ORAL PRESENTATIONS

1. Do Words Matter? A Linguistic Analysis of Letters of Recommendation for Residency at a Large Academic Plastic Surgery Program

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Background: Cognizant that Step 1 of the USMLE will adopt a pass/fail format, the letter of recommendation (LOR) will become an increasingly important component of the Match, and whether it should be standardized remains highly debated. The American Council of Academic Plastic Surgeons (ACAPS) developed a standardized LOR that allows letter writers to rank applicants. Previous studies have investigated components of a successful application but have omitted the LOR. This analysis seeks to understand the utility of the free-text LOR as it may relate to the request for an interview.

Methods: 489 LORs from 132 applicants were gathered at a single integrated plastic surgery residency program from the 2019-2020 application cycle. Data was gathered from the complete ERAS application form, including subjective standardized ranking scores and details about the letter writer. Group comparisons were performed between interviewed candidates and non-interviewed candidates. Linguistic and regression models were used to estimate the LOR’s utility in contributing to the receipt of an interview. Feature importance, utility of certain words in predicting a candidate’s interview status, was determined using model weights.

Results: The following variables were statistically significant: letter writer location, duration of relationship between the letter writer and applicant, NIH funding, H-index of the writer, research and teaching percentile of the student, and academic skills percentile of the student. Of the 10 standardized LOR ranking variables, only research and academic skills were statistically significant. Using text only, the BOW model achieved higher performance than the regression model (AUROC 0.76 vs 0.71). The most highly weighted feature in the regression was letter probability.

Conclusion: The results suggest that the unstructured LOR has more predictive ability than standardized rankings. The analysis suggests that both the letter writer and content of the unstructured letter substantially impact chances of receiving an interview. In addition, text analysis and quantitative comparisons show that research and leadership highly contribute to the chances of receiving an interview. In summary, the present analysis underscores the importance of the unstructured letter when compared with standardized elements of the recommendation, emphasizing that standardizing the LOR may offer little differentiation between candidates.

2. A Descriptive Analysis of Integrated Plastic Surgery Program Directors

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Background: The role gender plays in surgical leadership positions is heavily discussed in the literature, however there is an absence of research looking at plastic surgery program director (PD) demographics and the differences between male and female PDs.

Methods: A cross sectional study of publicly available online resources of all integrated plastic surgery residency programs was performed. Demographic and academic data of integrated plastic surgery PDs was analyzed focusing on the differences in PDs based on gender.

Results: 82 integrated plastic surgery residencies were analyzed. 15 PDs (18.3%) were female. 56 (68%) PDs completed general surgery residencies, while 24 (29%) completed an integrated plastics residency. All female PDs were fellowship trained while only 46 (68%) male PDs pursued additional training after residency (p=0.02). Research output amongst male PDs was greater with 49.9 publications and a higher average H-index, at 13.3, compared to women with an average of 27.5 publications (p=0.008) and an H-index of 8.7(p=0.02). When comparing male to female PDs, there was no difference between age at PD appointment (p=0.15), or in the amount of time between...
completion of plastic surgery training to PD appointment (p=0.29). Male PDs were older (52.2) compared to female PDs (46.5) (p=0.02). Male PDs served longer terms (4.98 years) than females (2.87 years) (p=0.003).

Conclusion: The majority of integrated plastic surgery PDs are male with an M.D. who completed a general surgery residency and a plastic surgery fellowship. Most PDs also completed fellowship in a plastic subspecialty. Male PDs had higher research output, which may be attributed to their older age on average. Although females make up only 18.3% of plastic surgery PDs, this percentage is similar to the 17.2% of active female plastic surgeons in the U.S. As more women train in plastic surgery, it is possible that the percentage of females serving academic leadership roles will increase. By gaining a better understanding of the demographics and diversity in plastic surgery residency program leadership, efforts can be made to increase the representation of minority groups in academic leadership roles.

3. Making Headway in Surgical Education at Home and Abroad: Use of an Inexpensive Novel 3-D Learning Model for Plastic Surgery Education

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Background: Simulation enhances trainee preparation for operative experiences. The development of cost-effective simulations is an area of interest amongst surgical specialties and is superimposed on a critical time in global surgery training as the COVID-19 pandemic has halted international travel for education. The aim of this study is to present a low-cost, interactive educational model, and describe the impact on resident assessment of reconstructive options for Mohs defects for use in both domestic and global surgery educational settings.

Methods: Seventeen residents in an integrated plastic surgery program performed a pre-activity questionnaire to assess their baseline ability to plan reconstructive flaps for five Mohs defects. They subsequently underwent an interactive learning session and were instructed to design flaps on life-sized Styrofoam heads with feedback from a senior surgeon. The residents completed a post-activity questionnaire to assess improvement in: analysis of the defect, identifying multiple reconstructive options, confidence in selecting the optimal reconstructive option, and ability to draw the final operative design. Three additional attending surgeons anonymously reviewed each resident’s designs for accuracy and estimated the resident’s postgraduate year (PGY).

Results: When analyzing all defects, participant-reported average post-activity scores increased by 0.63 [0.06 – 1.12]. Junior residents (PGY 1-3) had a greater increase in average score responses (mean: 1.07 [0.5-1.75]) compared to senior residents (PGY 4-6) (mean: 0.27 [0-1]) (p<0.001). A large majority of participants stated that this study “moderately” or “highly” improved their ability to assess Mohs defects for reconstruction (nasal alae: 30% (72% from 42%), nasal dorsum: 13% (59% from 46%), nasal tip: 20% (69% from 49%), cheek: 25% (68% from 43%), and upper lip: 15% (53% from 38%)). When anonymously assessed by senior-level surgeons, senior residents were significantly more accurate in design across the index cases compared to junior residents. However, junior residents were more likely to be estimated above their PGY training level compared to senior residents.

Conclusion: Beneficial improvements in assessing reconstructive options for Mohs defects are demonstrated, particularly by junior trainees, after participating in this low-cost, interactive educational model. The development of cost-effective models is critical for continued domestic and global surgery education.

4. Surgical Simulation for Metacarpal Fracture Fixation Improves Satisfaction, Confidence and Skill

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Background: Surgical education has long touted the value of high fidelity simulations in the modern training paradigm.