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Authors

Westafer, Lauren
Hensley, Justin
Shaikh, Sameed
[et al.](#)

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Global Emergency Medicine Journal Club: A Social Media Discussion About the Lack of Association Between Press Ganey Scores and Emergency Department Analgesia

Lauren Westafer, DO, MPH*; Justin Hensley, MD; Sameed Shaikh, DO; Michelle Lin, MD[†]

*Corresponding Author. E-mail: westafer@gmail.com, Twitter: @LWestafer.

Annals of Emergency Medicine collaborated with an educational Web site, Academic Life in Emergency Medicine (ALiEM), to host a public discussion featuring the 2014 *Annals* article on the association between Press Ganey scores and emergency department (ED) analgesia by Schwartz et al. The objective was to curate a 14-day (December 1 through 14, 2014) worldwide academic dialogue among clinicians in regard to preselected questions about the article. Five online facilitators hosted the multimodal discussion on the ALiEM Web site, Twitter, and Google Hangout. Comments across the social media platforms were curated for this report, as framed by the 4 preselected questions. Engagement was tracked through Web analytic tools and analysis of tweets. Blog comments, tweets, and video expert commentary involving the featured article are summarized and reported. The dialogue resulted in 978 page views from 342 cities in 33 countries on the ALiEM Web site, 464,345 Twitter impressions, and 83 views of the video interview with experts. Of the unique 169 identified tweets, discussion (53.3%) and learning points (32.5%) were the most common category of tweets identified. Common themes that arose in the open-access multimedia discussions included Press Ganey data validity and the utility of patient satisfaction in determining pain treatment efficacy. This educational approach using social media technologies demonstrates a free, asynchronous means to engage a worldwide scholarly discourse. [Ann Emerg Med. 2015;■:1-7.]

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INTRODUCTION

In 2013, *Annals of Emergency Medicine* and Academic Life in Emergency Medicine (ALiEM) launched a shared initiative to increase awareness of key emergency medicine literature and highlight critical appraisal skills. The ultimate goal was to increase the speed of knowledge translation into clinical practices because this gap is often longer than 10 years.¹ The use of open-access multimedia digital platforms, termed free open access medical education, is increasingly common in medical education, and ALiEM is a central resource for US emergency medicine residents.² This joint online journal club, the Global Emergency Medicine Journal Club, paired ALiEM's social media capabilities with the evidence-based medicine expertise of *Annals*.

In this installment of the Global Emergency Medicine Journal Club, we discussed an article by Schwartz et al³ on the association of Press Ganey scores with analgesia administered in the emergency department (ED). In this retrospective review, the authors linked ED visit information from 2 hospitals in Rhode Island, totaling 4,749 Press Ganey patient satisfaction survey scores for patients discharged between October 2009 and September

2011. The authors found no association between analgesics prescribed in the ED and patient satisfaction scores, measured by the Press Ganey instrument.

On December 1, 2014, ALiEM published the blog post, which served as a central resource unifying conversations from the other social media platforms, including Twitter and the Google Hangout on Air video. The objective of this article is to curate the proceedings of the Global Emergency Medicine Journal Club through collection, organization, and review, as well as to report objective engagement analytics of the social media modalities.

MATERIALS AND METHODS

The *Annals* editors selected the article for this edition of the Global Emergency Medicine Journal Club collaboration with ALiEM. The facilitators were chosen for their expertise in curating open-access multimedia resources. Three were experienced bloggers (L.W., J.H., and M.L.) and all have active Twitter accounts with greater than 200 (S.S., @SynthShaikh), greater than 870 (J.H., @EBMgoneWILD), greater than 2,500 (L.W., @LWestafer), and greater than 8,900 (M.L., @M_Lin) followers at the discussion.

[†]All participants are listed in the [Appendix](#).

The ALiEM team prespecified times for promotion (November 26 to 30, 2014), a 14-day discussion period (December 1 to 14, 2014), and the live discussion (December 4, 2014). In accordance with an inventory of previous online discussions in other open-access resources and the paired *Annals* journal club article,⁴ 2 authors (L.W. and J.H.) formulated 4 discussion questions.

Pre-event Promotion

Promotion of the Global Emergency Medicine Journal Club was multimodal. The unique identifying hashtag, #ALiEMJC, was prospectively registered with Symplur.com (hashtag-based Twitter analytics Web site) as a result of previous Global Emergency Medicine Journal Club projects. Facilitators publicized the initiative on Twitter leading up to the live journal club event, using the hashtag #ALiEMJC, through their individual Twitter accounts, as well as the ALiEM Twitter account. Facilitators also e-mailed potentially interested colleagues about the journal club event.

Journal Club Event

A blog post on the ALiEM Web site was published on December 1, 2014, to Global Emergency Medicine Journal Club, featuring the 4 discussion questions. On the same day, announcements were made with Twitter, as well as on the ALiEM Google+ and Facebook pages, about the event. The facilitators monitored all channels and encouraged continued scholarly discussions.

Live Interview on Google Hangout

On December 4, 2014, a live interview was conducted with the authors of the featured article, Tayler Schwartz, BS, (Brown University) and Kavita Babu, MD, (University of Massachusetts), using Google Hangout on Air, a free multiperson videoconferencing software, which was automatically streamed live onto the ALiEM YouTube channel (<http://youtu.be/g08zmClCfCo>). Concurrently, an off-screen facilitator (S.S.) live-tweeted quotes from the interview with the #ALiEMJC hashtag. This video could be viewed asynchronously on YouTube directly or on the ALiEM blog post.

Discussion Analysis

Written transcripts from the ALiEM blog, Twitter, and the Google Hangout interview were reviewed and curated to create a discussion summary using the 4 featured questions as a framework. Content curation was conducted by one author (L.W.) and independently checked by another (J.H.). A full transcript of the blog discussion is

archived at <http://www.aliem.com/?p=20567>, all tweets with the #ALiEMJC are archived at <http://aliem.link/1Av3ttV>, and the Google Hangout video can be accessed on YouTube at <http://youtu.be/g08zmClCfCo>.

Social Media Web Analytics

Free, prepackaged analytic tools were used to measure engagement and reach during the 14-day Global Emergency Medicine Journal Club period. Google Analytics measured Web traffic for the ALiEM blog, Symplur measured metrics for #ALiEMJC-related tweets, and YouTube measured analytics for the recorded live discussion. Viewership was measured by the number of visits to a Web page from a single user, identified by Internet provider address, and the duration a viewer stayed on a page or allowed the YouTube video to play in a single viewing was recorded. [Table 1](#) provides descriptions for these tools.

A post hoc analysis of the #ALiEMJC tweets, aggregated by Symplur during the 14-day period, was conducted to attempt to categorize the purpose of each tweet. Additionally, because the #ALiEMJC hashtag was not used consistently by participants, one author (L.W.) performed a manual search of Twitter to capture tweets that were part of the conversation regardless of hashtag use. Only original tweets or replies were included in this analysis. Tweets that were modified tweets or retweets were included in this analysis only if they contained additional original comments or thoughts. Tweets were classified into categories, which were defined as informed by a literature review and selected before analysis.⁵⁻⁸ This included promotion (of the project), learning points, discussion, support, literature, or other. Descriptions of these can be found in [Table 2](#). A study by McKendrick et al⁵ categorized tweets related to a medical conference and provided the foundation for establishing content categories. Of these categories, promotion, learning points, and discussion were incorporated into our analysis because these had the most relevance. The categories “encouraging speakers” and “social” by McKendrick et al⁵ were merged into a single category called support because these original categories have similar aims and the asynchronous nature of our project did not allow traditional, in-person social events. The literature category was created according to previous studies showing that more than half of tweets from some medical conferences may share links to journal articles and news stories, which could also aid in knowledge dissemination.⁹ Last, an “other” category was included to include tangential conversations or tweets that did not fit into the other established aforementioned categories.

Table 1. Aggregate analytic data from various social media–based discussions for the first 14 days of the event (December 1 to 14, 2014).

Social Media Analytic Aggregator	Metric	Metric Definition	Count
Google Analytics: a free online service to track page views and other blog metrics	Page views	Number of times the Web page containing the post was viewed	978
	Users	Number of times individuals from different Internet provider addresses viewed the site	817
	Number of cities	Number of unique jurisdictions by city as registered by Google Analytics	342
	Number of countries	Number of unique jurisdictions by country, as registered by Google Analytics	33
	Average time on page	Average amount of time spent by a viewer on the page	3 min 37 s
ALiEM social media post widget: a Web-based tool embedded into each blog post that tracks engagement metrics for multiple social media platforms	Number of tweets from page	Number of unique 140-character notifications sent directly from the blog post by Twitter to raise awareness of the post	117
	Number of Facebook likes	Number of times viewers “liked” the post through Facebook	26
	Number of Google+ shares	Number of times viewers shared the post through Google+	0
ALiEM comments section	Number of site comments	Comments made directly on the Web site in the blog comments section	17
	Average word count per blog comment (excluding citations)		112
Symplur Analytics: a free online service to track metrics for Twitter engagement of health-related hashtags; used to track Twitter hashtag #ALiEMJC	Number of tweets	Number of tweets containing the hashtag #ALiEMJC	231
	Number of Twitter participants	Number of unique Twitter participants using the hashtag #ALiEMJC	65
	Twitter impressions	How many impressions or potential views of #ALiEMJC tweets appear in users' Twitter streams, as calculated by number of tweets per participant and multiplying it by the number of followers that participant has	464,345
YouTube Analytics: a free online service to track YouTube video viewing statistics	Length of video interview	Total duration of recorded Google Hangout videoconference session	33 min 56 s
	Number of views	Number of times the YouTube video was viewed	83
	Average duration of viewing	Average length of time the YouTube video was played in a single viewing	5 min 27 s

A tweet could be classified into more than 1 category. Tweets were independently categorized by 2 authors (L.W. and J.H.). We calculated the Cohen unweighted κ statistic to assess for interrater agreement beyond chance alone. Disputes were settled by discussion between 2 authors (L.W. and J.H.).

RESULTS

Social Media Analytics

The 14-day analytic data for the Global Emergency Medicine Journal Club discussion about the association between patient satisfaction and analgesia during December 1 through 14, 2014, are summarized in [Table 1](#). [Figure 1](#) summarizes a global geographic distribution of participants who read the blog post. A total of 978 viewers from 33 countries saw the blog post on the ALiEM Web site during the discussion period, with an average of 3 minutes 37 seconds spent on the page.

In accordance with the Symplur analytic database, the #ALiEMJC-tracked discussions garnered 231 total tweets (includes retweets) and 464,245 Twitter impressions. Through a manual search of Twitter during the same 14-day period, we identified 169 unique tweets (excluded retweets), of which 103 included the #ALiEMJC hashtag and 66 did not. These 66 tweets thus were missed by the Symplur analytics mechanism. [Table 2](#) shows the distribution of tweets divided by category and hashtag use. Overall agreement of the categorization of tweets between raters was excellent ($\kappa=0.97$; 95% confidence interval 0.96 to 0.99). In descending order of frequency, the tweet categories included discussion (53.3%), learning point (32.5%), promotion (17.8%), support (13.0%), literature (10.1%), and other (4.1%).

Summary of the Online Discussion

The Global Emergency Medicine Journal Club attracted participants from around the globe, who contributed

Table 2. Classification of 169 unique tweets during December 1 to 14, 2014, identified by the Sympplr #ALiEMJC-tracked transcript and a manual search.*

Category	Description	Number of Tweets in Each Category		
		With #ALiEMJC Hashtag	Without #ALiEMJC Hashtag	Total (% of All Tweets)
Discussion	Tweets discussing academic matters directly with one another or posts of controversial points	34	56	90 (53.3)
Learning point	Directly answering a journal club question, a summary from the live Hangout, or an objective pearl not otherwise classified as discussion	43	12	55 (32.5)
Promotion	A tweet advertising or promoting the project	30	0	30 (17.8)
Support	Tweet demonstrating support of the project or individual or a display of camaraderie/nonacademic discussion	12	10	22 (13.0)
Literature	Reference or link to literature other than the article associated with the project	11	6	17 (10.1)
Other	Links to other discussions on a similar but not directly related topic	6	1	7 (4.1)

*The total tweet count exceeds the 169 unique tweets count because a single tweet could be classified into multiple categories.

asynchronously to the open-access conversation by commenting on the ALiEM Web site, posting tweets, and watching the Google Hangout on Air. The curated summary of the conversation on the 4 preselected journal club questions is presented below.

Question 1

This study evaluated the association between analgesics provided in the ED and patient satisfaction scores. Do you think analgesia in the department can be extrapolated to satisfaction of analgesic prescriptions dispensed at discharge from the ED?

This question was sparked by a recent ALiEM-Annals Residents' Perspective discussion about the opioid prescription epidemic (<http://www.aliem.com/opioid-prescription-epidemic-annals-em-resident-perspectives-article/>). Patient satisfaction was mentioned as a possible driving force for unnecessary opioid prescriptions at discharge. The Global Emergency Medicine Journal Club consensus was that the findings of Schwartz et al,³ which showed no association between patient satisfaction and ED analgesia, should not be extrapolated to analgesic prescriptions dispensed on discharge. Study author Babu noted that the Press Ganey scores evaluate only the experience in the ED and are not intended to reflect postdischarge care.

On the blog, Avi Giladi, MD, (plastic and reconstructive surgery, University of Michigan) commented further: *“Looking at the data en masse is a statistical exercise but doesn't look at the complexities of the issue. The real question is whether PG [Press Ganey] scores are changed by giving opioids to patients that want them—specifically, to patients that want*

them and might not need them.... Without a comparison arm (patients with the same diagnoses who didn't get meds), and without even filtering for diagnoses in the model, I don't think this paper answers the real question about opioid delivery and PG scores that goes through the mind of the under-pressure provider.”

Question 2

The Press Ganey Instrument was used to measure patient satisfaction in this study. What are the limitations to using this instrument? Is there another way to measure patient satisfaction?

The limitation most commonly identified by discussants focused on the undisclosed proprietary sampling algorithm used in the Press Ganey surveys. In addition to a nontransparent patient selection process, concerns were raised about the nonrandom process. Furthermore, these data do not capture admitted patients, thereby eliminating the sickest population. On Twitter, participants exchanged numerous studies and articles identifying poor response rates associated with Press Ganey surveys. Ultimately, response bias was identified as a significant limitation to this instrument and is further discussed in question 3.

Ryan Radecki, MD, (University of Texas–Houston), author of an EMLitofNote.com blog post also covering this article, called for real-time assessment of patient-oriented pain management effectiveness, rather than using the poor recall-based surrogate marker of patient satisfaction (Figure 2). Zack Repanshek, MD, (Temple University) added that satisfaction scores are subjective and should not be treated as a reliably objective measure (Figure 3).

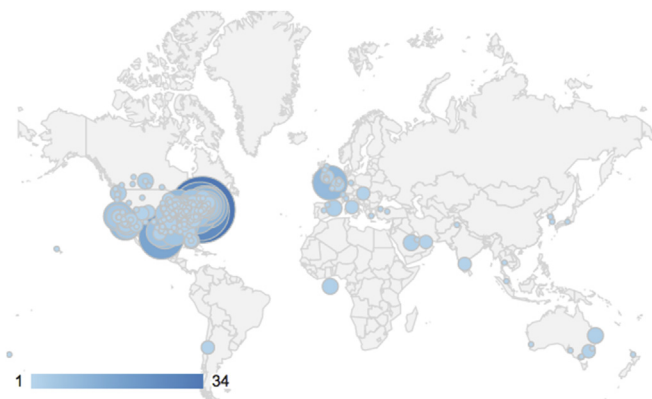


Figure 1. Geographic distribution of readers who viewed the Global Emergency Medicine Journal Club between December 1 and 14, 2014.

Question 3

The authors studied only patients who returned the survey. How might that group differ from the others? What might these authors have done, given that they had treatment data on all patients, to explore the potential for response bias?

In the discussion, author Schwartz hypothesized that those returning the surveys are likely to be at one end of the spectrum of satisfaction: either highly satisfied or dissatisfied. This bias would thereby skew the results. Repanshek suggested that in an ideal world, a secondary analysis of both respondents and nonrespondents to the Press Ganey survey should be conducted to determine their demographic, patient profile, and satisfaction differences. Giladi also commented on the blog that the article suffers from a lack of comparison group, not including diagnoses in the model, and not knowing whether discharge prescriptions were given.

Babu suggested on the Google Hangout live-stream video that, given a theoretical scenario of unlimited funds and resources to answer the question of patient satisfaction and in-ED analgesic administration, “[y]ou could survey patients about their satisfaction with the discharge prior to them receiving their discharge prescriptions. That way you would be able to get all comers before they know their discharge prescription.” This

would minimize such confounders as recall bias, response bias, and inclusion of discharge prescription experiences.

Question 4

Based on your own clinical experience, do you think that there exists an association between positive satisfaction scores and discharge opioid prescriptions? Is pain control the largest component of satisfaction, or is it merely a small player? What other aspects of the patient experience can affect patient satisfaction?

In the Google Hangout, Babu discussed that she undertook this study after asking community emergency physicians at opioid-prescribing conferences to curtail prescription of opioids for acute exacerbations of chronic pain. She found that they often inquired how this change would affect their patient satisfaction scores because bonus compensation (20% to 30% of base salary) was tied to patient satisfaction for some.

On Twitter, many providers echoed this sentiment, acknowledging that patient satisfaction had altered their prescribing practice. Ari Kestler, MD, (San Jose Regional Medical Center) suggested that it may not be patient satisfaction but rather “prescriber fatigue” that has driven an increase in opioid prescriptions in the ED. On a chaotic shift, the provider may not have the time or energy to explain why opioids are not being prescribed to the potential drug seeker, and so he or she opts to just prescribe the opioid.

Ultimately, however, Babu stated that she did not think that a correlation would be evident between opioid prescriptions and patient satisfaction if a study directly assessing this were to be conducted. She reasoned that “the opioid fixated population is [a] relatively small” proportion of the sample population and thus would unlikely affect overall patient satisfaction trends.

Overall, there was good agreement that patient satisfaction is multifactorial and very difficult to measure in a reliable and meaningful way. Communication, demeanor of staff, and length of stay were identified as some of the most important components associated with patient satisfaction in the Global Emergency Medicine Journal Club.



Ryan Radecki
@emlitofnote



@kavitababu @LWestafer @M_Lin
@EBMgoneWILD "Satisfaction" is an inadequate surrogate for quality of processes or outcomes. #aliemjc

Figure 2. Tweet by Ryan Radecki, MD, about measuring patient satisfaction.



Zack Repanshek
@ZackRepEM



@EBMgoneWILD @LWestafer @MDaware I'd say patient satisfaction is IMPORTANT. Its measurement is an inexact science and should be treated thus

Figure 3. Tweet by Zack Repanshek, MD, about the measuring patient satisfaction.

LIMITATIONS

The primary limitations of sampling and response bias have been addressed in previous articles in this series.¹⁰⁻¹² Our project may also have an English-language bias because this was the only language used in the materials. Although the Global Emergency Medicine Journal Club harnessed open-access multimedia platforms, the featured article was not open access. This may have decreased participation and engagement by some parties. Despite use of Symplur analytics and a manual search for Twitter messages and conversations, it is still possible that some tweets were missed and thus underreported.

DISCUSSION

In this ALiEM-*Annals* Global Emergency Medicine Journal Club, we report a summary of social media–based discussions critically appraising the association between analgesics administered in the ED and patient satisfaction. The discussion focused on the shortcomings of the Press Ganey instrument currently used to measure patient satisfaction. This endeavor provided a forum for participants to share their perspectives on methodological flaws, evidentiary concerns, systematic issues, and personal experiences about the topic in a virtual and transparent space.

Measuring value and impact of digital scholarship in medical education is a continually evolving point of discussion. The value of available metrics of community engagement and content dissemination, such as page views or Twitter impressions, remains under debate. However, our reported social media analytic data provide early insight into the behavior and usage patterns of Global Emergency Medicine Journal Club participants. For example, YouTube analytics demonstrate that viewers, on average, watched 16% of the video. This value is consistent with that of previous editions of the Global Emergency Medicine Journal Club, in which viewers trended toward watching small portions of the video.¹⁰⁻¹² This suggests limited effectiveness of this platform for the sharing and dissemination of scholarly content.

Although the social media analytics in [Table 1](#) generally report passive consumption by a global audience, the thematic analysis of Symplur and manually searched Twitter content demonstrates some degree of active engagement. Tweets often contained active academic discussion and contribution of links to affiliated literature. This suggests that it is feasible to engender thoughtful discussion from geographically disparate parties on open-access multimedia platforms. During the search for Global Emergency Medicine Journal Club–related tweets, we

determined that Symplur failed to capture 66 of 169 tweets (39%) from this journal club despite this serving as a standard hashtag-based reporting tool in academic conferences and tweet chats.^{13,14} Because Twitter plays an expanding role in academic discussions and is increasingly used to measure engagement at conferences, our results suggest that future social media–based discussion will require ongoing participant education about the significance of the hashtag. In the meantime, our analysis demonstrates that tracking hashtag mentions on Twitter alone would miss a substantial portion of participant discussions. Alternative approaches to capturing meaningful discussions on Twitter and reporting engagement metrics are needed.

The benefit of social media such as blogs and Twitter extends beyond being able to virtually and transparently connect clinicians and scholars in a free, worldwide platform. They also affect article-level metrics, which are becoming increasingly valued by academic institutions and used as a comparative metric within and between journals. In contrast to the journal impact factor score, these metrics measure impact at the article level. The alternative metrics provider Altmetric.com tracks the attention that scholarly articles receive from multiple media platforms, including news outlets, social media such as Twitter, blogs, and Facebook, and research highlight platforms.¹⁵ Although this metric reports only mentions (as an indirect measure of value and quality), it does incorporate both traditional and social media–based data. This featured Global Emergency Medicine Journal Club article had a high score of 100 as of February 18, 2015. This score placed the article in the 99th percentile among all *Annals* articles (13th of 1,714 articles).

Collaborations between social media outlets such as ALiEM and traditional academic journals such as *Annals* may be intrinsically beneficial by enabling a scholarly discourse on a global level through the establishment of an online community of practice. Additionally, academic journals may benefit as well, as demonstrated by the high-scoring Altmetric score for the featured article.

CONCLUSIONS

In this ALiEM-*Annals* Global Emergency Medicine Journal Club, we report the perspectives of clinicians on the association between patient satisfaction scores and analgesia in the ED. Most participants believed that patient satisfaction is multifactorial and may be more heavily influenced by communication and systems processes than by analgesic administration itself. All agreed that the ways in which we measure patient satisfaction are inadequate and should not be used to drive medical treatment decisions.

This educational initiative to promote scholarly dialogue in the digital community attracted a global audience by using various social media platforms, including a blog, Twitter, and Google Hangout. We hope that this curated report from the Global Emergency Medicine Journal Club virtual community of practice will encourage more to participate and engage with scholarly dialogues in the social media domain.

Supervising editors: N. Seth Trueger, MD, MPH; Michael L. Callahan, MD

Author affiliations: From the Department of Emergency Medicine, Baystate Medical Center/Tufts University, Springfield, MA (Westafer); the Department of Emergency Medicine, Texas A&M Health Science Center, Corpus Christi, TX (Hensley); the Department of Emergency Medicine, Sinai-Grace Hospital/Wayne State University, Detroit, MI (Shaikh); and the Department of Emergency Medicine, University of California–San Francisco, San Francisco, CA (Lin).

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APPENDIX

Participants

The #ALiEMJC Twitter participants:

@alitemteam, @alittlemedic, @apathetic_cynic, @bodymender_n_ed, @ccemrp, @debhourycdc, @docamyewalsh, @docertrauma, @doconskis, @drsamko, @ebmgonewild, @emcases, @emtogether, @glazier_scott, @himmelhimmel, @k_scottmd, @kavitababu, @kestlermd, @lwestafer, @m_lin, @maggimahar, @matthew608b, @mdaware, @meetsdeadlines, @nomadicgp, @peterrchai, @rocknicepac, @shannonomac, @signaturedoc, @synthshaikh, @thesgem, @toxtalk, @zackrepem

The ALiEM blog discussion participants:

Kavita Babu, Avi Giladi, Anton Helman, Ronald Hirsch, Michelle Lin, Tom Logue, Sabrina Poon, Zack Rapanshek, Seth Trueger, Lauren Westafer