



rTMS as a treatment of intractable neuropathic pain in patient with lumbosacral plexopathy: a case report

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Introduction

➤ Lumbosacral plexopathy is not an uncommon condition but can be difficult to diagnose and manage. There are only a few reports on the neuropathic pain resulting from traumatic lumbosacral plexopathy as well as its effective management. rTMS is a potentially effective and safe treatment of neuropathic pain. We investigate to effect of rTMS on neuropathic pain in patients with lumbosacral plexopathy. Additionally, we study to effect of rTMS on depression, life of quality.

Case Report

❖ Subject

- A 16-year-old female patient fell from five floors and was transferred to the emergency unit and was diagnosed with right sacrum fracture, both superior and inferior ramus fracture, right subtrochanteric femur fracture, coccyx fracture, and right calcaneus fracture. Serial external fixation and reduction with internal fixations were performed to repair the fractures. The patient also developed massive pelvic hematoma and was managed with right iliolumbar artery embolization.
- She suffered two kinds of pain, the constant burning pain of NRS 7/10 in her right foot around L5, S1 dermatome, and the intermittent sharp, tearing pain in her lower leg mainly at nighttime, requiring tramadol intramuscular injection regularly. Despite best maximal po medication and topical agent application, her pain persisted. Furthermore, local anesthetic blocks including epidural block, psoas compartment block, and caudal block were minimally effective.
- Electrodiagnostic studies revealed right lumbosacral plexopathy, relatable with the patient's clinical symptoms. We considered adapting rTMS treatment for further management of the patient's neuropathic pain.

❖ Methods

- The patient received rTMS therapy a day for 10 days using high frequency (10-Hz). The Short Form McGill Questionnaire (SFMG) and Neuropathic Pain Symptom Inventory (NPSI), The Brief Pain Inventory (BPI) and the EQ-5D-5L was administered. All assessments were conducted before and after the application of rTMS. Additionally, to assess the long-term follow-up effect, these evaluations were administered again 10 weeks after the initiation of rTMS.

Results

1. The total pain rating index decreased from 18 points before rTMS treatment to 16 points after rTMS as assessed with the SFMG Questionnaire, and further decreased to 15 points at the long-term follow-up (Fig 1). The score of the NPSI revealed that the total NPSI score decreased from 53 before rTMS therapy to 52 after rTMS, and further decreased to 40 at the long-term follow-up. (Table 1)

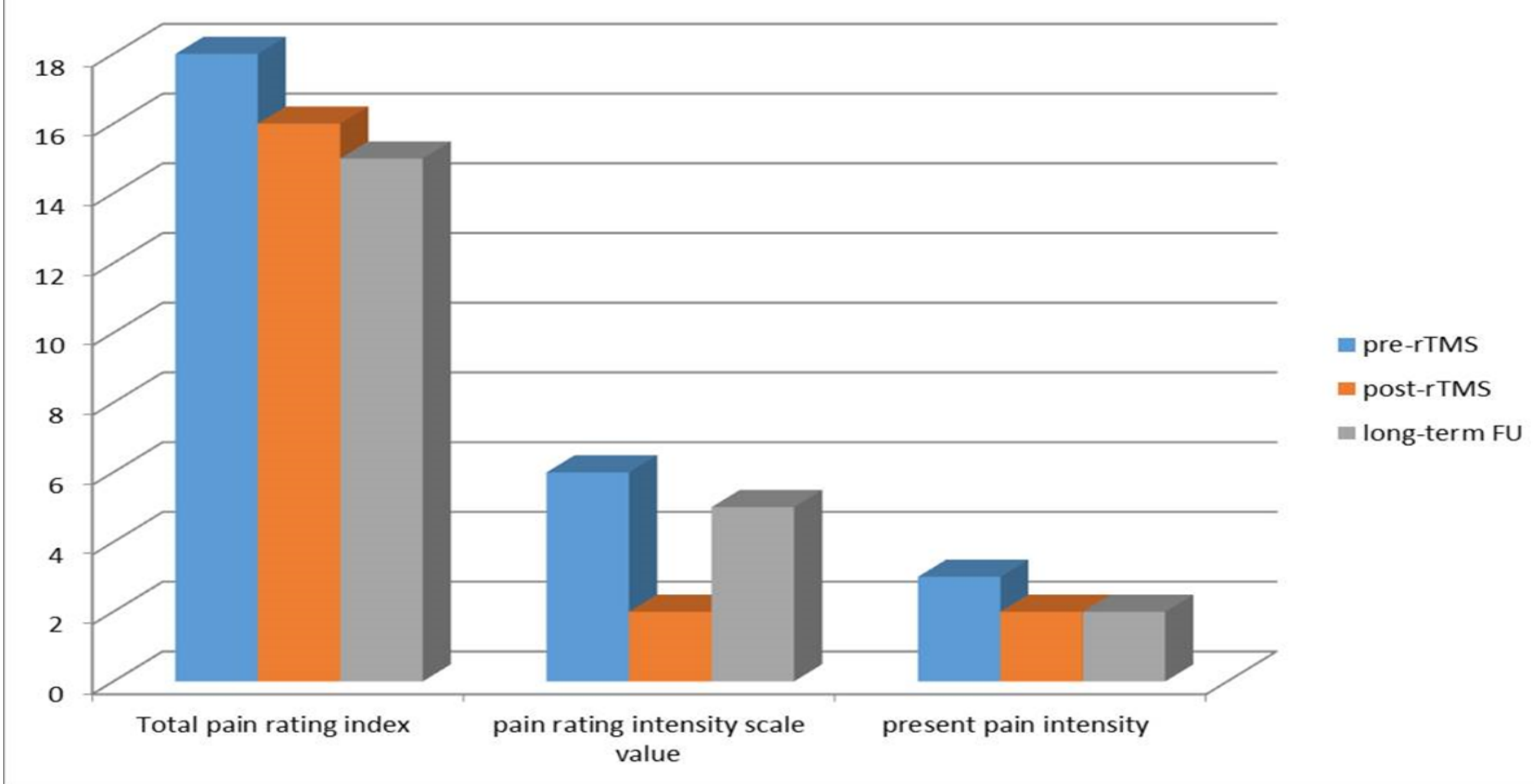


Figure 1. Short form McGill questionnaire

Table 1. Neuropathic pain symptom inventory

parameters	pre-rTMS	post-rTMS	long-term FU
Total score	53	52	40
Time score	10	8	1
Pain quality score	52	46	30
Superficial pain	5	0	3
Deep pain	1.5	0	2
Paroxysmal pain	7	6	3
Evoked pain	6	7	3.6
Dysesthesia	6	5.5	3

2. The BDI score worsened from 50 points before rTMS therapy to 62 points after rTMS, however, it improved to 31 points, finally (Fig2).

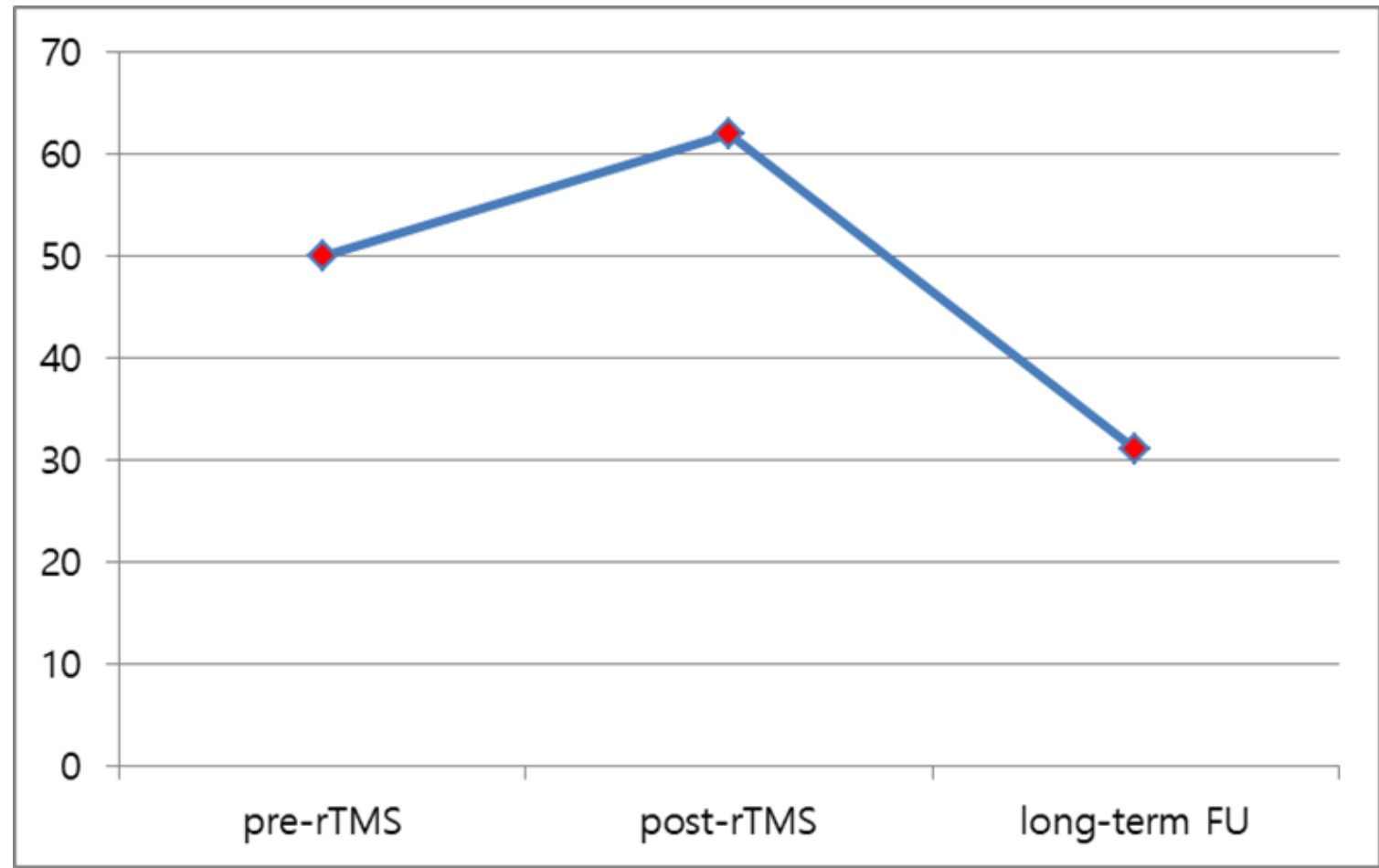


Figure 2. Beck's depression inventory

3. In the mobility, self-care, usual activities, and pain/discomfort domains, the EQ-5D-5L misery scores were improved, compared the baseline score and long-term follow-up score (Fig 3).

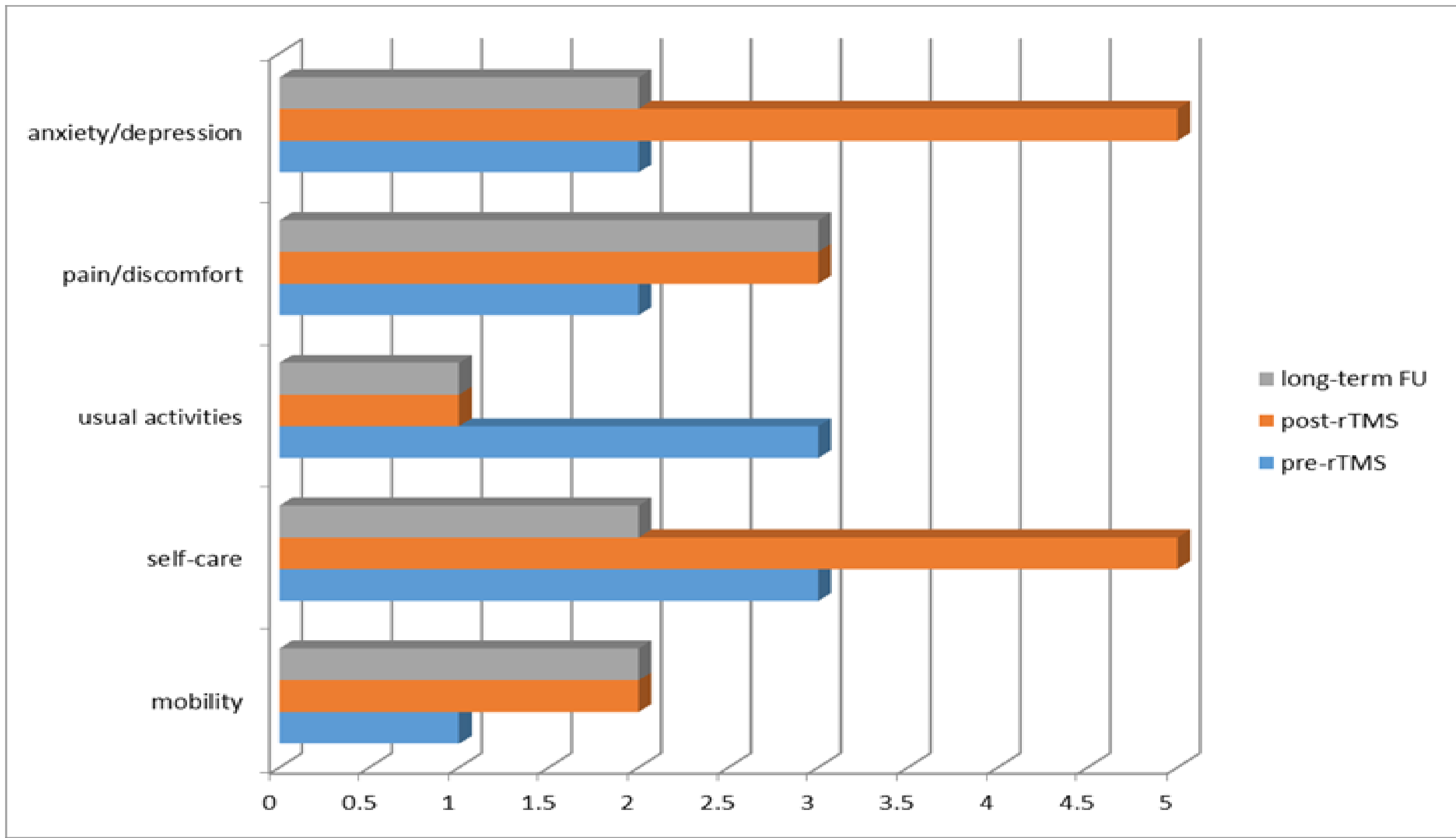


Figure 3. EQ-5D-5L misery score

Conclusions

- The rTMS is effective in alleviating neuropathic pain associated with lumbosacral plexopathy following an extensive pelvic bone fracture.
- Furthermore, it was observed that rTMS not only reduces pain but also improves mood and enhances quality of life.

References

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