

Competency and Comfort Levels in Performing a Basic Head & Neck Examination

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INTRODUCTION

Studies suggest 25-40% of all primary care complaints are related to problems of the head and neck. Medical educators in the U.S and U.K. have reported that there may be a knowledge gap in the diagnosis and management of common otolaryngology problems that do not require referral.

In our current curriculum, the head and neck exam (HNE) is incorporated into the M-2 HEENT assessment in the standardized patient program. During clinical years, rotation on the Otolaryngology, Head & Neck Surgery (OTO-HNS) service is elective, and therefore skill acquisition in the head and neck exam is piecemeal throughout different rotations.

The goal of this project is to focus skill acquisition for the head and neck exam in dedicated teaching sessions and measure competence and perceived comfort in performing a comprehensive head and neck examination. Secondly, we hope to increase medical student interest in the growing field of OTO-HNS.

METHODOLOGY

A total of 73 students participated in focused Standard Patient (SP) session evaluating performance of a comprehensive HNE. Students were evaluated by ENT faculty and residents on technical maneuver’s and recognition of normal anatomy. Students rated their comfort and competence at performing the HNE in a survey taken before and after SP interaction. 28 M2 students formed the control group. 45 M3 students were part of a cross-sectional survey. 37/45 M3 students completed a HNE training session during the surgery clerkship as part of the educational curriculum. 8/45 M3 students had not yet enrolled in the surgery clerkship and therefore did not complete the HNE training session. Prior to the training session students were asked to watch ENT Exam instructional videos. During the session students were given a short anatomical lecture. Students then participated in faculty and resident led group instruction followed by practice on student partners.

RESULTS

I.

Changes from Pre- to Post-Training Sessions among M2s				
Total Questions Correct	Number of Participants	Median	IQR	P-value
Pre-Training Survey	26	11.5	4	0.001
Post-Training Survey	21	15	4	
Percent of Questions Correct	Number of Participants	Median	IQR	P-value
Pre-Training Survey	26	63.9%	24	0.001
Post-Training Survey	21	83.3%	19	
Total Questions Correct (Partial)	Number of Participants	Median	IQR	P-value
Pre-Training Survey	27	12	4	0.001
Post-Training Survey	21	15	4	
Percent of Questions Correct (Partial)	Number of Participants	Median	IQR	P-value
Pre-Training Survey	27	66.7%	22	0.002
Post-Training Survey	21	83.3%	19	

III.

Changes from Pre- to Post-Training Sessions among M3 After or During the Surgery Clerkship				
Total Questions Correct	Number of Participants	Median	IQR	P-value
Pre-Training Survey	27	11	5	0.014
Post-Training Survey	18	14	5	
Percent of Questions Correct	Number of Participants	Median	IQR	P-value
Pre-Training Survey	27	61.1%	28	0.014
Post-Training Survey	18	77.8%	29	
Total Questions Correct (Partial)	Number of Participants	Median	IQR	P-value
Pre-Training Survey	30	11	4	0.007
Post-Training Survey	18	15	4	
Percent of Questions Correct (Partial)	Number of Participants	Median	IQR	P-value
Pre-Training Survey	30	61.1%	22	0.009
Post-Training Survey	18	83.3%	22	

V.

Among M2s			
How effective do you think the ENT practice session was in providing you with the standards/expectations for performing an appropriate head and neck exam?			
Opinion	Number of Respondents (n=21)		Percent
Poor	0		0.0
Fair	4		19.0
Good	9		42.9
Very Good	7		33.3
Excellent	1		4.8

II.

Comparing Pre-Training Scores among M3 Students with and without the Surgical Clerkship					
Total Questions Correct	Number of Participants	Median	IQR	P-value	
M3 with Clerkship	27	11	5	0.893	
M3 without Clerkship	8	11.5	4		
Percent of Questions Correct	Number of Participants	Median	IQR	P-value	
M3 with Clerkship	27	61.1%	28	0.893	
M3 without Clerkship	8	63.9%	24		
Total Questions Correct (Partial)	Number of Participants	Median	IQR	P-value	
M3 with Clerkship	30	10	5	0.958	
M3 without Clerkship	8	11.5	4		
Percent of Questions Correct (Partial)	Number of Participants	Median	IQR	P-value	
M3 with Clerkship	30	61.1%	26	0.9	
M3 without Clerkship	8	63.9%	24		

IV.

Comparing Post-Training Scores among M3 Students with and without the Surgical Clerkship					
Total Questions Correct	Number of Participants	Median	IQR	P-value	
M3 with Clerkship	18	14	5	0.495	
M3 without Clerkship	9	15	4		
Percent of Questions Correct	Number of Participants	Median	IQR	P-value	
M3 with Clerkship	18	77.8%	29	0.495	
M3 without Clerkship	9	83.3%	19		

VI.

Among all M3s			
How effective do you think the ENT practice session was in providing you with the standards/expectations for performing an appropriate head and neck exam?			
Opinion	Number of Respondents (n=32)		Percent
Poor	0		0.0
Fair	2		6.3
Good	6		18.8
Very Good	9		28.1
Excellent	15		46.9

Clockwise from Top Left

A – Otoscopy

B – External Nasal Exam

C – Anterior Rhinoscopy

D – Oral Cavity Exam

E – Neck Exam



DISCUSSION

The primary purpose focus of this pilot is skill acquisition in the head and neck exam through dedicated teaching sessions and to measure perceived comfort and competence in performing a comprehensive head and neck examination.

Both M2 and M3 students showed significant improvement from pre- to post-survey. M2s (median=Good, IQR=I) rated the effectiveness of the training lower than M3s (median=Excellent, IQR=I) and the difference was statistically significant (p<0.001). M3 students may consider the HNE more relevant to everyday clinical practice. The majority of M3 participants (n=27 v n=9) completed the ENT training session during the Surgery Clerkship.

There was no difference in pre- and post- survey scores based on clerkship status. Long-term retention may explain the difference as some participants completed the ENT training session up to 5 months prior to the MCA.

Ongoing analysis is focused on medical student comfort in performing the HNE. Raw data suggests that the majority of M2 students felt less comfortable performing the exam after the SP evaluation. M3 students who had completed the surgery clerkship and ENT training session felt more comfortable (need some indirect guidance) in the pre-survey and had a greater improvement in the post-survey (does not need guidance).

There are several limitations to this study. Notable limitations of the study are our attrition rate, which could reflect poor communication with students, variable teaching styles among the ENT instructors, and participant fatigue.

CONCLUSION

Overall, third year medical students felt the ENT training session was effective in providing the standards and expectations for performing an appropriate HNE and SP evaluation successful in reinforcing their skill. However, there was no statistical significance in the pre- and post- survey scores based on clerkship status though M3 students perceived greater comfort performing the HNE in both pre- and post- surveys if they completed the ENT training session during the surgery clerkship. Though piecemeal throughout the clinical curriculum, our students seem to acquire the skills necessary to complete a comprehensive exam. The ENT training session helps students, but reinforces the importance of practice.

Further study to address long-term retention could be addressed by incorporating the HNE exam at different points throughout the pre-clinical years.