



#RheumJC: Development, Implementation and Analysis of an International Twitter-Based Rheumatology Journal Club

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Introduction

Twitter is a social networking and microblogging service and has become an increasingly popular platform for discussion and engagement amongst healthcare professionals^{1,2}. Several specialty specific journal clubs are already routinely conducted on Twitter including nephrology, urology, geriatrics, radiology, and microbiology³. Here we describe the development, implementation and analysis of a rheumatology focused journal club on Twitter which utilizes the hashtag #RheumJC.

Development

The initial development team for #RheumJC consisted of two academic rheumatologists, two private practice rheumatologists, and an adult/peds rheumatology Fellow in Training (FIT).



Using an online team collaboration tool called Slack, the development team began the effort of designing the basic structure of the proposed journal club.



A needs assessment survey was conducted amongst existing Twitter users over a 2 week period to gauge interest in the initiative and to help determine the ideal format and timing of the potential journal club sessions. 61 responses were collected. The different questions and responses are presented below.

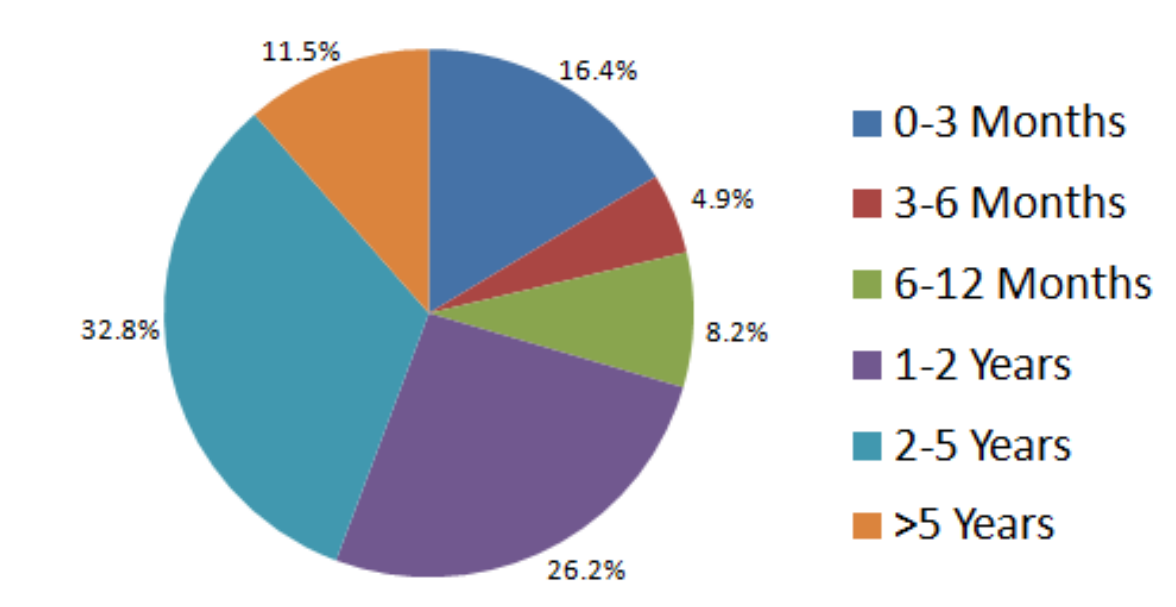
Question 1: Please select which description fits you best

Adult Rheumatologist (private)	n=19	31.15%
Adult Rheumatologist (academic)	n=21	34.43%
Resident Trainee (or equivalent)	n=1	1.64%
Fellow (Registrar) Trainee (Rheumatology)	n=11	18.03%
Fellow (Registrar) Trainee (Other)	n=0	0.00%
Other (please specify)	n=9	14.75%
Patient (or parent of patient)	n=3	
Pharmacist	n=2	
Postdoc researcher (basic science)	n=1	
Nephrologist	n=3	
Total	n=61	

Question 2: Please indicate in which country you currently reside.

Australia	n=2	Italy	n=1
Canada	n=2	Mexico	n=1
Colombia	n=1	Norway	n=1
Germany	n=1	New Zealand	n=1
Spain	n=2	Philippines	n=1
Tunisia	n=1	Tunisia	n=1
Honduras	n=1	United Kingdom	n=14
Ireland	n=2	United States	n=28
Total	16 different countries, 5 continents		

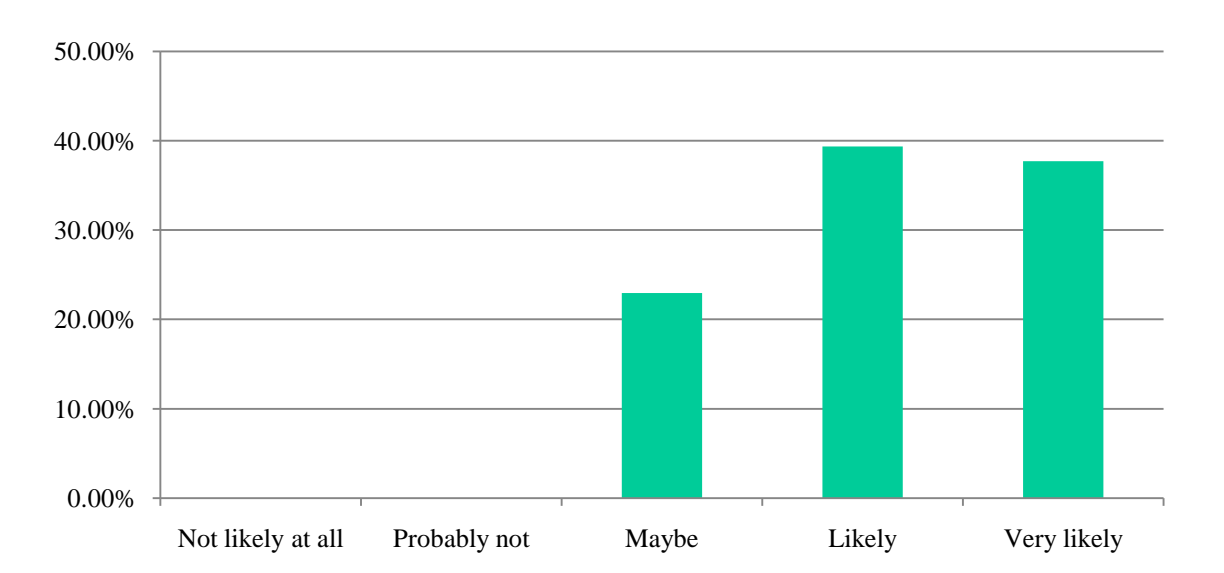
Question 3: Approximately how long have you been on Twitter?



Question 5: Please indicate below what you feel would be the ideal format for a Twitter based journal club

Asynchronous (24 hours)	n=44	75.86%
Synchronous (one hour "live tweet")	n=14	24.14%

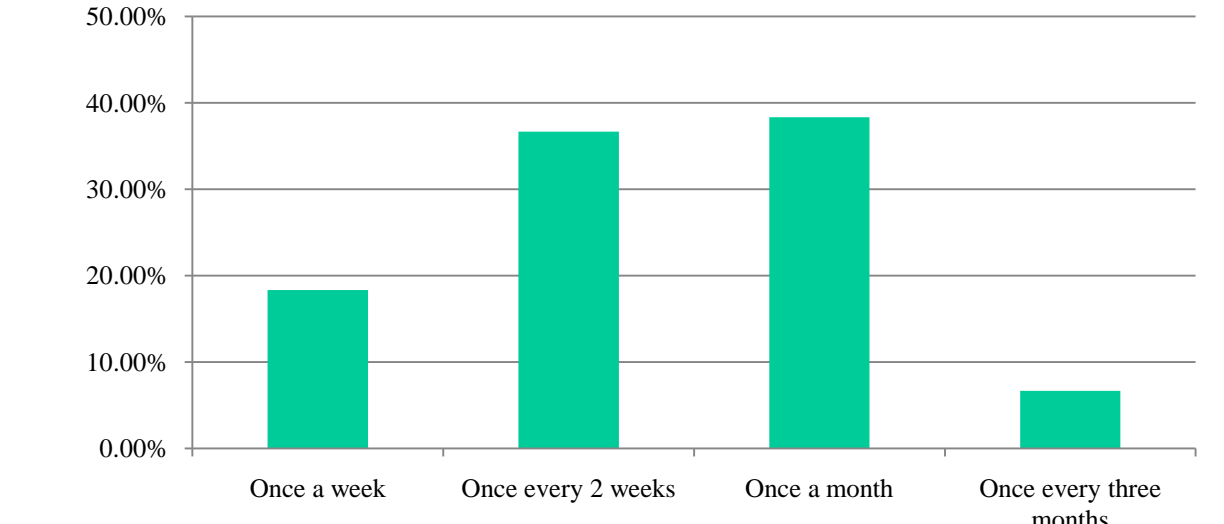
Question 5: Please rate the likelihood that you would participate in a Twitter based Rheumatology Journal Club?



Question 6: If there was a synchronous format (live one hour tweet chat), please indicate which time of the day would you prefer.

Morning (8am-11am local)	n=1	1.79%
Afternoon (11am-3pm local)	n=5	8.93%
Late Afternoon (3pm-6pm local)	n=6	10.71%
Evening (6pm-10pm local)	n=44	78.57%

Question 7: How often would you like to see a Twitter based Rheumatology Journal Club occur?



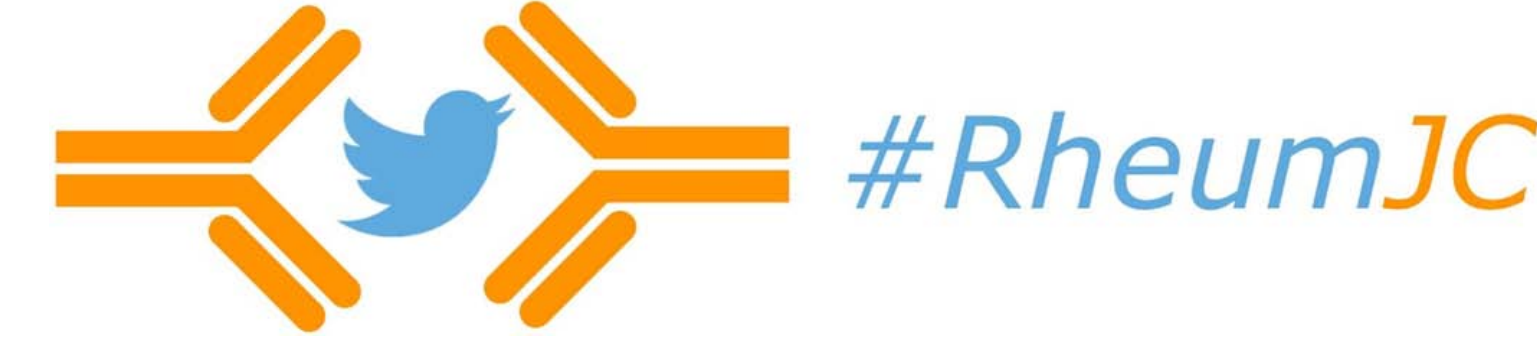
Question 8: Please indicate the type of journal articles you would like to see covered. You may select as many as you like.

Basic science - original research	n=23	38.33%
Basic science - review	n=20	33.33%
Case reports	n=24	40.00%
Clinical - original research	n=53	88.33%
Clinical - review	n=40	66.67%
Clinical trials	n=43	71.67%
Guideline articles	n=43	71.67%
Practice management	n=28	46.67%
Health policy/ law	n=15	25.00%

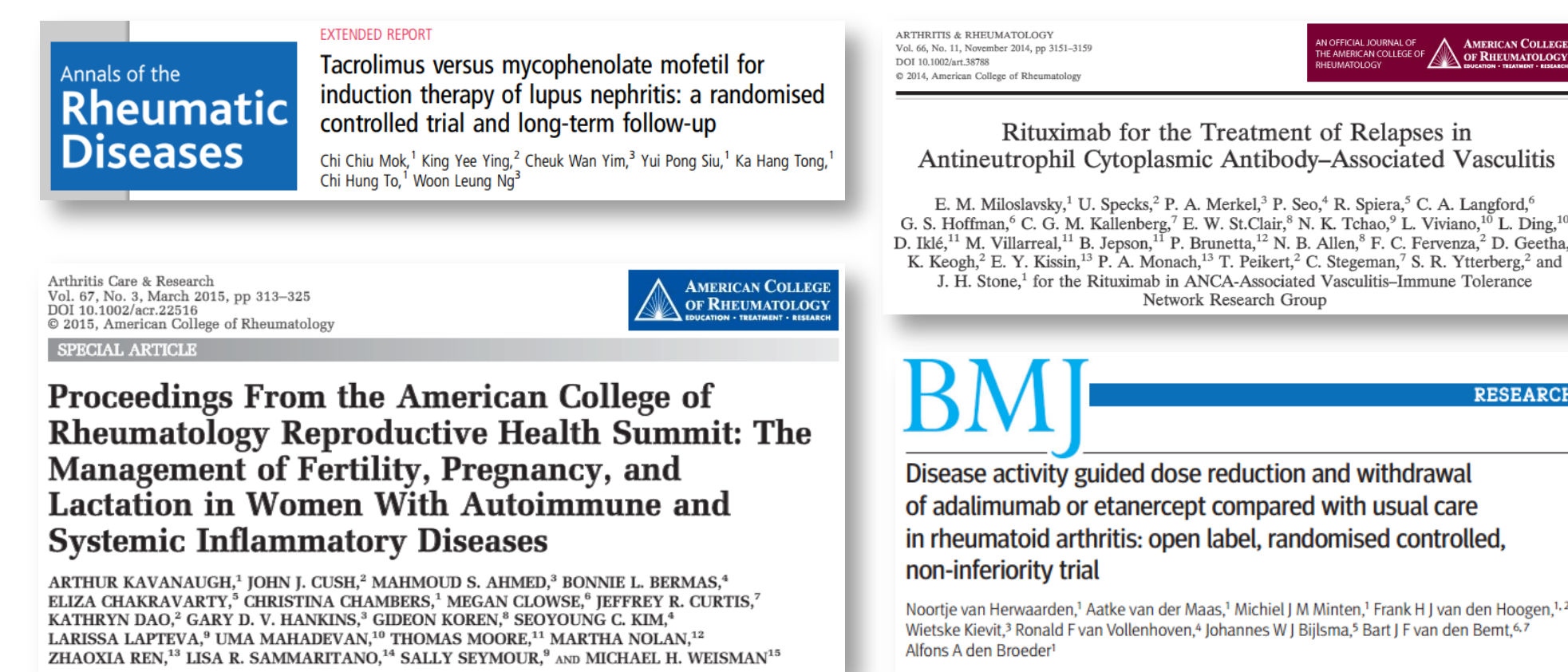
#RheumJC Format

- Journal clubs occur approximately once a month, usually on a Thursday evening
- For each journal club there are 2 one hour "live" chats, the first occurring during the evening hours of GMT (European centric) and the second during the evening hours of CST/EST (Americas centric). Dates and times are announces at least 2 weeks prior via Twitter and email.
- In addition, discussion is encouraged to continue for a full 24hrs (asynchronous) to allow for full international participation.
- Each session/chat is moderated by a member of the development team to help facilitate the conversation using the Twitter account @RheumJC.
- All relevant tweets should include the hashtag "#rheumjc" so that the conversation can be tracked.
- Whenever possible, the chosen article is open-access, or requests are made for temporarily open-access status by the publisher prior to the journal club.
- Principle authors are invited to participate in the live chats.
- A companion website (www.rheumjc.com) is maintained to provide information about the journal club imitative, including bios of the development team, instructions on how to participate, and transcripts of journal club sessions.

Implementation



- A total of 4 different journal clubs were conducted between January 29th and May 2nd, 2015, each consisting of two "live" one hour chats, occurring during the evening hours of GMT (European centric) and EST (Americas centric) respectively, as well as a full 24 hrs to allow for asynchronous participation.
- In two of the four journal clubs, principal authors participated in the live chat sessions (Dr. Eli Miloslavsky and Dr. John Cush).
- For 3 of the chosen manuscripts, a request for temporary open access status was granted by the publishers (the 4th article was already open access).
- Summaries and transcripts were posted on the companion website as well as on PubMed Commons.
- For some of the sessions, Storify summaries were created and hosted on www.rheumjc.com
- Interim analysis of each session was done utilizing data gathered from Symplur Healthcare Hashtag Project



Analysis of #RheumJC

Journal Club #1

- Session 1: 3pm EST (January 29, 2015)
- 188 tweets (160 unique tweets, 28 retweets)
 - 26 participants (17 unique to this session, 9 participated in both sessions)
 - Location - 9 Europe, 15 USA/Canada, 2 unknown
- Session 2: 9pm EST
- 195 tweets (170 unique tweets, 25 retweets)
 - 21 participants (12 unique to this session)
 - Location - 19 USA, 2 Mexico
 - Identity - 9 Rheumatologists, 3 Nephrologists, 4

Journal Club #2

- Session 1: 3pm EST (March 2, 2015)
- 182 total tweets (160 unique tweets and 22 RTs)
 - 23 participants (11 Europe, 12 Americas)
 - 6 people participated again in session 2 (9pm EST)
 - Eli (@emilosa), our invited author, had 44 unique tweets!
- Session 2: 9pm EST
- 240 total tweets (189 unique tweets and 51 RTs)
 - 17 participants (14 Americas, 1 India, 1 Australia, 1 unknown)
- Combined sessions + 24hrs
- 518 total tweets (401 unique tweets and 117 RTs)
 - 46 unique participants
 - 20 people had participated in last month's journal club (round 1)
 - 26 people were new
 - 17 different countries were represented

Journal Club #3

- Session 1: 3pm EST (April 2, 2015)
- 208 total tweets (159 unique tweets and 49 RTs)
 - 22 participants (5 Europe, 14 Americas, 3 Middle East)
 - 3 people participated again in session 2 (9pm EST) including our guest author @RheumNow
- Session 2 (9pm EST)
- 211 total tweets (175 unique tweets and 36 RTs)
 - 13 participants (12 Americas, 1 Philippines)
- Combined sessions + 24hrs
- 569 total tweets (390 unique tweets and 179 RTs)
 - 20 people had participated in one of the two previous journal clubs
 - 43 people were brand new
 - 22 different countries were represented

Journal Club #4

- Session 1: 4pm EST (May 7, 2015)
- 129 total tweets (123 unique tweets and 6 RTs)
 - 13 participants (3 Europe, 9 Americas, 1 Australia)
 - 2 people participated again in session 2 (10pm EST)
- Session 2 (10pm EST)
- 224 total tweets (195 unique tweets and 29 RTs)
 - 15 participants (14 Americas, 1 Australia)
- Combined sessions + 24hrs
- 393 total tweets (354 unique tweets and 39 RTs)
 - 21 people had participated in one of the three previous journal clubs
 - For 6, this was their second journal club
 - For 7, this was their third journal club
 - For 8, this was their fourth journal club
 - 10 different countries were represented

Summary of first 4 journal clubs

- In total, 133 unique individuals from 31 different countries participated in at least one #RheumJC session (Figure 1).
- While the majority of participants were rheumatologists, over 8 different medical fields were represented including nephrologists, gastroenterologists, and geriatricians.
- There were 13 FIT and other trainees amongst the participants.
- 38 individuals participated in at least 2 different journal clubs, 16 participated in at least 3, and 8 individuals were present at all four.
- The mean number of participants during each live chat was 20.5 (European centric session) and 15.6 (Americas centric session).
- The mean number of total tweets during each of the journal clubs (full 24hrs) was 493 (385 unique tweets (UT), 108 re-tweets (RT)) with an average of 197 (166 UT, 31 RT) during each of the live one hour sessions.
- Most of the tweets in between the live sessions and afterwards (asynchronous participation) tended to be RTs from conversation during the live chat.

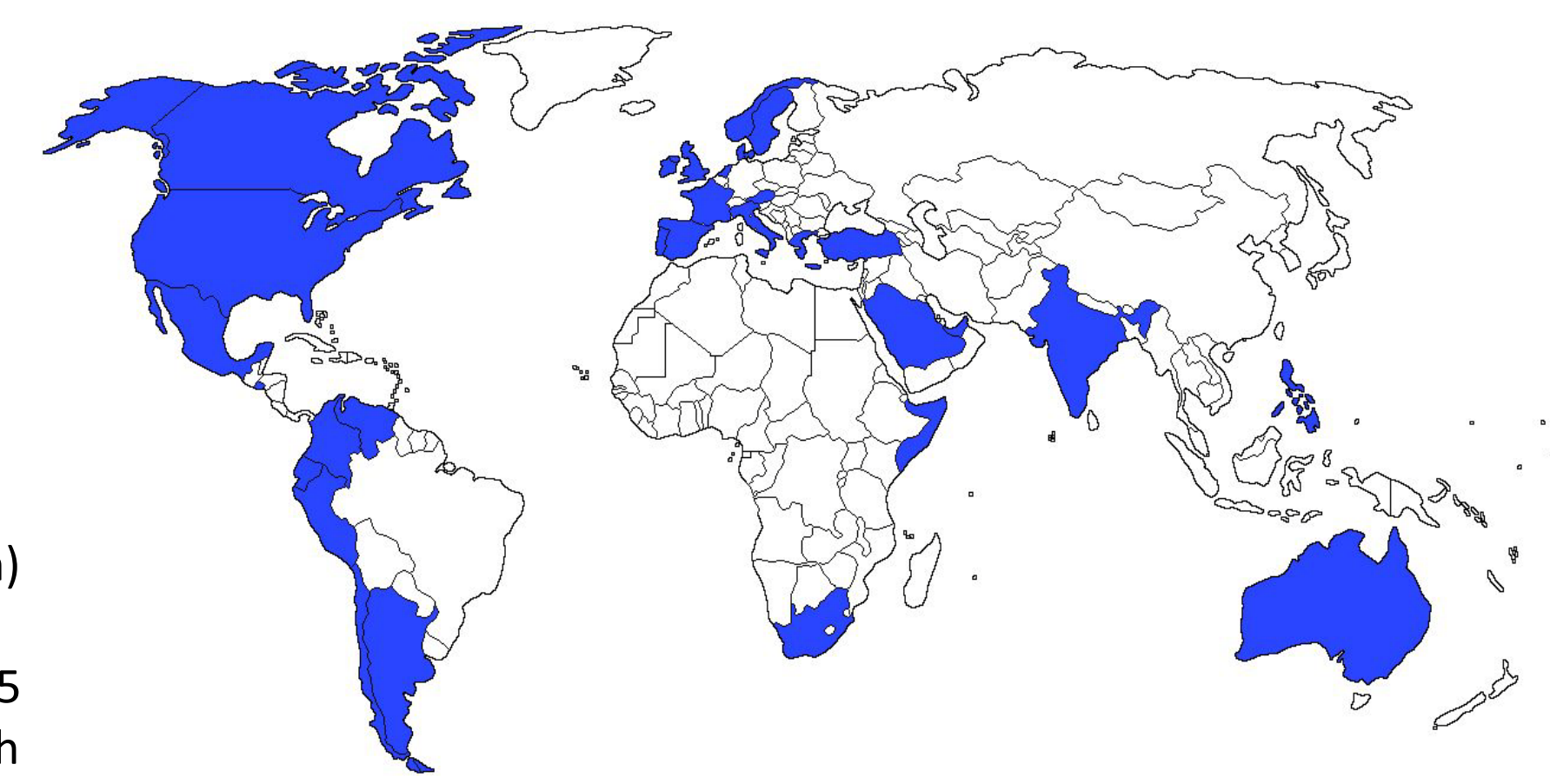
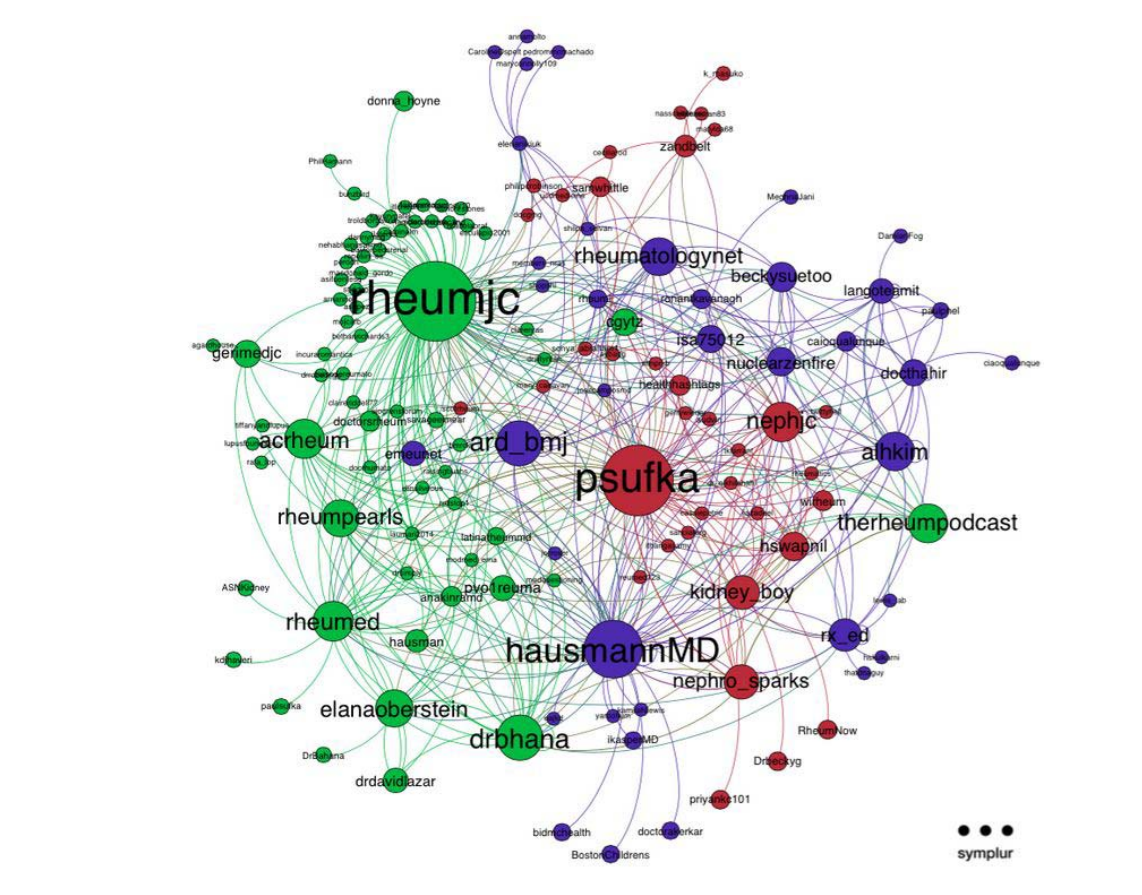
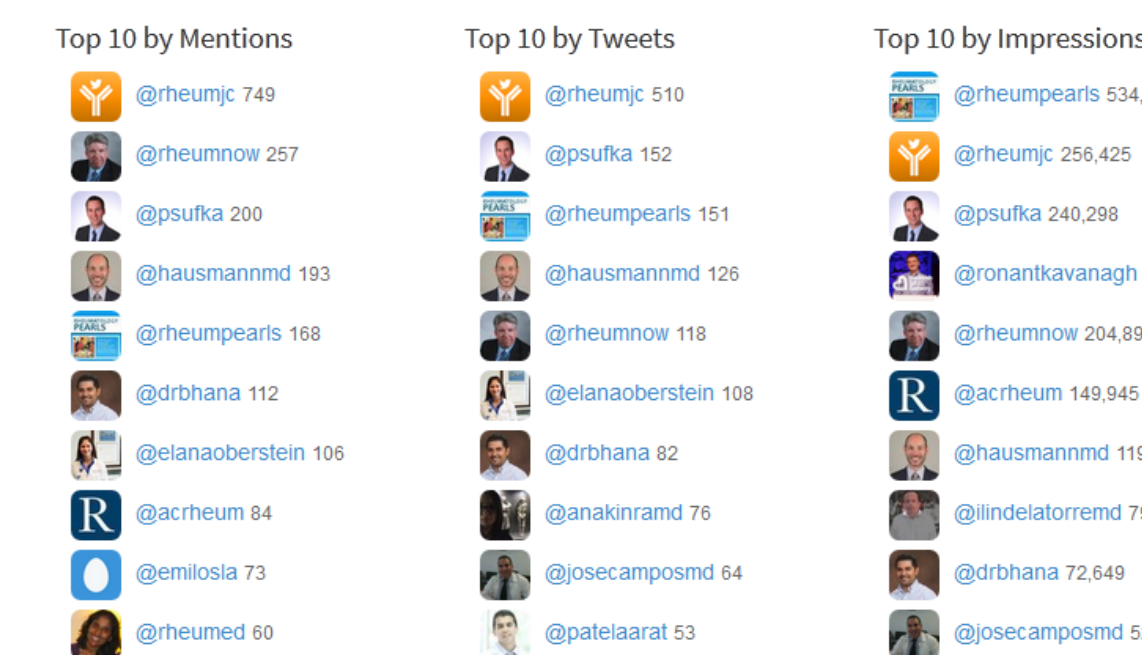


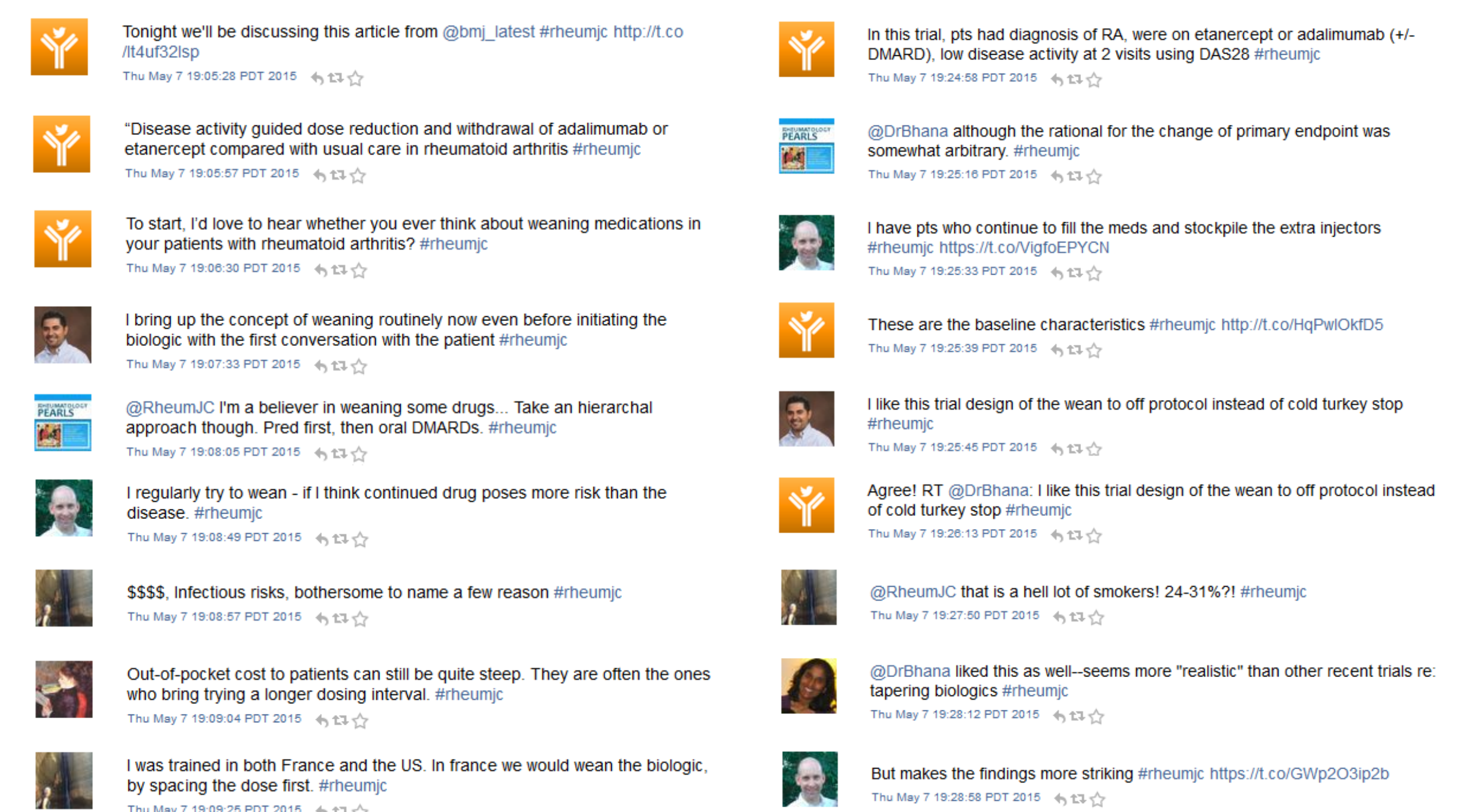
Figure 1: Map of #RheumJC participants



The #RheumJC influencers



Sample Tweets from Journal Club #4, Session 2



Analysis (continued)

A content analysis of all tweets from the four journal clubs (n=1927) was conducted with 6 coders assessing 363 tweets each (313 unique and 50 common) (inter-rater agreement: alpha=0.87).

- The majority of the conversation was considered relevant with 28% of the tweets addressing the article directly (in the spirit of a "traditional" medical journal club) and another 62% considered "on-topic" with tweets referencing personal experiences, opinions, and links to supporting literature.
- Analysis of the flow of tweets during a typical live session (journal club #4, session 2) revealed a natural conversation-like pattern (Figure 2).
- Tweets which were considered "on-topic but not article specific" were more likely to be re-tweeted than tweets which were article specific (p=0.02) suggesting users found value in the opinions and personal reflections of other participants.

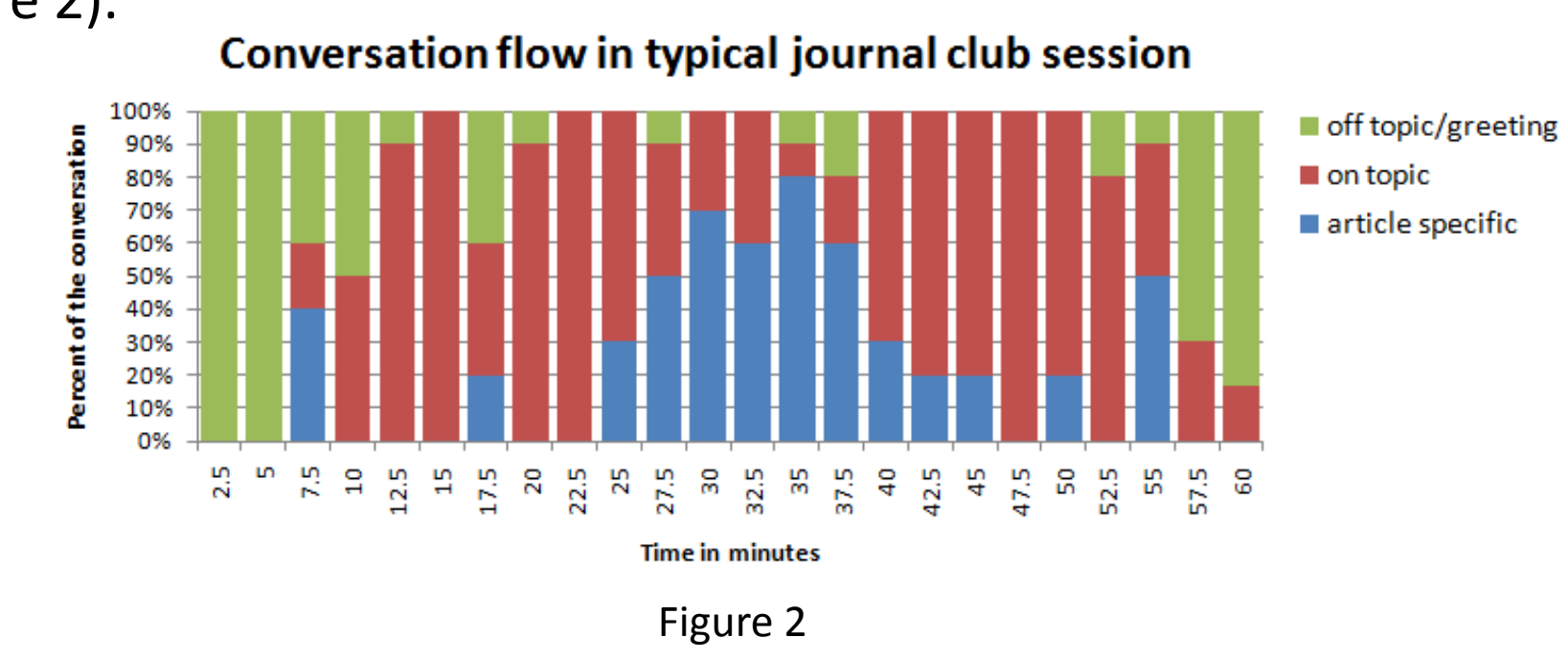


Figure 2

Follow-up Survey

A second survey was conducted after the 4th journal club which collected 68 responses. Questions included queries about respondent demographics, participation rates in the different journal club sessions, the structure and timing of the journal clubs, and overall satisfaction with the initiative.

- Half of the respondents (n=34) had participated in at least one of the #RheumJC sessions.
- Of these, a significant majority (90%) were either satisfied or very satisfied with the #RheumJC initiative (Figure 3).
- 14 respondents admitted that they had only observed some of the sessions and not participated in the actual discussion suggesting that the total number of #RheumJC participants could be greater than the data presented here.
- 67% of respondents indicated that the availability of the articles as open access was "important" or "very important", without which they would have had difficulty accessing it.
- 98% of respondents indicated they would "likely" or "very likely" continue to participate in future sessions of #RheumJC
- Of interest, 11% indicated they had joined Twitter solely because of #RheumJC, and another 41% stated that #RheumJC had increased their use of Twitter as a tool for medical education (Figure 4).

- 34 respondents stated that they had not participated in any #RheumJC session.
- The most common response as to why not was "did not know it existed" (55%).
- Only 17% felt that Twitter was an inappropriate venue for medical journal clubs.
- Non participants were more likely to be new to twitter (using <6 months vs ≥6 months) compared to #RheumJC participants (p=0.04)

- Of the 29 FIT who responded to the survey, 12 had participated and 17 had not.
- The most common reasons for not participating were not knowing of the existence of #RheumJC and inconvenient times (35% each).
- Of those FIT who had participated, 100% were either satisfied or very satisfied with the initiative.

Aspects of #RheumJC most liked were the inclusion of authors and perceived quality of the discussion.

Respondents who participated in at least one journal club

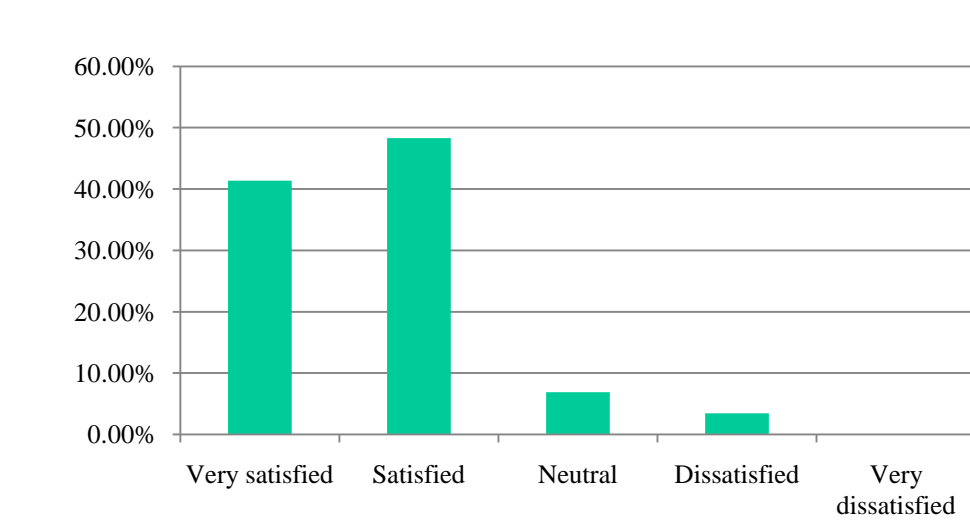


Figure 3: Overall satisfaction

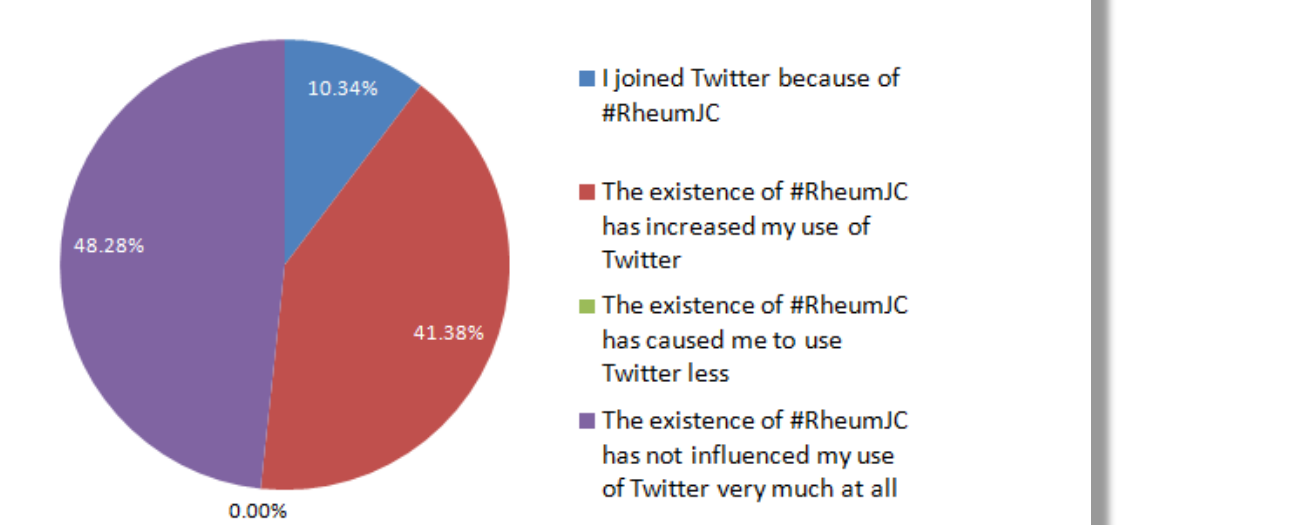


Figure 4: Effect of #RheumJC on Twitter use

Conclusions

#RheumJC is a novel and popular approach to the traditional medical journal club which brings together people from around the globe and across specialties to discuss current medical literature in rheumatology utilizing Twitter as a medium for medical education.

References

- Jalali A, Sherbino J, Frank J, Sutherland S. Social media and medical education: Exploring the potential of Twitter as a learning tool. *Int Rev Psychiatry*. 2015 Apr;27(2):140-6.
- Reames BN, Sheetz KH, Englesbe MJ, Waits SA. Evaluating the Use of Twitter to Enhance the Educational Experience of a Medical School Surgery Clerkship. *J Surg Educ*. 2015 Sep 20. pii: S1931-7204(15)00214-7.
- Roberts MJ, Perera M, Lawrentschuk N, Romanic D, Papa N, Bolton D. Globalization of continuing professional development by journal clubs via microblogging: a systematic review. *J Med Internet Res*. 2015;17(4):e103.

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