Abstract

The use of Virtual Reality in Motor Rehabilitation in Acquired Brain Injury patients (ABI) is a scientific reality validated from last years. The promising and satisfactory results that are being obtained in this researching field (at both cognitive and motor level), in conjunction with traditional therapeutic processes, provide the rise of a new milestone in traditional rehabilitation known as Virtual Motor Rehabilitation whose acronym is (VMR).

Today, the Acquired Brain Injury is one of the main problems of disability and death in the world, where the methodologies proposed in the field of traditional rehabilitation provide promising and encouraging results. However, these therapies have drawbacks such as lack of patient motivation, (leading to a limited adherence treatment), or time limitations, space or cost that arise in the rehabilitation process.

Traditionally, the main experiments carried out in the field of Motor Rehabilitation have been performed in post-acute and acute ABI patients, with few scientific publications based on the motor rehabilitation process in chronic ABI patients. In the present thesis several VR systems based on low cost devices have been developed. These systems, together with the contributions obtained by clinical specialist have served to validate our hypothesis:

By using Virtual rehabilitation techniques make possible to obtain in chronic patients a statistically significant balance recovery, similar to that obtained in acute ABI patients.

The experiments carried out in the rehabilitation process, together with clinical evaluations in Valencia al Mar Hospital, and Instituto Valenciano de la Discapacidad, have served to obtain verifiable and satisfactory results, that confirm the hypothesis.