

OUTCOME SUCCESS FOR SPECIAL FORCES: INTENSIVE OUTPATIENT CHRONIC PAIN MANAGEMENT PROGRAM FOR REHABILITATION OF NEURO-MUSCULOSKELETAL INJURIES AND MTBI

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PURPOSE

A comparative analysis, using an experimental group and a control arm or cohorts with musculoskeletal pain and TBI. Experimental group received 6 weeks intensive MRP (Movement Recovery Program) consisting of experimental treatment in Neuroplastic-Graded Proprioceptive Stimulation (N-GPS), cognitive restructuring addressing Kinesiophobia, and motor function training, in PT and Yoga Therapy along with 12 week TBI rehabilitation. Control arm participants received standard 12 week TBI treatment. Recent research suggests that the polytrauma clinical triad of chronic pain, PTSD, and concussion is highly prevalent among OIF/OEF veterans and that each of these problems rarely occurs by itself, but the three conditions most often occur in combination with one another. Animal models of pain rehabilitation have shown how vital movement is to sustained central nervous system stimulation and sustained recovery. These concerns are especially relevant for the highly mobile, advanced tactical forces of our elite military Special Operations Forces. Special Operations soldiers often experience a plethora of potential mechanisms of injury for neuro-musculoskeletal injury, traumatic brain injury and pain. A need for efficient, effective and timely treatment for this injury trifecta is in great demand using an interdisciplinary treatment process to facilitate patient self-care, improved function and mobility, improve return to duty status, soldier retain ability and decreased opioid medication use.

OBJECTIVE

- ❖ Use Holistic Cam Modalities (Yoga) to address Chronic Pain
- ❖ Treatment of Polytrauma's; PTSD, TBIs
- ❖ Improve Functional Mobility & Facilitate Quicker Recovery Times
- ❖ Address Kinesiophobia
- ❖ Improve Soldier Readiness and Retain ability
- ❖ Reduced opioid medication use
- ❖ Provide Patient Self Care

PARTICIPANTS

Both groups were SOF (Special Operation Forces) service members with comorbid diagnoses of musculoskeletal pain and TBI received 6 weeks intensive outpatient TBI rehabilitation

-n=15: SOF; control arm; received 6 weeks intensive outpatient TBI rehabilitation in conjunction with intensive outpatient MRP that included 40 min PT sessions physical therapy and yoga.

-Intensive Outpatient Movement Recovery Program consists of experimental treatment enriched in Neuroplastic-Graded Proprioceptive Stimulation (N-GPS) rehabilitation, vestibulocochlear nerve stimulation, cognitive restructuring, motor function training and task overloading.

METHOD

Physical Therapy

-40 minutes 2x a week/6 weeks for a totally of 12 treatments; performed before yoga sessions
 -Treatment consisted of 20 minutes of dynamic warm-ups (YoMo) followed by 20 minutes of Physical Function Pyramid Test. Biopsychosocial Approach addressing Kinesiophobia was implemented throughout treatment.
 -FUNCTIONAL MILITARY EXERCISE (FME): (7-1 PYRAMID TEST 7-1 PYRAMID TEST=The improvement in number of repetitions .Time and ability based.

YOGA INTERVENTION

❖ **Yin yoga treatment:**
 - 40 minutes 2xs week/6 weeks; was performed immediately after PT sessions to enhance neuromuscular active recovery with cognitive restructuring using a Biopsychosocial Approach was implemented throughout the duration of yoga sessions to reinforce the activation of the neuroendocrine response during PT sessions.
 ❖ **Hatha yoga treatment:**
 -60 minutes 3xs week/6 weeks; Practice included a yoga protocol of sequenced asanas, diaphragmatic breathing, guided imaginary and mediation.

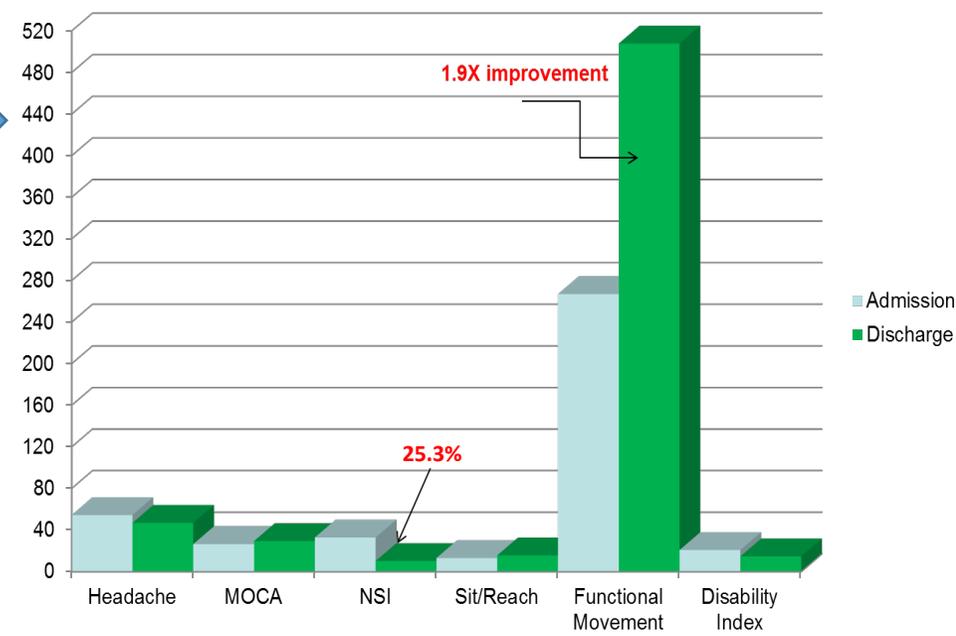
RESULTS

This chart shows outcome metrics for the intensive patients at time of admission and discharge. Metrics include headache, MOCA, NSI, Sit/Reach Functional Movement, and Disability Index. Patients saw 190% improvement in functional movement from admission to discharge.

This table presents outcome metrics for the patients from admission to discharge on selected metrics from the aforementioned clinical measures:

	Admission	Discharge	%Improvement
Headache (HIT-6)	54.5	47	9.6%
MOCA	26.58	29.5	8.8%
NSI (Post Concussive)	32.923	10.33	25.6%
Sit/Reach	13.168	15.75	10.76%
Functional Movement	267	508	1.9X better
Disability Index	20.9	14.75	12.3%

*Headache Impact Test 36-78;
 *Montreal Cognitive Assessment Test 0-30;
 *NSI: Neurobehavioral Symptom Inventory 0-88
 *Sit/Reach Functional Movement Metric 0-24;
 *Functional Movement Program (higher number better)
 *Oswestry Disability Index 0-50;



This patient is playing basketball again.

The treatment group evidenced as high as a 188% symptom functional improvement rate

- ❖ Over 80% of the cohort returning to full active duty.
- ❖ NSI: improvement Neurobehavioral Symptom Inventory (post concussive) 25.6%
- ❖ Significant improvement in patient symptom sequelae was observed

CONCLUSION

Interdisciplinary care involving CAM modalities such as yoga that incorporate a dynamic, interactive delivery model with a biopsychosocial approach in conjunction with TBI rehabilitation, receive increased improvements in TBI NSI, functional improvement and return success to functional duty. Functional Outcomes indicate that Overcoming Cainotophobia, the fear of movement, is key. Pain is not a limiting factor to function.

Functional Outcomes indicate that Overcoming Fear avoidance is key.
Pain is not a limiting factor to function!



This SF soldier is running again.