Manual dexterity aptitude testing: a soap study.

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ABSTRACT

Objective: To determine whether or not manual dexterity aptitude testing in the form of soap carving during otolaryngology residency interviews at Kaiser Permanente Oakland Medical Center predicts surgical skill at the time of graduation from otolaryngology residency programs.

Methods: Over the last 25 years, applicants to the residency program at Kaiser Permanente Oakland were required to carve soap. This study was conducted to determine how applicants with the best and worst soaps compared at the time of graduation with respect to various metrics including visuospatial ability and manual dexterity.

Results: The best and worst soaps from 1990-2006 were determined. Sixty-two individuals qualified for the study and matriculated into otolaryngology residency programs. Surveys were sent to their residency programs to evaluate those individuals on a 5 point Likert scale in various categories. There was no difference between individuals with the “best soaps” and those with the “worst soaps” in all categories; cognitive knowledge, visuospatial ability, manual dexterity, decision making, and overall score (P > 0.1 for all categories). There was a 95% response rate with 35 of 37 residency programs responding, and 59 of 62 surveys returned.

Discussion: Although further studies need to be conducted to determine the role of manual dexterity and visuospatial ability in the otolaryngology application process, individuals who have the “best soaps” did not score higher than those with the “worst soaps” in several metrics.

BACKGROUND

For the last 25 years at our program, every residency applicant to our program was required to carve soap at the time of their residency interview. All else being equal, it was our assumption that applicants who had the manual dexterity and visuospatial skills to carve a good soap would more likely possess the skills necessary to become a good surgeon. For this study, the best and the 3 worst soaps carved among all the residency applicants each year since the 1990 were determined. Surveys were submitted to the residencies that these applicants graduated from. There was a 95% response rate with 35 of 37 residency programs responding and 59 of 62 surveys returned.

RESULTS

Of the 64 applicants that matched into ENT, 2 matched into programs that do not exist anymore. 59 applicant surveys were returned (91/62 = 95% response rate). 6 surveys were returned uncompleted as 1 institution (4 applicants) decided not to participate, and 2 of the applicants were unknown to the responder. Of the 53 that were evaluated 38 were ranked at the top 50% of all residents, and 15 were ranked at the bottom 50% of all residents.

EXAMPLES OF BAD SOAPS

Each year from 1990 to 2006, the 3 worst soaps from the 40 residency applicants were determined by an objective, blinded judge. The criteria for good soaps included:
- Maintaining proportionality in all dimensions
- Smooth edges and well contoured
- Representative of the figure in the drawing

Below are photos of some “Bad Soaps” selected for the study

EXAMPLES OF GOOD SOAPS

Each year from 1990 to 2006, the 3 worst soaps from the 40 residency applicants were determined by an objective, blinded judge. The criteria for good soaps included:
- Maintaining proportionality in all dimensions
- Smooth edges and well contoured
- Representative of the figure in the drawing

Below are photos of some “Good Soaps” selected for the study

SURVEY COMMENTS

Some comments included the following:

- “This resident was exceptional regarding knowledge and decision making. Secondary to a tremor, he had difficulty under the microscope. Very safe surgeon.”

- “It is difficult to accurately evaluate residents 6 years after they completed training.”

CONCLUSION

Individual applicants who carved “good” soaps were not more likely to become better surgeons (graduate from the top 50% of their class), and did not have better cognitive knowledge, visuospatial ability, manual dexterity, or decision making ability compared to applicants who carved “bad” soaps.

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