Title: Evaluation of Mobile Applications in Neurologic Clinical Practice Using the Mobile App Rating Scale (MARS)

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Background

- More than 350,000 mobile health applications (apps) are currently available with 6.7 million people using them.[1,2]
- However, there is a lack of understanding on which apps are most appropriate for Physical Therapists (PT) to use in a virtual or telehealth visit.
- The Academy of Neurologic Physical Therapy (ANPT) formed a Telehealth Taskforce (TT) and the TT, as one of its charges, reviewed mobile apps for neurologic clinical practice.

Purpose

The purpose of this abstract is to:

a) Describe the process of searching and reviewing current neurologic mobile apps using the Mobile App Rating Scale (MARS), and

b) To provide recommendations for their use in a neurologic telehealth PT visit by providers and patients.

References

Description

- Apps included were freely available in the Apple store till January 2022 and referenced the neurologic Clinical Practice Guidelines (CPGs).
- Two reviewers from the TT searched and appraised the mobile apps using the MARS independently and categorized them into PT assessment and outcomes, treatment, and patient education categories.[3,4,5]
- The MARS objectively assessed app quality on four dimensions, including engagement, functionality, aesthetics and information.
- The entire TT reviewed the final process and results.

ASSESSMENT & OUTCOMES APPS

App	Incldued outcome measures
iWalkAssess	6-minute walk test (6MWT), 10-meter walk test (10MWT)
Timed walk	6MWT, the duaration of walking is selectable
6WT	6MWT
Lockhart Monitor	Activities-specific Balance Confidence Scale, non-standard stability tests
SPPB Guide	Short Physical Performance Battery, including 5 x sit to stand
P & O Comet	10MWT, Timed Up & Go (TUG), four square step test, and 12 more standard outcome measures
Onestep PT	TUG, 30 seconds sit to stand, ROM, Lower Extremity Functional Scale, and others
Mon4tClinic	TUG, standing balance with feet together or eyes closed, PD checlist, and others
GaitRate	Gait speed test, the distance of walking is selectable from 3 meter to 15 feet
Hacaro-iTUG	TUG
TUG	TUG
e-DHI	Dizziness Handicap Inventory

INTERVENTION APPS

App	Included intervention
iMAV	Verstibular exercises
RehabPal	Neuro metronome
Vision Workout: Eye Training	Dynamic visual exercises
Instant Heart Rate: HR Monitor	Instant heart rate
Cardiio: Heart Rate Monitor	Instant heart rate
Heart Rate Monitor - Pulse BPM	Instant heart rate
HR Zones - Target Heart Rate	HR max and HR target
Max Heart Rate Calculator for Fitness and Exercise	HR max and HR taraget

PATIENT EDUCATION APPS

App	Included patient education
BPPV Treatment	BPPV and Brandt Daroff
aVOR	Vestibular system, vestibulo-ocular reflex, and BPPV
EpleyManeuver	Epley maneuver

Top Rating Recommended Apps

NEURO TELEHEALTH Academy of Neurologic Physical Therapy

App / MARS	iWalkAssess	P & O Comet	HR Zone:Target Heart Rate	Instant Heart Reate: HR monitor	BPPV Treatment
Engagement	★★½☆☆	★★½☆☆	★★★☆☆	★★★★½	★★½☆☆
Functionality	★★★★½	★★★★★	★★★★½	★★★★½	★★★★½
Aesthetics	★★★½☆	★★★½☆	★★★★☆	★★★★☆	★★★½☆
Information	★★★★½	★★★★☆	★★★★½	★★★★☆	★★★½☆

Summary of Use

- 20 mobile apps were assigned to assessment and outcomes (n=7), treatment (n=8), and patient education (n=5) categories.
- iWalkAssess and P&O Comet (PT assessment and outcomes), the HR Zone-Target Heart Rate and Instant Heart Rate: HR Monitor (PT treatment), and the BPPV Helper and BPPV Treatment (patient education) were highly ranked.
- Potential challenges included:
  - Lack of generalizability to Android
  - A constant need to update the search to include current apps or updates for the app
  - A significant amount of screening

Importance to Neurologic Physical Therapy

- Mobile apps are here to stay!
- Can be used for virtual telehealth visits for assessment, treatment, and education
- Apps for core sets of outcome measures allow easy CPGs implementation
- Top 2 apps for assessment and outcomes: iWalkAssess & P&O Comet
- Top 2 apps for treatment: HR Zone-Target Heart Rate & Instant Heart Rate: HR Monitor
- Top 2 apps for education: BPPV Helper & BPPV Treatment

- Of note, the BPPV Helper app is no longer available on the Apple store. The updated list of recommended apps is provided by the ANPT Telehealth Taskforce shared on the Taskforce website.

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