UTILIZING ORTHOPEDIC MASSAGE TO IMPROVE IN-CHAIR COMFORT DURING MANUAL WHEELCHAIR USE FOR A VETERAN LIVING WITH A SPINAL CORD INJURY (SCI)

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INTRODUCTION

Negligible guidance exists for massage therapy intervention to improve quality of life in wheelchair-bound, leaving therapists fearful of advanced cases or unaware of the positive impact they could have. Post-rehab, many SCI clients experience nociceptive pain and overall discomfort from manual wheelchair use.

OBJECTIVE

Identify the impact of orthopedic massage on nociceptive pain and overall discomfort in a veteran living with a SCI in a 12 therapy session series.

METHODS

The client (consent obtained), a 39 year old male Veteran, fractured his C-5 and C-6 vertebrae in combat, while serving in Afghanistan in 2006. Considered a complete quadriplegic, he has regained some mobility throughout his cervical spine, glenohumeral, scapular, and core areas, through rehabilitation. At the initial session, the client presented with nociceptive pain and overall discomfort of his upper body using the verbal numeric rating scale (VNRS) at a 6 but could range as high as an 8. He reported his lower body at an 8 with “tightness” throughout his lower back and gluteal muscles. The client was permitted to dictate the focus between upper or lower body therapy sessions, depending on the level of discomfort experienced that day.

Session duration ranged from 30-45 minutes, depending on the severity of pain or discomfort, the client provided his VNRS rating pre and post treatments on both upper and lower body days. Upper body focused treatments included ranges of motion (ROM) visual assessment of scapular travel during glenohumeral abduction/adduction and flexion/extension pre and post treatment. Lower body treatments focused on improving ROM and overall discomfort pushing his chair. Orthopedic massage techniques utilized included cross-fiber friction, longitudinal stripping, neuromuscular resistance techniques, and trigger point. These techniques were applied to cervical, glenohumeral, scapular, and muscular areas. Lower body treatments focused on improving his in-chair comfort.

RESULTS

Upper Body

Cross Fiber Friction and Longitudinal Stripping

Cervical

- Muscleied Emphasis

- Suboccipital

Upper Trapezius

Glenohumeral

- Muscleied Emphasis

- Rotator Cuff/External Rotation

- Rotator Cuff/Abduction

- Palmaris Longus

- Subacromial Bursa

Myofascial

- Rotator Cuff/Abduction

- Rotator Cuff/External Rotation

- Subacromial Bursa

- Suboccipital

Neuromuscular Therapy

Cervical

- Rotator Cuff

- Suboccipital

- Rotator Cuff/Abduction

- Rotator Cuff/External Rotation

- Myofascial

Trigger Point

Glenohumeral

- Suboccipital

Neuromuscular Therapy

Cervical

- Myofascial

- Rotator Cuff

- Suboccipital

Neuromuscular Therapy

Glenohumeral

- Suboccipital

- Myofascial

- Rotator Cuff/Abduction

- Rotator Cuff/External Rotation

- Palmaris Longus

- Subacromial Bursa

ORTHOPEDIC MASSAGE

The combination of multiple soft tissue manual therapy modalities applied with intent of relieving pain conditions throughout the musculoskeletal system.

Lower Body

Cross Fiber Friction and Longitudinal Stripping

Spinal

- Muscleied Emphasis

- Lumbar Oblique

- Pectoralis Major

- Psoas Major

Passive Range of Motion

Cervical

- Muscleied Emphasis

Veteran Spinal Cord Injuries

The VA treats more than 37,000 veterans with SCI per year, making it the largest health care system providing spinal cord injury care.

Details of a 6 year study compared Spinal Cord Injury Rehabilitation among U.S. Army, Soldiers Deployed to Iraq (Operation Iraqi Freedom) and Afghanistan (Operation Enduring Freedom) Troops.

Clinical Spinal Cord Injuries

- 55% SCI, 6% resulted in paraplegia (5)

- 6% SCI, 2 % resulted in paraplegia (6)

Individuals with a spinal cord injury are susceptible to secondary medical complications, including chronic and acute pain syndromes.

POSTERIOR DELTOID SESSION*

In addition to the chronic, nociceptive pain, individuals operating a manual wheelchair are also at risk for acute pain due to repetitive chair use.

For one of his sessions, the client presented with acute pain in his right posterior deltoid, in addition to his chronic nociceptive pain at C5/C6. This pain is intermittent in nature, and he would typically treat with over the counter anti-inflammatories. The same techniques were utilized as for general upper body sessions focused on nociceptive pain, but with increased dosage to the right side, that session the client reported his pain levels in his right deltoid to be at a level 0.

Living with SCI

“After an SCI, chronic musculoskeletal pain, a change of nociceptive pain may occur with additional postural pain and osteoarthritis of structures such as arm and shoulder.”

80% of SCI individuals experience pain with their most common Pain Treatment Options:

- Acupuncture

- Non-Stress anti-inflammatories

- Steroid injections

- Opioids

There are approximately 300,000 individuals living in the United States with a spinal cord injury.

58.7% Quadruplegic

40.4% Paraplegic

CONCLUSIONS

- The results demonstrate the potential benefits of orthopedic massage to reduce nociceptive pain, increase range of motion, and improve in chair comfort for this underserved population.

- Limitations exist with visual observation only. Future reports should include quantitative measurements of ROM pre/post session and pre/post series. This would enable more accurate identification of short term and longer term musculoskeletal affects.

- Future reports should also include more qualitative data from the clients to assess effects of orthopedic massage can have on quality of life.

REFERENCES


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