Direct Referrals from Musculoskeletal Providers Improve Efficiency of a High-Volume Hand Surgery Clinic

Troy B Amen, Lillian Zhu, Kaveh Torabian, Kasra Araghi, Matthew Veenendaal Abola, Scott W Wolfe

INTRODUCTION: The purpose of this study was to examine how new patient referrals from musculoskeletal providers, non-musculoskeletal providers, and self-referrals impact treatment utilization rates in a high-volume hand surgery clinic, with the goal of identifying opportunities to improve triage efficiency. We hypothesized that patients referred by musculoskeletal providers to hand clinics would be more likely to receive steroid injections or surgical intervention.

METHODS: This retrospective review included all new patients seen by ten fellowship-trained hand surgeons at a single academic hospital from 2018-2022. Patients were separated into self-referral, musculoskeletal, and non-musculoskeletal cohorts based on referral source. Musculoskeletal referrals included referrals from hand surgeons, physical/hand therapists, orthopedic surgeons, neurosurgeons, physiatrists, and chiropractors. Non-musculoskeletal referrals included referrals from all other allopathic providers. Extracted variables included patient demographics, hand therapy referral within one month, and steroid injections or surgical procedures within 18 months. The primary outcomes were hand therapy referral, steroid injection, and surgery, stratified by referral type. Multivariable logistic regression models adjusted for clinical and demographic variables.

RESULTS:

This study included 24,254 new patient visits, of which 20,787 (85.7%) were self-referrals, 1,892 (7.8%) were non-musculoskeletal referrals, and 1,575 (6.5%) were musculoskeletal referrals. Self-referrals had the highest percentage of therapy utilization (6.2%), non-musculoskeletal referrals had the highest percentage of steroid injections (18.3%), and musculoskeletal referrals had the highest percentage of surgical utilization (30.1%) (Table 1). In adjusted analyses, musculoskeletal referral was significantly associated with increased surgical utilization [odds ratio (OR) = 1.242, confidence interval (CI): 1.061–1.455, $P = 0.007$] compared to non-musculoskeletal referral. However, musculoskeletal and non-musculoskeletal referrals had similar odds of receiving steroid injections and therapy referrals (Table 2). Compared to non-musculoskeletal referral, self-referral was associated with lower steroid injection utilization [OR = 0.708, CI: 0.619–0.813, $P < 0.001$] but higher therapy utilization [OR = 1.261, CI: 1.008–1.599, $P = 0.049$], while both had similar odds of surgical intervention.

DISCUSSION AND CONCLUSION:

In this study we found that patients referred by musculoskeletal providers were 24.2% more likely to undergo surgery than non-musculoskeletal referrals, highlighting the effectiveness of musculoskeletal providers in effectively triaging surgical hand candidates. We also found that self-referred patients accounted for 85.7% of new patient visits but demonstrated the lowest surgical yield of all referral types. Compared to non-musculoskeletal referrals, self-referrals were 29.2% less likely to receive steroid injections and 26.1% more likely to receive therapy for their hand complaints.

These findings highlight that referral source may be a key determinant of treatment utilization for patients seen in hand clinic. Establishing structured triage pathways that prioritize referrals from musculoskeletal providers may improve patient selection and optimize clinical efficiency.