

Abstract

The subject of this dissertation was the creation of the adapted exercise program for unilateral transfemoral amputees and its verification in practice.

The content of this program was chosen based on the practical experience and theoretical background in the field of anatomy, kinesiology, rehabilitation, lower-limb amputations and Motion Capture technologies. The four-month intervention program was designed as an adapted corrective exercise aimed at the major muscle groups influencing the posture, especially the position of the pelvic segment, which is the dominant element in the kinematic chain.

The aim of this project was to ascertain whether this intervention can affect the pelvic tilt (in frontal and sagittal plane) of unilateral transfemoral amputees and so improve their quality of life.

This was a project based on combination of quantitative and qualitative research methods. The measurement of the size of angles determining the pelvic tilt by Qualisys optoelectronic system was the essence of the quantitative part of the research. Qualitative data were collected through semi-structured in-depth interviews from persons who completed whole project.

This research is by its nature and focus characterized as a set of case reports and as a pilot study, proof of concept respectively. 10 unilateral transfemoral amputees aged 6 to 44 years were involved in the project, 5 of them completed the whole program.

The results of the quantitative part show that the pelvic tilt of unilateral transfemoral amputees can be influenced by regular adapted corrective exercise, but not all the participants achieved the same and objective (substantively significant) changes.

The qualitative part results show the suitability of this exercise and its benefits for unilateral transfemoral amputees. Positive effect of this compiled program was evident in all participants, especially in their musculoskeletal system and psyche.

Keywords: adapted exercise program, corrective exercise, pelvic tilt, Qualisys, rehabilitation, transfemoral amputation