



Heavy shoulder strengthening exercises in patients with hypermobility spectrum disorder and persistent shoulder problems: a feasibility study

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BACKGROUND

Patients with hypermobility spectrum disorder (HSD) are at great risk of experiencing shoulder problems, but evidence for treatment is sparse. Therefore, the objective of this study was to evaluate the feasibility of heavy shoulder strengthening exercise in patients with HSD and persistent shoulder problems to inform a future randomised controlled trial.

METHODS

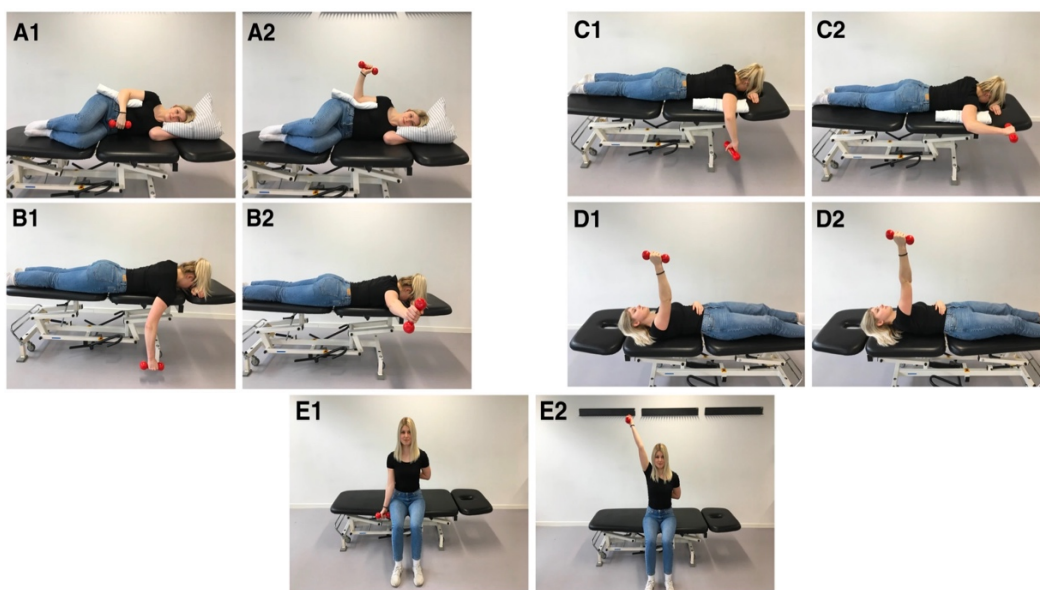
This was a feasibility study. Patients were recruited from April to July 2018 in primary care by general practitioners and physiotherapy clinics from the Region of Southern Denmark.

Twelve patients (39.3±13.9 years, 91.7% females) with HSD and shoulder instability and/or pain for more than 3 months were included.

The intervention included a 16-week progressive heavy shoulder strengthening exercise program, 3 times per week using exercises targeting scapular and rotator cuff muscles (images A to E below).

The primary outcomes were pre-defined progression criteria including recruitment rate (acceptable: 6 patients/month), assessment duration (acceptable: <120 min), patient retention (acceptable: >80% complete intervention), training adherence (acceptable: >75% adhere to >36 training sessions), adverse events (acceptable: minor events with no patients discontinuing the study), besides patient and physiotherapist feedback.

Secondary treatment outcomes were assessed using the Western Ontario Shoulder Instability Index (WOSI (0-2100, better to worse)); treatment impact on other patient-reported health parameters such as pain, fatigue and kinesiophobia; isometric shoulder strength; and clinical tests for shoulder instability, hyperlaxity, and proprioception.

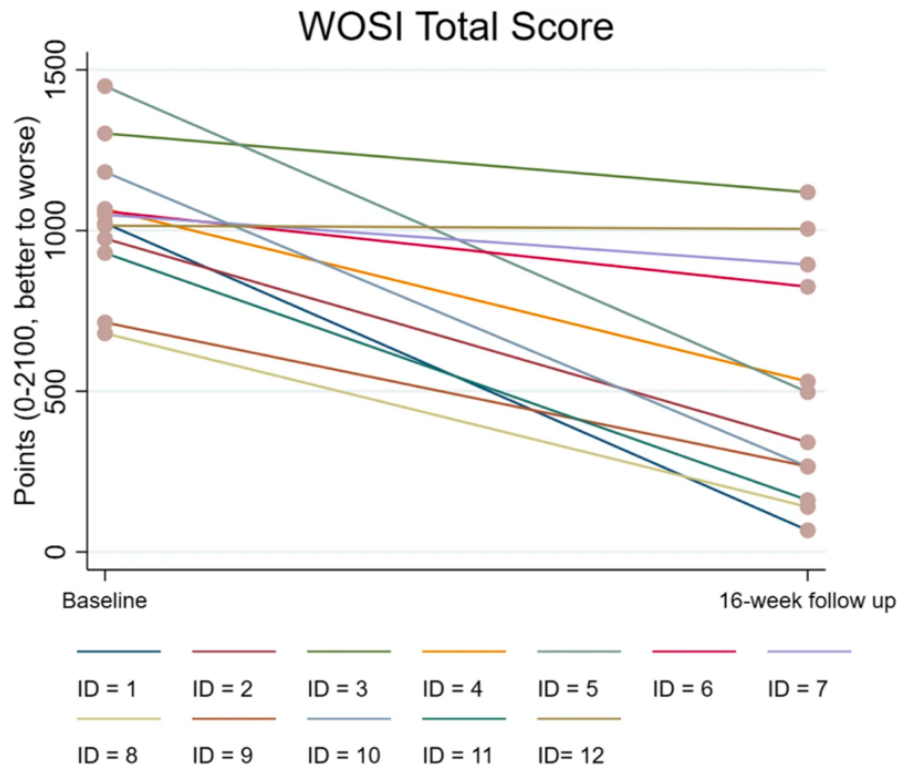


RESULTS

Recruitment rate was 5.6/month, assessment duration (mean±SD) 105±9 min, retention 100%, adherence 83%, and four patients experienced short-lasting soreness/pain.

Patient feedback was positive, and physiotherapists found the intervention relevant and applicable to the patient group.

The WOSI total score improved by 51% (mean±SD, points: baseline 1037±215; follow-up 509±365; mean change (95%CI), 528 (318;738)), and patients reported reduced pain, kinesiophobia, and fatigue.



Shoulder strength measurements improved by 28-31% (mean change (95%CI), Nm/kg: scaption 0.51 (0.23;0.78); internal rotation 1.32 (0.70;1.95); and external rotation 0.89 (0.37;1.40)), and clinical tests indicated decreased shoulder laxity.

CONCLUSION:

The shoulder strengthening exercise program was feasible and safe for patients with HSD and persistent shoulder problems. A future RCT, with an improved recruitment strategy, will demonstrate whether the exercise program is effective in improving symptoms and decreasing shoulder laxity in this patient group.

“Trial registration: [ClinicalTrials.gov](https://clinicaltrials.gov/ct2/show/study/NCT03547570): NCT03547570. Registered on May 3, 2018. This study is published in Pilot & Feasibility Studies, <https://pilotfeasibilitystudies.biomedcentral.com/articles/10.1186/s40814-020-00632-y>”

Full publication: <https://pilotfeasibilitystudies.biomedcentral.com/articles/10.1186/s40814-020-00632-y>

DECLARATIONS OF INTEREST:

None