Activating the Knowledge to Action framework: a five-site implementation case series in rehabilitation settings in the United States

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Funding:
Aims

1) Use the Knowledge to Action framework in five diverse rehabilitation facilities to implement the same Clinical Practice Guideline (CPG)

2) Assess the impact of each site’s implementation efforts on therapist adherence to CPG recommendations
Background


Methods

Multi-site Mixed-methods Case Series
# Five Sites

<table>
<thead>
<tr>
<th>#</th>
<th>Organizational Structure</th>
<th>Internal Site Lead</th>
<th>Locations</th>
<th># PTs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Small independent practice</td>
<td>✓</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Research hospital</td>
<td>✓</td>
<td>1</td>
<td>11</td>
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<tr>
<td>3</td>
<td>Medium independent practice</td>
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<tr>
<td>4</td>
<td>Large academic institution</td>
<td>✓</td>
<td>1</td>
<td>4</td>
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<tr>
<td>5</td>
<td>Large US government institution</td>
<td>✓</td>
<td>6</td>
<td>20</td>
</tr>
</tbody>
</table>
Home Exercise Program
Prescribed Minutes/Day

Acute | Chronic
---|---
0.5 | 1
6-10 | 2
11-15 | 3
16-20 | 4
21-25 | 5
26-30 | 6
31-35 | 7
36-40 | 8
41-45 | 9
46-50 | 10
51-55 | 11
56-60 | 12

Identify Problem: Therapist Survey

- Identify Problem
- Determine the Know/Do Gap
- Identify, Review, Select Knowledge
- Adapt Knowledge to Local Context
- Evaluate Outcomes
- Monitor Knowledge Use
- Select, Tailor, Implement Interventions
- Assess Barriers/ Facilitators to Knowledge Use
- Sustain Knowledge Use
Adapt Knowledge: Therapist-generated goals

Therapist Generated Goal:
Facilitate patient adherence to prescribed exercise program

Effectiveness of Vestibular Rehabilitation

- **Strong recommendation** (Level I*) that vestibular rehabilitation should be offered to patients with symptoms due to:
  - Acute, Subacute, & Chronic Unilateral Hypofunction
  - Bilateral Hypofunction, including Pediatrics

Effectiveness of Different Exercise Types for Unilateral Peripheral Vestibular Hypofunction

- **Moderate recommendation** (Level II*) for use of targeted exercise techniques for acute and chronic hypofunction
The individual(s) who developed this intervention understand my practice setting. This intervention is important compared to other interventions our facility could be implementing. This intervention fits with our patients' needs, preferences and resources. This intervention is in alignment with external incentives and pressures our facility is dealing with. The culture in our facility supports success of initiatives like this. There is a strong need for this intervention at our facility.

Assess Barriers: Therapist Survey

➢ Consolidated Framework for Implementation Research

➢ Organizational Readiness for Implementing Change

<table>
<thead>
<tr>
<th>Statement</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>This intervention is important compared to other interventions our facility</td>
<td>100%</td>
</tr>
<tr>
<td>This intervention fits with our patients' needs, preferences and resources</td>
<td>75%</td>
</tr>
<tr>
<td>This intervention is in alignment with external incentives</td>
<td>100%</td>
</tr>
<tr>
<td>The culture in our facility supports success of initiatives like this</td>
<td>75%</td>
</tr>
<tr>
<td>There is a strong need for this intervention at our facility</td>
<td>100%</td>
</tr>
</tbody>
</table>


Assess Barriers/ Facilitators to Knowledge Use

Select, Tailor, Implement Interventions

Monitor Knowledge Use

Evaluate Outcomes

Sustain Knowledge Use

Adapt Knowledge to Local Context

Identify Problem

Determine the Know/Do Gap

Identify, Review, Select Knowledge
Tailor Interventions:

- Select, Tailor, Implement Interventions
- Monitor Knowledge Use
- Evaluate Outcomes
- Sustain Knowledge Use
- Adapt Knowledge to Local Context
- Assess Barriers/Facilitators to Knowledge Use

Patient Resources:
- Educational handouts
- Educational videos
- Text messages
- Communication app
- Timers
- Exercise kits

Therapist Documentation:
- Exercise dose prescribed
- Patient reported compliance
Monitor Knowledge Use: 6-month intervention

Monthly Chart Reviews and Team Meetings
Evaluate Outcomes & Sustain Use

Study outcomes

<table>
<thead>
<tr>
<th>Study outcomes</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>Pre- to post- intervention change in therapist guideline adherence</td>
</tr>
<tr>
<td>Secondary</td>
<td>Qualitative analysis from semi-structured therapist interviews</td>
</tr>
</tbody>
</table>

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Intervention

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6 months

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Pre-chart Review

--- 6 months ---

Post-chart Review

--- 6 months ---

Evaluate Outcomes & Sustain Use

- Select, Tailor, Implement Interventions
- Monitor Knowledge Use
- Evaluate Outcomes
- Sustain Knowledge Use
- Assess Barriers/Facilitators to Knowledge Use
- Adapt Knowledge to Local Context
- Identify Problem
- Determine the Know/Do Gap
- Identify, Review, Select Knowledge
Results
Site 1: Texts Messages, Exercise Kits, Timers

Study Timeline

- Exercise Kits*
- Timers*
- Text Messages

*Statistically Significant p<0.05 (Bonferroni adjustment for comparisons within site)
Site 3: Educational Handout, Communication App

*Statistically Significant p<0.05 (Bonferroni adjustment for comparisons within site)
Site 2: Documentation

*Statistically Significant p<0.05 (Bonferroni adjustment for comparisons within site)
Early Qualitative Results

Monthly meetings with audit feedback were important:
“There was frequent feedback, where if we had just met once … I think that would have been easy to fall off.” (ID#24)

“I thought [the meetings] were useful … just giving people a chance to kind of talk through…. What issues have come up? Have you been using this? Have you had patients that liked it?” (ID#25)
Early Qualitative Analysis

Documentation goals promoted accountability:
“I found myself, because of the project, getting each patient into more specifics of exactly what they're doing at home for their home program, and I saw that to be helpful.” (ID# 21)

“Certainly with the dosing, [I’ve] definitely been more on top of that with myself and with patients.” (ID# 43)
Early Qualitative Analysis

Simple tools that patients embraced were most successful:

“So I think the timers have been hugely beneficial. And patients love it. [I ask] are you using your timer? Yes, I'm using it. I'm like, okay, then I know you're doing the minutes.” (ID# 11)

“I guess I don't know for sure that my patients were using the YouTube videos as a resource, part of the challenge with the YouTube video, they would have had to type in this long address from the printed handout.”
Limitations

- Small number of therapists per site
- Design prevents aggregate data
- Preliminary qualitative analysis
Bottomline

• All sites achieved increased and sustained adherence to the CPG using the Knowledge to Action framework
• Sites with internal leadership had more success
• Simple tools (timers and exercise kits) were more easily adopted
• Therapists valued the improved documentation strategies
THANK YOU!

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