

## Introduction

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# Telerehabilitation

The provision of health, educational and supportive services via web, computer, phone, TV, or wireless offers much promise as vehicles for providing services to people for whom issues of transportation, distance, convenience, economics, security or preference are of central importance. These services have been described using a variety of terms e.g., telehealth, telerehabilitation, telemedicine, telementoring, teleeducation, tele-supervision and teleconsultation. While the message and the messenger will change over time, along with the lexicon used to describe it, advancements in information technology coupled with changing economic conditions, and health care and community needs will continue to provide fertile ground to develop, expand and refine the delivery of remote services to patients, care-givers and health care providers.

However, the efficacy and economic viability of remote service provision will ultimately be guided and informed by rigorous clinical outcome studies that examine strengths and weakness as well as recognize the interdisciplinary issues and advances that will help foster and some cases restrict the growth of this field. This special issue of *NeuroRehabilitation* provides insights and perspectives on this emerging field, its potential and its limitations. For example, Linda Savard et al., discuss research on “Telerehabilitation consultations for clients with neurologic diagnoses: Cases from rural Minnesota and American Samoa” describing the delivery of rehabilitation services to individuals with traumatic brain injury (TBI) and multiple sclerosis living in remote areas, using rehabilitation specialists, electronic information, communication technologies, real-time audio and video conferencing. Amanda Egner, Victoria Philipps et al., examine “Depression, fatigue, and health-related quality of life among people with advanced multiple sclerosis: The impact of an exploratory telerehabilitation study” using a structured in-home education and counseling session delivered via telephone or video by a rehabilitation nurse. Laura H. Schopp et al., in “A rationale and training agenda

for rehabilitation informatics: Roadmap for an emerging discipline” propose a rationale for the new field of rehabilitation informatics, offering a multidisciplinary training model for the next generation of rehabilitation informaticians.

Pam Forducey and colleagues conducted research on “Using Telerehabilitation to promote traumatic brain injury recovery and transfer of knowledge.” They report that teletherapy was successfully utilized to improve functional outcomes (i.e., physical and cognitive), confirming that it represents an effective and efficient means for providing rehabilitation services for patients in rural communities, as well as for facilitating mentoring relationships between seasoned professionals and trainees located in rural settings. Geb Verburg et al., examined “Online support to facilitate the reintegration of students with brain injury: Trials and errors” and report that there is potential in providing online support for teachers of students with brain injury after patient release from pediatric rehabilitation, thereby allowing students to maintain contact with family and friends in their home community. Joseph H. Ricker writes about “Clinical and methodological considerations in the application of telerehabilitation after traumatic brain injury: A commentary” and addresses several areas that warrant critical consideration before telerehabilitation is likely to be widely implemented and reimbursed. Kathleen Torsney writes “Advantages of telerehabilitation for persons with neurological disabilities” and briefly reviews the types of telerehabilitation services, incentives and disincentives for the use of telerehabilitation, and recommendations for further research.

B.M. Brooks and F.D. Rose in their manuscript “The use of virtual reality in memory rehabilitation: Current findings and future directions” examine the considerable potential for using virtual reality (VR) in memory rehabilitation and assessment. These authors believe that future research should investigate ways in which the procedural knowledge gained during VR in-

teraction can be adapted to offset the many disabilities, which result from different forms of memory impairment. In “Alzheimer’s Caregiver Support Online: Overview, lessons learned, and future directions”, Robert L. Glueckauf and Jeffrey S. Loomis describe the development and implementation of an Internet- and telephone-based education and support network (Alzheimer’s Caregiver Support Online) for the caregivers of individuals with progressive dementia. Finally, in Bruce J. Diamond and Gregory M. Shreve’s et al.’s work on “Telerehabilitation, cognition and user-accessibility”, these authors report that in survivors of TBI, impairments in visual-constructional integration and executive type functions as well as language processing appeared to be related to how effectively

participants learned how to use telerehabilitation resources and provide evidence that learning in a “telerehabilitation” environment can generalize into a community setting.

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