

## Introduction

- Orthopedic clinical research in the past decade presents limited knowledge on the effect of language barriers on healthcare adversities, treatment outcomes, and patient quality of life.<sup>1,2,3</sup>
- This unique pilot retrospective study aims to study the risk and incidence of orthopedic postoperative complications between English speakers and non-English speakers.
- We hypothesize that there will be a higher risk and incidence of postoperative orthopedic complications in non-English speakers, due to the increase of people facing language barriers.<sup>4</sup>

## Methods

- This study received Institutional Review Board approval from Thomas Jefferson University as exempt status - iRISID-2023-1942.
- Quantitative analysis was conducted on patients' data collected from Jefferson Health - East Region in New Jersey.
- A Qlik database of patients admitted for orthopedic procedures was accessed.
- Postoperative complications were analyzed based on the primary language spoken, demographics, and average length of stay (LOS) for fiscal years 2020 through 2022.
- The patient population was 2,497, for which there were 2,449 English-speaking patients (Mean age: 69 ± 13.18), and 48 non-English speaking patients (Mean age: 75 ± 13.28).

## Demographics

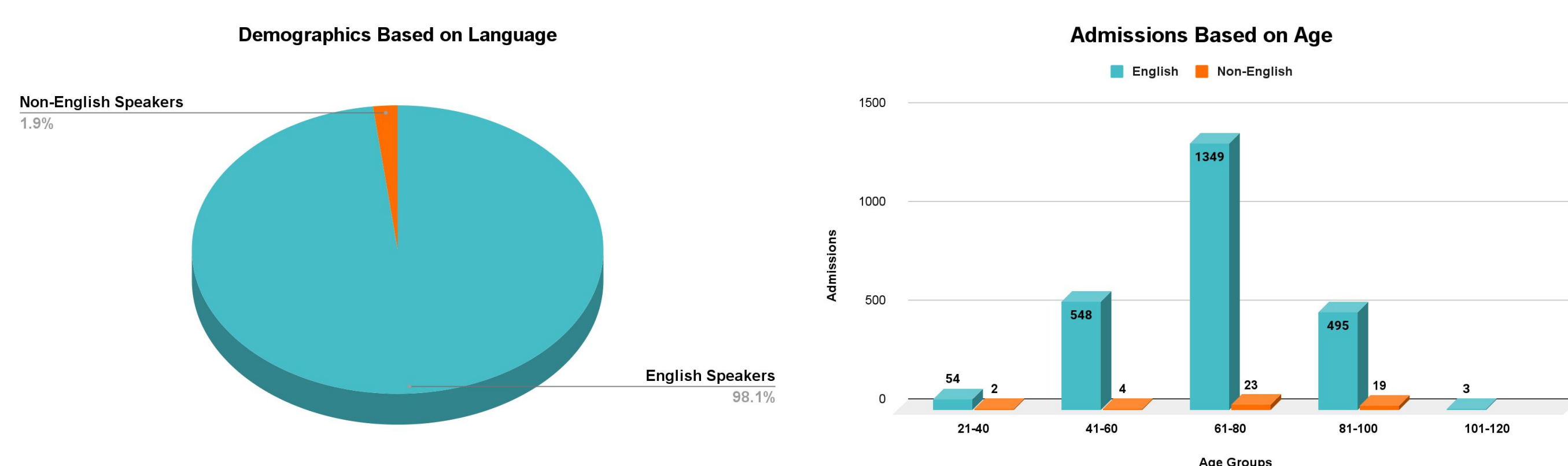


Figure 1. Percentage of patients admitted for a surgical procedure based on primary language spoken for fiscal years 2020-2023. Figure 2. Number of patients admitted for a surgical procedure based on age for fiscal years 2020-2023.

## Acknowledgements

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## Results

### Risk and Incidence

#### Complication Incidence in English Speakers

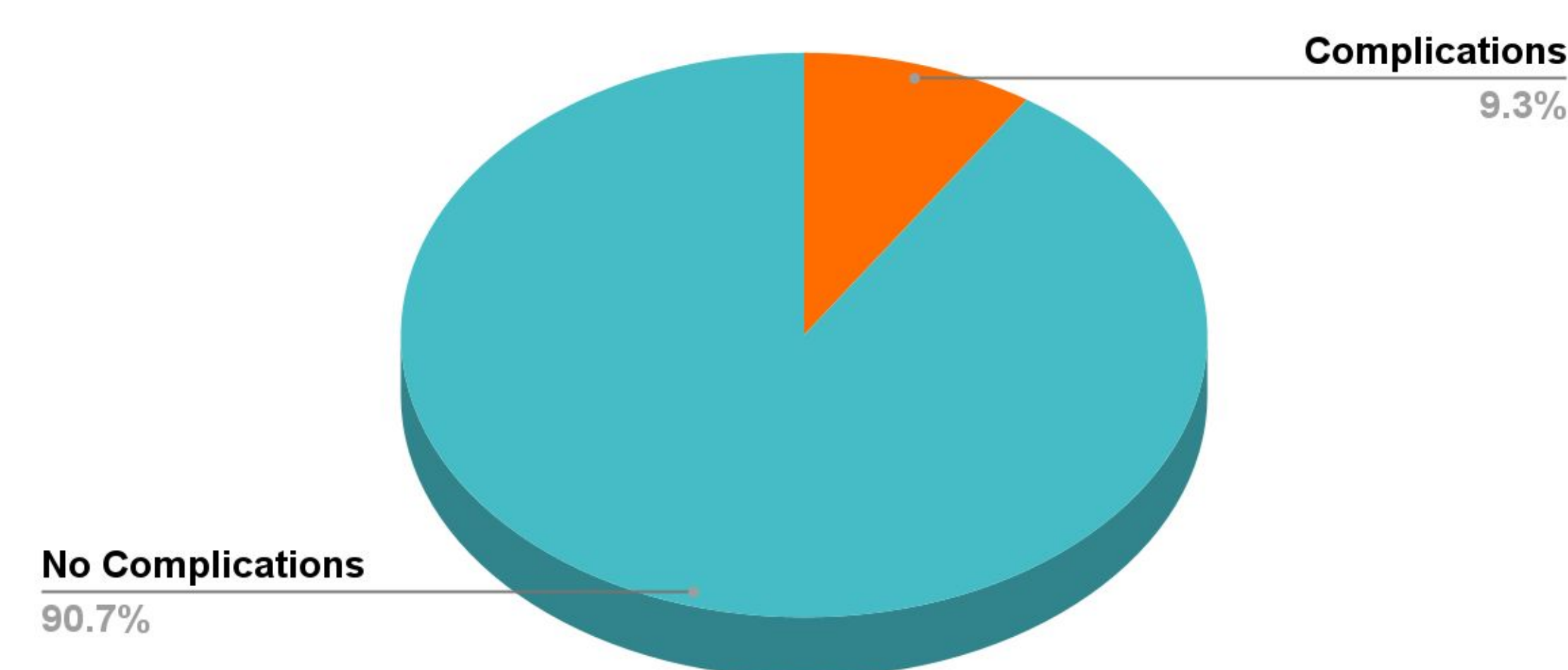


Figure 3. Incidence rate of orthopedic postoperative complications for English speakers for fiscal years 2020-2023.

#### Complication Incidence in Non-English Speakers

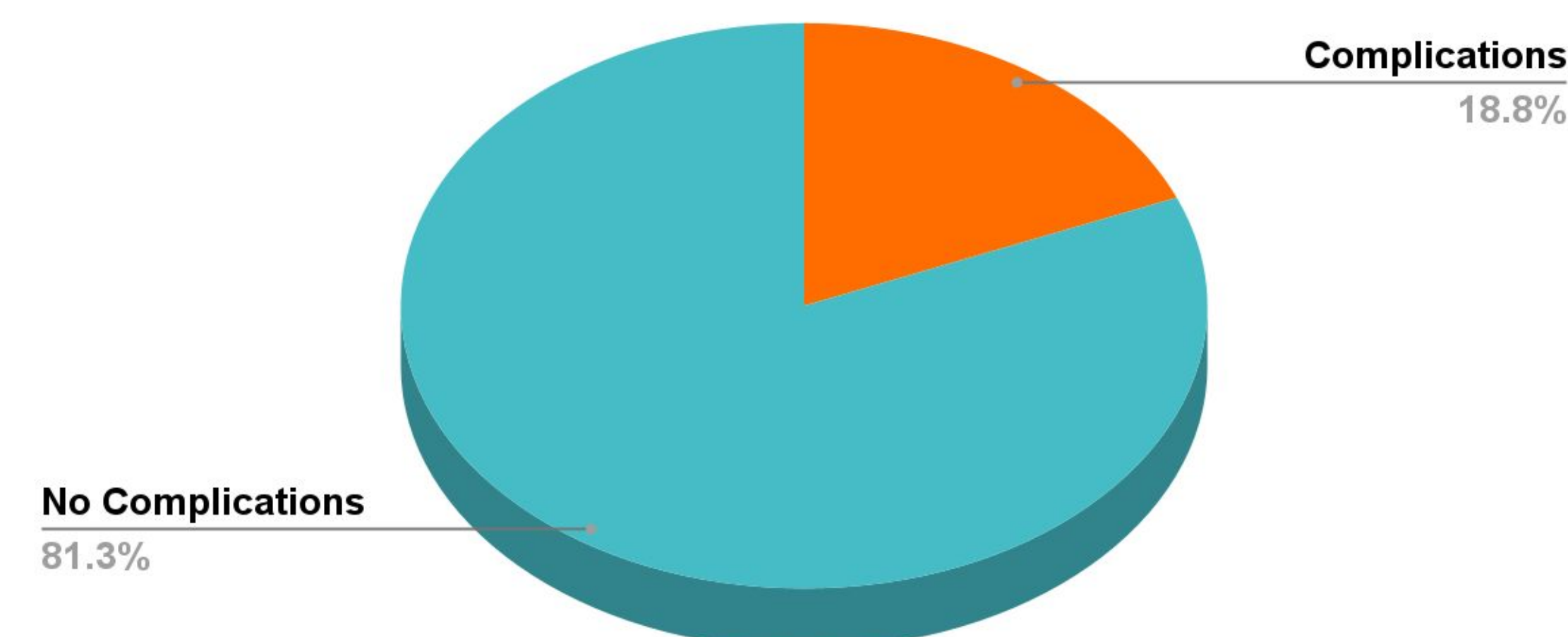


Figure 4. Incidence rate of orthopedic postoperative complications for Non-English speakers for fiscal years 2020-2023.

- The incidence of orthopedic postoperative complications was higher in non-English speakers (18.75%) than in English speakers (9.31%) [p-value: 0.027].

## References



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## Secondary Outcomes

### Average Length of Stay (LOS)

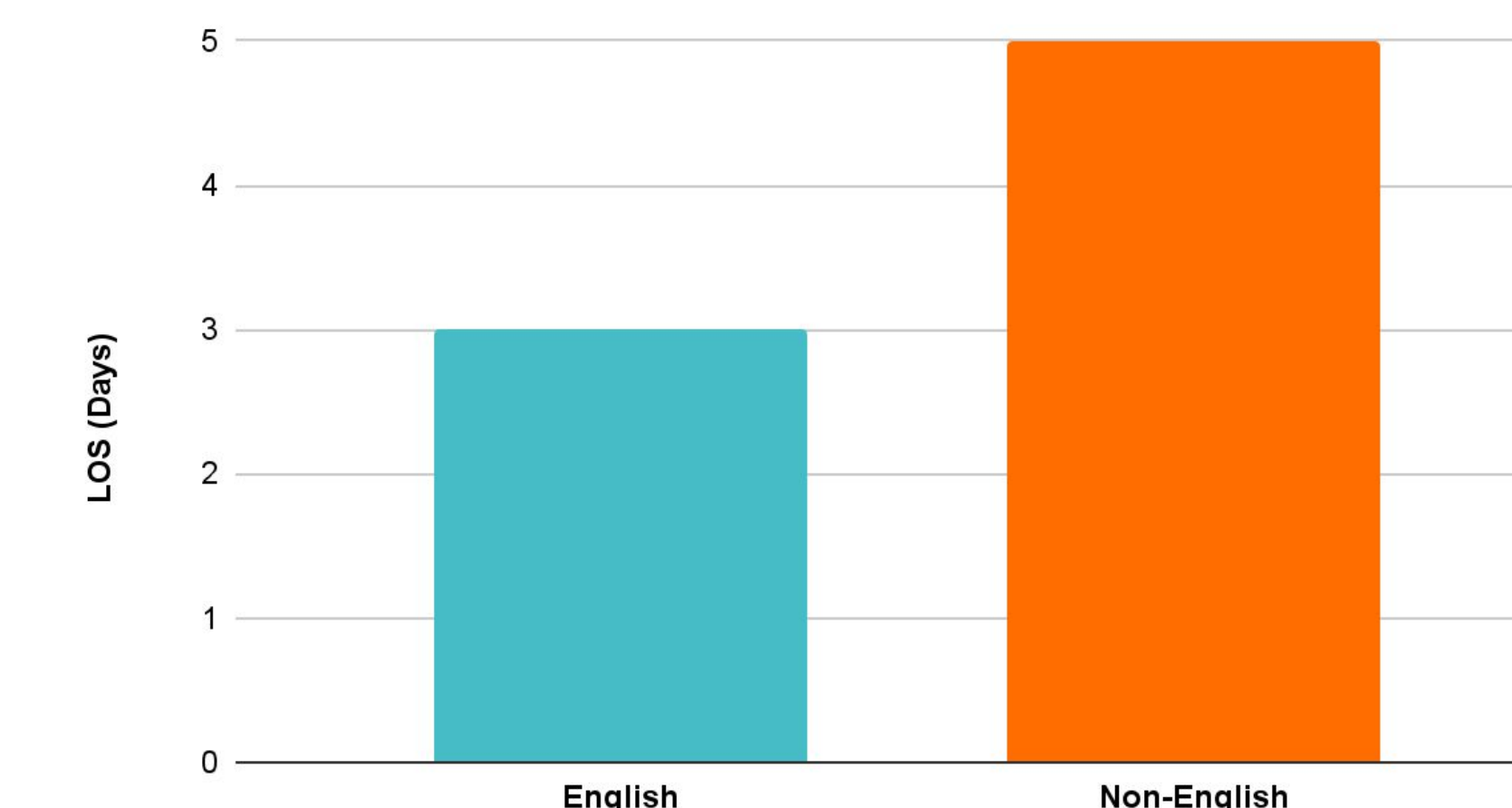


Figure 5. Average length of stay (LOS) of English speakers vs. non-English speakers after completion of the orthopedic procedure for fiscal years 2020-2023.

### Total Incidence of Different Complications

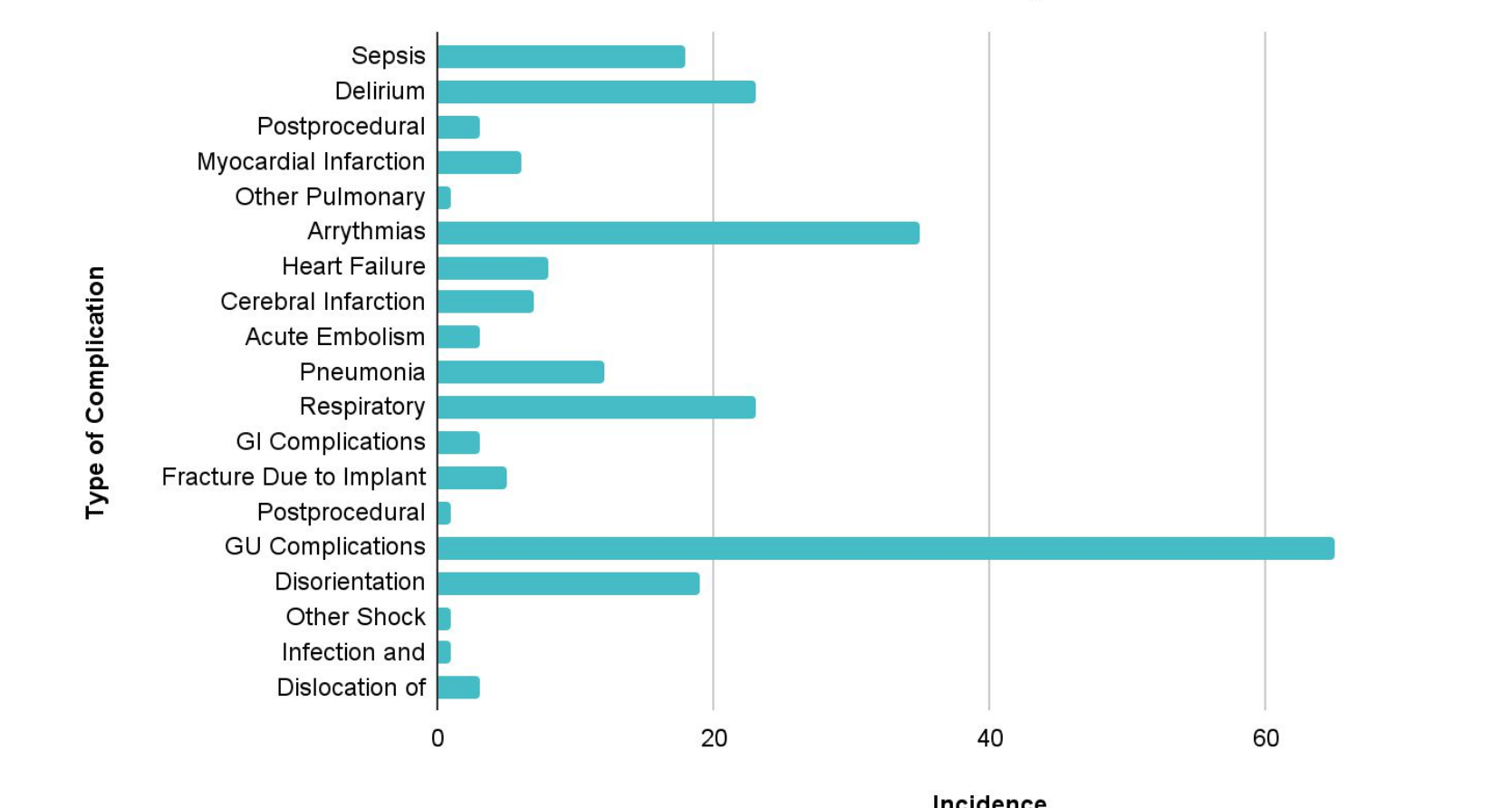


Figure 6. Total incidence of different types of complications for all patients for fiscal years 2020-2023.

- The average LOS was also higher in non-English speakers (5 days) than in English speakers (3 days).
- The most common complication was genitourinary-related complications, usually kidney failures, in both the English speaking group and Non-English speaking group.

## Conclusion

- This is a unique study that found an increased risk of postoperative orthopedic complications for non-English speaking patients compared to English-speaking patients.
- The lack of understanding regarding the direct correlation amongst language barriers, healthcare disparities, and their implications on patient health outcomes and treatment adversities remains unaddressed.
- Although the non-English speaking group (n = 48) was small, this is the only study to the authors' knowledge that examines the inclusion of primary language when considering orthopedic complications.
- While the reasons for the LOS and comorbidities were not evaluated in this study, future research could incorporate these variables.