

Competitiveness of Otolaryngology

Residency Applicants without a Home Program

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ABSTRACT

OBJECTIVE: Investigate if otolaryngology residency home program (HP) leads to any advantages to match by comparison of competitiveness to applicants without HPs.

STUDY DESIGN: Survey study
METHODS: Surveys were distributed to fourth-year medical students who applied to otolaryngology – head and neck (OHNS) residency (2015-2016 cycle) and school administrators of US allopathic medical schools. Additionally, surveys were posted to OHNS (2015-2016) Applicants Closed Facebook Page and Otomatch. Data were analyzed between applicants with/without HPs including but not limited to: board scores, number of away rotations, and matching at their top choice. Continuous variables were summarized by mean/standard deviation or medians/inner quartile range. $p \leq 0.05$ was considered statistically significant.

RESULTS: 62 surveys were included in our analyses. Applicants were divided into three groups: 1)HP, 2)no home but have ENT staff (staff), and 3) no home or staff (none). 95% of survey participants matched into otolaryngology, 96% (HP), 90% (staff), and 100% (none). A sub-analysis of match preference among matching applicants revealed 63% of participants with HP matched to their first choice compared to 56% (staff) and 14% (none) ($p=0.058$). Match rate between those with any staff (HP or staff) versus those without was statistically significant ($p=0.037$). Applicants without HPs were on more away rotations than students with HPs (mean: 2.5 ± 0.5 vs. 1.7 ± 0.07 , $p=0.0002$). No statistical significance was seen between applicants with/without HP in regards to board scores, publications, or number of interviews.

CONCLUSION: Applicants applying to otolaryngology residency without HPs are as competitive as those who have HPs. However, without HPs, applicants tend to participate in more away rotations and are less likely to match at their top choice.

INTRODUCTION

Otolaryngology – Head and Neck Surgery (OHNS) is one of the most competitive residencies in the United States to match (1-3). In 2016, there were only 304 residency spots in the field, with 370 total applicants (4). This yielded 0.82 positions per applicant, with 20% of candidates applying at risk for not matching into an OHNS residency. From 2012 to 2016, the number of applicants that did not match has remained above 20%, with the number of available positions increasing annually by only 1% according to data from the National Resident Matching Program (NRMP).

NRMP has published data about average statistics of all candidates applying to OHNS residency programs (5); however, there is no stratification between applicants with and without home OHNS programs. The objective of this study is to investigate if an OHNS home program leads to any advantages to successfully match in comparison to applicants without home programs.

METHODS

We assembled data of applicants via two anonymous surveys: one sent to fourth-year medical students that applied to OHNS programs in the 2015-2016 cycle, and another to school administrators of US allopathic medical schools. Additionally, we posted links to the applicant survey on the OHNS 2015-2016 Applicants Closed Facebook page and Otomatch, an OHNS interest forum. Inclusion criteria were non-duplicate medical student surveys whom applied for OHNS residency in 2015-2016 cycle and completed the entire survey.

91 applicants responded, but 29 were excluded due to incomplete surveys. 62 applicant surveys were included in our final analyses, and two parameters were isolated to evaluate benefits of a home residency program and/or advantages of active OHNS staff: (A) Presence of an OHNS home program or (B) Active OHNS staff at medical school. We subsequently divided our applicant surveys into three groups: (1) Applicants with an OHNS home residency program (home program), (2) Applicants without a home program, but with active OHNS staff (staff only), and (3) Applicants without an OHNS home residency program or active OHNS staff (none).

Data were analyzed by comparing the statistics of those with and without home programs and with and without active OHNS staff, including: number of applications, successful match, USLME Step 1 and Step 2 scores, number of research experiences, percentage that are Alpha-omega-alpha (AOA), and number of away rotations. Continuous variables were summarized by the mean and standard deviation, or medians and inner quartile range. ANOVA or Kruskal-Wallis was used, with post-hoc pairwise t-test when appropriate. Threshold for statistical significance was set at $p \leq 0.05$. The p-values of all tests were reported without any correction for the multiplicity of tests performed. SAS 9.4 was used to perform all analyses.

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Applicant surveys

The majority of our applicant survey participants (95%; 59/62) matched into OHNS. Of participants without a home program, 90% (9/10) participants with staff only and 100% (7/7) participants with neither program nor staff matched into OHNS. **Table 1** summarizes demographic information for survey participants.

TABLE 1: Survey Participant Demographics

Demographic	Number (% of Applicants)			
	Total Applicants n = 62 (100)	With home OHNS program n = 45 (72.6)	Without home OHNS program but with OHNS staff n = 10 (16.1)	Neither home OHNS program or OHNS staff n = 7 (11.3)
Sex				
Male	46 (74.2)	32 (71.1)	8 (80)	6 (86)
Female	15 (24.2)	13 (28.9)	1 (10)	1 (14)
Not reported+	1 (1.6)	0 (0.0)	1 (10)	0 (0.0)
Age				
Average (standard deviation)	27.0 (1.9)	26.6 (1.6)	27.8 (2.0)	27.9 (2.9)
Race/Ethnicity				
White	48 (77.4)	35 (77.8)	8 (80)	5 (71.4)
Asian/Pacific Islander	8 (12.9)	7 (15.6)	1 (10)	0
Native American	2 (3.2)	2 (4.4)	0	0
Hispanic/Latino	1 (1.6)	1 (2.2)	0	0
African American	1 (1.6)	0	1 (10)	0
Other	2 (3.2)	0	0	2 (28.6)

When observing match preference among matching applicants, 56% (33/59) of all participants matched into their first choice OHNS residency program; 63% (27/43) of participants with a home program matched to their first choice compared to 38% (6/16) without a home program ($p=0.139$). Moreover, in addition to those with a home program, **Figure 1** shows 56% (5/9) with only staff and 14% (1/7) in those with neither matched to their first choice ($p=0.058$). Interestingly, comparison of the match rate between those with any staff (home or not) versus those without was statistically significant ($p=0.037$).

OHNS Match by Choice and OHNS Status

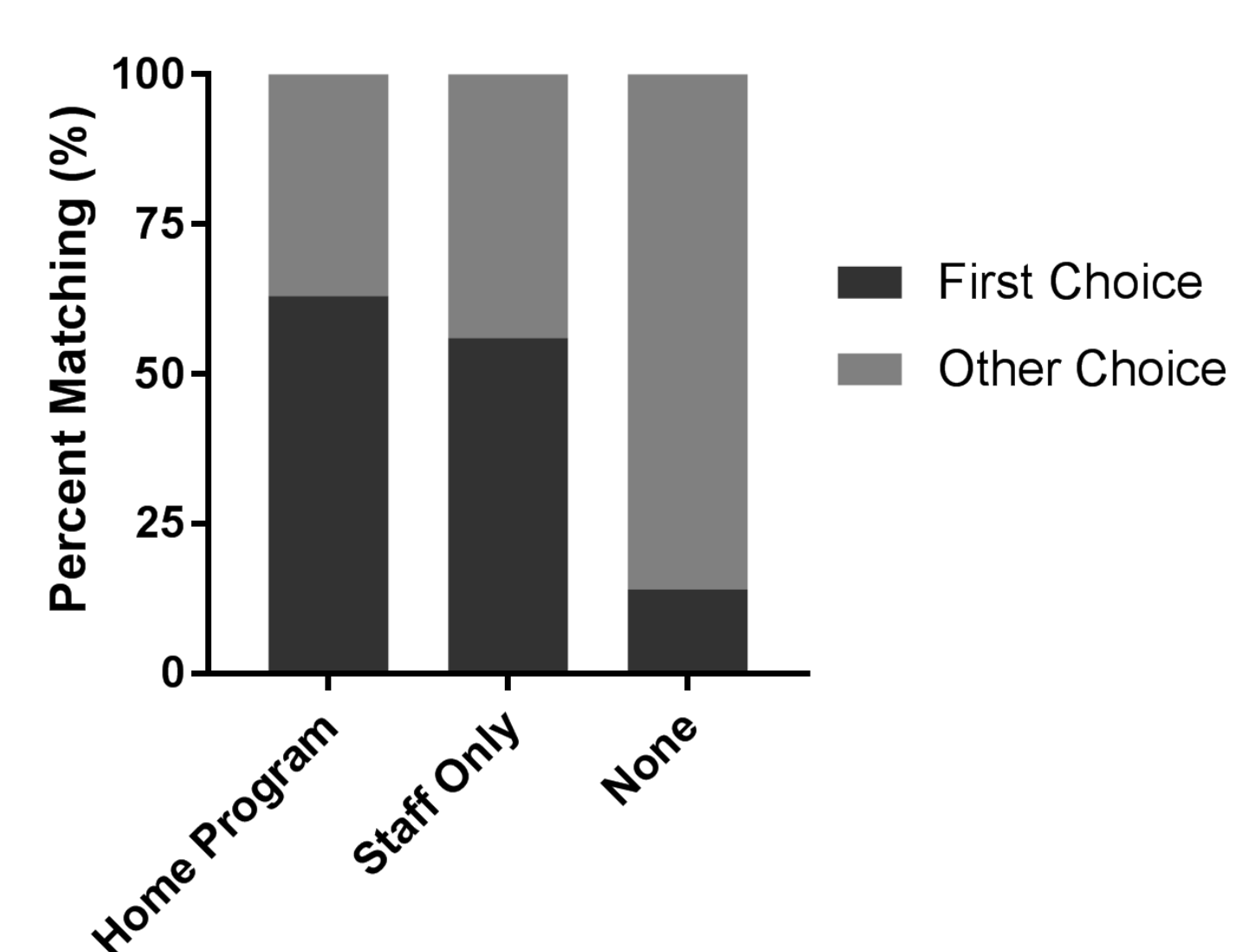


Figure 1. Match choice preference among differing groups ($p=0.058$)

Overall, applicants with a home program applied to fewer OHNS residency programs as seen in **Figure 2** (median home program: 57.5, staff only: 71, none: 73; $p=0.0325$). Of applicants with a home program, 96% (43/45) applied at their home institution. However, 12% (5/42) of these applicants matched into their home OHNS program. Despite this, there were no statistical differences between interviews received per group (median 16.5, 17.5, and 15.0 respectively; $p=0.438$).

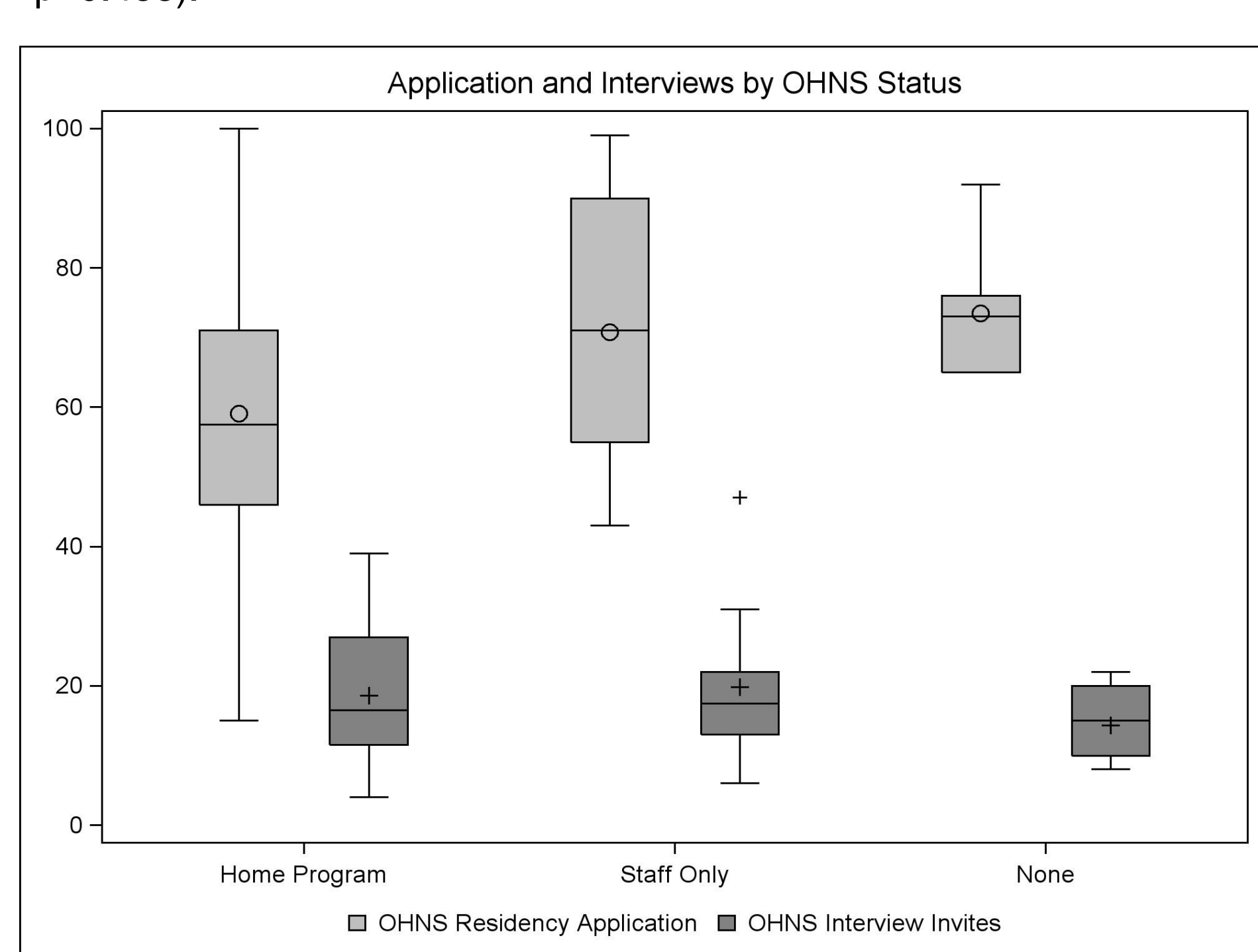


Figure 2. Number of OHNS residency applications ($p=0.033$) and interviews ($p=0.438$) for each group. The larger symbols (○ and +) represent the average values and the smaller symbols represent outliers.

RESULTS

Table 2 showcases Step scores by home and staff status. Although there is a trend of lower USLME Step 1 scores in the participants with neither a home program or staff group (mean: 243.7) compared to participants with a home program and/or active OHNS staff (mean: 249.4), it was not statistically significant ($p=0.102$). In contrast, the difference in Step 2 scores between staff status was statistically significant as shown in **Table 2** ($p=0.043$).

	Mean Step 1	Standard Deviation Step 1	Mean Step 2	Standard Deviation Step 2
Home program	249.4	11.8	254.1	12.1
No home program	246.9	13.9	252.6	12.4
Active OHNS Staff	249.4	12.9	254.7*	12.1
No active staff	243.7	5.5	246.1*	9.6

Table 2. USLME Step 1 and 2 median scores by grouped participants (* $p < 0.05$)

Advisor surveys

Figure 3 shows data collected from program advisors about their respective 2016 graduating medical school classes, 1.70% (68/4005) of students with a home program, 0.86% (9/1049) with staff only, and 0.31% (1/321) of students with neither applied to an OHNS residency this last cycle. This difference was statistically significant ($p=0.027$). Given the unequal application rates, it should come as no surprise that the acceptance rates are also somewhat disproportionate at 1.45%, 0.67%, and 0.31%, respectively ($p=0.038$).

U.S. Allopathic Graduating Seniors Interest and Match in OHNS

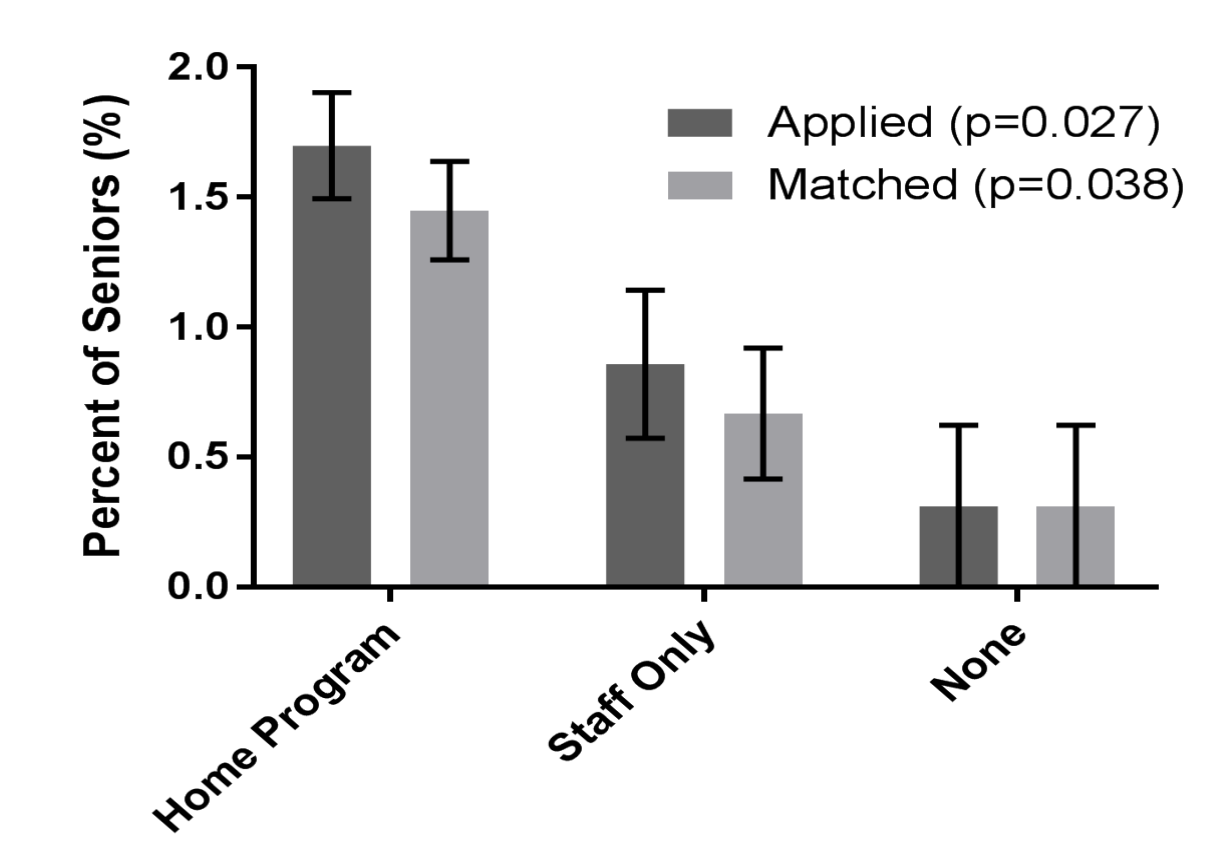


Figure 3. Proportion of applicants and matches for 2016 graduating classes

Out of the population surveyed, 45 survey applicants had a home residency program, 10 had no program at their school but did have OHNS staff, and 7 had no program or OHNS staff at their institution. Of the total number of allopathic medical schools in 2016 (145), 69% have an OHNS residency program and 31% do not. Of our survey responders, 72% (45/62) had a home OHNS program and 27% (17/62) did not. Demographic information also generally correlates across groups.

CONCLUSION

Although most of our survey participants matched into OHNS (95%), only approximately half (56%) matched into their first choice OHNS residency program. Furthermore, staff status, regardless of home program status, also displayed a potential influence on choice of residency programs, where only 14% of those without OHNS staff matched into their first choice. On average, those without a home program applied to 15 more OHNS programs than applicants with a home program.

Applicants applying to otolaryngology residency with or without a home program are equally as competitive. Without home programs, applicants tend to participate in more away rotations and apply to more OHNS programs to obtain similar number of interviews as applicants with home programs. Home program applicants have a higher probability of matching into their first choice program. Further studies are necessary to elucidate other potential aspects of a successful match without a home program.

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