

Medical Students' Comfort Levels With Performing the Basic Head and Neck Examination in Practice: Follow-up During the Core Clerkship Year

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OBJECTIVE: Following our preliminary study on junior medical students' comfort levels in performing the head and neck physical examination (H&NPE) before and after a department-led teaching session, we assessed the longitudinal effect of this session on students during the core clinical clerkship year, in which these skills were performed on real patients.

DESIGN: Anonymous cross-sectional survey study as a follow-up to previous intervention.

METHODS: Overall, 101 and 90 second-year medical students participated in an H&NPE teaching session 1 year before the current survey administration in 2 consecutive years. The same cohorts of students, as third years, were asked to rate their comfort levels (0-5-point Likert scale) in performing the H&NPE and the importance of otolaryngology rotations in medical school and primary care residency training.

RESULTS: Of the 101 and 90 students, 53 and 46 medical students completed the follow-up survey in each respective year. For both classes, compared with before the teaching session, students reported an average comfort level of 2.8 (somewhat to moderately comfortable) in performing the complete H&NPE ($p < 0.0001$) during the core clinical clerkship year. Similar changes were observed for the individual ear, nose, mouth, and neck components of the examination (all p 's < 0.0002). Students at follow-up reported statistically similar comfort levels when compared with immediately after the teaching session for the ear, oral cavity, and neck examinations.

CONCLUSION: The initial teaching session persistently improved medical students' comfort levels in performing the H&NPE, with some attrition in comfort levels with performing the nasal examination and complete H&NPE. An otolaryngologist-directed, practical educational intervention may permanently reinforce the acquisition of complex skills such as the H&NPE. (J Surg 72:117-121. © 2014 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

KEY WORDS: general otolaryngology, head and neck examination, medical education

COMPETENCIES: Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, Interpersonal and Communication Skills

INTRODUCTION

Otolaryngologic problems comprise a significant proportion of common medical visits.^{1,2} However, coverage of otolaryngologic problems is relatively deficient in undergraduate medical education³⁻⁶ and primary care graduate education,⁷⁻¹⁰ though such problems are routinely encountered in training and practice. As such, it is important for otolaryngologists to actively close the knowledge and skills gap for medical students and primary care resident physicians who will encounter such medical problems. One method is through a department-led, supervised, practical head and neck physical examination (H&NPE) teaching session. Our previous study provided preliminary results on junior medical students' comfort levels toward performing elements of and the complete H&NPE, as well as their exposure to and attitudes toward otolaryngology, before and after our annual department-led teaching session.¹¹ The results were very

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encouraging—a coordinated H&NPE teaching session, in which medical students were taught basic H&NPE examination skills by resident and faculty physicians followed by practice on student partners, was not only well received as an effective and interesting teaching tool, but it also served to significantly increase students' comfort levels in performing this complex examination. The session secondarily introduced medical students to the specialty of otolaryngology and helped them realize the importance and predominance of otolaryngologic complaints in primary care medicine.

Although the gains immediately following a teaching session may appear inflated because of the timing of the training session, we were interested in the change in comfort levels over time as these students progressed to the core clinical clerkship year, during which they would be performing the H&NPE routinely on actual patients. Studies have documented that students learning from real patients acquire complex skills and develop enhanced confidence in their abilities, thus reinforcing skills learned from didactics.¹² At the University of California Irvine School of Medicine, third-year medical students participate in required core clinical clerkships in the following specialties: internal medicine, ambulatory medicine, general surgery (with brief exposure to various surgical subspecialties), pediatrics, obstetrics and gynecology, psychiatry, and family medicine. It is our belief that each of these clerkships provides exposure to otolaryngologic issues, offers some opportunity for students to perform the H&NPE (some more frequently than others) and, at the same time, shapes their attitudes toward the role of otolaryngology in medicine. With consideration of both students' previously learned H&NPE skills and newly acquired clinical experiences, we present the 1-year follow-up results from our original study cohort. The goal of the current follow-up study is to assess the longitudinal effect of a H&NPE teaching session conducted before the core clinical clerkship year on students' comfort levels in performing the H&NPE on real patients during their clinical rotations.

METHODS

This study was approved by the institutional review board of the University of California, Irvine. The H&NPE teaching session and the contents of the presession and postsession surveys are extensively discussed in our preliminary study.¹¹ Similar to the previous 2 surveys, the 1-year follow-up survey asked students to rate their current comfort levels in performing elements of and the complete H&NPE, the helpfulness of the second-year teaching session in improving H&NPE comfort levels, and the relevance of a mandatory otolaryngology rotation for medical students and primary care resident physicians. Once again, the survey solicited the length of time that students felt was necessary to be able to learn to perform a skillful

H&NPE. All ratings were based on a 5-point Likert scale, with 5 being the highest rating and 0 the lowest.

RESULTS

Of the 101 and 90 second-year medical students to complete the H&NPE session in 2009 and 2011, 95 and 89 completed presurveys, 77 and 69 completed postsurveys, 53 and 46 students completed the follow-up survey a year later, during their core clerkship year, yielding response rates of 52.5% and 51.1%, respectively. The Figure illustrates the timing of each survey administration and the response rate for each survey administration.¹¹ The mean Likert rating scores were compared between presurveys and follow-up surveys, as well as between postsurveys and follow-up surveys, using an unpaired, 2-tailed Student *t* test with a significance level of 0.05.¹¹ These results are summarized in the Table. All 1-year follow-up comfort levels were statistically higher than comfort levels reported before the teaching session ($p < 0.0001$). Statistically significant differences in comfort levels were observed between the postsurvey and 1-year follow-up survey for the nasal examination ($p = 0.006$ and $p < 0.0001$) and complete H&NPE ($p = 0.003$ and $p = 0.004$), whereas no differences were observed with the ear/otoscopic, oral cavity, and neck examinations ($p > 0.05$).

The initial teaching session was rated as moderately helpful (2.8). Students rated the relevance of a mandatory medical school rotation in otolaryngology as 2.3, decreasing from 2.8 ($p = 0.03$) and 3.3 ($p < 0.0001$) from the presurveys and postsurveys, respectively. They rated the relevance of a mandatory primary care residency rotation in otolaryngology as 3.0, statistically unchanged from 3.2 ($p = 0.39$) and 3.3 ($p = 0.11$) from the presurveys and postsurveys, respectively. Of the students, 56% believed that 2 weeks was sufficient in learning to perform a skillful H&NPE; the distribution of responses was not different among presurveys, postsurveys, and follow-up surveys ($p = 0.58$, single-factor analysis of variances).

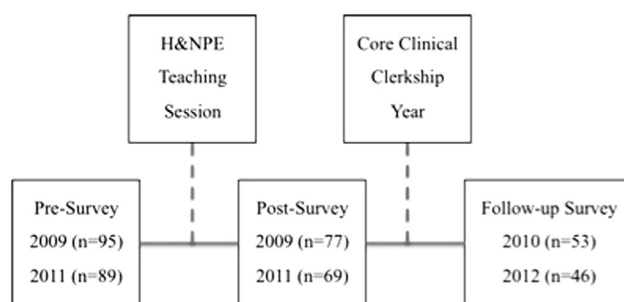


FIGURE. Timing of head and neck examination teaching session, survey administrations, and corresponding numbers of survey respondents.

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