Demographics of Loss To Follow-up in Pediatric Supracondylar Humerus Fractures

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INTRODUCTION:

Clinical loss to follow-up (LTF) affects all orthopedic patients including pediatrics and is a major facet of treatment non-adherence. This study seeks to analyze the underlying social factors associated with LTF in pediatric patients with supracondylar humerus fractures (SCHF) treated operatively. Factors of interest include race, language, age, poverty index by county, and distance to hospital. Loss to follow-up was defined as a scheduled follow-up visit that was missed and not rescheduled.

METHODS: Retrospective cross-sectional study of patients aged 0-18 with SCHF undergoing surgical fixation at a tertiary children's hospital between 1/1/2010 and 12/31/2020 was conducted. Data obtained via chart review included LTF, race, language, zip code, age, and county. Distance to hospital was obtained using zip code longitude and latitude and calculated using the Haverstine formula. Poverty by county was assessed by percentage of county population below the federal poverty line. Qualitative variables (primary language, race) were analyzed for significance using chi-square statistics. Quantitative variables were analyzed using independent two-tailed T-tests. A univariate logistic regression (UVLR) was run for each independent variable and used to select significant variables for the multivariate logistic regression analysis (MVLR).

RESULTS:

700 patients met inclusion criteria. Total LTF was 194 (27.7%). Differences in LTF between English-speaking patients (26.7% LTF) and non-English speaking patients (31.7%) was not significant (p=0.23). There was a significant difference in LTF (p=0.003) between White race (21.5% LTF) and non-White race (31.8%). Age was significantly associated with LTF-- mean age LTF 6.9 years versus mean age not LTF 7.8 years (p = 0.0004). Percent of county below the federal poverty line (p=0.13) and distance to the hospital (p=0.75) were not associated with LTF. For the UVLRs, only age and race were significant to a p<0.05. These variables were selected for the MVLR. For the MVLR, the Chi-square associated with the Log Ratio (L.R.) was significant at 19.081 (p<0.0001). Age at surgery had the largest effective standardized coefficient (-0.149) followed by non-White race (0.125).

DISCUSSION AND CONCLUSION:

Demographic factors such as young age and non-White race are associated with LTF in pediatric patients treated surgically for SCHF. Future work is needed to expound on the roles that demographic factors play in follow-up and health discrepancies for orthopedic injuries.