

Descriptive Comparative Study of Grip Strength in a Group of People with Frozen Shoulder - A Hospital-Based Study in Sri Lanka

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Frozen shoulder, or adhesive capsulitis, is a debilitating condition characterized by pain, stiffness, and restricted shoulder movement, which can impair hand function and grip strength. Grip strength is an essential measure of upper limb functionality, yet its relationship with frozen shoulder remains underexplored. This study aimed to evaluate the impact of frozen shoulder on grip strength through a descriptive comparative design. This study examines the relationship between frozen shoulder and grip strength using a descriptive comparative design. A total of 128 participants were recruited, divided equally into a study group (individuals diagnosed with frozen shoulder) and a control group (healthy individuals without shoulder impairments). Grip strength was assessed using a hand grip dynamometer. Demographic characteristics, including age, sex, and ethnicity, were recorded to ensure comparability between groups. Statistical analyses included Mann-Whitney U tests and Spearman's correlation to examine differences and associations. All statistical significance levels were set to $p < 0.05$. The study revealed significantly lower grip strength in individuals with frozen shoulders compared to controls ($p < 0.001$). A strong negative correlation ($r = -0.805$, $p < 0.01$) was observed between frozen shoulder presence and grip strength, highlighting the adverse impact of the condition on hand function. Additionally, grip strength varied across the stages of frozen shoulder progression, with improvements noted in the later stages (Stage 3) compared to the early stages (Stage 1). Frozen shoulder significantly impairs grip strength, underscoring the importance of early intervention to mitigate functional limitations and improve rehabilitation outcomes. Grip strength may serve as a valuable indicator for assessing recovery in individuals with frozen shoulders.

Keywords: Frozen shoulder, grip strength, adhesive capsulitis, hand function, rehabilitation