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Original Article

Adult Gastroenterology Trainees' Experience of Receiving Feedback on Their Performance of Endoscopy in the Workplace

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Abstract

Background: Competency-based gastrointestinal endoscopy training is concerned with outcomes of the learning experience. Feedback allows for trainees to achieve the expected outcomes. However, little is known about trainees' experience of receiving feedback. Gaining understanding of their experience could help improve feedback practices. The study was conducted to explore what it means for adult gastroenterology trainees to receive feedback on their performance of endoscopy in the workplace.
Methods: An interpretative phenomenological approach was used. Individual semi-structured interviews were conducted with six trainees from three Canadian adult gastroenterology residency programs. Interviews were audio-recorded and transcribed verbatim for analysis. Analysis was conducted to identify the phenomenological themes across participants' accounts of lived experience to provide an insight into the meaning of experiencing the studied phenomenon.
Findings: Three phenomenological themes of experience were identified: *taking pauses, negotiating understandings* and *accepting asymmetry*. Taking pauses allowed for participants to receive feedback on their performance of endoscopy. Participants needed to negotiate attending gastroenterologists' different understandings of gastrointestinal endoscopy while carrying their own whenever feedback was provided. They had to accept the asymmetry between the roles of care provider and learner as well.
Discussion: The study has captured the uniqueness and the complexity of the lived experience of receiving feedback on the performance of endoscopy in the workplace from the perspective of study participants. The gained understanding of this experience has enabled the authors to suggest how attending gastroenterologists' feedback practices may be improved.

Keywords: *Endoscopy; Feedback; Gastroenterology; Phenomenology; Postgraduate training; Qualitative research*

Background

Competency-based medical education (CBME) is concerned with the outcomes of trainees' learning experience. It demands the continuous assessment *for* and *of* learning to ensure that trainees acquire the competencies required for unsupervised practice, independent of time spent in training (1). With respect to gastrointestinal endoscopy training, CBME calls for moving away from models based on the attainment of minimum procedural volumes and toward establishing approaches tailored to trainees' progression (2,3).

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Competency-based gastrointestinal endoscopy training requires attending gastroenterologists to provide trainees with constructive and timely feedback based on first-hand observations of their performance (4,5). Feedback is fundamental to the process of assessment *for* learning (6). It can be defined as 'specific information about the comparison between a trainee's observed performance and a standard, given with the intent to improve the trainee's performance' (7). Feedback can be directive—informing the trainee of what requires correction—, or it can be facilitative—guiding the trainee in his own revision (8). But, previous research on trainees' experience of gastrointestinal endoscopy training suggests that feedback provided sometimes fails to meet their expectations (9–11).

Although calls have been made for attending gastroenterologists to receive formal training in teaching (12,13), gaining understanding of trainees' experience of receiving feedback could inform immediate improvements of teaching practices. The purpose of this study was to understand—and create meaning of—current adult gastroenterology trainees' lived experience of receiving feedback on their performance of endoscopy in the workplace.

METHODS

Methodology

An interpretive phenomenological approach was adopted to conduct the study. Phenomenology, whether descriptive or interpretive, is concerned with how individuals experience things (14). All phenomenologists search for the seemingly trivial, sometimes taken-for-granted aspects of human experience to create meaning and gain understanding (15). Whereas descriptive phenomenologists seek to portray the essence of a phenomenon without interpretation—they *bracket* their own experience and knowledge—, interpretive phenomenologists use the *lens* of their own experience and knowledge to identify the essential structures of a phenomenon across accounts of lived experience (16).

Health professions education researchers have employed interpretive phenomenology to capture what was meaningful to participants who have experienced phenomena such as learning to communicate clinical reasoning (17) and feeling shame in clinical learning environments (18). Using interpretative phenomenology, researchers can incorporate their own experience into the research process to comprehend the contextual forces at play and to identify the essential structures—or *phenomenological themes*—that give meaning to the lived experience (16,19,20) and that have relevance to practice (21).

Because the aim of the study was to gain understanding of a phenomenon in a specific context, and because the first author's own experience as a trainee and as an attending gastroenterologist was relevant to the research, using an interpretive phenomenological approach was considered appropriate. The first author shared his experience with the second author and kept a reflexive journal to ensure that participants' voices would not be drowned out by his own (22).

Participants

Purposeful and convenience sampling was used to recruit trainees from the four adult gastroenterology residency programs in the Canadian province of Quebec. Between March and November 2019, following ethical approval and permission from program directors, invitation emails were sent to 22 trainees. Six—two for each of the three residency programs represented in the sample—gave consent to participate. Two participants were female, and four were male. One participant was a postgraduate year (PGY)-4 trainee, and the others were PGY-5 trainees. They are referred to as Participant 1 to 6 to preserve confidentiality. No participants had experienced the 'Competence by Design' initiative—the Royal College of Physicians and Surgeons of Canada's approach to CBME (23)—at the time of their interview.

The number of trainees who gave consent defined the sample size. Saturation—a criterion used in qualitative research 'to indicate that, on the basis of the data that have been collected or analysed hitherto, further data collection [or] analysis [is] unnecessary' (24)—is considered inapplicable to phenomenological research because one cannot claim to have captured all the meanings of a phenomenon (25). Recruiting six participants was sufficient to identify the essential structures of lived experience across different accounts (26–28).

Data Collection

The first author interviewed the participants between May and December 2019. An individual semi-structured interview format was used. The a priori questions were few and open-ended to allow for participants to give examples of their everyday experience in the workplace without predefined boundaries (29) and for the first author to use his own experience to follow up with probing questions in real time (30). The interview guide is shown in Table 1. One interview was conducted face-to-face, in English, and five via Skype, in French. They lasted from 55

Table 1. Interview guide

Questions
Can you tell me about your background as an adult gastroenterology trainee?
Can you describe your experience of receiving feedback on your performance of endoscopy in the workplace?
Can you provide specific examples of you receiving feedback?
Can you tell me how you felt when you received this or that feedback?
Can you tell me how this or that feedback impacted you?
Can you describe how endoscopy training happens in the workplace?

to 75 minutes. Interviews were audio-recorded and transcribed verbatim for analysis.

Data Analysis

The interview transcripts were analyzed by the first author, under the supervision of the second author, using an interpretive phenomenological approach inspired by Ricoeur's theory of interpretation (31,32). This approach has been previously applied in health professions research (33–35) and consists of three steps, which are detailed below.

I. Naive reading: Transcripts were read several times to develop a preliminary understanding of the meaning of participants' lived experience as a whole.
II. Structural analysis: Transcripts were divided into *units of meaning*, representing *what was said* during the interviews. Next, the first author used his own experience to identify *units of significance* and capture *what the transcripts speak about*. Patterns, subthemes and phenomenological themes emerged from this interpretation process: phenomenological themes were the structures without which the lived experience would not have been the same. The interpretation of participants' lived experience of receiving feedback was built around these themes. It was discussed with participants before being included in the Findings section to determine whether it had been distorted by the first author's own experience (36).
III. Critical interpretation: The phenomenological themes were integrated into a narrative, where they are explained in relation to previous research, connecting the particularities of participants' experience to commonalities in medical education research. It is presented in the Discussion section.

Ethics

Ethical approval was received prior to commencement of the study. All participants provided written informed consent.

FINDINGS

The three phenomenological themes that were captured through analysis are taking pauses, negotiating understandings and accepting asymmetry.

Taking Pauses

Pauses enabled participants to receive feedback on their performance of endoscopy in the workplace: they could suspend their role as care providers and embrace their identity as learners, provided that attending gastroenterologists could explain the discrepancy between the observed performance and the desired performance.

For the bulk of endoscopy training, participants joined with attending gastroenterologists to perform scheduled or emergency procedures. Educational contracts between participants and attending gastroenterologists on when, or whether, to pause and have feedback conversations were exceptional; there were no performance assessment forms to fill out.

During the performance of endoscopy, pauses were dictated by participants' conscious experiences of performance gaps. They requested feedback when they realized that they could not achieve the desired performance. Participants said:

> "I say: 'Look, I'm constantly looping in the same spot, and right now my scope is straight, and I'm still looping, and it's the third time, you know, I'm stuck here. Please take the scope and then show me what you do.'" (Participant 1)
> "I may ask the attending: […] 'I feel that I am not in an ergonomic position, my wrist is all bent. Is there a better way to do this?'" (Participant 3)

In doing so, participants *stepped back from action*, and pauses occurred. Without these, they remained focussed on completing the procedures they had started. Participants had difficulty receiving feedback when they were thinking about how to move the endoscope, what to make of the images on the screen, and what to do in response to patients' discomfort.

Pauses were again needed for participants to receive feedback after the performance of endoscopy, but they seldom occurred. Pauses interrupted the workflow and were contingent on attending gastroenterologists' ability and willingness to engage in feedback conversations. Participants engaged in and benefited from feedback conversations taking place after the performance of endoscopy when participants and attending gastroenterologists had agreed that everything else could wait. Without such agreements in place, participants felt compelled to finish up and move on to the next task. A participant said:

> "It takes the proper state of mind to receive [feedback]. If you're a little frustrated, or crunched for time, or a little stressed because you have to finish very quickly, the quality of the feedback—I'm sure it's lower. And my ability to remember or apply feedback is lower because I'm crunched for time—I want to write the report because the next patient is coming in soon." (Participant 5)

Negotiating Understandings

Participants had to negotiate different understandings of endoscopy whenever they received feedback from attending gastroenterologists. And participants did so while building their own.

Participants were introduced to a specific approach to endoscopy early in their training. This approach—dubbed the 'SEE-technique' by two participants—was taught during the 'First Year GI Residents' Endoscopy Training Course' (hereafter,

the 'Endoscopy Training Course'). It was a 2-day introductory course to endoscopy that participants attended with trainees from across the country at McMaster University in Hamilton, Canada, only days after becoming adult gastroenterology residents. Faculty from across Canada (two were involved with two of the three residency programs represented in the sample) explained to attendees why the 'SEE-technique' works. They broke down endoscopy into smaller, manageable subtasks as they provided feedback to attendees during hands-on simulation sessions. Participants left Hamilton with an understanding of how endoscopy can be practiced and taught. Participants said:

> "Doing this course helped me understand how I'm doing endoscopy instead of doing it mechanically." (Participant 2)
> "I would say it was a 'game changer' for me. I based my endoscopy technique on what was taught during the course." (Participant 6)

However, participants were confronted with the heterogeneity of practices among attending gastroenterologists at university health centers and community-affiliated hospitals where they did their residency. Participants explained:

> "Those that did not believe in the SEE-technique were saying: 'Why are you turning the patient in the middle of a scope? […] What is this loop here you're putting in the umbilicus? What are you doing?'" (Participant 1)
> "One [attending] told me: 'Do not hold your scope like this.' And I was like: 'OK, but this how we were taught to hold it. This must be the right way to do it because they told us it was the best thing to do in Hamilton.'" (Participant 3)
> "No one does endoscopy the same way. It's to be expected, but, at the same time, no one teaches it in the same way, and that's very confusing, especially at the beginning." (Participant 4)

Facing this heterogeneity early in their training—and being unable to rely on magnetic endoscopic imaging to visualize the shape of the colonoscope in real time—, participants rejected feedback that conveyed an inappropriate understanding of endoscopy (e.g., "Don't turn the patient. Just turn the scope in the patient, like a BBQ skewer" [Participant 1]) and accepted feedback that resonated with their own. Participants also accepted feedback that concretized attending gastroenterologists' conscious competence (e.g., "Here, I would have turned the patient because of the anatomy." [Participant 1]), regardless of participants' knowledge about whether attending physicians had received formal training in teaching.

As participants advanced in their training, they observed that attending gastroenterologists who did not practice some or all the principles of the SEE-technique were providing safe, quality endoscopy care regardless. This observation led participations to adopt a pragmatic approach when dealing with feedback received: participants applied feedback received in real time—especially when they felt compelled to perform endoscopy the way the attending physicians wanted— and they decided what to make of it after. A participant said:

> "I take the feedback, and I think: […] 'I'll do it, I'll try it, and if it doesn't work, then too bad! I won't do it again. Or if I don't like it, I won't do it again. I'll use my technique.'" (Participant 4)

Accepting Asymmetry

The experience of receiving feedback was also about accepting asymmetry. Asymmetry emerged from the roles of participants played in the workplace: they were acting as care providers and learners.

Although pauses were essential to receive feedback, participants accepted that assessment *for* learning was secondary to care provision. As alluded to above, participants understood that time was seldom sufficient to engage in feedback conversations. They acknowledged that attending gastroenterologists were unlikely to engage in comprehensive feedback conversations when immediate corrective action was required. A participant said:

> "There's the patient we need to think about. If the patient shows discomfort […], I agree that not a lot of time should be spent on explaining how [the task] should be done." (Participant 6)

Participants acknowledged that attending gastroenterologists bore the ultimate responsibility for patient care. Attending gastroenterologists were staying close to participants; they were ready to take over if need be. Participants were performing endoscopy on *attending gastroenterologists' patients*; they were inside *attending gastroenterologists' rooms*. Such asymmetry sometimes led participants to suspend their own understanding of endoscopy and emulate attending gastroenterologists' practice. A participant said:

> "We know in advance which attending will have this or that method to advance the scope. It is not always the right one according to what we learned, but we are a little forced to accept this." (Participant 2)

However, participants wished for *less asymmetrical* feedback conversations in order to communicate their own perspective. A participant said:

> "The idea is not to revolutionize the way [attending gastroenterologists] scope. It's just the way they give us feedback. They should try to figure out with us what's going on, to tell us what's going on, to let us say how we plan to get out of it." (Participant 4)

The asymmetry in the teacher–student relationship sometimes prevented participants from sharing their understanding or asking probing questions after having received feedback:

participants feared some attending gastroenterologists could have interpreted this as calling into question their competence. One participant said:

> "When you ask an attending why he did something this way, it's because, in our head, there would be another way to do it—it can seem like, you know, a criticism of what they did." (Participant 3)

Participants accepted that they would be unable to engage in meaningful feedback conversations when working with specific attending gastroenterologists. Participants patiently waited to work with the next attending gastroenterologist instead of trying to share their perspective and create potential conflicts; they expected or hoped that the next attending gastroenterologist would welcome their questions or perspective.

Discussion

A meaningful insight into six adult gastroenterology trainees' experience of receiving feedback on their performance of endoscopy in the workplace is presented in the Findings section. Articulated around the phenomenological themes of *taking pauses*, *negotiating understandings* and *accepting asymmetry*, this insight highlights the complexity and uniqueness of participants' lived experience. It also contradicts the assumption that trainees receiving feedback are passive recipients of a unidirectional process—a prevalent assumption in the medical education literature (37).

Taking pauses meant stepping back from their role as care providers to embrace their learner identity. Without educational contracts between attending gastroenterologists and participants, the latter were readiest to receive feedback after they had reached a stage of *conscious incompetence* (38). Although attending gastroenterologists should feel free to provide immediate error correction when needed—patient's safety is paramount (39)—, this finding supports that feedback should be delivered in a timely fashion based on the complexity of the task, the competence level of trainees (40), and their *cognitive load* (i.e., the amount of information working memory can hold at one time (41,42)). And, regarding cognitive load, previous research suggests that it may be more appropriate to teach with restraint during the performance of endoscopy (43,44). The present study's findings should encourage attending gastroenterologists to keep track of trainees' struggles during the performance of endoscopy and, when the situation allows it, to ask trainees to describe what is (or was) going on: this should help trainees acknowledge their performance gaps and create the pauses needed to engage in feedback conversations.

Negotiating understandings meant finding a way through different conceptions of what the desired performance is. A first understanding was introduced to participants when they attended the Endoscopy Training Course at McMaster University (45). It can be argued that attending gastroenterologists who teach this course are forming a community of practice (i.e., 'a persistent, sustaining social network of individuals who share and develop an overlapping knowledge base, set of beliefs, values, history and experiences focused on a common practice and/or mutual enterprise' (46)): they want to structure *pre-gastrointestinal endoscopy training*, they have received formal training in teaching, and they are involved with the Skills Enhancement for Endoscopy (SEE) Program of the Canadian Association of Gastroenterology (45,47)—hence the use of the term 'SEE-technique' during the interviews. Participants gained a communal understanding of endoscopy when attending this course—an understanding that was challenged soon after participants had left Hamilton. Although it has been argued that trainees acquire learning when they *traverse* multiple communities of practice (48,49), or when they are exposed to procedural variation (50), the findings suggest that having to deal with different understandings of a desired performance left participants to make credibility judgements regarding feedback: participants had to decide 'which information must be integrated into their developing professional identity and which information can be dismissed' (51). Attending gastroenterologists are encouraged to reflect on their own understanding of endoscopy, to be genuinely curious about trainees' understanding, and to reach out to colleagues who practice endoscopy differently. These actions should help attending gastroenterologists explain whether the feedback they give is a reflection on possible variations (40), helping trainees negotiate understandings with more ease.

Accepting asymmetry meant growing accustomed to the tensions between the roles of care provider and learner: participants accepted the need to focus on endoscopy care and forgo feedback conversations because of time constraints, and they accepted that they should bracket their own practice preferences because they were *apprentices* to attending gastroenterologists. Feedback *competes* with clinical work across specialty training (52–55). Although adult gastroenterology trainees have voiced that scheduling fewer procedures could enhance their training experience (9–11), this may prove difficult to implement given the ever-increasing demand for endoscopy (56). In contrast, attending to the asymmetry of the teacher–student relationship can be done. Previous research in surgical education has found that attending surgeons believe that teaching trainees many procedural approaches will help them adapt to new situations (50). However, other research has found that surgical trainees adapt to attending surgeons' procedural preferences in part so as not to harm their relationships with them (57). The present study adds that trainees may avoid asking questions about procedural variation altogether. Attending gastroenterologists are encouraged to welcome trainees' questions on their own practice habits and to give them honest answers (40). Doing so will help create healthy learning

environments where trainees and attending gastroenterologists can engage in meaningful feedback conversations (50).

As previously mentioned, the study presents an interpretation of what it meant for six adult gastroenterology trainees to receive feedback on their performance of endoscopy in the workplace. To determine whether the first author had distorted participants' perspective with his own, the interpretation was discussed with them. This process of *member checking* was done to enhance of the *trustworthiness* and *credibility* of findings (58).

It could be questioned whether the findings are generalizable. Establishing the *transferability* of findings—the degree to which the findings are applicable to other contexts (59)—is more apropos in qualitative research. The description of the research process and of the contexts in which participants experienced the phenomenon should help readers establish the applicability of the findings to their settings (58). Whereas the authors understand that no two experiences are exactly alike, they invite readers to reflect on how phenomenological themes may apply to their settings. For example, because procedural variation is the rule rather than the exception (50,57,60,61), readers should think about how trainees are dealing with attending gastroenterologists' different approaches to (and understandings of) endoscopy.

Although curricular changes have been implemented with the launch of the 'Competence by Design' initiative in July 2019, the findings still have relevance to adult gastroenterology training in Canada. Trainees and attending gastroenterologists are now expected to engage repeatedly in feedback conversations following the documentation of trainees' performance of endoscopy. However, making time for feedback remains a challenge, and meaningful feedback conversations are still infrequent (62,63). Also, the observation forms that are used to document trainees' performance do not account for procedural variation nor the asymmetry in the teacher–student relationship.

Because the study was conducted with a phenomenological lens, it cannot answer questions such as 'What are the barriers and facilitators to delivering successful feedback on the performance of endoscopy?' and 'How is feedback on the performance of endoscopy best delivered in the workplace?' (64). Nonetheless, the findings enabled the authors to suggest how attending gastroenterologists may improve their feedback practices. Although calls for receiving formal training in teaching should be answered, this study should help attending gastroenterologists reflect on their feedback practices immediately.

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AUTHOR CONTRIBUTIONS

J.C.P. contributed to the conceptualization of the project, conducted the interviews, performed data analysis, and was a major contributor to writing the manuscript. D.W. acted as supervisor to J.C.P. throughout the research process and was a contributor to writing the manuscript.

ETHICS APPROVAL

The study was reviewed and approved by the following bodies [listed in chronological order of approval]: the School of Medicine and Life Sciences Research Ethics Committee at the University of Dundee (100/18); the *Comité sectoriel d'éthique de la recherche en sciences de la santé d'éthique* at *Université Laval* (2019–037); the Faculty of Medicine Institutional Review Board at McGill University (A04-E25-19B); the *Comité d'éthique de la recherche en sciences et en santé* at the *Université de Montréal* (CERSES-19-031-D); and the *Comité d'éthique de la recherche* at the *Centre intégré universitaire de santé et de services sociaux de l'Estrie – Centre hospitalier universitaire de Sherbrooke* (2020–3212). All participants provided written informed consent.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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