



# Brazilian Journal of Physical Therapy

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## ORIGINAL RESEARCH

### Identification of intervention categories for aquatic physical therapy in pediatrics using the international classification of functioning, disability and health-children and youth: a global expert survey

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Received 1 June 2016; received in revised form 16 August 2016; accepted 19 August 2016

#### KEYWORDS

Physical therapy modalities;  
Disabled children;  
International Classification of Functioning;  
Disability and health;  
Clinical competence;  
Delphi technique

#### Abstract

**Objective:** To identify intervention categories encountered by physical therapists working in aquatic therapy with disabled children, using the International Classification of Functioning, Disability and Health-Children and Youth (ICF-CY).

**Methods:** Aquatic physical therapists were asked to describe concepts related to the functioning of disabled children and their contextual factors. Data were collected in three rounds using the Delphi technique. All answers were translated ('linked') to the ICF-CY and analyzed to determine the degree of consensus.

**Results:** Answers were linked and organized into four diagnostic groups. Overall, in the four groups, 41 Body Functions, 8 Body Structures, 36 Activities and Participation, and 6 Environmental Factors categories were identified as intervention targets. In addition, eight Environmental Factors that influence aquatic physical therapy were identified.

**Conclusions:** This study highlights the variety of intervention categories available to aquatic physical therapists when treating children in the water.

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<http://dx.doi.org/10.1016/j.bjpt.2017.05.007>

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Please cite this article in press as: Güeita-Rodríguez J, et al. Identification of intervention categories for aquatic physical therapy in pediatrics using the international classification of functioning, disability and health-children and youth: a global expert survey. *Braz J Phys Ther.* 2017, <http://dx.doi.org/10.1016/j.bjpt.2017.05.007>

## Introduction

The preamble of the constitution of the World Health Organization (WHO) underlines the importance of promoting healthy development during childhood, which entails the ability to live harmoniously in an ever-changing environment.<sup>1,2</sup> The role of physical therapists is to overcome the limitations or improve the functioning of people as a whole, by addressing all their biopsychosocial needs.<sup>3</sup> In the case of children and teenagers with disabilities, early intervention is a key factor influencing their physical, mental, and social recovery.<sup>4</sup>

The International Classification of Functioning, Disability and Health-Children and Youth (ICF-CY) is a classification that enables the description of changes in body function and structure, addressing both what a person can do in a standard surrounding (their level of capacity) or what they do in their usual environment (their level of performance).<sup>5</sup>

The objective of the ICF-CY is to create a framework to assess relevant aspects of functioning and health in children and youth. This is a useful classification that can be used by health systems to promote participation,<sup>6</sup> develop ICF Core Sets,<sup>7</sup> and identify important domains within professional interventions such as physical therapy, occupational therapy, and speech therapy.<sup>8</sup>

Aquatic Physical Therapy (APT) is defined as "the special practice of physiotherapy, with therapeutic intent toward the rehabilitation or attainment of specific physical and functional goals of individuals using the medium of water".<sup>9</sup> Prior studies have shown that aquatic therapy produces an improvement in motor symptoms and increases physical activity levels and that these levels are maintained six months after program completion in children with developmental disabilities and other motor neuron disorders.<sup>10,11</sup> Aquatic interventions also produce a positive influence on social interactions or behaviors<sup>12,13</sup> and participation levels<sup>14</sup> of children with neurological damage.

Despite the well-described benefits of aquatic therapy, it is unknown what areas should be routinely assessed or targeted by professionals working in this field. The present study methodology is framed within the initial phases of the Rehab-Cycle model.<sup>15</sup> This model is a guide for healthcare professionals and provides a logical sequence of activities for the purpose of designing recommended intervention plans according to the specific needs of the individual.<sup>3,15</sup> The first steps of this model involve a process of analysis and identification of functioning categories in children and their possible relation with relevant factors regarding the person and the environment, in order to define the therapeutic objectives.

The objectives of this study were (1) to identify intervention categories encountered by aquatic physical therapists working with children with neurological disorders [central and peripheral neurological disorders (ND), autism spectrum disorders (ASD), psychomotor delay (PMD)] and musculoskeletal disorders<sup>2</sup> (MD), respectively, and (2) to summarize these concepts using the ICF.

## Methods

This study was exempted from ethics application by the Spanish National Ethics Committee.

## Study design

We conducted a cross-sectional study using an open-ended internet 3-round survey of international experts based on the Delphi method.<sup>16</sup> The Delphi method is a structured process based on anonymity, iteration with controlled feedback, statistical group responses, and informed feedback.<sup>17</sup> The purpose of this method is to develop and facilitate consensus by recognized experts with knowledge in the matter under study.<sup>18</sup>

Four different groups of aquatic physical therapists participated in online and email surveys. The physical therapists in all four groups were working in APT at the time and treating children related to the four diagnostic areas cited in the study objectives.

## Participants and sampling methodology

Recruitment for this study took place in spring 2012. Expert aquatic physical therapists were identified and recruited based on the following sources: (a) authors of articles, (b) lists of participants from the international courses organized by the Association International Aquatic Therapy Faculty (IATF) since the year 1998, and (c) a list of experts provided by the World Confederation of Physical Therapy (WCPT) in 2012. Both institutions provided consent for the disclosure of data. At the onset, the number of proposals received from the IATF and the WCPT was 97 and 53, respectively. Another 15 of these were located by searching within the articles of the specific literature.

Aquatic physical therapists had to meet the following criteria to be included as 'experts' in the survey: (a) they had to be qualified physical therapists, (b) work in APT, (c) work with children, (d) have over two years of experience treating children related to the four major groups of specified health conditions (ND, ASD, PMD, MD), and (e) be able to communicate either in Spanish, English, or Portuguese.

The sampling technique was non-probabilistic. The main experts responsible for APT in each participating country were contacted (representatives of the IATF and the WCPT). These organizations were asked to provide names and mailing lists of potential experts, who were subsequently contacted via email.

The proposal with the explanation of the project was sent to all those individuals included on the lists provided by both institutions. After creating a list of experts, these were sent an information sheet and an online link to the Delphi round one questionnaire via email.

Up to 165 experts from 34 countries (from five WHO regions) were contacted after receiving the lists provided from the IATF and WCPT groups and after reviewing the databases. These belonged to hospitals, universities, and associations. Of these, 32 were rejected as they did not fulfill the inclusion criteria, ten refused to participate, and 15 failed to respond.

Altogether, 69 physical therapists participated in at least one round of the Delphi exercise. These included 29 participants from the WHO Region of the Americas, 33 from the European Region, five from the Western Pacific Region, one from the South-East Asia Region, one from the Eastern-Mediterranean Region, and none from the African Region

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