Physical and Psychological Outcome Measures after Multiple Foot Surgeries

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Unique

- The psychological effects of an injury have the potential to be more debilitating than the physical ailments themselves.1,2
- Physical therapy (PT) rehabilitation programs that incorporate both physical and psychological interventions have demonstrated successful outcomes but have not been widely studied.

Purpose

The purpose of this case report was to investigate both the physical and psychological outcomes after a comprehensive PT rehabilitation program for a patient who sustained multiple foot and ankle injuries.

Foundation

- Fear of movement, decreased confidence, and depression can increase the probability of secondary sequelae and future disability in patients with lower extremity (LE) injuries.1,2
- Psychological principles such as positive reinforcement, verbal encouragement, and patient led interventions may help decrease the patient’s fear of movement and assist in the recovery process.1,3

Description

Patient: The patient was a 51 year old female who presented to PT after multiple LE surgeries including: right tarsal tunnel release, osteoarthritis debridement in the right ankle and first metatarsalphalangeal (MTP) joint, and a repair of the right extensor hallucis longus tendon.

Past Medical History: Her PMH included fractures to both fibulae, an open fracture of the right first metatarsal, and multiple steroid injections in the right ankle and first MTP joint.

Plan of Care:

- The patient participated in 60 minute sessions two days a week, for 10 weeks.
- Patient and physical therapist collaboration was the cornerstone of the rehabilitation process.
- Psychological principles were incorporated through the gradual progression of interventions, verbal encouragement, and tactile and visual cuing.

Examination Findings

1. Fear of movement of the R ankle and great toe
2. ↓ ROM in R ankle/great toe
3. ↓ Strength R ankle/great toe
4. Gait abnormalities
5. Inability to descend an 4-inch step with R LE

Goals

1. ↓ Fear of WB on the R LE to resume exercising on an elliptical machine.
2. Improve R ankle and great toe strength to 5/5 for gait symmetry.
3. Step down with eccentric control to negotiate stairs at home and work.

Interventions

1. Desensitization training
2. Manual therapy
3. AROM
4. Gait training
5. LE strengthening (Figure 2A)
6. Balance training (Figure 2B)
7. Verbal, tactile, and visual cuing

Figure 1: Healing progression of the surgical incision of the extensor hallucis longus tendon repair on the right foot.

A. On IE, incision just closed and cleared of infection.
B. At DC, incision healed with minimal scarring.

Figure 2: A. Step down exercise using Aires foam pad and wooden dowel.
B. Single leg balance exercise using Aires foam pad.

Observations

The outcome measures demonstrated clinically significant 7-9% physical and psychological improvements from initial evaluation (IE) to discharge (DC).

Physical and Psychological Outcome Measures

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<tr>
<th>Lower Extremity Functional Scale (recorded as % function)</th>
<th>Tampa Scale of Kinesiophobia (recorded as % disability)</th>
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Great Toe Circumferential Measurements

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Conclusion

This case report demonstrated positive physical and psychological outcomes after a comprehensive PT program for a patient with multiple LE injuries and a chronic fear of movement.

Future research may consider investigating the relationship between psychological interventions and outcome measures for a larger population of people with lower extremity injuries.

References