



Does Geographic Region of Away Rotations Predict Otolaryngology Match Outcomes?

William J Benjamin MPH¹, Nicholas R. Lenze, MD, MPH²; Angela P. Mihalic, MD³; Michael J. Brenner, MD²; Lauren A. Bohm, MD²; Marc Thorne, MD, MPH²; Robbi A. Kupfer MD²

¹University of Michigan Medical School, Ann Arbor, MI

²Department of Otolaryngology - Head and Neck Surgery, University of Michigan Health System, Ann Arbor, MI

³Department of Pediatrics, University of Texas Southwestern Medical Center, Dallas, TX

Abstract

Objective: To assess whether the geographic region where medical students complete an away rotation predicts the same site, region-specific, or overall interview offers and match success in otolaryngology.

Study Design: Cross-sectional study

Setting: U.S. medical schools

Methods: We queried the Texas Seeking Transparency in Application to Residency database to analyze outcomes of otolaryngology applicants during the 2018 to 2022 and 2022 match cycles. Outcomes included number of interviews offered, geographic location of interviews, and match results, including region-specific and overall match success rate.

Results: Of 455 otolaryngology applicants, 402 (90.3%) completed an away rotation. Among these, 368 (91.8%) were offered an interview and 124 (30.9%) matched to the program where they completed an away rotation. Applicants who completed away rotations outside of their home region received more interview offers from that region than those who did not (Northeast: 4.2 vs. 2.9; South: 4.3 vs. 3.0; Central: 4.8 vs. 3.0; West: 3.8 vs. 1.6, $p < 0.01$ for all). Completing a remote away rotation increased the odds of receiving an interview from and matching within that region. After excluding programs where an away rotation was completed, a remote away rotation increased the odds of receiving and interview in the central and western regions (Central: OR 1.2 (1.1, 1.5); West: OR 1.9 (1.7, 2.2), $p < 0.01$ for both).

Conclusion: Away rotations are associated with increased odds of interviewing and matching at that away program, with possible associations across the region, most evident for the west coast.

Introduction

- Pre-pandemic data suggest that 32.7% of applicants matched to a program they completed an away rotation and 48.8% of students who ranked an away rotation first matched there.
- Few data exist to help guide students on geographic choices during the away rotation process.
- A common perception among applicants and advisors is that completing an away rotation in a region outside one's home region might "open up" that region.
- The purpose of this study is to
 - Assess the association of away rotations with interview and match outcomes in the Texas STAR database
 - Assess whether completing an away rotation in a geographic region outside one's home region improves interview and match outcomes in that region.

Methods

- Data were sourced from the Texas Seeking Transparency in Applications to Residency (STAR) survey, which contains de-identified information from residency applicants for the 2018-2022 match years
- Outcomes
 - Number of interview offers
 - Interview rate (interviews received / total applications submitted)
 - Match status
- Programs were separated into geographic regions (Figure 1) and the number of applications, interviews, and away rotations each application completed in a geographic region were calculated.
- The odds of an applicant receiving an interview and matching at the site of an away rotation or in the region where an away rotation was completed outside of a student's home region were obtained with logistic regression. (Table 1, Figure 3A).
- Since some programs interview all away rotators, we ran a second model excluding programs where an away rotation was completed which enabled us to assess whether completing an away rotation in a region outside of one's home region improves applications outcomes at programs that an away was not completed.
- All statistical analyses were carried out at a significance level of $p < 0.05$ and two-sided testing was used
- SAS v9.4 (Cary, NC) was used for all analysis and R v4.2 (R development group) was used for figure creation. Maps were created using MapChart.

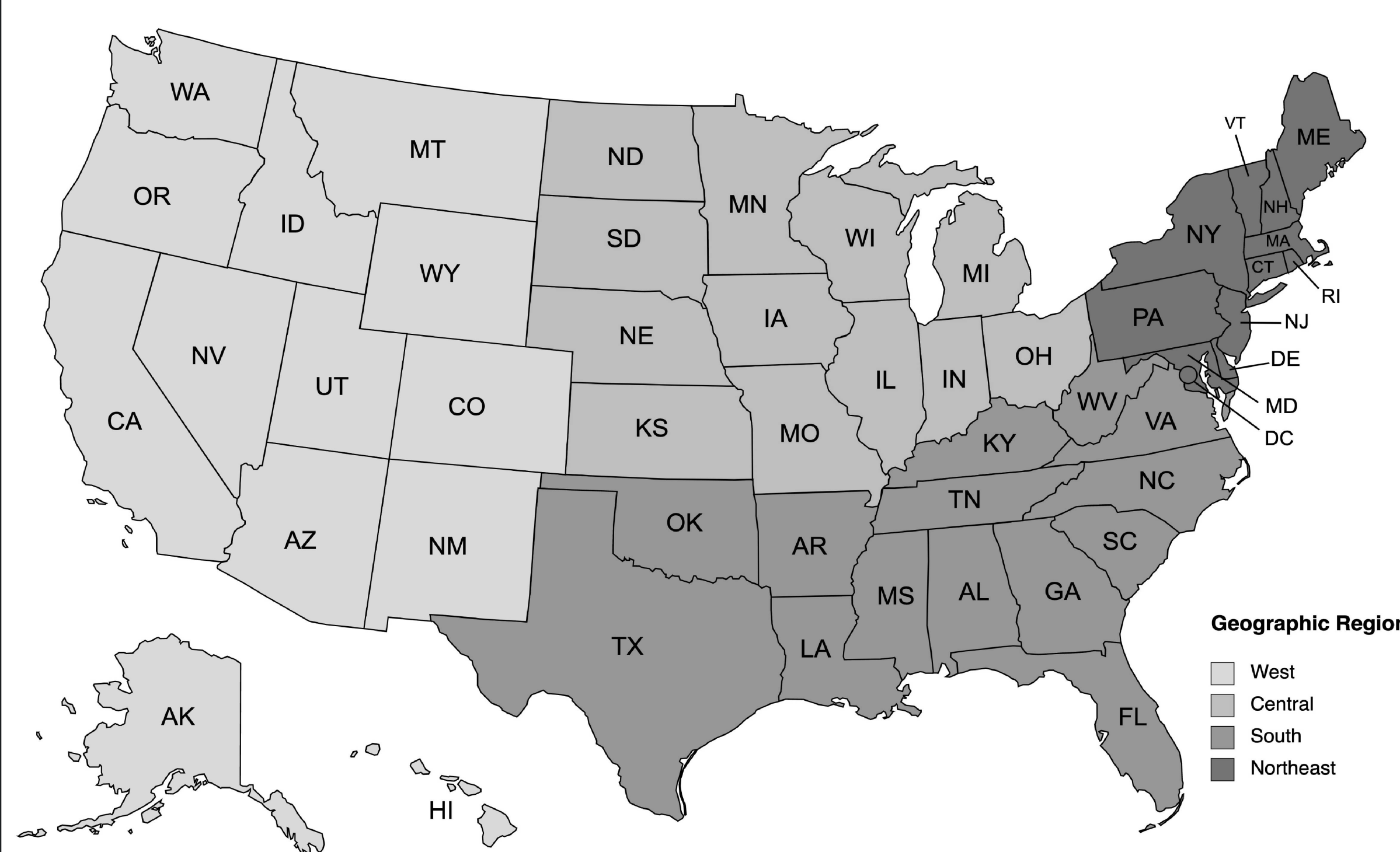


Figure 1: Geographic Regions in the Texas STAR Database

Results

General Characteristics

- Of 445 applicants, 402 (90.3%) completed an away rotation.
- Of these, 369 (91.8%) interviewed at a program where an away was completed and 124 (30.9%) matched at a program where an away rotation was completed.
- Of 402 applicants who completed an away rotation, 357 (88.8%) completed an away rotation in a geographic region outside their home region.

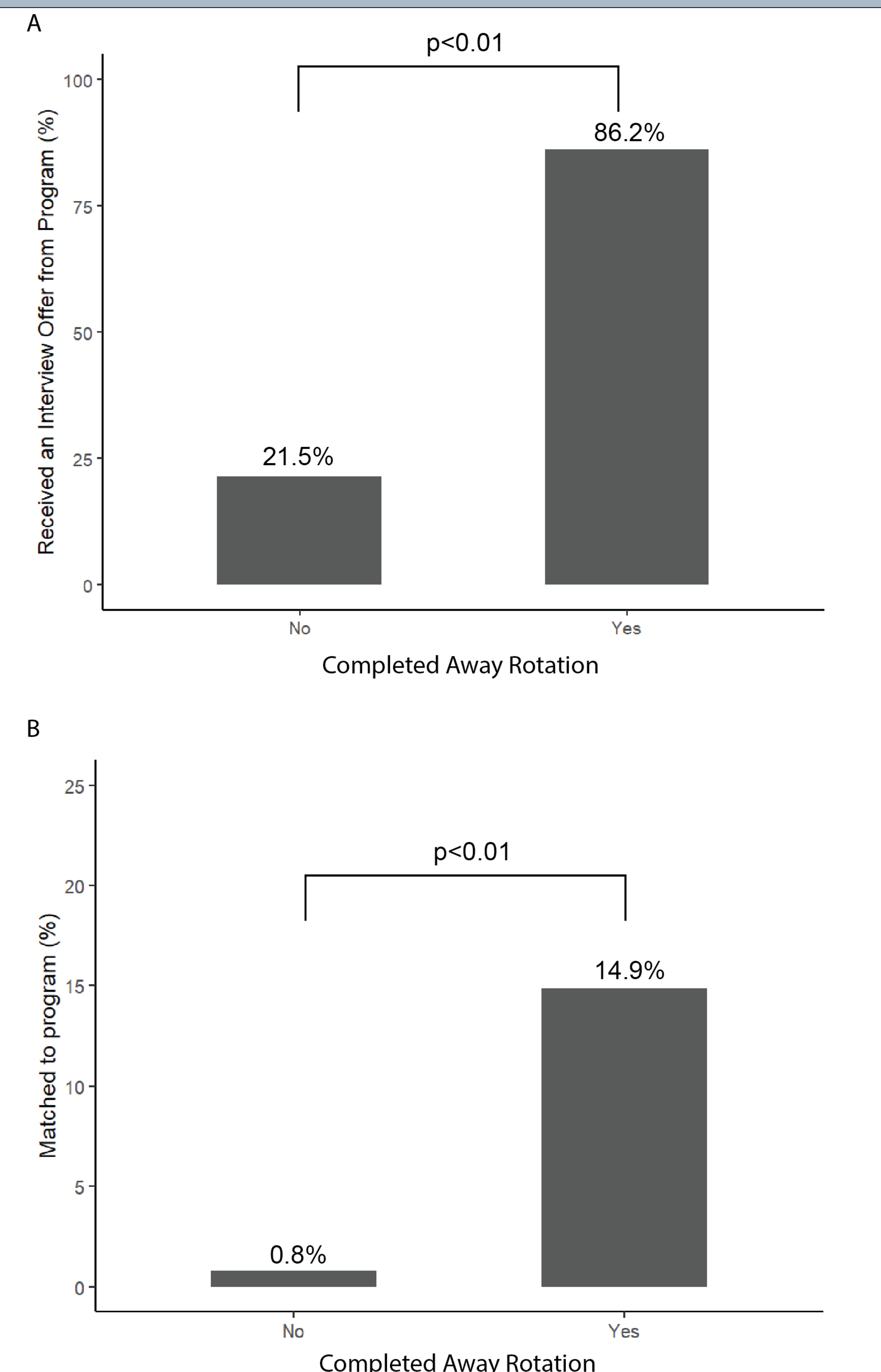


Figure 2: The Percentage of Interview Offers (A) and match out (B) stratified by whether an away rotation was completed at the program.

Outcome	Odds ratio	95% Confidence interval	P-value
<i>Among all applications (n = 31,356)</i>			
Interview offer	22.8	(18.6, 27.8)	<.01
Matching	21.4	(17.1, 26.9)	<.01
<i>Among applications that received an interview offer (n = 7271)</i>			
Matching	5.3	(4.2, 6.7)	<.01

Table 1: Odds of receiving an interview or matching based on whether an away rotation was completed.

Interview and Match Outcomes by Away Rotations

- Applications to programs where an away rotation was completed were significantly more likely to receive an interview (86.2% vs. 14.9%, $P < 0.01$) and match (14.9% vs. 0.8%, $P < 0.01$) than applications to programs where an away rotation wasn't completed. (Figure 2).
- Applications to programs where an applicant completed an away rotation had increased odds of receiving and interview (OR 22.8, $P < 0.01$) and matching (OR: 21.4, $P < 0.01$) compared to applications to programs where an away rotation wasn't completed. (Table 1).

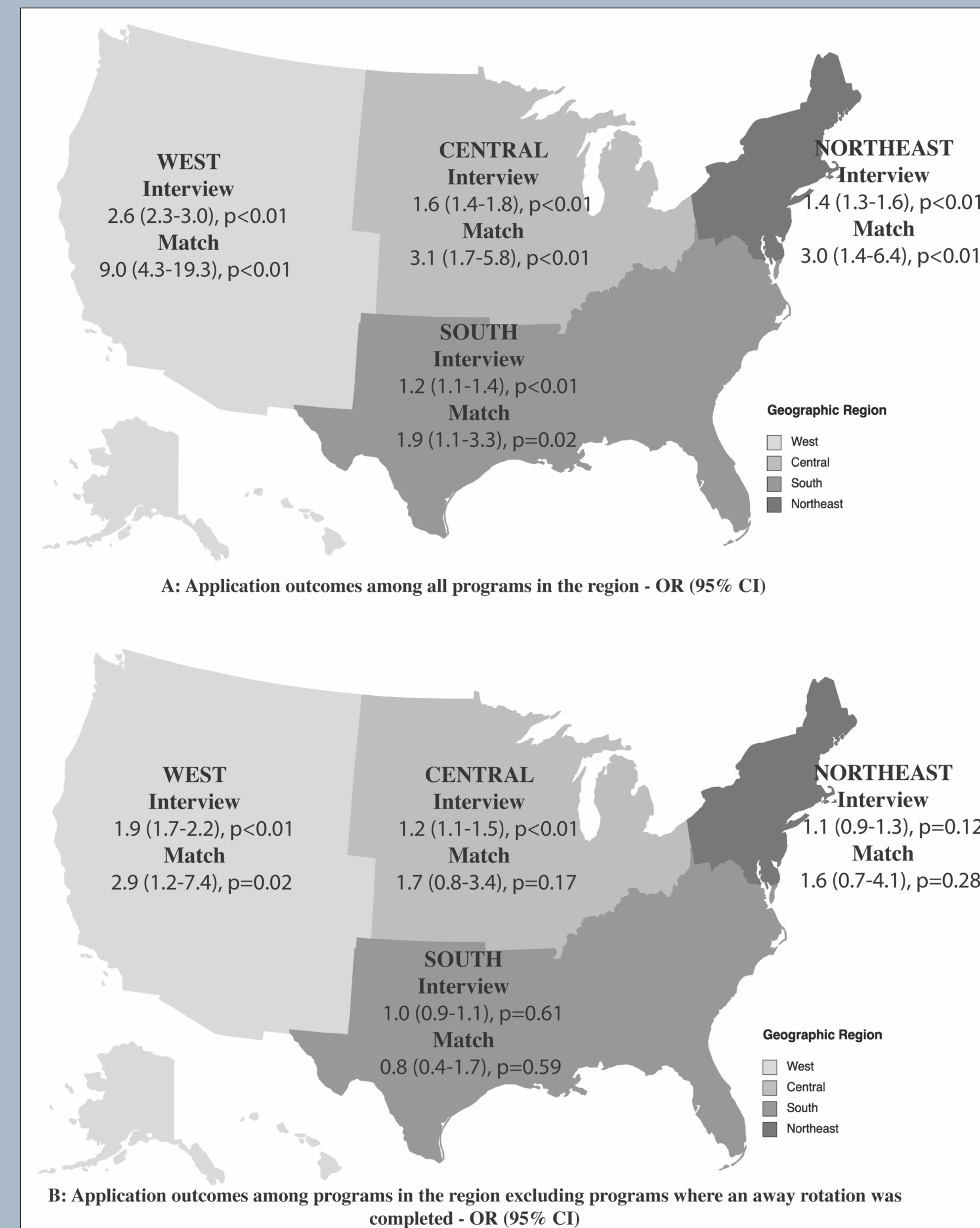


Figure 3: Odds of an applicant receiving an interview or matching to the region where an away rotation was completed. (A) Application outcomes among all programs in the region - OR (95% CI). (B) Application outcomes among programs in the region excluding programs where an away rotation was completed - OR (95% CI).

Interview and Match Outcomes by Geographic Region of Away Rotations

- Applicants who completed an away rotation in a geographic region outside of their home region had significantly higher rates in that region than those who did not for all regions but the southern region. (NE: 30.2 vs. 18.0; C: 31.7 vs. 22.2; W: 35.0 vs. 17.6; $P < 0.01$ for all).
- There was no significant association between the number of applications submitted to a region outside of one's home region and matching to that region.
- Applications to a geographic region where an away rotation was completed excluding one's home region had significantly higher odds of receiving an interview or matching (Figure 3A), however when excluding the program where an away was completed, this relationship only held in the central and south regions (Figure 3B).

Conclusions

- Most otolaryngology applicants participated in away rotations who completed the Texas STAR survey, 88% of these away rotations took place outside of applicants' home region.
- Away rotations are associated with increased odds of matching at that specific program, and there are possible associations the region where the away was completed, most evident for the West coast.