

## Symposium 4 - EIE2023

### #221- Tailoring the Knowledge-to-Action Framework to Guide Implementation of Evidence-Based Practices in the United States and Norway

Jenni Moore<sup>1</sup>, Thomas George Hornby<sup>2</sup>, Joakim Halvorsen<sup>3</sup>, Ingvild Lillieheie<sup>1</sup>

<sup>1</sup>Sunnaas Hospital, Oslo, Norway. <sup>2</sup>Indiana University, Indianapolis, USA. <sup>3</sup>Forsterket Rehabilitering Aker, Oslo, Norway

#### Introduction to your symposium

The Knowledge-to-Action framework (KTA) is an implementation framework that is commonly used in physical rehabilitation. This symposium describes how the KTA informed the implementation strategy, outcome selection, data collection, and analysis of an implementation project performed at four hospitals in the United States (n=2) and Norway (n=2). The KTA was tailored to the needs of each hospital as the teams implemented high-intensity gait training (HIT), which resulted in different dynamic processes and outcomes. The implementation methods and outcomes will be presented. Similarities and differences in the framework's application and implementation outcomes will be discussed.

#### Symposium abstract Nr. 1: Implementation in Indianapolis, Indiana (USA), T. George Hornby PT, PhD

**Background.** Evidence demonstrates that gait training at higher cardiovascular intensities (HIT) facilitates greater walking outcomes. This presentation describes the use of the KTA to successfully implement and evaluate the comparative effectiveness of HIT to usual care during inpatient stroke rehabilitation in Indianapolis, Indiana (USA). **Methods.** The KTA guided the implementation plan, which included assessment of usual care, adaptation to the local context, barrier assessments, implementation strategies, and monitoring knowledge use. Fidelity metrics included percentage of sessions prioritizing gait interventions and documenting intensity. Changes in stepping activity and functional outcomes were compared over 9 months during usual-care (n = 131), an 18-month transition phase with attempts to implement HIT (n = 317), and 12 months following HIT implementation (n = 208). Implementation strategies used during the transition phase included educational meetings and workshops, mentoring, and audit and feedback. **Results.** Efforts to prioritize stepping and achieve targeted intensities led to increased steps/day ( $p < .01$ ). After 18-months of implementation efforts, HIT was implemented consistently with fidelity. Functional measures indicated that HIT resulted in greater gains in walking speed ( $p=.01$ ) and walking distance ( $p<.01$ ) than usual care. **Discussion points.** The KTA plan required an 18-month transition phase that included several iterations of barrier assessments, selection of new implementation strategies, and monitoring knowledge use. After the transition phase, clinicians implemented HIT with fidelity and patient outcomes were assessed. HIT led to increased steps/day, resulting in greater gains in locomotor and non-locomotor outcomes.

Symposium abstract Nr. 2: Implementation in Grand Rapids, Michigan (USA), Jenni Moore PT, DHS, NCS

**Background.** The KTA guided the implementation of standardized assessments and HIT into clinical practice at a hospital in Grand Rapids, Michigan (USA). **Method.** The multi-component implementation plan included implementation facilitation, implementation leadership, and a bundle of knowledge translation interventions that targeted barriers. Two project phases were implemented sequentially. Phase 1 implemented standardized assessments (i.e., usual care), and phase 2 implemented HIT. **Results.** Phase 1 resulted in 46% adherence to administration of the standardized measures initially. However, with use of ongoing implementation strategies, adherence increased to more than 85% after 6 months. These adherence levels remained consistent 48 months after implementation. Phase 2 occurred over 3 years and required 3 KTA iterations that included barrier assessments, selection of new implementation strategies, and monitoring fidelity of the intervention. After 3 years of implementation efforts, improvements in documentation of fidelity metrics were demonstrated. Stepping activity increased from 2494 +/- 1865 steps/day to 2847 +/- 1592 steps/day, and steps per physical therapy session increased from 983 +/- 975 steps to 1542 +/- 1018. While these improvements were noted, ongoing implementation with fidelity was needed to demonstrate significant changes in clinical practice when comparing to usual care. **Discussion points.** The KTA guided the implementation of standardized assessments and HIT, resulting in different implementation outcomes despite consistent staff, leadership, and organizational factors. The required implementation time periods were different, and standardized assessments were successfully implemented more quickly than HIT.

Symposium abstract Nr. 3: Implementation in Oslo, Norway, Joakim Halvorsen, PT, MS

**Background.** While HIT is recommended in stroke rehabilitation, identifying effective and efficient implementation methods is challenging. This presentation will describe an implementation project conducted in two inpatient stroke rehabilitation facilities in Oslo, Norway. **Methods.** The KTA guided the implementation of gait assessments and HIT. Barriers were identified and the Consolidated Framework for Implementation Research was used to select implementation strategies to overcome barriers. An iterative approach of monitoring barriers and using implementation strategies (n=26) was employed to implement with fidelity. Implementation fidelity was determined by steps/day, steps/physical therapy session, and heart rates achieved during therapy. Patient outcomes included measures of gait speed, walking distance and balance. A quasi-experimental design was used to compare practices and outcomes of usual care (n=56) to HIT (n=54). **Results:** Barriers included knowledge, beliefs, perceived adaptability of HIT, resources, culture, and others. Clinicians implemented HIT with fidelity in < 1 year, and fidelity metrics demonstrated a significant increase ( $p < .001$ ) in steps/PT session, steps/day, and patients spent ~34% of sessions in the target heart rate zone. Patients demonstrated improved gait speed and walking distance ( $p < .001$ ), when compared to usual care. The 2-year follow-up survey indicated that the new practice was sustained. **Discussion points.** In this project, a transitional phase of attempting HIT was not required. The clinicians quickly implemented with fidelity at the beginning of phase 2. Contributors to successful implementation may include the implementation methods, usual care interventions, and clinicians' readiness for this change.

Key highlights of your symposium

The Knowledge-to-Action Framework can be tailored to address the unique needs of an implementation project.

Although these hospitals used the Knowledge-to-Action Framework to implement the same practices, each implementation plan was unique and required different lengths of time to complete.

### Implications for research and practice

Implementation frameworks inform all aspects of implementation projects. This symposium illustrates how a framework can guide implementation while being tailored to the individual needs of a project, organization, and team. This symposium also demonstrates how the KTA is dynamic and responsive to issues that arise during implementation.

### Overall discussion: Discussion, Ingvild Lillieheie PT, PhD

- How can the Knowledge-to-Action Framework guide implementation projects while being tailored to the unique needs of a team and organization?
- How can the Knowledge-to-Action Framework respond to unexpected issues that arise during implementation?