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Movement analysis in wheelchair propulsion: Future trends in Occupational Therapy

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Movement analysis of the upper limb becomes very interesting since it allows the understanding of the biomechanical principles of human functional abilities and also the understanding of the biomechanical bases of human occupation but it also represents a challenge in terms of technology, due to its differences with gait analysis, which is very common in clinical scenarios and also health professional, people with disabilities and their families are becoming more familiar with this type of analysis. Also, the world wide use of certain Assistive Technology Device such as the wheelchair demands us as OT's the detailed analysis of this interface and its implications for people with disabilities. Objectives: Develop and validate a technological tool that allows professionals to measure the variables that affect the efficiency of wheelchair propulsion using a 3D movement analysis system. Methodology: The experimental study was developed with 5 males with Spine cord injury. Using the PHASE SPACE system Kinetic and kinematic variables were calculated and adjusted to obtain the parameters of wheelchair propulsion in ideal conditions of prescription. Results: The result reports will be finished on July 2009. Contribution to OT practice: The tool will contribute to the standardization, validation, and generation of evidence that allows us to build up our body of knowledge which can makes us visible in global academic communities and in interdisciplinary teams in the field of physical dysfunction and rehabilitation engineering, constituted by professionals that from their diverse knowledge and conceptual appropriations contribute to the biomechanical comprehension of human beings. The contributions that we can make as Occupational Therapists related to the comprehension of occupational performance from this theoretical perspective, will allow us to remain in force in the middle of a knowledge society that demands professionals and disciplines all along, that are able to demonstrate in a quantitative measure the effectiveness of its procedures and interventions.