Identification of Clinical Measures to Use in a Virtual Concussion Assessment: Preliminary Results of a Mixed-Methods Study

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Background

- While remote care is not new, the COVID-19 pandemic catalyzed the transition to virtual assessments
- Approaches and measures used in virtual assessments of concussion have not been standardized
- Psychometric properties of measures when administered using videoconference have not yet been documented

Objectives

Objective #1 To identify concussion measures clinicians currently use in-person to assess five physical domains: neurological examination, cervical spine, vestibular, oculomotor, and effort assessment;

Objective #2 To document the available psychometric properties of the measures identified;

Objective #3 To identify which of these measures appear feasible in a virtual context; and

Objective #4 To identify practical and technical barriers/challenges, facilitators and benefits to conducting or engaging in virtual concussion assessments.

Methods

Study design: sequential mixed methods

Delphi Surveys with Clinicians

Outcome: comprehensive list of clinical measures

Working Group with Clinicians

Outcome: list of feasible and infeasible measures when administered in a virtual context

Focus Groups with Patients and Clinicians

Outcome: identification of barriers and facilitators associated with engaging in and completing virtual assessments, using identified measures

Integration of Quantitative and Qualitative Results

Outcome: selection of measures to use in virtual assessment

Preliminary Results

Delphi Surveys:

- 59 and 33 clinicians completed the first- and second-round surveys, respectively
- Measures ranked first by the clinicians by domain: Neurological examination - coordination; Vestibular - Vestibular Ocular Motor Screening; Oculomotor - smooth pursuits; Cervical - cervical spine range of motion

Working Group:

- Measures were deemed feasible in a remote context, with some modifications needed, such as modifying the environment or adapting the method of measurement

Focus Groups:

- To be completed by end of February 2023

Take Aways and Conclusions

- Document measures that are currently used in-person and are most relevant to assessing the physical domains impacted by concussions
- Measures could be feasibly administered virtually, if modifications are implemented
- Results will inform the decision regarding which measures to include in a virtual assessment toolkit, which will be tested in a follow-up study, with the aim of establishing psychometric properties of the measures

References

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