Patient self-directed upper limb practice: Increasing the opportunity for recovery

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Background

- Stroke is a leading cause of adult disability \(^1\)
- Loss of upper limb (UL) function post stroke significantly impacts an individual’s participation in occupations \(^2\)
- Research reveals potential for occupation based UL intervention via use of repetitive task practice \(^3\)

Clinical Practice Guidelines: 2010

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<thead>
<tr>
<th>6.3.5 Upper limb activity</th>
<th>Grade</th>
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<td>a) People with difficulty using their upper limb(s) should be given the opportunity to</td>
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<td>undertake as much tailored practice of upper limb activity (or components of such tasks)</td>
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<td>as possible. Interventions which can be used routinely include:</td>
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<td>- constraint-induced movement therapy in selected people</td>
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<td>- repetitive task-specific training</td>
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<td>- mechanical assisted training.</td>
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<td>A (^546) (\text{or B} (^487) \text{or B} (^586))</td>
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Project Aim

To increase patients’ UL practice time through implementing a self directed UL therapy program.

Phase 1:
• To identify the time patients engage in UL therapy within an inpatient rehabilitation ward, and
• To identify evidence based recommendations for UL therapy within our OT service to ensure best practice.

Phase 2:
• To identify best practice in increasing patient adherence with self-directed exercises, and
• To develop an adherence package and patient self directed UL kits, for use on our rehabilitation ward.
Methods

Phase 1:

- Literature review
  - Repetitive task practice

- Data collection and analysis
  - Therapist time use
  - Documentation audit
    - Staff survey
    - Activity track
    - Resources review

Phase 2:

- Literature review
  - Increasing adherence to self-directed exercise

- Product development
Results – Phase 1 Literature Review

- Increased amounts of repetitive task practice after stroke may improve upper limb impairment.
- Required components to promote the effectiveness of repetitive task practice: relevant, variable, repetitive, part and whole tasks, and positive and timely feedback.
- Unclear specific dosage for one-on-one task therapy sessions and self-directed programs.
- Dosage should be guided by providing 60 minutes of active engaged one-on-one therapy and supplemental independent homework program.
Results – Activity Tracking

- **Active therapy** – 48%
- **Passive therapy** – 26%
- **Time in transit** – 18%
- **Setting up** – 8%
Results – Upper Limb Therapy Time

Average time per session:
49 minutes

Suggesting 24 minutes of active therapy per session
Qualitative themes emerged from the OT survey:
• Cessation of sessions when pain and fatigue were indicated
• Producing quality, controlled practice in comparison to lengthy sessions
• Acknowledging client centred goals, and the need to encourage meaningful tasks within upper limb therapy

Data collected indicated that:
• 50% of OTs use both component and functional based tasks within repetitive task practice
• 60% of OTs indicated they allow rest breaks once fatigue is noted
• 60% of therapists report homework is given to patients with both written and pictorial instructions
Results – Phase 2 Literature Review

• 2-5 exercises are the optimal number of exercises to prescribe for patient adherence

• Behavioural contracts and goal development increased adherence by creating responsibility for practice

• Recording progress and exercise completion (repetitions and sets) increased adherence
Outcomes – Phase 2

Product development

Adherence packs were developed for use with patients consisting of:

• Behavioural contract

• Homework exercise tracking sheet
Outcomes – Phase 2

Product development

• Nine UL practice kits were developed
  o Fine motor
  o Gross motor
  o GRASP program

Kits were designed for patients to use independently within the ward environment.

A master exercise booklet was developed with handouts for both therapists and patients.
Future Directions

- A pre/post implementation study (phase 3) will investigate the impact of the UL practice kits and adherence package on patient directed UL practice time.

- Incorporation of stakeholder feedback, including patients, significant others and therapists.

- Ongoing UL practice kit analysis and modification.
References


References


