

## **Older stroke survivors and rehabilitation therapists views on home-based resistance exercise for upper limbs**

ALI, K, SHAFIZADEH, Mohsen <<http://orcid.org/0000-0002-7524-1058>>, NASR, Nasrin, BALCHIN, T, HART, John <<http://orcid.org/0000-0002-6142-4515>> and KELLEY, John <<http://orcid.org/0000-0001-5000-1763>>

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This document is the Accepted Version [AM]

### **Citation:**

ALI, K, SHAFIZADEH, Mohsen, NASR, Nasrin, BALCHIN, T, HART, John and KELLEY, John (2024). Older stroke survivors and rehabilitation therapists views on home-based resistance exercise for upper limbs. *Age and Ageing*, 53 (Supp 1). [Article]

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Abstract title - Older stroke survivors and rehabilitation therapists' views on home-based resistance exercise for upper limbs.

Abstract Author Name - K Ali<sup>1</sup>; M Shafizadeh<sup>2</sup>; N Nasr<sup>2</sup>; T Balchin<sup>3</sup>; J Hart<sup>2</sup>; J Kelley<sup>2</sup>.

Abstract Provenance - 1- Brighton and Sussex Medical School, 2- Sheffield-Hallam University, 3- Action for Rehabilitation from Neurological Injury (ARNI) Institute.

Abstract Content - Introduction: Upper limb recovery after stroke depends on participating in personalised task-specific exercise programmes. However, older adults with stroke find it challenging to maintain an optimal level of engagement with such exercise programmes due to personal and environmental factors. The aim of this study was to explore the views of stroke survivors and rehabilitation therapists on home-based resistance exercises for upper limbs. Method: A qualitative study of semi-structured virtual and in-person interviews was conducted between January and March 2023 in England. Participants were 11 older adults >65 years (6 females (55%), with chronic stroke (>1 year after a stroke) and moderate to severe disabilities. Twenty rehabilitation therapists were also interviewed (3 physiotherapists, and 17 Action for Rehabilitation from Neurological Injury (ARNI) instructors). The group was asked about perceived personal and environmental barriers and facilitators as well as expectations of resistance exercises in relation to upper limb neurorehabilitation programmes. Interview sessions were audio recorded for transcription and thematic data analysis. The study was approved by Sheffield Hallam University ethics committee (reference number: AA43961583). Results: Both groups mentioned that the main barrier to performing upper-limb exercises is weakness in the paretic arm affecting grip strength with consequent adverse impact on adherence to a home-based programme and poor patient motivation. Patients also reported safety concerns such as dropping equipment and being dependent on a carer to undertake regular exercises. Stroke survivors preferred a program that activates the paretic arm and is relevant to their daily functional activities. They preferred simple exercise instructions and demonstrations through visual aids and video materials. Patients also valued regular feedback on adjusting their exercise dose, monitoring progress over time, and ongoing encouragement. Conclusions: Our study showed that designing home-based resistance exercises for upper limb in older stroke survivors should be individualised, functionally orientated, and motivational.