Editorial

Exer-Gaming: A Novel Tool in Stroke Rehabilitation

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Stroke also known as cerebrovascular accident (CVA) is the condition of neurological deficits resulting from lack of blood supply to brain. It is the 3rd most common cause of death and 1st leading cause of disability in developed as well as developing countries. The incidence rate of stroke in Pakistan is 250 per 100, 000 and it is more prevalent in younger population as compare to western countries. The economic and social costs of disability are considerable, but difficult to quantify the exact cost. Comprehensive costs of the disability are scarce and fragmented even in developed countries. The cost of productivity loses because of direct and indirect consequence of disability and causing a huge burden on society[1].

The neuro rehabilitation is complex, dynamic and goal oriented process to achieve the optimal outcome in stroke patients. Multiple rehabilitation approaches based on different theoretical frameworks are widely used to promote the function and activity level in stroke. The main objectives of all approaches are to enhance the level of independence, participation and quality of life of stroke patients. The focus of rehabilitation is to restore the function and facilitate the brain plasticity which activates the smooth synaptic transmission. The brain recognizes the appropriate repetition with sensory input to achieve the skill acquisition. The effective rehabilitation needs higher repetition with active involvement of patients. But during the implementation process of neuro rehabilitation, there are certain limitations and barriers which directly affect the recovery process. The major issues include the limited repetition practice, lack of motivation and engagement of patients in performing tasks and skills.

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Recently, technology has fueled both our quest for knowledge and the mechanisms available to obtain and retrieve it. One manifestation derived from these discoveries has been our ability to engage new ways of exploring our nervous system. Exer-gaming, a term used to describe the form of exercise through games and it, relies on the technology that tracks the body movement and gesture. The exer-gaming has recently developed innovative idea for promoting the function with motivation [2]. The utilization of exer-gaming in stroke rehabilitation has significant and effective role in providing the higher repetition along with active involvement of patients. It not only improves the functional level but also enhances the motivation and interest of patients. The task oriented and context specific exer-gaming engage the patients with proper utilization of cognition which lead to enhance the brain plasticity. Interactive technology that can improve the physical activity level, improves cognitive skills, concentration and simply to enjoy the challenge of game itself. The stress and depression is also associated with stroke but exer-gaming reduces the symptoms and improve quality of life. The

literature shows that exer-gaming has remarkable effects on upper limb function, activities of daily life and postural control. This technology can effectively provide a platform to perform maximum repetition of activity and is a better option as compare to conventional approaches.[3]

In Pakistan the stroke incidence is gradually increasing in the younger population and it is major threat to the working and earning community. This will eventually raise the burden on society, so it should be on priority to rehabilitate the persons with stroke disability and make them an independent & active member of society. Exer-gaming is a novel tool in neuro rehabilitation to provide an interactive activity and commercial video games are available which are cheap and easy to implement. It is prime responsibility of professionals to provide a comprehensive rehabilitation approach to achieve the highest functional level and enable individuals to live independent life.[4] This technology reduces the exhaustive assistance from of therapist and is also easy to manage in home based rehabilitation in future. It is time to utilize the technological assistance in neuro rehabilitation to achieve the optimal outcome in short duration.

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