

Abstract

Spinal cord injuries can affect motor, sensory, and autonomic functions. The largest group of spinal cord injuries are cervical spinal cord injuries. Patients with these injuries can suffer from deterioration in breathing patterns and airway clearance techniques due to the paralysis of respiratory muscles. For this reason, they are continuously at risk of respiratory complications, which are also the most common cause of death in those with chronic cervical spinal cord injuries.

The theoretical section presents general knowledge about spinal cord injuries, with a particular focus on respiratory complications, variants of respiratory physiotherapy, and the possibilities of using resistance breathing exercisers and mechanical insufflation-exsufflation in therapy.

The research section focuses on mapping the frequency of respiratory infections and methods of influencing respiratory functions through the use of breathing exercisers (Threshold PEP, POWERbreathe) and the CoughAssist device. The examination includes the measurement of selected anthropometric and spirometric parameters, the use of standardized questionnaires (Pulmonary Function Basic Data Set – ISCOS), and the monitoring of the participants' subjective perception of their condition.

This thesis aims to record the frequency of infections and the possibilities of influencing lung functions in chronic patients with cervical spinal cord injuries. It also aims to demonstrate that the use of CoughAssist in chronic patients has a greater effect than standard therapy using resistance breathing exercisers.