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Background

mHealth technology is healthcare delivered outside of the clinical setting using mobile technology. Many use mHealth technology for health maintenance, chronic disease management, behavioral intervention, and now more recently for rehabilitation support (mRehab). The delivery of rehabilitation services and collection of health-related information using mobile telecommunication devices including cell phones, tablet computers, wearable tracking or sensor-based recording devices, and the internet is referred to as mRehab.

Study Objective: Identify patient needs for mHealth/mRehab interventions and technologies, and obstacles to adoption from a clinical perspective.

Methods

In this survey research study, convenience sampling was used to recruit clinicians through professional networks from Shepherd Center, Duke University Medical Center, the American Congress of Rehabilitation Medicine, American Physical Therapy Association, American Occupational Therapy Association, American Speech-Hearing Association and others. Online data collection was conducted from January 15 through March 3, 2019.

Procedures: Participants completed a 24-item questionnaire on: their professional experience; their patients' needs for therapy outside of clinical visits; their perception of mHealth/mRehab utility; and their sources of rehabilitation technology information.

Sample: 505 professionals across 10 clinical rehabilitation specialties.

Sample

Table 1. Specialties of Clinical Professionals

Rehabilitation Specialties	Count (n=505)	Percentage (%)
Physician or physician assistant	17	3.4
Nurse or nurse practitioner	9	1.8
Physical therapist	72	14.3
Occupational therapist	104	20.6
Speech language pathologist	166	32.9
Recreational therapist	57	11.3
Exercise physiologist	2	0.4
Counselor or social worker	8	1.6
Psychologist	46	9.1
Other	24	4.8

Table 2. Rehabilitation Populations Clinical Professionals Serve

Rehabilitation population	Counts (n)	Percentage (%)
Acquired Brain Injury (ABI)	375	74.3
Spinal Cord Injury (SCI)	172	34.1
Neurodegenerative Disease (NDD)	300	59.4
Cardiovascular Disease (CVD)	181	35.8
Musculoskeletal injury/disorder	198	39.2
Cancer	178	35.2
Other	119	23.6

Table 3. Rehabilitation Environments Clinical Professionals Serve

Clinical environments	Counts (n)	Percentage (%)
Inpatient acute	146	28.9
Outpatient clinic	243	48
Skilled nursing facility	72	14.3
Home health	48	9.5
Other	73	14.5

Results

Most clinical professionals report the majority of their patients need additional therapy after discharge from acute care and between outpatient visits. The need for additional therapy after discharge from acute care is greater than between outpatient visits. Endurance, cognitive self-care, and problem solving were identified as areas patients are in most need of additional therapy/intervention to meet rehabilitation goals.

Table 4. Average Percentage of Patients Needing Additional Therapy/Intervention after Discharge from Acute Care and Between Visits to Outpatient/Day Program by Rehabilitation Specialty.

Rehabilitation Specialties	AFTER DISCHARGE Percentage (%)	BETWEEN VISITS Percentage (%)
Physician or physician assistant	44.7	32.9
Nurse or nurse practitioner	59.7	54.1
Physical therapist	73.6	55.7
Occupational therapist	70.4	48.9
Speech language pathologist	75.3	57.8
Recreational therapist	79.7	68.0
Psychologist	83.4	53.9

The majority of clinicians (95.6%) reported mobile or internet technology could be effective in supporting post-acute or between-visit therapy interventions for their patients.

Obstacles to successful implementation of mHealth/mRehab commonly identified across various clinical practices include clinicians' comfort level with implementing mHealth/mRehab into practice, how knowledgeable clinicians feel about current rehabilitation technology, and access to information to discover mHealth/mRehab.

Table 5. Percentage of Clinicians Reporting a High Level of Comfort with mHealth/mRehab Technology or High Level of Knowledge of Current Rehabilitation Technology by Rehabilitation Specialty

Rehabilitation Specialties	Very comfortable/ Extremely comfortable Percentage (%)	Very knowledgeable/ Extremely knowledgeable Percentage (%)
Across all rehab specialties	50.7	22.6
Physician or physician assistant	64.7	35.3
Nurse or nurse practitioner	100.0	22.2
Physical therapist	50.0	30.5
Occupational therapist	44.2	24.0
Speech language pathologist	53.0	24.7
Recreational therapist or Exercise physiologist	43.1	8.6
Psychologist	50.0	6.5

Conclusions

From the clinician perspective, patients need additional support after discharge from acute care and between outpatient/day program visits to help reach rehabilitation goals. Clinicians agree that mHealth/mRehab technology is a useful and convenient approach to support ongoing therapy outside of a clinic setting.

For mHealth/mRehab technology to be regularly and successfully implemented, efforts should be made to provide ongoing education and training in current rehabilitation technology among providers, so clinicians are knowledgeable and comfortable incorporating mHealth/mRehab into their practices.