

## Introduction & Background

Social Determinants of Health (SDOH) significantly influence medical and surgical outcomes, including pituitary surgery<sup>1,2</sup>. SDOH include economic stability, social and community context, healthcare access and quality, neighborhood and built environment, access to nutritious foods, and factors such as race and language. While many studies have reported the impact of insurance status and race on surgical outcomes, few have reported the impact of language.

## Purpose

This study builds on prior research comparing outcomes at public and private hospitals to examine the impact of language status on pituitary surgery. We aim to explore how socioeconomic factors influence clinical history and the outcomes of patients undergoing pituitary tumor surgery. By analyzing variations in the demographic and surgical metrics within our cohort, we hope to inform future research, hospital policies, and culturally sensitive care practices.

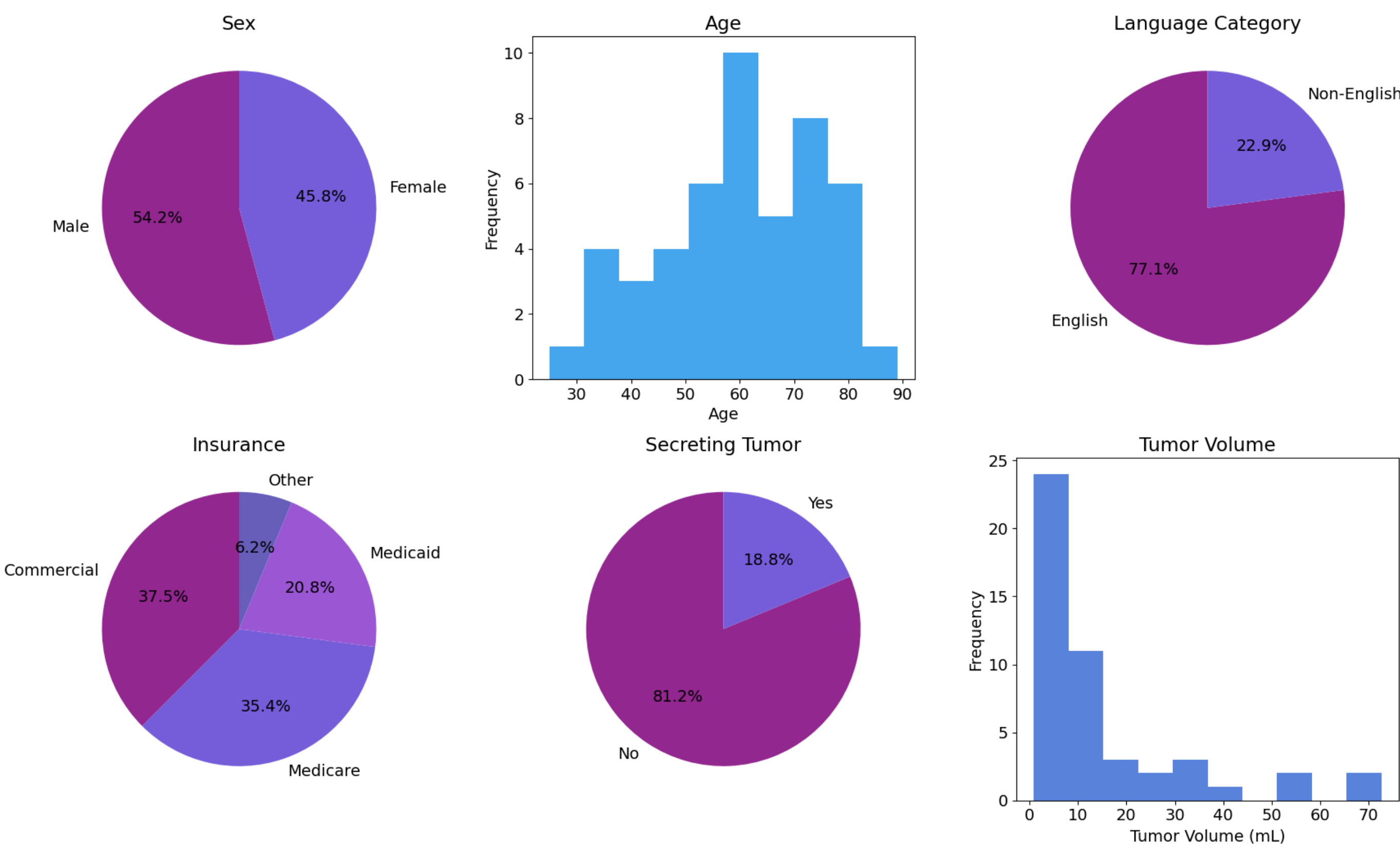
## Methods & Materials

We performed a retrospective analysis of patients that underwent pituitary surgery between January 2021 and June 2024. Patient demographic information included age, sex, primary language, and insurance type. Tumor metrics included tumor volume and secretion status. Surgical data included CSF leak status, resection type (total, sub-total, or biopsy), and post-operative hormone deficiency status.

## Patient Demographics

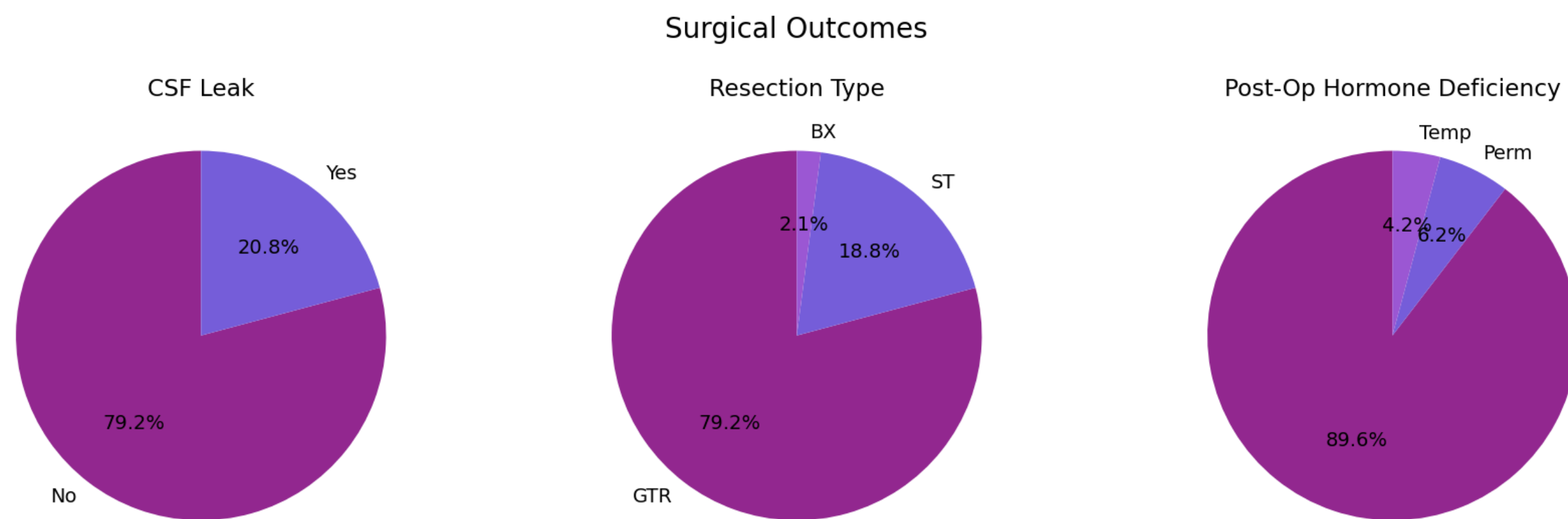
There were 48 patients, including 26 male and 22 female patients. Median patient age was 60.5 (range 25-89) years. 37 were English speaking, and 11 spoke either Spanish, Creole, Chinese, Hindi or Punjabi. The majority of patients were on commercial health care insurance, Medicaid or Medicare. 9 patients had secreting tumors. The average tumor volume was 7.8 mL (range 0.8 -73).

Patient Demographics

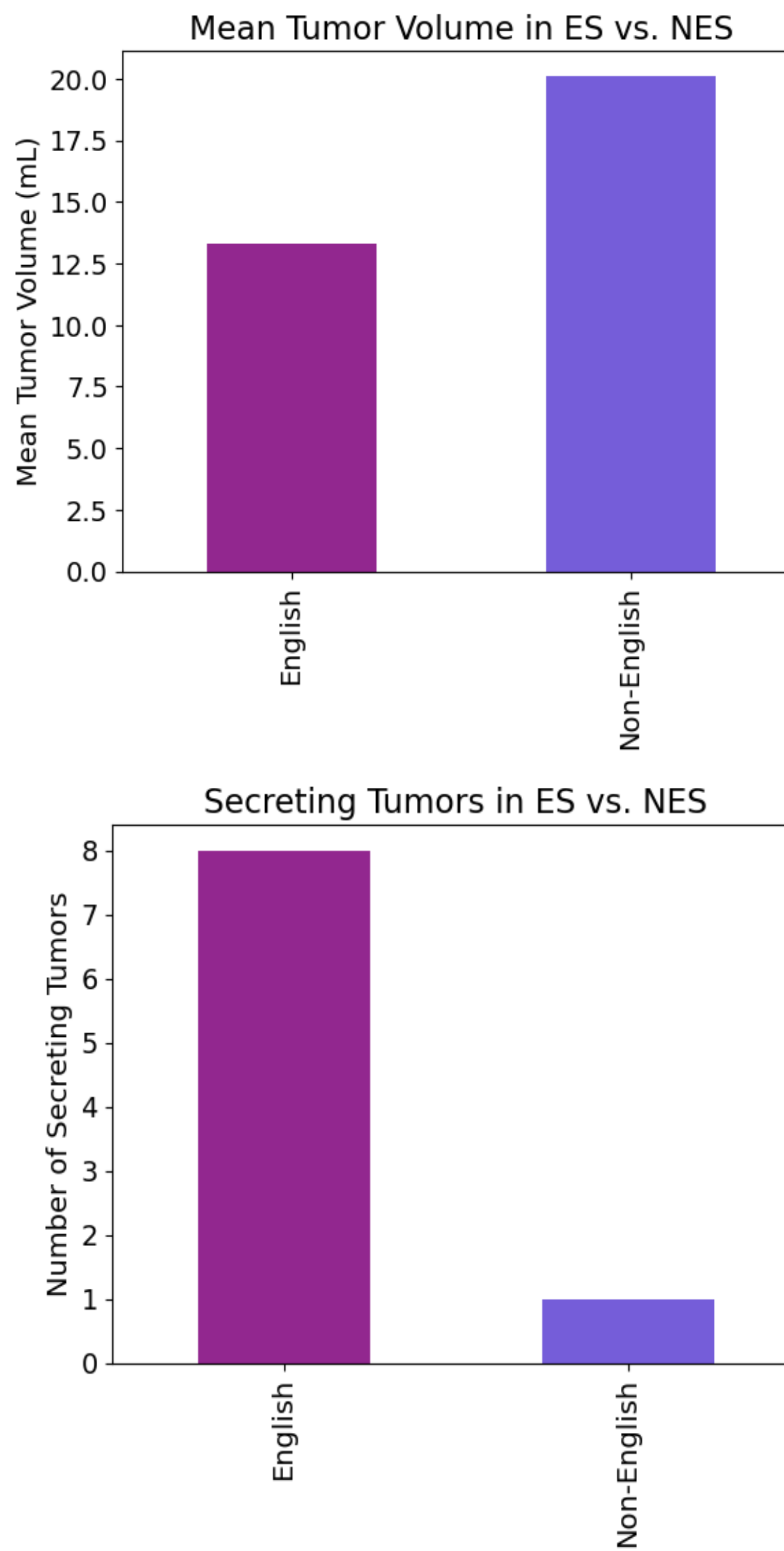


## Overall Surgical Results

Intraoperatively, 38 patients underwent gross total resection (GTR), 9 patients underwent subtotal resection (ST), 1 patient underwent biopsy only (BX). There were 10 CSF leaks, 2 temporary post operative hormone deficiencies, and 3 permanent post operative hormone deficiencies.



## Results by Language



The average tumor volume for English-speaking patients was 13 cm<sup>3</sup>, while for non-English-speakers (NES) it was 20 cm<sup>3</sup> (p=0.39). 43% of English-speakers were on commercial insurance compared to 18% of NES. 55% of NES were on Medicaid, compared to 11% of English-speakers. 21% of English-speakers had a secreting tumor in comparison to 9% of NES.

## Discussion

NES presented with larger tumors, suggesting a delay in presentation and diagnosis. This delay may be attributed to barriers in accessing healthcare services due to language and insurance. Additionally, NES exhibited a lower incidence of secreting tumors. This is significant because secreting tumors initially present as endocrine issues, requiring more extensive workup to be diagnosed as pituitary disorders.

## Conclusions

Social determinants of health (SDOH), particularly language and insurance status, impact the clinical presentation and course of patients undergoing pituitary surgery. Although language status is often intertwined with other SDOH, it may independently influence the medical care patients receive and the characteristics of their tumors.

## Contact

Emmajane Rhodenhiser, MS2  
Grossman School of Medicine  
NYU Langone Health  
550 1<sup>st</sup> Ave, NY, NY, 10016  
Emmajane.rhodenhiser@nyulangone.org

## References

- Sabahi, M., Maroufi, S. F., Wierzbicka, A., Maniakina, L., Adada, B., & Borghei-Razavi, H. (2023). Healthcare disparities in pituitary surgery: a systematic review. *Neurosurgical focus*, 55(5), E15. <https://doi.org/10.3171/2023.8.FOCUS23467>
- Gordon AJ, Dastagirzada Y, Schlacter J, Mehta S, Agrawal N, Golfinos JG, Lebowitz R, Pacione D, Lieberman S. Health Care Disparities in Transsphenoidal Surgery for Pituitary Tumors: An Experience from Neighboring Urban Public and Private Hospitals. *J Neurol Surg B Skull Base*. 2022 Oct 10;84(6):560-566. doi: 10.1055/s-0042-1757613. PMID: 37854536; PMCID: PMC10581820.