

Do Language Barriers Play a Role in Long-Term Functional Outcomes Following Orthopaedic Trauma?



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BACKGROUND

- There are 14 million people in the United States who do not speak English well.
- Studies have shown that non-English-speaking patients have less access to health care and receive fewer preventative health measures.
- Little is known about outcomes following orthopaedic procedures in non-English-speaking patients.

OBJECTIVE

The purpose of this study is to assess the effects of not speaking English on long-term functional and clinical outcomes following operatively treated orthopaedic trauma.

METHODS

- All fractures of the proximal humerus, distal radius, ankle and tibial plateau were prospectively followed at a single institution.
- The functional outcomes of patients were obtained by translators fluent in the patients' native language using the Short Musculoskeletal Function Assessment (SMFA) for lower extremity fractures.
- The Disabilities of Arm, Shoulder and Hand (DASH) survey was used to assess functional outcomes in proximal humerus fractures and distal radius fractures. Inclusion criteria for analysis consisted of 12-month follow-up and operatively treated fractures.
- Patients were divided in to two cohorts; one group being those who spoke English and the other being non-English speaking patients.

TABLE 1. Percentage of English and Non-English speaking patients.

	Upper Extremity Fracture (Proximal Humerus, Distal Radius)	Lower Extremity Fracture (Tibial plateau, Rotational Ankle)
English Speaking Patients (N, %)	338, 91.3%	481, 92.1%
Non-English Speaking Patients (N,%)	37, 8.7%	41, 7.9%

TABLE 2. Statistical analysis demonstrating worse outcomes in Non-English speaking patients who sustain orthopaedic trauma. Not speaking English was an independent predictor of worse outcomes, as demonstrated by multivariate analysis.

	Upper Extremity Fracture (Proximal Humerus, Distal Radius)	Lower Extremity Fracture (Tibial plateau, Rotational Ankle)
Worse Outcomes in Non-English Speaking Patients (P-Value)	0.004**	0.031**
Multivariate Linear Regression Demonstrating Non-English Speaking Patients Having Worse Functional Outcomes, Compared to English Speaking Patients	β = .261, 95% Confidence Interval = 6.351 to 36.715, p=0.001	β = .147, 95% Confidence Interval = 2.847 to 42.006, p=0.043

STATISTICAL ANALYSIS

- Multivariate linear regression analysis was performed with the dependent variable being SMFA or DASH at one year and independent variables being English comprehension, age, gender and tobacco and alcohol use.

RESULTS

- Overall, 897 patients with 12-month follow-up were operatively treated for a fracture of the proximal humerus, tibial plateau, ankle or distal radius.
- 78 patients (8.7%) reported they did not speak English.

CONCLUSIONS

- The United States is an extremely diverse country in which 5% of the population lacks the ability to properly speak and understand the English language.
- While it is known that non-English-speaking patients have less access to health care, this study demonstrates that they report worse outcomes following operative management of orthopaedic fractures.
- Health literacy may be decreased in Non-English patients.
- Patients with low health literacy lack the skills to understand basic health information related to their illness.
- Adequate health literacy is a necessity for optimal function following diagnosis and treatment of physical and mental ailments.
- Orthopaedic trauma surgeons should be aware of these language barriers in order to look for early interventions and utilization of proper resources, with aims to improve the outcomes in the non-English-speaking population.

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