The Relationship Between Physical Performance and Balance Parameters with Psychological Status and Quality of Life in Patients with Spinal Cord Injury

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Abstract

Background: This study is to investigate the relationship between functional performans and balance parameters evaluated during physiotherapy processes and psychological status—including depression, anxiety, hope, and quality of life—in individuals diagnosed with spinal cord injury (SCI), and to highlight the impact of functional status on psychological outcomes.

Methods: Data obtained from functional performans and balance assessments, including the Functional Ambulation Classification (FAC), Functional Independence Measure (FIM), Berg Balance Scale (BBS), Timed Up and Go (TUG) test, and Single-Leg Stance Test (SLST), as well as clinical scales assessing depression, anxiety, hope, and quality of life, were analyzed. The direction and strength of the relationships between variables were evaluated using Spearman's rank correlation coefficient.

Results: Balance demonstrated the strongest and most statistically significant correlation with both FAC (*r=0.825; p=0.006*) and FIM (*r=0.868; p=0.002*). A marked interaction was observed between functional status and psychological profiles; notably, functional independence levels (FIM) correlated significantly with hope scores (*r=0.800; p=0.010*). Depression and anxiety levels exhibited an exceptionally strong positive correlation with each other (*r=0.976; p=0.001*), reflecting how functional restrictions directly translate into psychological burden. Quality of life measures were primarily associated with FIM (*r=-0.419)* and FAC (*r=-0.368*) parameters, which reflect the patient's capacity for independent mobility and daily activity.

Conclusion: In patients with SCI, functional status parameters—particularly balance and functional independence—play a critical role in shaping overall psychological well-being and quality of life. Therefore, rehabilitation programs must prioritize maximizing functional performance and independence, emphasizing targeted exercise interventions focusing on balance and functional ambulation.

Index Terms

Spinal Cord Injury, Balance, Functional Independence, Quality of Life, Rehabilitation