Conference
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Title
Living the Experience - African American and Multiple Sclerosis: A Case Study

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Background
Multiple sclerosis (MS) is a neurodegenerative disease that affects the central nervous system and spinal cord. Bodies of research have revealed racial disparities in neurological outcomes associated with multiple sclerosis with African Americans exhibiting accelerated trajectory and more severe clinical sequelae compared to other racial groups. The purpose of this case study is to evaluate the therapeutic efficacy of high –intensity interval training and structured balance interventions in improving quality of life and facilitating positive health outcomes among African American individuals living with multiple sclerosis.

Objectives
Identify racial disparities in multiple sclerosis progression and functional outcomes in African American individuals.

Methods
Pt completed a structured rehabilitation program consisting of 14 60-minute sessions. Interventions included treadmill based high-intensity interval training (HIIT), overground gait training activities, and balance training activities designed to improve dynamic stability and decrease fall risks. Performance based outcome measures assessed at baseline, midterm and at discharge included, 10-meter walk test (10MWT), 6-minute walk test (6MWT), 3-meter backward walking test (3M backward walking), Five times Sit to Stand test (5xSTS) and Functional Gait Assessment (FGA). Self-reported measures attained at same intervals included, Activity Specific Balance Confidence scale (ABC scale), Modified Fatigue Impact Scale (MFIS), Fatigue Severity Scale (FSS), and 12-item Multiple Sclerosis Walking Scale (12-MSWS).

Results
The patient demonstrated clinical meaningful improvements across multiple capacity domains. 10MWT increased from .91 m/s to 1.22 m/s, which revealed a minimal clinical important difference (MCID) and 6MWT improved from 337 meters to 448 meters which exceeds MCID. 3M backward walking test showed a decrease in time

from 7.84s to 3.01s. FGA showed measurable gains and self-perceived balance confidence increased as indicated by higher scores on ABC scale. Functional strength revealed improvements as seen in 5xSTS from 21.83s to 10.06s. Additionally, the patient reported substantial subjective improvements, including increased daily energy, greater ability to carry out multiple tasks throughout the day – running errands and caring for grandchildren and engaging in daily exercise.

Conclusions

This case demonstrates that a combined regimen of HIIT and targeted balance rehabilitation can produce meaningful improvements in gait, balance, fatigue and overall quality of life in African American individuals with MS – a population frequently experiencing disproportionate functional decline. These findings support the integration of structured aerobic and neuromuscular re-education training into clinical practice as an impactful strategy for addressing and enhancing quality of life in African American individuals living with MS.