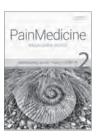
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A Role of Complementary Medicine in Rehabilitation of Military Traumatic Brain Injuries

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Background: Military service members and veterans face health issues related to traumatic brain injury (TBI), especially during combat, use of heavy equipment, and exposures to environmental hazards and explosives. There were 1.000 TBIs reported in deployed Ukranian troops during Russian-Ukranian war in 2014-2017. Studies have indicated that some manual therapies could be helpful for treating patients who have post-concussive syndrome.

Objective: This case series report describes the effects of CranioSacral Therapy (CST), Visceral Manipulation (VM), and Neuro-muscular Manipulation (NM) modalities for treating patients who have post-concussion syndrome. The goal of this study was to evaluate these effects on immobility, pain intensity, quality of life, sleep disorders, and cognition in these patients.

Materials and Methods: This single-blinded case series was conducted at the Volunteer rehabilitation center, Dnipro, Ukraine. The patients were 45 male participationers of Ukranian military forces who had been medically diagnosed with post-concussion syndrome. Each participant received a morning and afternoon 1-hour session of these three specific manual therapies, which were capable of accessing and addressing the structural, vascular, and neuro-muscular tissues of the Cranium, Neck, Diafragm, Peritoneal bag and brain-as well addressing far-reaching ramifications throughout the body following trauma. The main outcome measures were scores on the: Impact Neurocognitive Test; Blood Oxigen Saturation Test; Short Form-36 Quality of Life Survey, Headache Impact Test, a numeric pain rating scale; orthopedic range of motion tests (ROM); and vestibular testing. Hours of sleep were also checked. These outcome measures were registered at baseline, after treatment, and after a 3-6-month follow up.

Results: Statistically significant differences were seen with a decrease in overall pain rating scale scores (P = 0.034), and cranio-cervicogenic pain levels decreased (P = 0.047). There were statistically significant increases of blood oxigen saturation (P = 0.033), Memory Test (P = 0.017) scores, and cervical ROM scores (P = 0.036). Hours of sleep averaged 1 hours on the first day of treatment and increased to 2.0 hours at the end of treatment. Results were continuing to increase, as noted at a 5-month evaluation.

Conclusions: Six sessions of specific CST/ VM/NM therapy resulted in statistically greater improvements in pain intensity, ROM, memory, cognition, blood oxigen saturation and breathing in concussed patients.

Keywords: CranioSacral Therapy; Neuro-muscular Manipulation; Visceral Manipulation; Neurorehabilitation; traumatic brain injury.

