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Neuromuscular Rehabilitation via Telebiofeedback as a Portal for Home Care

The U.S. Army has approximately 30 specialists in Physical Medicine & Rehabilitation. These specialists are located at the Army’s medical centers as well as the two major troop posts (Ft. Hood and Ft. Bragg). The need for rehabilitation is increasing as the military strives to retain skilled soldiers (rather than discharging them to Veterans Administration care) during these times of recruitment and retention problems. Furthermore, the cost of TDY to outlying posts having no rehabilitation services places a double strain on the system: the costs of the TDY itself, and the cost of removing the specialist from the health care pool of his/her base hospital. Similar issues are being confronted by other rehabilitation professionals (physical and occupational therapists). Thus, a system that can offer rehabilitation and consultation at a distance can serve to “force multiply” the rehabilitation assets within the military medical system. Although the sample population in this study is afflicted by neurological pathology, the principles of tele-rehabilitation used in this study can be applied to other numerous diagnostic entities. This provides further validity to the force multiplication of rehabilitation assets.

The goal of this study is to determine the feasibility of rehabilitation for patients with chronic gait impairments following a central nervous system insult, using an EMG Biofeedback system (the BioRehab System™) conducted by a therapist remote to the patient location via “Tele” methodologies. There are 4 main objectives:

- Is the BioRehab System adaptable for use in a tele environment from a technical standpoint?
- Is the BioRehab System adaptable for use in a tele environment from a patient standpoint?
- Is the BioRehab System adaptable for use in a tele environment from a therapy provider standpoint?
- Are there functional changes to be demonstrated after BioRehab treatment?

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