

Improving life after stroke needs global efforts to implement evidence-based physical activity pathways

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Abstract

There is an urgent need to improve life after stroke across the world—especially in low-income countries—through methods that are effective, equitable and sustainable. This paper highlights physical activity (PA) as a prime candidate for implementation. PA reduces modifiable risk factors for first and recurrent stroke and improves function and activity during rehabilitation and following discharge. Preliminary evidence also indicates PA is cost-effective. This compelling evidence urgently needs to be translated into seamless pathways to enable stroke survivors across the world to engage in a more active lifestyle. Although more quality research is needed—particularly on how to optimize uptake and maintenance of PA—this should not delay implementation of high-quality evidence already available. This paper shares examples of best practice service models from low-, middle-, and high-income countries around the world. The authors call for a concerted effort to implement high-quality PA services to improve life after stroke for all.

Keywords

Stroke, exercise, physical activity, quality of life

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Introduction

The 11th World Stroke Organisation Congress in 2018 highlighted the urgent need for effective, equitable and sustainable interventions to improve life after stroke across the world—especially in low-income countries, where the impact of stroke is highest.¹ As two-thirds of all strokes now occur under the age of 70 years,¹ survivors live longer than before with the sequelae of stroke. People with stroke need support to reach their rehabilitation potential, re-engage with important life roles and regain their quality of life. However, many countries cannot resource long-term health services and many people cannot afford pharmacological treatment to help prevent secondary stroke. A meta-epidemiological study has shown that exercise is significantly more effective in reducing post-stroke mortality than anticoagulants and antiplatelets.² Since PA improves vascular health, cognition, mobility, emotional well-being, and quality of life,^{3,4} it is a clinically effective and potentially cost-effective⁵ intervention to improve life after stroke.

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Stronger evidence now indicates that those who engage more in light and moderate PA pre-stroke have a lower stroke severity,⁶ that PA reduces risk factors for recurrent stroke⁷ and that fitness training after stroke improves impairments (e.g., strength), activity limitations (e.g., mobility),³ and psychosocial outcomes (e.g., confidence).⁴ A better understanding of barriers and motivators related to PA after stroke has informed new intervention approaches.⁸

Further research on PA after stroke is a top priority,⁹ particularly to identify optimum intervention parameters,³ determine impact on participation, and understand stroke survivors' PA experiences to improve uptake and maintenance. A wider spectrum of interventions is being explored; from reducing sedentary behavior to targeted fitness training, to urban planning to promote habitual activity.¹⁰

Current best practice around the world

Offering fitness training to all stroke survivors in the community is a target in the Action Plan for Stroke in Europe 2018–2030. Good service models are already in place in low-, middle-, and high-income countries around the world, as shown by a number of examples below.

In Nigeria, a lack of stroke rehabilitation instigated the development of a community-based Life After Stroke Centre model, offering Functional Rehabilitation and Exercise Training. Exercise prescription includes one-to-one and group exercise classes, park walks, and running activities.

In India, a sedentary lifestyle after stroke is compounded by a lack of rehabilitation coupled with a lack of accessible environments. Lifestyle modification, emphasizing physical activity and diet, is gaining popularity. A feasible community-based program that includes context-specific physical activity and adaptive sports has been developed.

In Brazil, the establishment of national guidelines for stroke survivors led to the development of free community-based city gyms (“*academias da cidade*”). Outdoor PA is unsupervised, but indoor PA is supervised and aims to improve cardiorespiratory fitness, flexibility, strength, and general motor coordination.

In Singapore, self-management and PA programs for chronic stroke survivors are provided mainly by voluntary welfare organizations. The Singapore National Stroke Association (SNSA) and the Stroke Support Station conduct regular volunteer-led programs which incorporate education, peer support, social activities, and group exercise. The SNSA also offers free supervised park walks for stroke survivors of all abilities.

In Canada, there is movement from clinical trials to implementation research. The Fitness and Mobility

Exercise (FAME) Program for Stroke has progressed from successful randomized controlled trials to implementation; detailed manuals, guidance on screening and developing a referral pathway are freely available. This has enabled over 500 groups over 20 countries (including low- and high-income economies) to implement this program in community settings, using physical therapists or fitness instructors.

In the United States of America, there is a strong push to encourage healthcare providers to promote physical activity. Several local and state programs use the FAME program or follow published recommendations for PA to improve life after stroke.

In Sweden, “Exercise on prescription,” based on a handbook with GRADE-based recommendations, has been available for about 10 years, emphasizing the similarity between exercise and pharmaceutical treatment. Its second edition has been translated into Norwegian, English, and Vietnamese and is used across Sweden and Norway.

In Australia, evidence-based guidelines have instigated many local services to provide exercise programs for people after TIA or stroke.

In the UK, evidence has been translated into education for specialist exercise and health professionals: since 2007, Later Life Training has qualified around 400 professionals, who now implement best practice in communities across the UK.

Together, these examples demonstrate that PA after stroke can be implemented successfully in different contexts. These could be used and adapted by others for their own specific needs.

Next steps

In conclusion, we are now in a better position than ever to address the United Nations Sustainable Development Goals: we can improve health and reduce health inequalities across the world, by creating seamless, sustainable, evidence-based physical activity pathways to support stroke survivors and their families. Our next step is to collectively develop a clear strategy to prioritize and focus research on knowledge translation for clinical practice and community engagement, with the ultimate purpose to optimize life after stroke.

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