P16 Relationship between PROMIS Depression and PROMIS Pain Interference in patients recovering from ankle surgery

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Objective: Ankle fractures are debilitating orthopaedic injuries that often require surgical intervention and months of rehabilitation. As such, monitoring physical health and mental well-being during recovery is essential in minimizing post-operative complications. Here, we evaluate the relationship between PROMIS Depression and PROMIS Pain Interference scores in patients recovering from ankle injuries requiring surgery and examine if there is a difference in the strength of the relationship by sex.

Methods: We performed a retrospective review of 97 subjects (52 females, average age 42.9 ± 16.7) presenting to an orthopaedic clinic for an ankle injury requiring surgery during a six-year period. PROMIS Depression and PROMIS Pain Interference scores were collected at decision for surgery (n= 97) and 2-weeks (n=71), 6-weeks (n=55), 3-months (n=45), 6-months (n=24), and 1 year (n= 12) postoperatively. Wilcoxon Signed-Rank Tests were utilized to compare pre-operative scores and final follow-up scores of the two PROMIS measures. Correlations were performed between PROMIS measures for sex at each follow-up visit. Fisher's r-to-z transformation was used to compare the strength of correlations between sexes across follow-up time points.

Results: Overall, we found improvements in both PROMIS Depression ($S = -1957.5$, $p < .0001$) and PROMIS Pain Interference ($S = -2190.0$, $p < .0001$) from pre-operative visit to the longest completed follow-up visit. Average PROMIS Depression scores were 54.5 ± 11.0 and 50.2 ± 12.6 at pre-operative visits and 49.5 ± 11.9 and 46.9 ± 11.5 at the longest collected follow-up visit, for females and males respectively. We found an overall moderate to strong positive correlation ($r = 0.54$, $p < .001$) between PROMIS Depression and PROMIS Pain Interference Scores. Fisher's r-to-z transformation revealed no statistical significance (all $p > 0.05$) between male and female correlations at follow-up time points.

Conclusions: Significant improvements in PROMIS Depression and PROMIS Pain Interference scores in the post-injury recovery period were identified for patients with ankle injuries needing surgery. Though we found no statistical significance between sexes, females tended to have larger correlations between the two PROMIS measures, except at 3 months and 1-year post-injury. Overall, we found a strong relationship between PROMIS Depression and PROMIS Pain Interference measures, indicating that one may influence the other.