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Reducing health disparities in the chronic spinal cord injury population in a clinical setting

Purpose: Individuals with spinal cord injury (SCI) face health disparities and a number of challenges in maintaining cardiovascular health compared to the able bodied population. The causes are multifactorial including susceptibility to numerous medical conditions that impart a health hazard; illness behaviors leading to a disproportionate percentage of deaths as a result of preventable causes, and changes in the ability to exercise to maintain heart health. Therefore, establishing and providing effective interventions for individuals with SCI is vital, however, the majority of rehabilitation research has been performed in research laboratories. Research Objective: To identify the possible physiological adaptations gained from utilizing a functional electrical stimulation (FES) bike for aerobic conditioning to address the increased prevalence of cardiovascular risk factors exhibited by the chronic SCI population, ASIA A-D.

Design: Single-subject case study. Setting: Clinical Out-patient Setting.

Participants: Individual with tetraplegia (C5 ASIA B) post 15

years since injury.

Interventions: Participant engaged in a cardiovascular endurance exercise program using a Functional Electric Stimulation (FES) bike 30 minutes, 3 times a week for 6 months in a clinical setting, supervised by a physical therapist.

Main Outcome Measure(s): The following variables were measured at baseline and at the end of the 6 month intervention: hemoglobin A1c, cholesterol (total, HDL/LDL ratio), and serum triglycerides.

Results: Participant's A1c, LDL cholesterol, and triglycerides decreased, and HDL cholesterol increased after 6 months of intervention.

Conclusions: Cardiovascular conditioning with an FES bike conducted in an outpatient setting, can reduce cardiovascular risk factors and facilitate health in individuals with chronic SCI.

Biography

Marie Vazquez Morgan earned a Bachelors of Science in Physical Therapy in 1993, a Masters in Health Sciences in 1997 from Louisiana State University Health Sciences Center in Shreveport, and her doctorate in Health Studies from Texas Woman's University in Denton, Texas in 2006. She has 19 years of clinical rehabilitation experience and has been a faculty member and assistant professor at Louisiana State University Health in Shreveport, School of Allied Health Professions since 1997. She has presented research both nationally, internationally, and regionally at continuing education seminars. Her expertise is in neurological interventions as well as nutrition, wellness, lifestyle modification, and community rehabilitation and occupational health. She was recently featured in National Newline Magazine for PT speaking on the role of cultural diversity in the physical therapy profession, and was honored in November 2006 by Maybelline NY as outstanding female educator of the year, and featured in People en Espanol December 2006 issue.

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