Abstract

Aquatic physiotherapy for painful shoulder in older adults: what can dual media kinematic analysis tell us?

Maria Graça [1,2,3]

[1]Porto Biomechanics Laboratory (LABIOMEP-UP), University of Porto, Porto, Portugal
[2]Research Center for Physical Activity, Health and Leisure, Faculty of Sport, University of Porto, Porto, Portugal
[3]School of Health Sciences, University of Aveiro, Portugal

Aquatic physiotherapy (AP) appears to be an effective way to develop strength and balance and relieve pain in individuals with degenerative joint diseases or orthopedic dysfuntions. AP provides symptom relief and advances dry-land functionality. Our first study was performed with 108 AP participants in a sports pool who completed two questionnaire, the shoulder and hand disability scale (DASH) and functional perception scale (FPS). Correlations between scales and main health problems showed predictive factors for water adaptation, providing strategies for successful interventions. Functional empowerment is based on performing movements and tasks in water, which are not possible on dry-land. Physiotherapists (PT) often use deep-water exercises, combining movements under and above water. Our further studies examined the range of motion, peak velocity, phase duration and smoothness coefficient in dual-media shoulder abduction/horizontal extension performed in deep water with different buoyancy aids. A sample of 10 healthy right-handed and experienced participants (five men and five women, age 30.1±9.4 years, BMI 21.8±2.8), performed upper limb abduction at maximum speed in three conditions: no aided buoyancy, pool noodle and buoyancy belt. Movements of the endpoint of the third finger od both right and left arm were captured using the Qualisys. Results for range of motion and peak velocity indicate that buoyancy belt as the best option for shoulder abduction resulting in greater symmetry between dominant and non-dominant upper limbs for the different phases of movements above and below water.

Biography

Maria Graça completed her Ph.D. at the Sports Faculty of Porto University and PT, and her Master studies at the University of Aveiro. Is the clinical director of Corpus Salut, a premier Aquatic Physiotherapy service, and is an expert in physiotherapy in older adults. Her research subject is aging problems. She has been lecturing since 2004, as professor assistence at the School of Health Sciences, University of Aveiro, and published in international journals, and has been serving as a revisor member of recognized Portuguese journals.