Building a Modern Journal Club: The Wiki Journal Club Experience

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Imagine the perfect medical education conference. It would be in an easily accessible place filled with engaged learners. Participants could stay as long as they liked, and participate as they wished. The ideas exchanged would always be available for future reference, and could evolve over time. Coffee would be plentiful and bagels would be fresh. Sounds pretty good, right?

Contrast that utopian view with the reality of contemporary journal club conferences. By all accounts, trainee participation in journal clubs improves biostatistics knowledge and critical appraisal skills, and promotes evidence-based practice.[1] Yet journal clubs are limited by their real time only nature, relatively low attendance, and propensity to overrepresent the viewpoints of a handful of vocal participants, who tend to overpower even the most diplomatic of mediators.[2]

New technology applied to the journal club concept has the potential to overcome these limitations to a large degree.[3] Twitter-based[4] and blog-based[5] journal clubs attempt to address the problem of real-time participation by separating conference attendance from conference participation. Through these types of social media, participants can contribute their perspectives at their leisure using technology fundamentally designed with community and collaboration in mind.

Although they have been at least modestly successful, social media–powered journal clubs introduce problems of their own. For example, while Twitter simplifies the act of contributing to a discussion, this medium offers little in the way of content organization. Learning anything from a journal club discussion that occurred months ago using Twitter is difficult. Similar limitations hold for blogs, which tend to relegate reader contributions to an unorganized comment section. Both platforms require special interventions to correct errors. In Twitter, it is easy to propagate errors from 1 tweet to the next. And in blog posts, errors tend to have long life spans since their content is editable only by the original author.

We set out to create an online journal club that combined Twitter's ease of contributing with the intuitive organization of an encyclopedia that would foster a collaborative community of medical learners of all levels. Subsequently, in 2011, we founded Wiki Journal Club (WJC, www.wikijournalclub.org). Powering WJC is the same wiki technology used by the popular online encyclopedia Wikipedia, which allows anyone to edit content directly in a browser.

At the center of WJC is a bibliography of landmark studies organized by disease, specialty, and publication date. The selection of studies is determined by consensus among WJC editors, with an emphasis on highly relevant, practice-changing studies in internal medicine, as well as studies requested by readers. The majority of studies are controlled intervention trials, although WJC reviews other types of research. Each study has an associated entry on WJC that can be written and edited by anyone with an account. Entry titles use the most common name of the journal article: think "Rivers Trial" rather than "Early Goal-Directed Therapy in the Treatment of Severe Sepsis and Septic Shock."[6]

Each WJC entry is a living, breathing journal club conference that follows a simple structure. The page header provides the full citation and URLs for PubMed listings, full text on the publisher's website, and a PDF on the publisher's website. The main content of each entry is divided into sections, including Bottom Line, Major Points, Guidelines, Criticisms, and Further Reading (table provided as online supplemental material). In general, 1 or 2 contributors provide the bulk of an entry's initial content, with editorial assistance from the WJC staff, who fact check for accuracy and completeness. When

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Editor's Note: The online version of this article contains a table of standardized article review sections; a figure of total published entries on the Wiki Journal Club by month and year; session timing analysis; and figures of average weekly timings of various website visitation sessions.

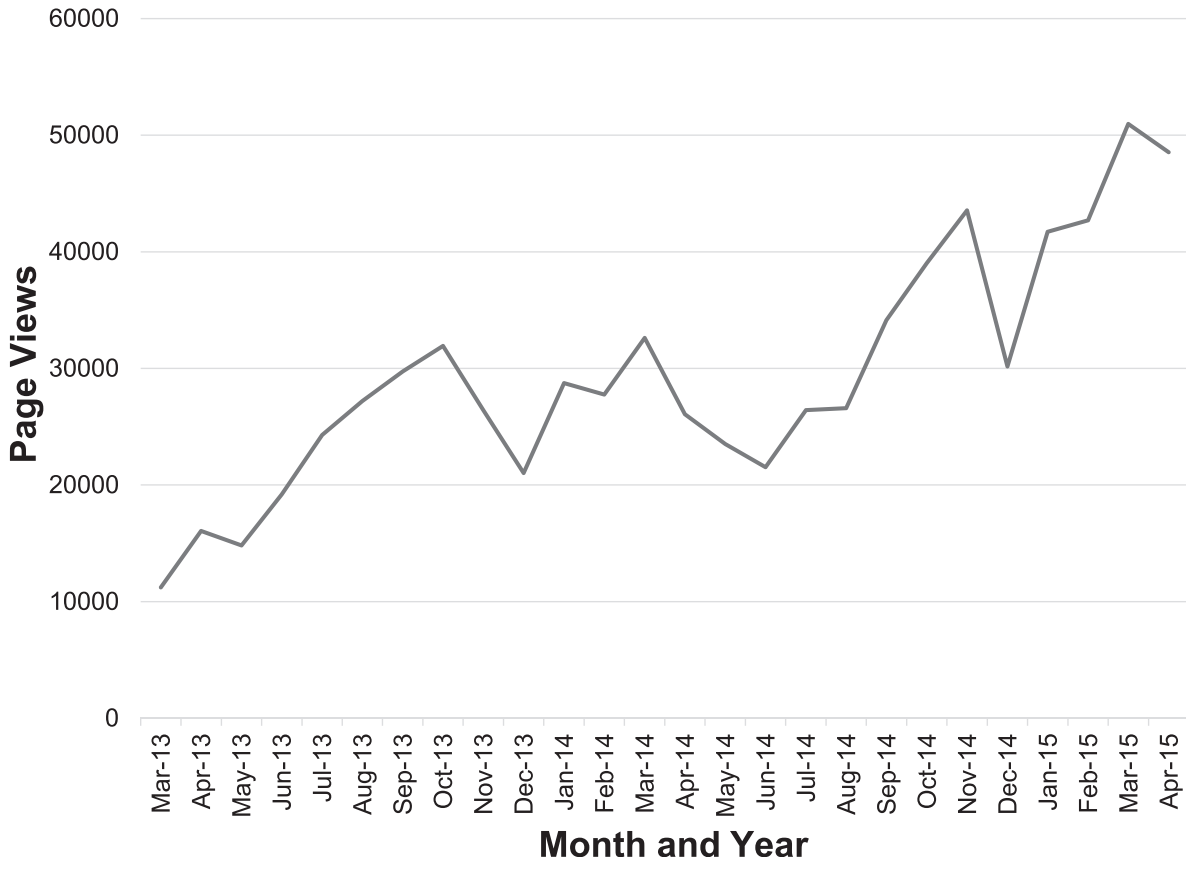

FIGURE 1

Monthly Page Views on Wiki Journal Club

Representing all visits to Wiki Journal Club. Downloaded from the Google Analytics web analytics platform.

opposing views are encountered, WJC editors moderate the discussion and seek to achieve consensus.

Entries are assigned a status as they evolve throughout the phases of development. *Incomplete* reviews lack 1 or more of the main content sections. *In Review* entries contain all the required sections and are ready for review by WJC editors for quality, accuracy, completeness, and clarity of writing. *Published* entries fulfill all editorial requirements and through consensus have been deemed of sufficient quality to publish. Over a period of weeks, WJC participants collaborate via the wiki, over e-mail and Twitter, and in person to summarize, review, and critique. It typically takes 3 to 4 weeks to bring each entry through the editorial process and to a *Published* status.

Custom-made clinical evidence summary applications[7] were developed for iOS and Android (www.journalclubapp.com) that organize and format WJC entries for mobile devices. These were introduced for sale on the Apple App Store (http://itunes.apple.com/us/genre/ios/id36) and Google Play Store (http://play.google.com) in April 2012 and March 2013, respectively. App sales are used to support website hosting and development costs.

Between April 2011 and September 2013, 32 regular participants contributed more than 150 entries to WJC, reaching a total of 223 entries in April 2015 (figure provided as online supplemental material). Visits to the site have increased as well, with total page views surpassing 50 000 per month in March 2015 (FIGURE 1). Readership is heaviest on workday mornings. We speculate that this is related to increased use during patient rounds (FIGURE 2).

As a whole, WJC has brought us closer to the ideal of a modern journal club through asynchronous communication, editorial oversight, professional moderation, and the ease with which WJC content can be referenced. All that's missing are coffee and fresh bagels.

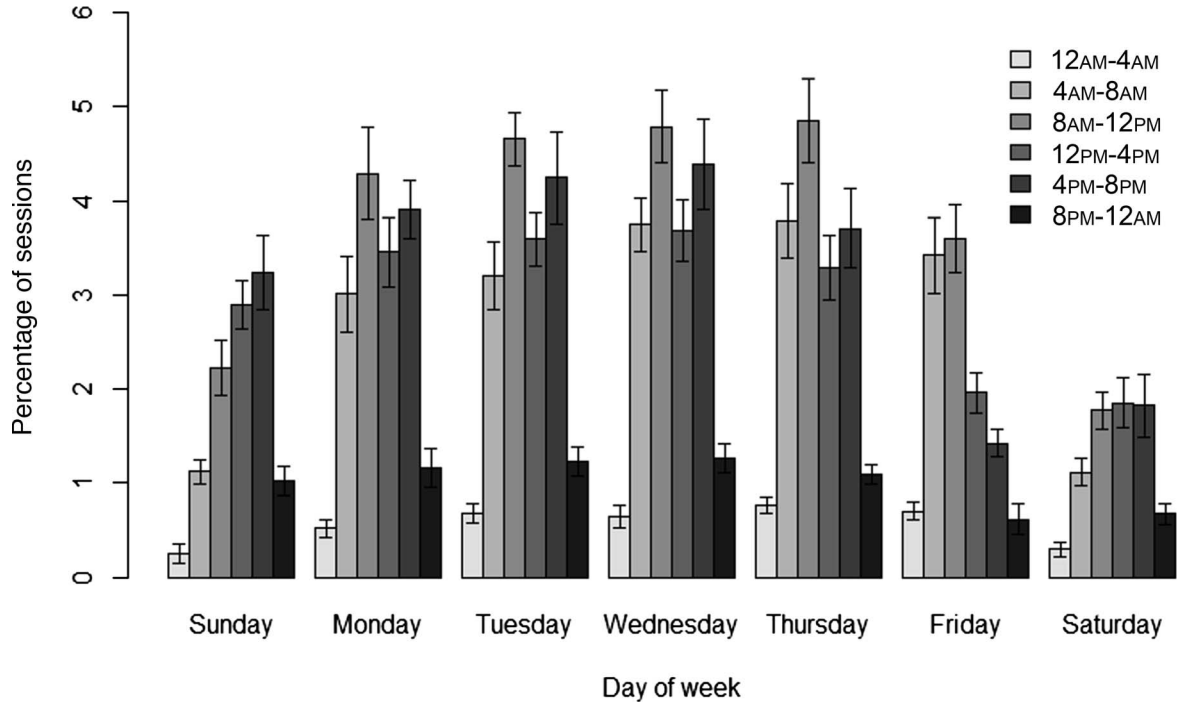

FIGURE 2

Average Weekly Timing of US Metropolitan Area Website Visitation Sessions in 4-Hour Blocks

Visits to the website occurred over a 10-week period (January 4, 2015 through March 14, 2015). Bars represent 95% CIs. Further descriptions of this analysis are provided as online supplemental material.

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