional Care, which has not yet been studied. This allows for optimizing care while at home by increasing patient readiness starting when the patient is in the hospital.

Limitation
This study has several limitations, some articles do not mention the theory or framework that underlies the study, and some reports do not clearly explain the research instruments used and secondary outcomes.

Implication of findings on nursing practice
This review is expected to be used as input for nursing science, especially medical-surgical nursing, to determine appropriate interventions for stroke patients. Selection of the proper intervention can help stroke patients' rehabilitation process, especially in meeting their basic needs to improve their quality of life.

Ethical approval
This research does not have ethical approval because this type of research is a systematic review, but the research process still follows the rules of research ethics.

ACKNOWLEDGMENT

REFERENCES

1. Venketasubramanian N, Yoon BW, Pandian J, Navarro JC. Stroke epidemiology in south, east, and south-east asia: A review. J Stroke. 2017;19(3):286–94.
2. Allen K, Hazelett S, Jarjoura D, Hua K, Weinhardt J, Kropp D. Management Model for Stroke Survivors. 2010;18(6):443–52.
3. Tini K, Samatra IDPGP, Wiryadana KA, Supadmanaba IGP. Clinical profile of patients with cerebrovascular disease at stroke unit, sanglah general hospital, Denpasar, Bali. Bali Med J.

2020;9(1):129–36.

4. Sit JWH, Chair SY, Choi KC, Chan CWH, Lee DTF, Chan AWK, et al. Do empowered stroke patients perform better at self-management and functional recovery after a stroke? A randomized controlled trial. Clin Interv Aging. 2016;11:1441–50.

5. Chen Y, Wei Y, Lang H, Xiao T, Hua Y, Li L, et al. Effects of a Goal-Oriented Intervention on Self-Management Behaviors and Self-Perceived Burden After Acute Stroke: A Randomized Controlled Trial. Front Neurol [Internet]. 2021;12. Available from: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85111931502&doi=10.3389%2Ffneur.2021.650138&partnerID=40&md5=b891686af1d6a62f4a49e95419974648

6. Sakakibara BM, Lear SA, Barr SI, Goldsmith CH, Schneeberg A, Silverberg ND, et al. Telehealth coaching to improve self-management for secondary prevention after stroke: A randomized controlled trial of Stroke Coach. Int J Stroke [Internet]. 2021; Available from: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85106712140&doi=10.1177%2F17474930211017699&partnerID=40&md5=7748ff4198e79f5becdb69ed72994e7a

7. Ko D, Bratzke LC, Roberts T. Self-management assessment in multiple chronic conditions: A narrative review of literature. Int J Nurs Stud [Internet]. 2018;83:83–90. Available from: https://doi.org/10.1016/j.ijnurstu.2018.04.009

8. Hanlon P, Daines L, Campbell C, Mckinstry B, Weller D, Pinnock H. Telehealth interventions to support self-management of long-term conditions: A systematic metareview of diabetes, heart failure, asthma, chronic obstructive pulmonary disease, and cancer. J Med Internet Res. 2017;19(5).

9. Goldberg RW, Dickerson F, Lucksted A, Brown CH, Weber E, Tenhula WN, et al. Living Well: An Intervention to Improve Self-Management of Medical Illness for Individuals With Serious Mental Illness. 2013;64(1):51–7.

10. Azami G, Soh KL, Sazlina SG, Salmiah MS, Aazami S, Mozafari M, et al. Effect of a Nurse-Led Diabetes Self-Management Education Program on Glycosylated Hemoglobin among Adults with Type 2 Diabetes. J Diabetes Res. 2018;2018.

11. Pedersen SKS, Sшrensen SL, Stabel HH, Brunner I, Pallesen H. Effect of self-management support for elderly people post-stroke: A systematic review. Geriatr. 2020;5(2):1–21.

12. Nott M, Wiseman L, Seymour T, Pike S, Cuming T, Wall G. Stroke self-management and the role of self-efficacy. Disabil Rehabil [Internet]. 2021;43(10):1410–9. Available from: https://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=150283595&site=ehost-live

13. Jones F, Riazi A. Self-efficacy and self-management after stroke: A systematic review. Disabil Rehabil. 2011;33(10):797–810.

14. Sajatovic M, Tatsuoka C, Welter E, Colon-Zimmermann K, Blixen C, Perzynski AT, et al. A Targeted Self-Management Approach for Reducing Stroke Risk Factors in African American Men Who Have Had a Stroke or Transient Ischemic Attack. Am J Heal Promot. 2018;32(2):282–93.

15. Whitehead L. Self-management programmes for quality of life in people with stroke. Int J Nurs Pract. 2018;24(2):1–2.

16. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ. 2021;372.

17. Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, et al. Preferred reporting items for systematic review and meta-analysis protocols (prisma-p) 2015 statement. Japanese Pharmacol Ther. 2019;47(8):1177–85.

18. Eriksen MB, Frandsen TF. The impact of PICO as a search strategy tool on literature search quality: A systematic review. J Med Libr Assoc [Internet]. 2018;106(4):420–31. Available from: https://jmla.pitt.edu/ojs/jmla/article/view/345/726

19. Munn Z, Moola S, Lis K, Riitano D, Tufanaru C. Chapter 5: Systematic reviews of prevalence and incidence [Internet]. JBI Manual for Evidence Synthesis. JBI, 2020. 2020. Available from: https://synthesismanual.jbi.global.

20. Harel-Katz H, Adar T, Milman U, Carmeli E. Examining the feasibility and effectiveness of a culturally adapted participation-focused stroke self-management program in a day-rehabilitation setting: A randomized pilot study. Top Stroke Rehabil [Internet]. 2020;27(8):577–89. Available from: https://doi.org/10.1080/10749357.2020.1738676

21. Lo SHS, Chang AM, Chau JPC. Stroke self-management support improves survivors' self-efficacy and outcome expectation of self-management behaviors. Stroke. 2018;49(3):758–60.

22. Kessler D, Egan M, Dubouloz CJ, McEwen S, Graham FP. Occupational Performance Coaching for stroke survivors: A pilot randomized controlled trial. Am J Occup Ther. 2017;71(3).

23. Sakakibara BM, Lear SA, Barr SI, Goldsmith CH, Schneeberg A, Silverberg ND, et al. Telehealth coaching to improve self-management for secondary prevention after stroke: A randomized controlled trial of Stroke Coach. Int J Stroke. 2021;0(0):1–11.

24. Wolf TJ, Spiers MJ, Doherty M, Leary E V. The effect of self-management education following mild stroke: an exploratory randomized controlled trial. Top Stroke Rehabil. 2017/02/14. 2017;24(5):345–52.

25. Wolf TJ, Siers MJ, Doherty M, Leary E V. The effect of self-management education following mild stroke: An exploratory randomized controlled trial. Top Stroke Rehabil [Internet]. 2017;24(5):345–52.

Available from: file:///C:/Users/Carla Carolina/Desktop/Artigos para acrescentar na qualificaзгo/The impact of birth weight on cardiovascular disease risk in the.pdf

26. Sit JWH, Chair SY, Choi KC, Chan CWH, Lee DTF, Chan AWK, et al. Do empowered stroke patients perform better at self-management and functional recovery after a stroke? A randomized controlled trial. Clin Interv Aging. 2016;11:1441–50.

27. Ortiz-Fernбndez L, Zabala JS, Gutiйrrez-Ruiz A, Imaz-Ayo N, Alava-Menica A, Arana-Arri E. Efficacy and usability of ehealth technologies in stroke survivors for prevention of a new stroke and improvement of self-management: Phase iii randomized control trial. Methods Protoc [Internet]. 2019;2(2):1–13. Available from: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85089835798&doi=10.3390%2Fmps2020050&partnerID=40&md5=d5ab58dca68c5513c4f39aaad66a013f

28. O'Connell S, Mc Carthy VJC, Savage E. Frameworks for self-management support for chronic disease: A cross-country comparative document analysis. BMC Health Serv Res. 2018;18(1):1–10.

29. Ahn S-N, Hwang S. An investigation of factors influencing the participation of stroke survivors in social and leisure activities. Phys Ther Rehabil Sci. 2018;7(2):67–71.

30. Eames S, Hoffmann T, Worrall L, Read S, Wong A. Randomised controlled trial of an education and support package for stroke patients and their carers. BMJ Open. 2013;3(5):1–9.

31. Lin S, Xiao LD, Chamberlain D. Erratum: A nurse-led health coaching intervention for stroke survivors and their family caregivers in hospital to home transition care in Chongqing, China: A study protocol for a randomized controlled trial (Trials (2020) 21 (240) DOI: 10.1186/s13063-020-. Trials. 2020;21(1):1–22.

32. Smith MJ, Liehr PR. Understanding middle range theory by moving up and down the ladder of abstraction. Middle Range Theory for Nursing, Fourth Edition. 2018. 15–32 p.

33. Fryer CE, Luker JA, McDonnell MN, L HS. Self management programmes for quality of life in people with stroke - Summary of the main comparison. Cochrane Database Syst Rev. 2016;(8):1–2.

34. Jones F, Gage H, Drummond A, Bhalla A, Grant R, Lennon S, et al. Feasibility study of an integrated stroke self-management programme: A cluster-randomised controlled trial. BMJ Open. 2016;6(1):1–10.

35. Septianingrum Y, Nurjanah S, Pandin MGR. Do self-management interventions improve self-efficacy and quality of life in stroke survivors? A literarture review. 2022; Available from: http://dx.doi.org/10.1101/2022.01.23.22269724