



BRIEF REPORT

Best practices in teaching endoscopy according to a Delphi survey of gastroenterology trainees

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Introduction

Endoscopy is a core component of gastroenterology training [1], yet there are no guidelines on how endoscopists should teach the procedure [2]. Across most programs in the USA, endoscopy training follows an apprenticeship model, in which trainees develop skills through supervised, hands-on practice [3]. Although some programs use assessment tools to determine proficiency in performing endoscopy procedures, most rely principally on procedural volume and subjective evaluations. As a result, endoscopic training is variable across and within institutions.

To better understand best practices in teaching endoscopy, we previously developed and proposed 18 endoscopy-teaching competencies in a national Delphi study of gastrointestinal (GI) fellowship program directors and endoscopy experts [4]. After two rounds, 10 competencies reached consensus as essential across the timing domains of the endoscopy-learning environment. This study, however, did not include the perspective of GI fellows—a key stakeholder in endoscopy education.

We thus invited a national cohort of GI fellows to rate our original 18 endoscopy-teaching competencies in a series of surveys. The aim of this study was to reach consensus amongst a group of GI fellows on the essential teaching competencies for faculty who teach endoscopy.

Methods

We previously published our process of developing the proposed endoscopy-teaching competencies [4]. In May 2020, we

recruited GI fellows from the 32 ACGME-accredited programs represented in our previous Delphi study and three additional third-year GI fellows at the Brigham and Women's Hospital. We invited fellows to rate each of the 18 proposed competencies on a three-point scale of “essential,” “important, but not essential,” and “not important.” We used a pre-set threshold for consensus of 70% agreement for the Delphi process [5].

Following round 1, participants reviewed their individual rating as well as the group's overall rating from the prior round for each teaching competency. Participants were then asked to rate each competency again using both their previous rating and the group rating. Descriptive statistics were created for each demographic variable and endoscopy-teaching competency. This study (2017P002515) was approved by the Partner's institutional review board.

Results

The survey response rate was 92.9% (26 of 28) for round 1 and 100% (26 of 26) for round 2 of the Delphi survey. There was an even distribution by training level (Year 1, 30.8%; Year 2, 30.8%; Year 3, 38.5%). Most participants reported having performed >250 esophagogastroduodenoscopies (76.9%) and >140 colonoscopies (80.7%) at the time of the survey.

Round 1

During the first round, seven teaching competencies reached consensus as essential (38.9%). Only five teaching competencies

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Table 1. Teaching competencies meeting consensus for essential

Teaching competency	Percent rated essential
Before each session	
Assesses trainee's current procedural competency	88.5%
Prior to each procedure	
Discusses patient history and plans for procedure with trainee	92.3%
Confirms patient is aware of trainee's participation and role	76.9%
Ensures trainee has discussed anticipated needs for the procedure with endoscopy staff (nurse and/or technician)	80.8%
During the procedure	
Maintains attention throughout the case	88.5%
Provides appropriate amount of feedback during procedure	73.1%
Assumes control of procedure when trainee is unable to progress or if patient-safety concerns arise	88.5%
After each procedure	
Discusses next steps in management for the patient	96.2%
Reviews procedure notes and provides feedback as needed to trainee	73.1%
After each session	
Provides feedback to the trainee	92.3%

received votes as not important from a minority of participants (3.8%–7.7%). Five participants submitted feedback on the proposed list of teaching competencies. These comments were reviewed by the authors (M.F. and N.L.K.) and felt largely addressed within the original set of competencies; grammatical edits were made to three of the competencies and this revised list was used for round 2.

Round 2

During the second round, an additional three competencies reached consensus as essential (Table 1). Five competencies also reached consensus as important but not essential (total of 15 competencies reached consensus or 83.3%). These included (i) "Discusses a plan for delivering feedback," (ii) "Optimizes room configuration for trainee," (iii) "Maximizes time spent by trainee performing the procedure," (iv) "Sets learning objectives for future sessions," and (v) "Asks trainee for feedback on session."

Discussion

In this follow-up Delphi survey of GI fellows, we reached consensus on 10 essential teaching competencies for faculty who teach trainees how to perform endoscopy. Nine of these competencies were also rated as essential by program directors and endoscopy experts in our prior study [4]. This finding underscores a shared perspective on endoscopy education between teachers and learners.

The only essential competency from our prior study that was not also rated as essential by trainees was "Uses standardized endoscopic language to guide trainee through procedure." We suspect GI fellows are less familiar with the set of standard procedural terminology and have become accustomed to faculty using different words or phrases for the same instruction, thereby placing less emphasis on this competency.

The highest-rated essential teaching competencies (all >90% agreement) related to communication between trainee and instructor before and after the procedure. Interestingly, pre- and post-procedure periods are rarely used for teaching endoscopy, although fellows indicate that post-procedural teaching is optimal for their learning [6]. The findings of this study thus emphasize the importance of teaching outside of the actual procedure, when cognitive load is minimized.

Previous research has found that program directors rate the quality of GI-training programs better than fellows, whereas

fellows indicate that attendees spend less time teaching than perceived by their program directors [3, 7]. To our knowledge, no study has compared trainee and faculty perceptions on best practices for teaching endoscopy. The findings in this follow-up study suggest that trainees and faculty largely agree on optimal endoscopic teaching. Disagreement between program directors and fellows about the quality of training, therefore, may represent suboptimal use of these teaching practices.

This study had some limitations. First, the proposed list of competencies was previously generated by a smaller group of four endoscopists with interests and expertise in endoscopy education. However, significant efforts to preserve content validity were deployed including the use of peer-reviewed literature, discussion with experts in the field, and cognitive interviewing with faculty who regularly teach endoscopy. Second, this survey was distributed amongst gastroenterology fellows only at programs that participated in our previous survey, and thus there is a risk of participation bias. However, we recruited in this manner to ensure consistency between these two studies. Further, all fellowship training tracks and program settings were represented in the study.

In conclusion, we identified 10 teaching competencies that GI fellows consider essential for effective endoscopy teaching. Trainees and experts share a similar mental model on best practices for endoscopy education. These competencies provide a starting point for developing guidelines, informed by both faculty and fellows, on how to teach endoscopy most effectively.

Author's Contributions

M.F. recruited participants, administered the survey, and wrote the initial draft of the manuscript. J.L.S. assisted with study design/implementation and edited the manuscript. N.L.K. provided guidance on the study idea, design, analysis, and manuscript preparation. All authors read and approved the final manuscript.

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Conflict of Interest

None declared.

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