JGME-ALiEM Hot Topics in Medical Education Online Journal Club: An Analysis of a Virtual Discussion About Resident Teachers

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ABSTRACT

Background In health professionals' education, senior learners play a key role in the teaching of junior colleagues.

Objective We describe an online discussion about residents as teachers to highlight the topic and the online journal club medium.

Methods In January 2015, the *Journal of Graduate Medical Education* (*JGME*) and the Academic Life in Emergency Medicine blog facilitated an open-access, online, weeklong journal club on the *JGME* article "What Makes a Great Resident Teacher? A Multicenter Survey of Medical Students Attending an Internal Medicine Conference." Social media platforms used to promote asynchronous discussions included a blog, a video discussion via Google Hangouts on Air, and Twitter. We performed a thematic analysis of the discussion. Web analytics were captured as a measure of impact.

Results The blog post garnered 1324 page views from 372 cities in 42 countries. Twitter was used to endorse discussion points, while blog comments provided opinions or responded to an issue. The discussion focused on why resident feedback was devalued by medical students. Proposed explanations included feedback not being labeled as such, the process of giving delivery, the source of feedback, discrepancies with self-assessment, and threats to medical student self-image. The blog post resulted in a crowd-sourced repository of resident teacher resources.

Conclusions An online journal club provides a novel discussion forum across multiple social media platforms to engage authors, content experts, and the education community. Crowd-sourced analysis of the resident teacher role suggests that resident feedback to medical students is important, and barriers to student acceptance of feedback can be overcome.

Introduction

A physician is a teacher. A physician facilitates not only the education of patients, colleagues, and other health professionals, but physicians-in-training also serve an important role in the education of junior colleagues, including medical students. The CanMEDS framework[1] and the Accreditation Council for Graduate Medical Education Outcome Project[2] explicitly include the teacher role as a core competency for physicians. While North American medical education has historically emphasized clinically based (ie, bedside) teaching, the shift to competency-based medical education only further emphasizes the value of teaching in authentic (ie, clinical) environments.[3] At times, the organization of clinical, administrative, and teaching responsibilities in academic centers frequently requires the partial delegation of teaching responsibilities from faculty to residents. As a result, senior residents have a significant influence on the learning of other trainees, such as junior residents and medical students.[4]

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The influence of medical student and junior resident education provided by residents is reflected in the growing literature that addresses the design and impact of resident-as-teacher curricula.[5–7] In fact, a recent *Journal of Graduate Medical Education* (*JGME*) article[8] reported on "What Makes a Great Resident Teacher? A Multicenter Survey of Medical Students Attending an Internal Medicine Conference." In January 2015, this article was the focus of an open-access, online, health professions education journal club hosted by *JGME* and the Academic Life in Emergency Medicine (ALiEM) blog. Here we describe the themes and summarize the virtual, multiplatform online discussion that arose during the *JGME*-ALiEM Hot Topics in Medical Education journal club on the featured topic of resident teachers.

Methods

Setting and Participants

The *JGME* and ALiEM editorial boards collaboratively selected the featured article in the online journal club. Three facilitators (J.S., N.J., M.L.) were selected by the editorial boards for their expertise in medical

BOX Expert-Designed Journal Club Discussion Questions

1. Feedback was *not* endorsed as an important element of learning. This finding conflicts with a substantial portion of the health professions education literature. What are the implications of this finding?
2. This study describes the perceived learning needs of medical students. What are the challenges of incorporating other perspectives (observed needs from teaching experts, institutional needs from training programs, etc) when designing a resident teacher curriculum?
3. Let's not reinvent the wheel. There are many curricular resources to teach residents how to be better teachers. In an effort to create a crowd-sourced repository to share with the health professions education community, please share useful resources.
4. This study used a postcourse survey design. What are the major threats to validity in survey studies? How might these threats to validity impact your ability to interpret or apply the authors' results? What next step study design and outcomes would build on this work?

education and facility with social media. The discussion was hosted by ALiEM (www.aliem.com), a public, not-for-profit education blog with more than 1.2 million page views in 2014 and 20 000 Facebook followers.

Promotion for the journal club began 3 days before the discussion period, and was primarily conducted on Twitter using the facilitators' accounts (@sherbino, @NJoshi8, @M_Lin), the ALiEM account (@ALiEM-team), and the *JGME* account (@JournalofGME), and included the #JGMEscholar hashtag. The facilitators also e-mailed health professions educators and social media thought leaders to promote the journal club.

Intervention

The weeklong *JGME*-ALiEM Hot Topics in Medical Education was launched January 12, 2015, via an ALiEM blog post (www.aliem.com/what-makes-great-resident-teacher-jgme-aliem-hot-topic). The post included a written summary of the paper with links to the original manuscript, a video interview with the primary author (Lindsay Melvin, MD, University of Toronto; www.youtube.com/watch?v=qe31YjsXhhQ), and 4 discussion questions (BOX). On January 15, 2015 (day 4), a Google Hangout on Air was live-streamed to the public, featuring a video panel discussion with the primary author, an invited expert panelist (H. Barrett Fromme, MD, University of Chicago), and a facilitator (J.S.). The video was embedded and archived within the ALiEM blog post for asynchronous viewing (www.youtube.com/watch?v=9B-h4vIIrTo). Quotes and key ideas from the panel discussion were live-tweeted by the other facilitators (N.J., M.L.). Further details about the educational design of an online journal club can be found in the companion Rip Out in this issue of *JGME*.[9]

What was known and gap

Residents play an important role in the education of junior learners, but receive limited training for this role.

What is new

An online journal club facilitated discussion of a paper on medical student acceptance of resident feedback, with crowdsourced resources for residents as teachers.

Limitations

Design does not allow for vetting of crowdsourced recommendations.

Bottom line

Online journal club participants emphasized the importance of resident feedback, and provided resources for residents as teachers.

Outcomes

We recorded and analyzed participation in the journal club discussion via the ALiEM blog and Twitter.

Analysis

A thematic analysis of the blog comments, Twitter comments with the #JGMEscholar hashtag, and a video panel discussion were conducted by 1 author (N.J.). The results were independently reviewed by the other authors (J.S., M.L.). Points of disagreement were resolved by consensus.

As a measure of the impact of this innovation, web analytics were captured for the week of the journal club, as well as the following week to incorporate any late discussion. Viewership and engagement were measured using such tools as Google Analytics, the ALiEM social media post widget, YouTube Analytics, and Symplur.

Results

The #JGMEscholar hashtag garnered similar participation when compared with established Twitter-based journal clubs, such as #UroJC in urology and #NephJC in nephrology, using public Symplur analytic data for a 14-day interval during a January 2015 journal club. The #UroJC hashtag garnered 179 tweets from 45 participants, resulting in 251 140 Twitter impressions, and #NephJC garnered 783 tweets from 112 participants, resulting in 617 883

Twitter impressions. In comparison, #JGMEscholar garnered 360 tweets from 86 participants, resulting in 459 857 Twitter impressions. We acknowledge that Twitter metrics are not definitive measures of impact, yet #JGMEscholar achieved an equivalent audience when compared to established online clinical medicine journal clubs. In contrast with other online journal clubs, the *JGME*-ALiEM online medical education journal club featured a more diverse audience across different specialties, including emergency medicine, internal medicine, and pediatrics, and across multiple nations. Presumably, this diversity resulted in part from a discussion topic broadly applicable across specialties.

Online Journal Club Requirements

The amount of time needed to prepare, host, and curate the online journal club was small. Production times were approximately 3 hours (preparation), 5 hours (promotion), 10 hours (journal club event), 5 hours (video discussion), and 40 hours (curation/dissemination). These time costs do not include the development of the blog, which was preexisting. The curated summary enables those who missed the journal club event to track participants' diverse viewpoints (and perhaps continue the discussion), a feature absent in other online journal clubs.

Web analytics are reported in TABLE 1. The blog post garnered 1324 page views from 372 cities in 42 countries (FIGURE 1), with 209 tweets directly sent from the blog post during the 14-day analysis period. Although multiple social media platforms were available to facilitate discussion, there was a general dichotomous adoption of platforms. Twitter was used primarily as a promotional tool to highlight or endorse a theme developing in the journal club discussion. Blog comments were used primarily to provide opinions on a question or respond to an issue.

The analysis from the blog comments (n = 40), tweets (n = 569), and video panel discussions for the 4 stimulus questions is summarized below.

Devaluation of Feedback

One of the most surprising elements of the featured paper was the devaluing of feedback as useful for learning by the medical students who were surveyed. This controversial finding was the focus of much of the online discussion across social media platforms. The majority of the audience emphasized that feedback was an important element for teaching medical students.[10,11] One discussant suggested that feedback is essential for resident-as-teacher programs (FIGURE 2).

A common speculation regarding the devaluing of feedback was that medical students may not recognize feedback as such when it is delivered. Many commentators concluded that if feedback is not recognized, it is not valued or appreciated for its influence on learning. This issue is not unique to medical students. Research has shown that learners at various levels of training have difficulty recognizing feedback, partly because of nuanced distinctions between feedback, coaching, and assessment.[12]

A proposed solution offered by discussants was to explicitly label feedback, and to use clear language that signals to learners that feedback is being delivered, such as "I am going to give you some feedback." Providing feedback without labeling it may leave learners unaware that they received feedback during a clinical shift.

Several Twitter discussants suggested the actual issue was the word "feedback." They proposed to rebrand feedback as "coaching" because of the positive connotations of this term, and the implication of the longitudinal relationship typical in coaching.[13]

Participants suggested that medical students truly value feedback, but that ineffective delivery reduces its value.[14] Medical student discussants criticized generic and untimely feedback, which prevented the development of learning plans. This is reflected in research that shows medical students value teachers who tailor education to the students' individual needs.[15] One discussant proposed enhanced assessment training for learners and teachers, and to create a feedback culture to address this issue. Some discussants suggested that medical students place a lower value on feedback from residents. Students may value feedback in general, but not from other trainees with limited clinical experience. While students may appreciate general teaching from a resident, whom they perceive as a near-peer, they may not value a constructive critique with performance recommendations.

Another explanation for the devaluing of feedback was that medical students do not fully understand their learning needs. Several studies suggest that self-assessment is inaccurate and unreliable.[16–19] The consensus from the discussants was that professional inexperience may leave medical students to rank feedback as less effective to their learning as other modalities.

Several blog commenters and tweeters, some of whom are medical students, suggested that perhaps threats to the self-images of medical students led to the devaluing of resident feedback (FIGURE 2). Other

TABLE 1
Aggregate Analytic Data for the First 14 Days of the *Journal of Graduate Medical Education* (*JGME*)–Academic Life in Emergency Medicine Hot Topics in Medical Education Discussion Using Various Social Media Platforms (January 12–25, 2015)

Social Media Analytic Aggregator	Metric	Metric Definition	Count
Google Analytics	Page views	Number of times the webpage containing the post was viewed	1324
	Users	Number of times individuals from different IP addresses viewed the site	1189
	Number of cities	Number of unique jurisdictions by city as registered by Google Analytics	372
	Number of countries	Number of unique jurisdictions by country as registered by Google Analytics	42
	Average time on page	Average amount of time spent by a viewer on the page	4:44 min
ALiEM blog	Number of tweets from page	Number of unique 140-character notifications sent directly from the blog post via Twitter to raise awareness of the post	209
	Number of Facebook likes	Number of times viewers "liked" the post via Facebook	14
	Number of Google+ shares	Number of times viewers shared the post via Google+	1
	Number of LinkedIn shares	Number of times viewers shared the post via LinkedIn	2
	Number of Reddit votes	Number of times viewers up-voted the post via Reddit	5
	Number of Pocket saves	Number of times viewers saved the blog post's content to their personal Pocket repository account for future reference	21
	Number of site comments	Comments made directly on the website in the blog comments section	40
	Average word count per blog comment (excluding citations)		111
Symplur analytics for Twitter hashtag #JGMEscholar	Number of tweets	Number of tweets containing the hashtag #JGMEscholar	360
	Number of Twitter participants	Number of unique Twitter participants using the hashtag #JGMEscholar	86
	Twitter impressions	How many impressions or potential views of #JGMEscholar tweets appear in users' Twitter streams, as calculated by the number of tweets per participant and multiplying it with the number of followers of that participant	459 857
YouTube Analytics (Video 1: Introduction; Video 2: Discussion)	Length of videocast	Total duration of recorded Google Hangout video broadcast	Video 1, 4:44 min; Video 2, 27:40 min
	Number of views	Number of times the YouTube video was viewed	Video 1, 183 views; Video 2, 77 views
	Average duration of viewing	Average length of time the YouTube video was played in a single viewing	Video 1, 3:11 min; Video 2, 9:03 min

FIGURE 1
Geographic Distribution of Online Journal Club Participants

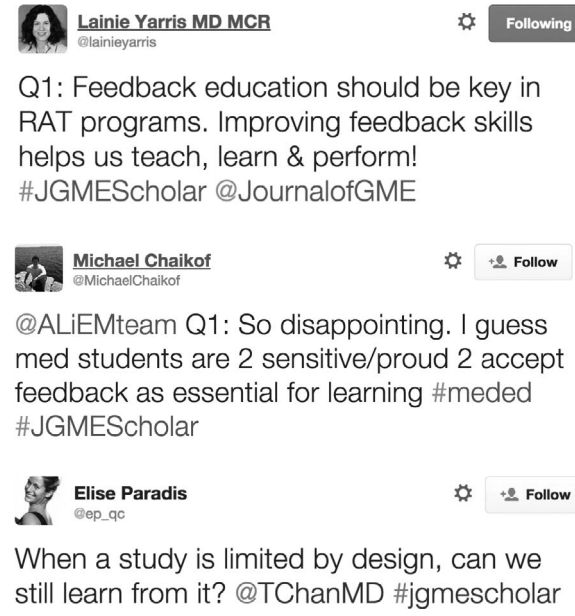

FIGURE 2
Selected Tweets From Twitter

participants suggested that medical students looked to feedback as a form of internal validation of their clinical abilities, as opposed to a means of identifying areas for learning.[20] Thus, constructive feedback that does not validate an internal perception may be devalued.

Medical Student Learning Needs and the Design of Resident-as-Teacher Curricula

The discussion identified differences between the needs of a student-centered versus a teacher-centered curriculum. Several medical students clarified the perceived needs of learners, suggesting they evolve during the progression of training. A number of faculty members acknowledged the challenge of balancing the needs of various stakeholders, but the "end-user" (ie, the student) should remain a primary focus.[21]

During the video panel discussion, an invited expert panelist felt that the devaluing of feedback further underlined the importance of effectively training residents in the delivery of feedback.[22] She cautioned that many resident teacher curricula are modeled on faculty teaching programs; however, this assumes that residents and faculty share the same learning needs. Therefore, more scholarship on effective resident teacher curricula is required.

Threats to Validity in the Study Design

The featured article's single specialty nature (internal medicine), and the opportunistic sampling of resident teacher performance immediately after an intensive, weekend-long workshop, limited the generalizability of the findings to other learning environments and specialties. Several discussants commented on the recall bias of retrospective surveys. On satisfaction bias, an individual commented that "the literature has shown that students often do not appreciate feedback as a phenomenon on the whole.[23] As such, they may not report these experiences as valuable." Recognizing these limitations, 1 discussant asked whether there is anything to be learned from a study limited by methodological design (FIGURE 2). The invited expert panelist countered that despite nonperfect methods, this study generates hypotheses to inform future scholarship.

Crowdsourced Resources for Residents as Teachers

Participants in the online journal club identified a rich and varied set of resources for residents as teachers, shown in TABLE 2.

Discussion

Our curated summary reports the multiplatform social media discussions from the inaugural *JGME*-ALiEM Hot Topics in Medical Education online journal club. The virtual health professions education community discussed a study of medical students' perceptions of feedback from resident teachers. The primary focus was why feedback was devalued by medical students, and many explanations were proposed, including feedback not being labeled as such, the process of giving feedback, the source of feedback, limitations of students' self-assessments,

TABLE 2
Crowdsourced Repository of Resident Teacher Curricular Resources

Resource	Host or Publisher	URL
Creating Effective Learning in Today's Emergency Departments: How Accomplished Teachers Get It Done	*Annals of Emergency Medicine*	www.ncbi.nlm.nih.gov/pubmed/15726047
MedEdPORTAL	Association of American Medical Colleges	www.mededportal.org
Online Repository of Residents-as-Teachers Curricula	American Pediatrics Association	http://academicpeds.org/resteach/login.cfm
PGY-3 Resident-as-Teacher Elective	Montefiore Medicine Housestaff Website	www.montemedicine.com/curriculum/electives/resident-as-teacher-rat
Resident as Educator (e-book)	Emergency Medicine Residents Association	www.emra.org/uploadedfiles/emra/emra_publications/emra-2013residentaseducator-interactive.pdf
Residents as Teachers	University of Nevada School of Medicine	http://medicine.nevada.edu/gme/current-residents/rats
Teaching on the Run	Florida State University College of Medicine	http://med.fsu.edu/index.cfm?page=facultydevelopment.onTheRun
Teaching Star: resources for enhancing teaching and assessment skills of faculty, residents, and nonfaculty instructors	Albert Einstein College of Medicine	www.einstein.yu.edu/education/graduate-medical-education/teaching-star
Trainee as Teacher Curriculum Showcase	Harvard Medical School	https://hms.harvard.edu/resident-teacher-interest-group-symposium

and threats to student self-image. A crowdsourced repository of resident teacher resources was developed.

Traditional journal clubs are challenged by the scheduling of participants and facilitators, finding local experts to guide the discussion, and exclusive sharing of conclusions only with participants. In response to these challenges, online journal clubs have become more popular.[24,25] Using online platforms, participation can be synchronous or asynchronous, global experts can be recruited, and the discussion is digitally archived for broader dissemination. As a testament to their popularity, PubMed Commons recently announced a partnership with several online journal clubs.[26] In a similar manner, the *Harvard Business Review* partnered with the *New England Journal of Medicine* in 2013 to create an annual open-forum series to discuss major health care issues.[27] The common theme is to bring different communities of practice together in a virtual online space to discuss, cocreate, and disseminate knowledge in an open and flat hierarchical environment.[28]

A limitation of this online journal club is sampling bias. Familiarity with social media was required for participation. Also, participant demographics are unknown, thus raising the possibility that important perspectives (eg, clinical specialty, stage of training, content expertise, etc) have not been considered in the analysis. Both of these elements limit the generalizability of the findings. Presumably, with increasing attention on the role of social media in health professions education, and the increasing incorporation of digital technologies into curricula, more educators will feel comfortable posting a blog comment or tweeting a response during virtual discussions. An online health professions education journal club has the potential to grow over time with minimal incremental costs because the available social media technologies are free and scalable.

Next steps for the *JGME*-ALiEM Hot Topics in Medical Education online journal club will be a thoughtful interpretation of web analytics to guide development, ensuring that a broad and representative audience contributes to future discussions on key topics for the health professions education community. Finally, the process of archiving and disseminating the curated summary of journal club findings should be examined to optimize reach and help influence related health professions education scholarship.

Conclusion

The *JGME*-ALiEM Hot Topics in Medical Education online journal club provided a novel discussion forum across multiple social media platforms, engaging authors, content experts, and the health professions education community. This approach can be adopted

by other disciplines to promote an international asynchronous discussion on important topics. Crowd-sourced analysis of the resident teacher role suggests that feedback from residents to medical students is important, and that barriers to feedback acceptance can be overcome. Resident teacher curriculum resources are recommended.

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