LETTER TO THE EDITOR

Twitter use during COVID-19 pandemic: An opportunity for continuing medical education in cardiology

Social media is a powerful tool with the potential to renovate continuing medical education[1]. This type of user-based interactive technology, particularly Twitter, has emerged as a novel educational method[2]. The coronavirus disease 2019 (COVID-19) pandemic compelled widespread, global social distancing, hindering traditional and face-to-face educational means like scientific sessions and congresses. Therefore, it has promoted the need of incorporating educational content delivered through social media platforms into mainstream remote-learning tools, but its reach power is uncertain[3, 4].

The objective of this research was to analyze and characterize cardiology related tweets during COVID-19 pandemic.

We obtained a sample of original tweets posted between May 20th and 30th 2020, containing the hashtag "#cardiotwitter". A hashtag is a key word or phrase used to categorize a tweet. We analyzed the number of tweets, number of participants and impressions (all tweets of each participant multiplied by the number of followers that participant currently had then summed up for all participants), and the number of tweets per hour. From a random sample of 10% of tweets, a qualitatively analysis was made. We identified type of users as: individual (doctors, researchers, academic), organization (provider, medical devices, media, research/academic) or journalist. Tweets were classified according to their content as: medical education, medical advice, non-medical personal opinion or miscellaneous. Medical education category was divided as: sharing guidelines/research, centers experience or clinical cases, conferences, webinars or tutorial and miscellaneous. For Twitter analysis, *Symplur Signals* was used. The list of randomly selected tweets was generated using the random real number function.

A total of 10 640 tweets were obtained with 29 972 million impressions and 5465 participants (Fig. 1). The average tweets per hour was 41. A random sample of 1064 was analyzed. Most accounts belonged to individuals (70%), followed by organizations with 28% and 2% journalists. The content type of each tweet was: 81.8% educational, 12.7% non-medical personal opinion, 0.5% medical advice and 5.1% miscellaneous. Within the medical education category, 39.1% tweets were about research, academic or guidelines, 24% centers

Fig. 1.– Tweet activity and content on #Cardiotwitter (n:10 640)
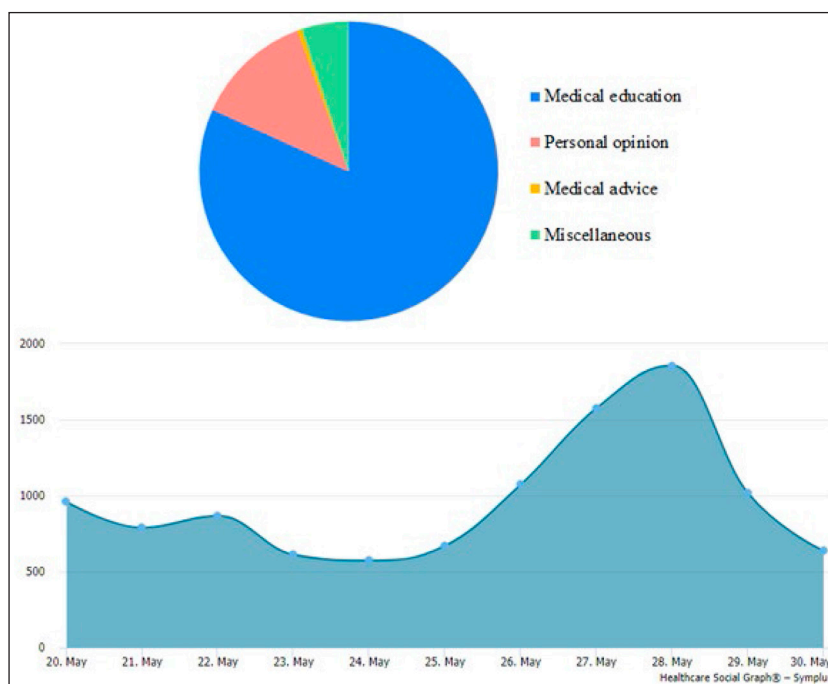
experiences or clinical cases, 24.3% conference, webinar or tutorial and 12.6% miscellaneous.

Our study revealed that the use of twitter in cardiology community was high during COVID-19 pandemic, and its content was mainly related to medical education issues, especially about research, academic content or sharing clinical cases.

Twitter is an effective tool, facilitating communication and medical education in the era of COVID-19 pandemic, when social isolation is paramount. The hashtag "#cardiotwitter" provides an asynchronous, ubiquitous and timeless training, with practically no associated costs. It enables connection among cardiologists across the world and engagement with educational content at any time or place. Its user-based interface allows medical trainees to share information instead of being just recipients, and reach virtual conferences and congresses that were previously inaccessible due to costs and distances.

The use of social media within the medical community is a healthy and innovative trend that provides several benefits, including sharing the latest, most relevant and interesting information related to cardiology, improving the distribution of this information to a wider audience, the promotion of research projects and the discussion of clinical cases. A twitter exploratory analysis found that in March 2015 and 2016, 7172 and 15 030 of cardiovascular-related tweets were made respectively, in contrast with 10 640 tweets made in only 10 days of May 2020, during pandemic. And they concluded that Twitter has become a potential tool for knowledge transfer in cardiovascular medicine[5].

For the best of our knowledge, this is the first study to quantitatively and qualitatively analyze the contents of tweets related to cardiology and medical education.

As limitations, we must mention that although the hashtag #cardiotwitter is used worldwide, there are probably other cardiology tweets without the hashtag that were not evaluated in this analysis.

Twitter, as one of the most popular social platforms in health sciences, is a widely accessible tool for everyone with an Internet connection, providing an instant delivery of the latest information regardless of individual profit. In these special times, COVID-19 related evidence must be quickly obtainable for clinicians to deliver the best patient healthcare, and summaries of published data are sometimes useful to avoid information overload. In the era of the COVID-19 pandemic, Twitter emerges as an innovative platform to offer continuous medical education to the cardiology community, capitalizing on the benefits and practicalities of a collaborative and untethered learning platform, and offering an accessible means to increase medical training.

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