What Makes a Good Endoscopic Teacher: A Qualitative Analysis

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OBJECTIVE: Teaching learners to perform endoscopic procedures is challenging, yet effective endoscopy teaching practices are not well-described in the literature, and prior studies have focused on perspectives of supervising physicians rather than learners. We sought to characterize, from the perspective of endoscopy learners, endoscopic teaching behaviors perceived as beneficial and detrimental to learning using qualitative methods.

DESIGN: This is a prospective qualitative content analysis. Gastroenterology fellows from 2 tertiary care centers anonymously provided feedback regarding supervising physicians' teaching behaviors during endoscopic training between March 2016 and December 2016. Preprinted cards were completed at the conclusion of procedures to document behaviors that fellows perceived as enhancing or hampering their learning. Two investigators performed content analysis of written comments; each identified behavior was assigned positive or negative valence.

SETTING: Mount Sinai Hospital in New York, New York and University of California San Francisco in San Francisco, California. Both institutions are academic tertiary care centers.

PARTICIPANTS: A total of 19 gastroenterology fellows at 2 training institutions participated.

RESULTS: A total of 239 teaching behaviors were identified by 19 fellows who worked with 31 supervising physicians; 29 unique behaviors were identified and organized into 7 themes: teaching, learning environment, autonomy, communication, coaching, feedback, and professionalism. Of all, 185 (77.4%) behaviors were reported as beneficial, and 54 (22.6%) as detrimental to the learning experience. Behaviors related to teaching were most often perceived as beneficial, while behaviors related to professionalism and communication were most often perceived as detrimental to learning.

CONCLUSIONS: Specific teaching behaviors may help or hinder learning of endoscopic skills. These behaviors may be useful for efforts related to teaching evaluation, faculty development, and direct teaching. (J Surg Ed ■:■■■-■■■. © 2018 Association of Program Directors in Surgery Published by Elsevier Inc. All rights reserved.)

KEYWORDS: Endoscopy, Colonoscopy, Behavior, Teaching, Qualitative Research, Gastroenterology

COMPETENCIES: Patient Care, Interpersonal and Communication Skills, Professionalism

BACKGROUND

Learning to perform endoscopic procedures, particularly esophagogastroduodenoscopy and colonoscopy, is a critical component of gastroenterology training, as most gastroenterologists will spend a significant portion of their career in the endoscopy suite. Endoscopic procedures comprise a unique "middle ground" in the spectrum of procedural skills performed in medicine—they are more involved than other procedures commonly performed by internal medicine-trained physicians (e.g., paracentesis and central line placement), yet are more focused and less complex than full operations performed by surgeons. Teachers of endoscopic procedures must simultaneously balance learners' needs for deliberate practice and meaningful feedback with patients' needs for safe and high quality procedures and healthcare systems' needs for efficiency and cost-effectiveness. It is therefore crucial that endoscopy teachers use effective teaching strategies, yet best practices in endoscopy teaching have been little addressed in the literature. In fact, a recent systematic review about training and assessment methods in endoscopic training did not substantially discuss effective endoscopy teaching behavior practices.[1] The need for

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optimize endoscopy training is important not only for gastroenterology fellows but also for surgical trainees, given their need to complete a flexible endoscopy curriculum during residency.

Verbal instruction during procedural skills training has been studied in other procedural skills teaching settings, including operating rooms.[2] In the endoscopy setting, a recent study analyzed verbal instruction from surgical attendings to residents after an endoscopy rotation and generated 6 categories of verbal instruction.[3] However, this study did not address the nonverbal behaviors that can occur in a procedural setting. Furthermore, there has been no study describing which behaviors are facilitative (positive) or hindering (negative) to endoscopy learning. Certain behaviors such as derogatory comments are known to have deleterious effects on medical performance,[4] yet there are likely others as well. It is important to characterize behaviors that faculty can emulate in order to improve endoscopic training. We designed this qualitative study to characterize attending physician teaching behaviors that were beneficial or detrimental to fellows' perceived learning experience during endoscopic training.

METHODS

Between March 2016 and December 2016, gastroenterology fellows (postgraduate year [PGY]-4 through PGY-6) at hospitals affiliated with 2 large gastroenterology fellowship training programs provided voluntary anonymous feedback on their supervising physicians' teaching during upper endoscopy and colonoscopy cases. The Institutional Review Board at both institutions approved the study. Fellows were contacted via e-mail or in person and invited to participate. No compensation was provided. Participating fellows completed preprinted cards (Appendix A1) at the conclusion of procedures to describe attending behaviors that they perceived as enhancing or hampering their learning experience. Completed feedback cards were deposited into a locked box. Attendings were not informed when feedback cards were completed. Teaching behaviors from the feedback cards were transcribed into an electronic spreadsheet.

Two authors independently performed content analysis of the transcribed comments using an inductive approach without prespecified themes.[5,6] Teaching behaviors present within the comments were organized into codes, which the authors then discussed and developed a unified set of codes. Positive and negative valence was attributed to each behavior code based on if they were listed as enhancing or hampering the learning experience on the feedback card. The authors met a second time and developed a set of larger themes with which the codes were organized. Through a similar process, overlapping codes were then further refined into categories called themes.

RESULTS

A total of 239 individual teaching behaviors were described by 19 fellows who worked with at least 30 supervising physicians. The 239 teaching behaviors comprised responses from mostly PGY-4 (44.8%) and PGY-5 (37.7%) trainees, with a minority from PGY-6 (14.6%) and those who were unclassified (2.9%). The University of California San Francisco (UCSF) submitted 17 (7.1%) teaching behaviors from 4 different fellows, and the remaining 222 behaviors came from the Mount Sinai Hospital (MSH). Supervising physician names were not included on cards submitted by UCSF subjects. There were 28 specific supervisors identified from MSH. In total, 18% of behaviors were solicited with anonymous supervisors. Of the 196 behavior codes with 28 individual supervisors listed, the range of behavior codes per supervisor was 1 to 20 and the mean, median, and standard deviation were 7, 7, and 4.6, respectively. When analysis of the 239 behaviors was complete, no further codes or themes emerged; therefore code saturation was achieved and data collection stopped.

There were 29 unique behavior codes identified, which were organized into the following 7 themes: teaching, learning environment, autonomy, communication, coaching, feedback, and professionalism (Table A1). Examples of nested themes, behavior codes, and teaching behaviors can be seen in Table B2. With regard to valence, 185 (77.4%) behaviors were reported as beneficial to the learning experience, whereas 54 (22.6%) were reported as hampering learning (Fig. A1).

Behaviors related to teaching were frequently reported (61, 25%) and most often had a positive valence (56, 91.8%). Multiple specific teaching behaviors were reported as improving fellows' learning experience, but the 2 most common included procedural skills development and knowledge expansion. Two examples with positive valence included "taught couple new loop reduction techniques" and "teaches medical knowledge such as Prague classification."

Behaviors related to the learning environment were also common (57, 24%), predominantly with a positive valence (45, 79%). The most common behavior associated with this theme was the supervisor's involvement in the case, followed by behaviors related to the learning environment's surroundings. Two examples with positive valence included "very helpful with moving cases along by setting up rooms on their own" and "active participant by constantly looking at the screen."

Autonomy was the third most common theme (51, 21%). The majority of these behaviors had a positive valence (32, 62.7%) but less than some of the other themes. Most of these behaviors were directly related to trainee autonomy with performing endoscopic procedures. An example with positive valence was "does not take the scope" while a related comment with negative valence was "took the scope too quickly."