



The effects of hydrotherapy on muscle strength, body composition and quality of life in boys with duchenne dystrophy

Oral Presentation

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Abstract

Introduction: This study focuses on the effects of hydrotherapy on the strength of quadriceps, back, forearm, and wrist muscles in boys with Duchenne dystrophy. So, the present study aimed to evaluate the changes in muscle strength for maintaining stature and performance of daily activities and finally improving the quality of life in boys with Duchenne dystrophy (DMD).

Methods: Eight patients with DMD (6-12 years old) who were members of the Iranian Dystrophy Association were selected by purposive and available sampling method and participated in a 4-week hydrotherapy program. The variables were quadriceps, back, hand, forearm muscle strength, body minerals, general mobility, and safety and balance. Functional skills and analyzing body composition were measured in the Sports Physiology Laboratory, and for evaluating children's quality of life, we used a questionnaire. Laboratory equipment including body composition analyzer, hand gripe, stopwatch, measuring tape. The tools needed for the field test include a special water treatment pool for the disabled with the appropriate water temperature for the patient (32 ° C) with a ramp for entering the water and proper ventilation. Quadriceps muscle strength was measured by MMT with three isometric contractions taken from the patients, and the mean was recorded. The strength of the back, leg, and chest muscles were assessed using a back-leg-chest dynamometer, and the strength of the forearms, claws, and wrists was assessed with a hand dynamometer. Finally, Time up and go test (TUG) was measured to evaluate general mobility and safety with mobility and balance.

Results: Significant improvements in functional skills in and out of the water were observed, along with a significant increase in muscle strength ($P < 0.05$).

Conclusion: Low to moderate intensity water exercises, in addition to increasing muscle strength and improving daily activities and a better quality of life, build confidence, vitality, and life expectancy in patients with Duchenne dystrophy.

Keywords

exercise; Strength; Duchenne muscular dystrophy; hydrotherapy; body composition; muscle strength

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