The Role of a Dedicated Pain Coach in Improving Outcomes Following Orthopaedic Trauma: A Randomized Controlled Trial

Jesse Seilern und Aspang, MD; *Nicholas A. Giordano, PhD; Mara Schenker, MD; J'lynn Lewis Baker, BS; Carter Holder, BS; Bailey Barrell, BS; Nicholas Cantu, MD*

Purpose: We implemented a novel team member—a Life Care Specialist (LCS)—to educate orthopaedic trauma patients on opioid risks and teach alternative behavior-based pain management strategies. This study was conducted to assess the efficacy of this intervention on orthopaedic trauma patients.

Methods: In this randomized controlled study, adult patients admitted with an orthopaedic trauma injury to a Level I trauma center were enrolled. Patients were randomized to control arm (standardized pain taper) or intervention arm (standardized pain taper, with intervention by an LCS). As a paraprofessional behavior-based "pain coach", the LCS delivered personalized risk assessment, opioid safety/disposal/naloxone education, trained participants on evidence-based non-pharmacological pain management approaches, and coordinated care (including referrals for underlying substance-use disorders or mental health concerns). Numeric Rating Scale pain scores and Patient-Reported Outcomes Measurement Information System (PROMIS) scores were assessed at baseline and followed up to 3 months postoperatively. Daily morphine milligram equivalents (MME) during hospitalization and total prescribed opioid medication at discharge were recorded. Chi-squared tests compared differences in pain outcomes between groups.

Results: 212 patients were enrolled and 129 completed follow-up surveys out to 3 months postoperatively, with 57 in the control and 72 in the intervention arm. Among the intervention group, 88.9% reported improved pain scores at 3 months postoperatively compared to participants in the control arm, 73.7% ($P = 0.035$). This translates to participants working with the LCS as having 2.86 higher odds ratio of reporting improved pain compared to the control group (95% confidence interval [CI]: 1.14-7.67; $P = 0.029$). Intervention patients were discharged with fewer opioids, 25% less daily MME, than control participants; however, this difference was not statistically significant.

Conclusion: Orthopaedic trauma and surgical fixation of fractures cause high levels of pain, which often necessitate the use of opioid medications. The Life Care Specialist not only helps educate patients on proper opioid use and safety, but also provides alternative behavioral-based strategies for pain management that patients can supplement in between doses of pain medication. From this work, we propose that working with a pain coach may help patients cope with pain in the long term and thereby may reduce the risks of opioid misuse, as well as improve overall satisfaction with pain management.