Ethics approval: This study was approved by the committee of medical ethics of Hirosaki University Graduate School of Medicine.

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Special Interest Report Poster Presentation
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Exhibit halls 401–403

EFFECT OF PRANAYAMA (YOGIC BREATHING) ON LUNG FUNCTION IN TRAUMATIC THORACIC SPINAL CORD INJURY PATIENTS: AN INTERVENTIONAL STUDY

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Background: The incidence of Global Spinal cord injury is 40 to 80 new cases per million populations every year. With low to high levels of spinal cord injury, the respiratory muscles are affected gradually. Lung function worsens up to about 50% to 70%. Total rib cage inflation is not possible. Involvement of the intercostal muscles leads to paradoxical movement which increases the work of breathing. Due to the involvement of the abdominal muscles, the effectiveness of diaphragm and coughing ability are reduced. This leads to respiratory disorders. All this can lead to fatigue and respiratory failure which affects the lung function parameters. Pranayama – a part of YOGA is an art of controlling the life force – the breath. It produces many systemic and psychophysical effects in the body, besides its specific effects on the respiratory functions. Hence, the present study is designed to assess the short- term effects of Pranayama on the lung function parameters.

Purpose: The purpose of the study was to determine the effect of Pranayama – Yogic breathing on lung function parameters among patients with thoracic spinal cord injury during their hospital stay.

Methods: Patients (level D4 to D9) between the age group of 20 to 50 were selected as per the selection criteria. Both male and female having ability to sit were included with written informed consent. Patients were equally divided into two groups Group A and Group B. Patients who were non co-operative and/or with other severe complications, like autonomic dysreflexia, chest trauma and abdominal trauma were excluded. Baseline spirometry tests (FVC, FEV1, FEV_1/FVC, PEFR) were performed for both the group at study entry and at completion with and without binder. All patients received their conventional rehabilitation protocol at the institute. Group A received of training of pranayama as form of breathing exercises which comprised of OM CHANTING PRANAYAMA for 3 minutes per day, ANULOM VILOM PRANAYAMA for 6 minutes and BHRAMARI PRANAYAMA for 3 minutes per day. Only group A received this training for 12 minutes per session, once in a day for 15 days. Post intervention spirometry parameters same as before were measured.

Results: Both the groups demonstrated an increase in all the lung function parameters. Wilcosan sign rank test and Mann–Whitney *U* tests apply accordingly. However a significant difference was observed only in the participants of Group A, while changes in lung function parameters in Group B did not reach significance ($p < 0.05$). Inter group comparison revealed a significant improvement in Group A than Group B ($p < 0.05$). Within group comparison between pre with binder and post without binder show no significant difference in group A ($p < 0.05$).

Conclusion(s): The study demonstrates that inclusion of pranayama in the rehabilitation of spinal cord injury patients can improve lung function parameters which reduces use of external supportive devises for lung in traumatic thoracic spinal cord injury patients.

Implications: Regular practice of Pranayama helps to improve lung function, and became an alternative to aids so it should be included in the rehabilitation program in traumatic spinal cord injury patients with impaired lung functions.

Keywords: Pranayama; Lung function; Spinal cord injury
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Ethics approval: Government Spine institutes & Physiotherapy college ethical committee.

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ACCESS TO PHYSICAL REHABILITATION SERVICES FOR WOMEN IN IRAQ

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Background: There are approximately 1 billion people living with disabilities worldwide, more than 300 million are women. Women with disabilities face significant challenges in accessing basic health and rehabilitation services, often being marginalized within their communities. In Iraq, due to decades of conflict, violence and international sanctions, the delivery of health and rehabilitation services were negatively affected with severe consequences for more than 3.5 million Iraqis with disabilities. Rehabilitation services are free of charge; however they are often based in centralized areas