Some individuals with multiple sclerosis (MS) have difficulty finding accessible and affordable exercise equipment to address their walking and fitness goals. A commercially available motor-assisted elliptical training system (Figure 1) is being used in rehabilitation and medical fitness settings to address walking and fitness goals of individuals with physical disabilities and chronic conditions.

The device:
- Promotes movements similar to walking
- Provides variable motor-assistance at speeds up to 65 revolutions/minute (forward/reverse)
- Integrates body weight support and an electronically height adjustable seat
- Incorporates an adjustable stride length

Objective:
Evaluate impact of 24 to 26-session motor-assisted elliptical training intervention on walking endurance and fatigue in individuals with MS.

Participants: Five adults free from relapsing remitting MS exacerbations participated (Expanded Disability Status Scales score = 4.5 to 6.0; mean age = 50.2 years). Study approved by Institutional Review Board.

Interventions: Motor-assisted elliptical training parameters (i.e., speed, motor assistance, body weight support, and total training time) manipulated across 24-26 sessions (2 days/week) to progressively challenge participants' walking and fitness and to attain 30 minutes of training/session.

Main Outcome Measures: Six minute walk test (6MWT) and modified fatigue impact scale (MFIS).

Results: Total exercise time and strides were greater during final compared to initial training session. 6MWT distance increased post-compared to pre-training. MFIS score improved (indicated by lower score) post- compared to pre-training.

Participants walked farther and were less fatigued after engaging in the motor-assisted elliptical intervention. Larger-scale study evaluating outcomes of motor-assisted elliptical training for MS population is warranted.

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