

Physiotherapists' use of evaluation measures to guide decisions about ankle-foot orthoses for children with cerebral palsy

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Introduction

- PTs play a key role in deciding which AFO design will optimize a child's mobility & monitoring effectiveness
- Evaluation is necessary for individualized AFO prescription & successful orthotic intervention (Kane et al., 2018)
- Understanding current orthotic evaluation practices may contribute to more consistent, effective clinical practices
- Therefore the aim of this survey study was to examine:



- 1) What is evaluated and how (initially & post-fitting)?
- 2) How does evaluation inform prescription & adjustments?
- 3) Recommendations to improve prescription?

Methods

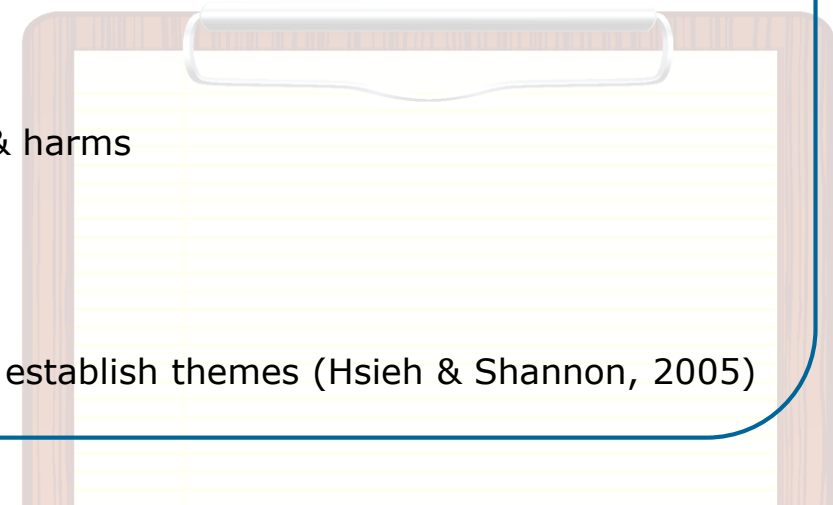
Participants: PTs working with children with CP in Canada

Online survey

- Created by researchers & 5 content experts
- 28 questions examined
 - Types of AFOs & indications
 - Plantarflexed ankle angle in the AFO (AA-AFO): indications, perceived benefits & harms
 - How evaluation informs AFO type, AA-AFO, adjustments

Analysis

- Closed-ended questions: descriptive statistics
- Open-ended responses: 3 researchers conducted a conventional content analysis to establish themes (Hsieh & Shannon, 2005)



Results

- 60 PTs from 10 provinces completed the survey
 - ~ 50% from ON and BC; 89% publicly-funded
 - Median 10y pediatric experience (<1y-42 y)
 - Access to orthotists: 52% on-site; 37% >1km away

Theme 1. Focus on impairment-level measures

- Gait was primarily evaluated by non-standardized observation; more objective tools (e.g., goniometer) used to assess tone & ROM
- AA-AFO was influenced by ankle ROM and tone (R1 or "first catch"/ R2 or "end range")
- AFO type was influenced by ankle DF ROM and PF tone (R1/R2), strength, alignment, gross motor function, gait pattern
- Most follow-up adjustments aimed to improve comfort/fit
 - <20% of adjustments aimed to improve gait pattern

Theme 3. Inconsistent practices between PTs

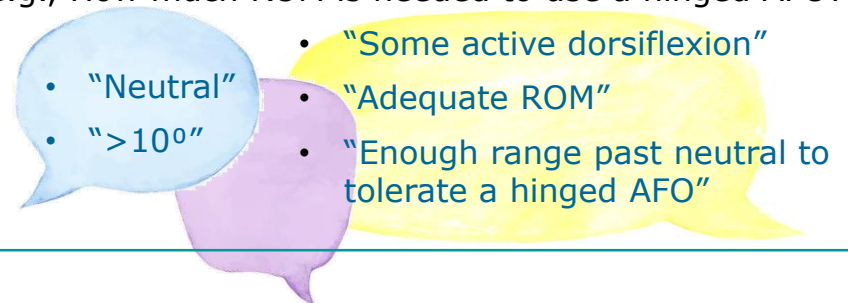
- Interpretation of findings and decision-making varied
 - Decisions about AA-AFO: Plantarflexion may "impair" **OR** "improve" gait quality
 - Decisions about AFO type: "prefer hinged AFOs for all ambulatory children" **OR** "default to solid unless there is optimal range, strength, and bony alignment"



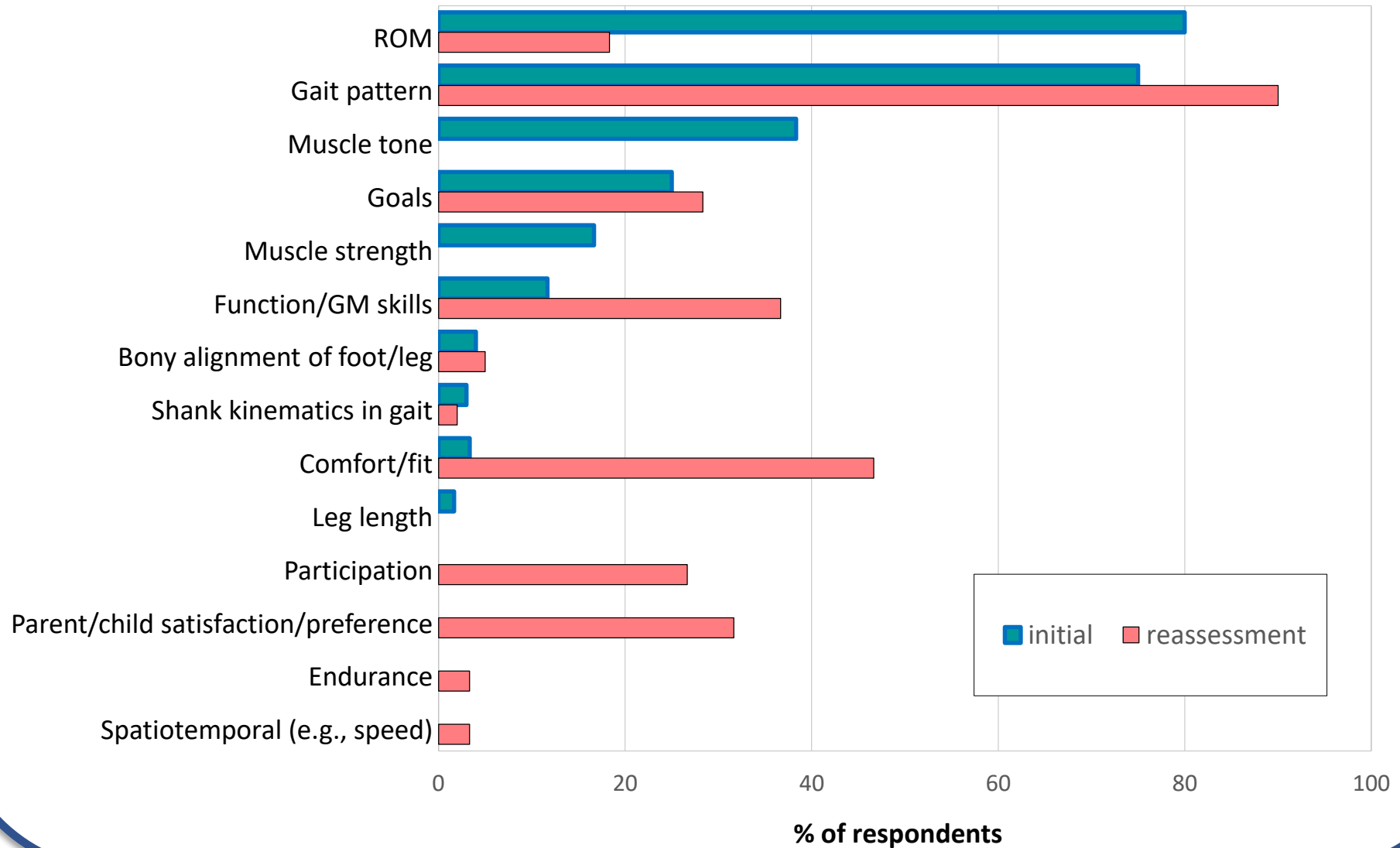
Theme 2. Lack of confidence/ knowledge

- Median confidence in AFO decisions = 57.5 (0=not confident; 100=++confident)
- AA-AFO: Uncertain about whether PF may help or harm
 - *"It's a big grey area and each child is different."*
- AFO type: Most confident about indications for solid & hinged, but inconsistent & nonspecific
 - Less familiar with ground reaction AFOs, energy storage and return (ESR) AFOs, posterior leaf spring, & carbon fiber AFOs

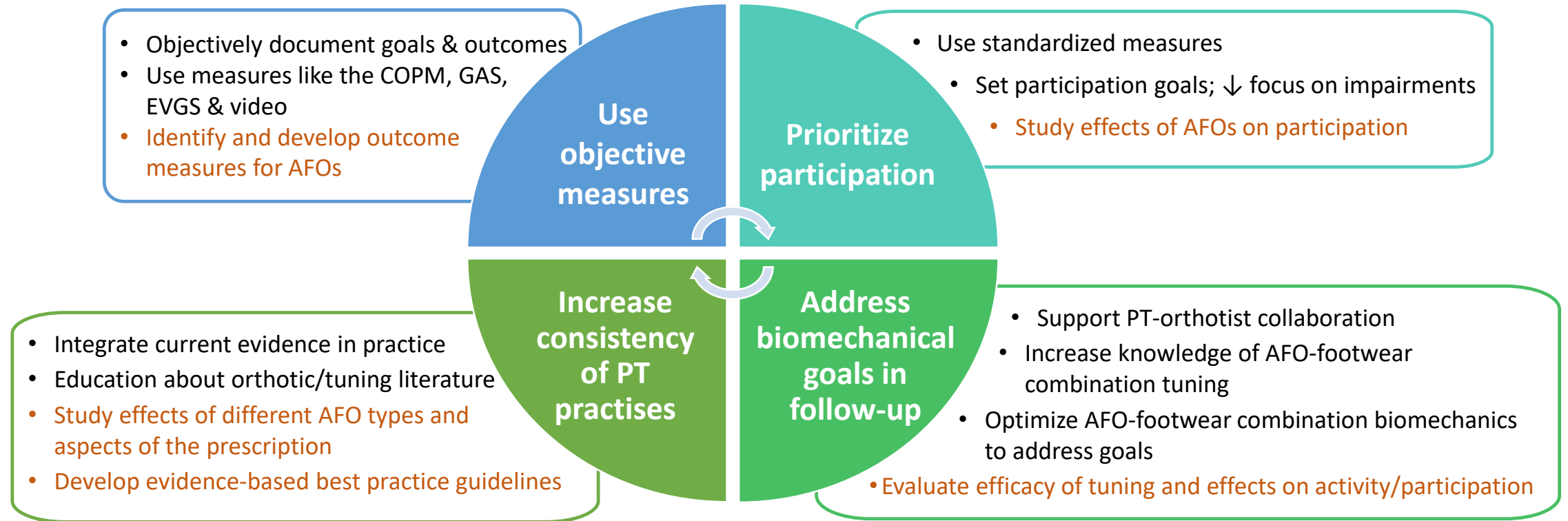
- Inconsistent interpretation of indications for different AFO types e.g., How much ROM is needed to use a hinged AFO?



Most important constructs to assess



Recommendations for practice and research



Conclusions

- Non-standardized, observational evaluation methods and impairment-level constructs appear to guide AFO prescription decisions
- Inconsistent practices may reflect efforts to individualize prescriptions, or may reflect the paucity of evidence-based clinical guidelines
- Best practice guidelines and standardized tools to assess meaningful outcomes may improve clinician confidence, consistency, and outcomes