

Development and Testing of a Mobile Health Intervention to Improve Adherence to Exercise Guidelines in Individuals with Spinal Cord Injury (SCI)



Alex W.K. Wong, OT, PhD, DPhil, FACRM^{1,2}, Sara Nataletti, PhD^{1,2}, Anushua Banerjee, BS¹, Sara Prokup, PT, DPT¹, & Arun Jayaraman, PT, PhD^{1,2}

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Exercise Guidelines for SCI

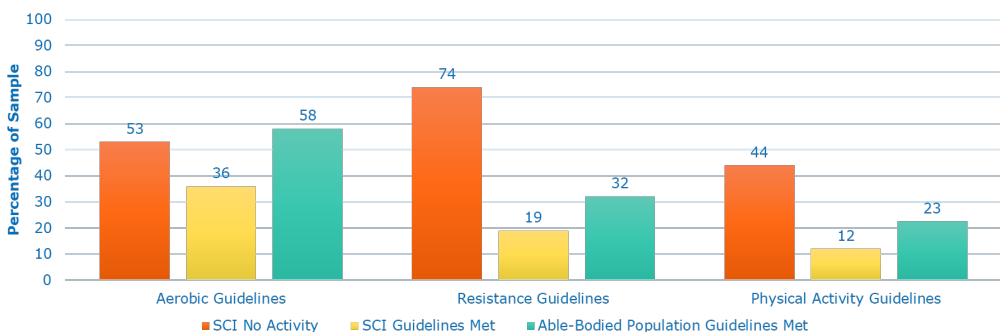
Fitness Benefits



Cardiometabolic Benefits



Low Adherence to Exercise Guidelines



Barriers to Exercises



Physical



Psychosocial

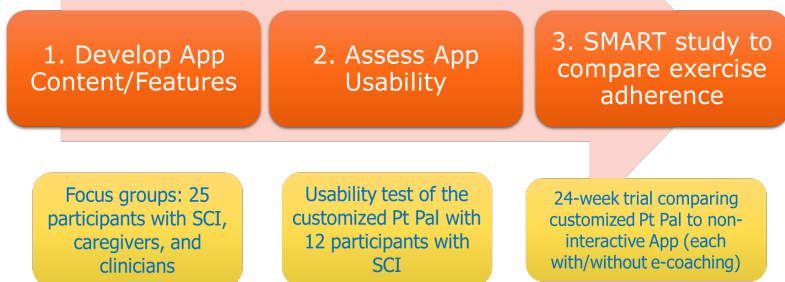


Knowledge



Environmental

Specific Aims



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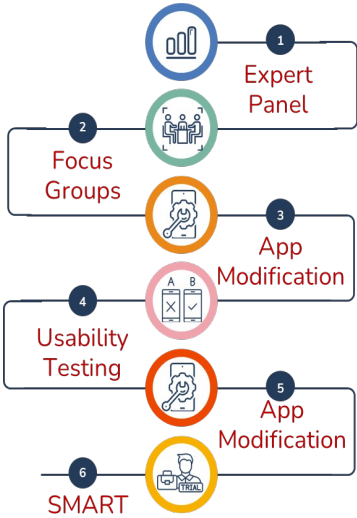


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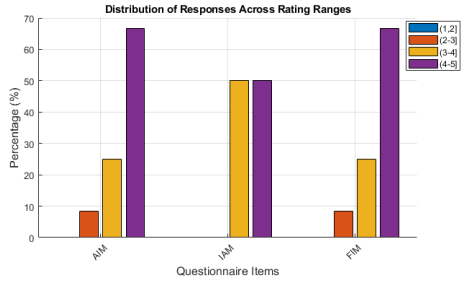
Development & Evaluation Process



App Features:

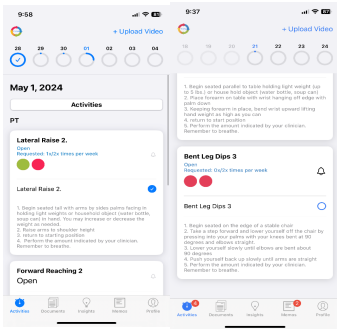
- Customized Training
- Tracking & Feedback
- In-App Educational Content
- Reminder & Notification
- Professional Support

Acceptability, Appropriateness, & Feasibility

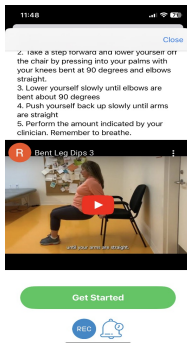


Exercise App Overview

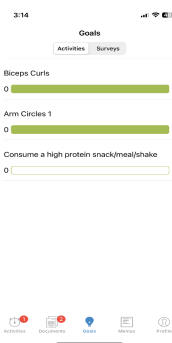
Workout & Tracking



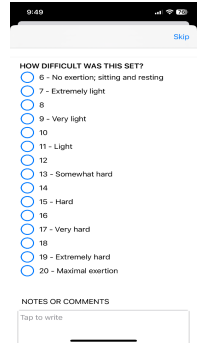
Video-Based Instructions



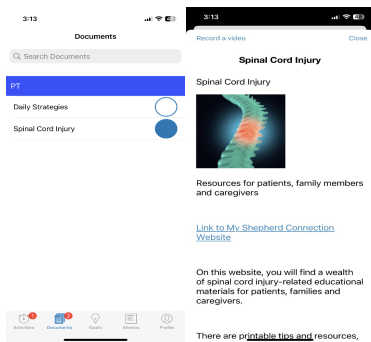
Goal Monitoring



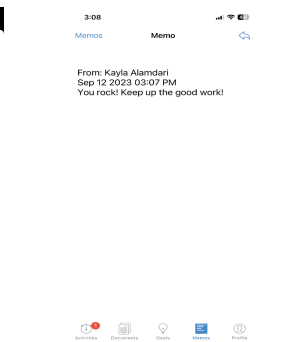
Perceived Exertion



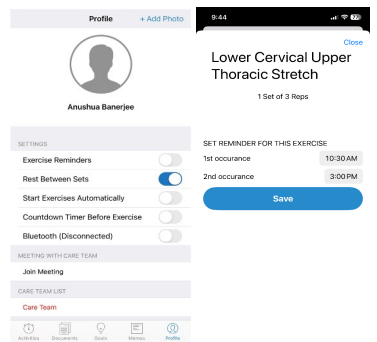
Education



2-way Communication



Setting & Reminders



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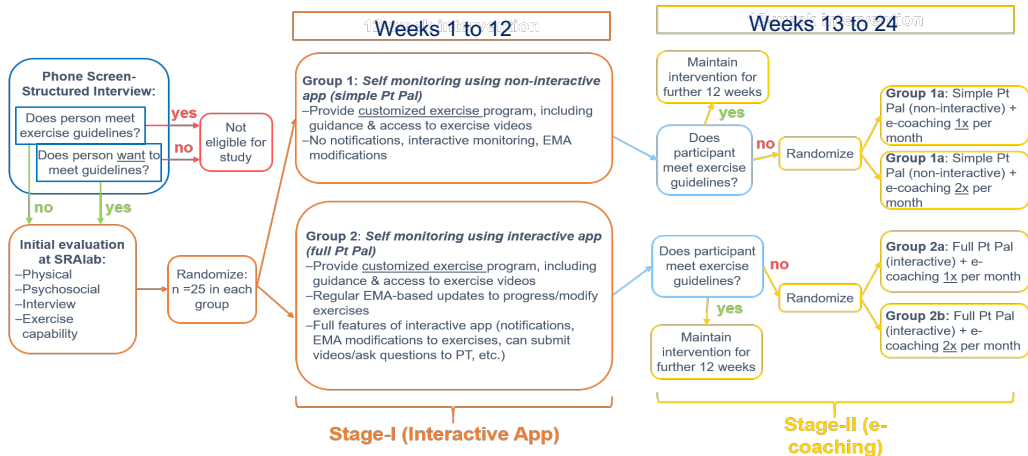
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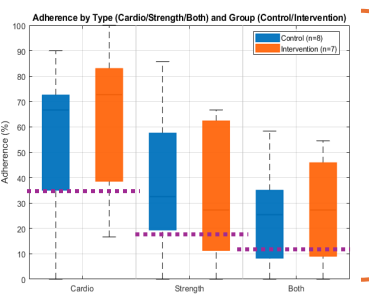
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Sequential, Multiple Assignment, Randomized Trial to Compare Exercise Adherence

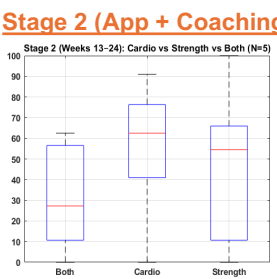
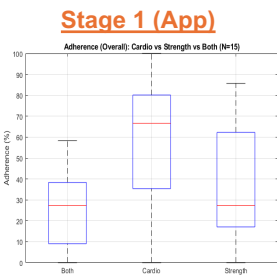


Preliminary Findings



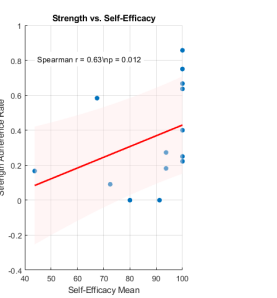
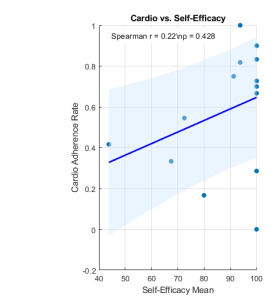
Effect of initial treatments (Stage 1):

- App-based interventions (regardless interactive or not) improved adherence across exercise types.
- Adherence is a bit higher in the interactive app group, but large inter-individual differences remain.



Effect of MI-Coaching Augmentation (Stage 2):

- Cardio adherence remained highest, but strength adherence improved
- Motivational factors play a key role in improving strength adherence



Mechanism:

- Self-efficacy is associated with strength adherence, but not cardio adherence.