The WHO Draft Group: Therapeutic aquatic exercise and immersion

Health benefits of immersion and therapeutic aquatic exercise in swimming pools and spas in health care, with focus on rheumatologic, orthopaedic and neurological disorders

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Introduction: The World Health Organization (WHO) is in the process of updating the "Guidelines for safe recreational water environments, volume 2: swimming pools and similar environments (2006). The update plans to contain a chapter on the health benefits of immersion and therapeutic aquatic exercise in pools and spas.

Methods: In order to write a narrative review, searches in PubMed, Embase, Cinahl, Sportdiscus, PEDro and Cochrane central were conducted in May-October 2012. The group of 8 experts focused on persons with a medical diagnosis as described in the ICD-10 and their resultants effects (as described in the ICF), but has been restricted to diseases, which have been presented in aquatic research literature sufficiently. Keywords about the interventions included “Hydrotherapy Or Water exercise Or Aquatic exercise Or Aquatic therapy Or Water rehabilitation Or Aquatic physical therapy Or Aquatic rehabilitation Or Aquatics”, as well as the appropriate keywords for the pathologies. References were restricted to Level 1-3 evidence papers as defined by the Oxford Centre of Evidence Based Medicine.

Results: In summary, across musculoskeletal disorders (low back and neck pain, osteoarthritis, joint replacement, fibromyalgia, rheumatoid arthritis and ankylosing spondylitis), both active and passive interventions have low to high clinical effects on outcome parameters at the various ICF levels and on quality of life. Adverse effects have not been reported. The evidence across neurological diseases (stroke, Parkinson disease, multiple sclerosis) is limited in comparison to musculoskeletal ones and mainly focuses on balance, gait, functional independence and quality of life. Moderate to high clinical effects have been found for these parameters. Effects on fatigue are conflicting. No adverse effects have been reported.

Discussion: This narrative review didn’t allow a comparison with other interventions and only focuses on the health benefits of aquatic interventions themselves. Description of intervention and the applied doses were often insufficient, therefore the exact parameters of the intervention tactics still have to be established. Many studies were underpowered and would need follow-up studies that are more rigorous in order to establish the health benefits with higher effects sizes and statistical significance.

Conclusion: The average – level 2 - evidence of therapeutic aquatic exercise and balneotherapy in neuro-musculoskeletal diseases have moderate to high beneficial effects on variables at the levels if function (primarily pain) and activity of the ICF, as well as on quality of life. These
benefits seem to comparable across the diseases.

Keywords: WHO, Aquatic therapy, Immersion