

**NEW TRENDS AND HOT TOPICS IN EPILEPTOLOGY: AN ANALYSIS OF TOP ARTICLES PUBLISHED IN EPILEPSY AND BEHAVIOR IN 2015**

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Almost a year ago, it has been quite interesting to look at the role of social media in dissemination of scientific research and how social media may potentially influence the performance of scientific articles published during a specific time frame (1). All medical science journals are now on line and most publishers do not even send printed copies any more, with the disappointment of those still attached to the romantic flavour of paper. In such a changing scientific world, some scientists are still sceptical and suspicious about the role of social media. Some researchers assume that public communication of their work has little to offer, and may even be harmful to their credibility. However, all of us are now finding the Altimetric score of our papers along with other indexes on our university web page. As already discussed in my previous editorial (1), the Altimetric score provides an indication of the amount of attention that an article has received in social media. A U.S. survey of highly-cited scientists showed that those whose research was mentioned on Twitter also had significantly higher h-indices than peers whose research was not mentioned (2). Furthermore, the h-indices of scientists who interacted with non-scientists were higher if they were also mentioned on Twitter. It is quite obvious that a high Altimetric score does not necessarily reflect high quality research but it is important that scientists become familiar with an evolving environment that necessarily includes public and media involvement.

The analysis of Altimetric scores of all papers published in *Epilepsy & Behavior* in 2015 confirms again that Twitter is the preferred social medium (**Table 1**). However, it is worth noticing that 2015 scores are definitely lower than those of 2014. In fact the paper by Press et al. (3) scored only 61 that is far below the first paper in the Top list of 2014 by Koubeissi et al. (4) which scored 246. This is definitely due to a lack of interest by news outlets. The first two papers in the Top 10 of 2015 are both about cannabis in epilepsy (3) (5) (**Table 1**). This topic gained considerable attention in the media a few years ago (6) but the topic is now moving on a scientific ground and it is not as sensationalistic as it used to be. It is anyway interesting that both papers focused on perceived efficacy of cannabis-enriched extracts by relatives of people with epilepsy. It is possible that these papers were twitted/retweeted by patients' associations.

Other papers in the top 10 list focus on a variety of different topics. The article by Ladino and collaborators (7) is part of a Special Issue titled "Epilepsy, Art and Creativity" (8) and focuses on how epilepsy is described in contemporary paintings. Two papers are dedicated to autism and epilepsy (9) (10). The first one is a research paper on autistic traits among patients with epilepsy (10) while the second is a review article on the biological pathways involved in both disease processes (9). The latter is again part of a Special Issue titled "Autism and Epilepsy" (11).

The paper by Gelisse and collaborators is of particular interest (12). This study investigates the possible role of emotional stress in the onset of epilepsy. The authors looked for major life events within three months from seizure onset in a large cohort of patients with mostly temporal lobe epilepsy and found that in some cases (5/1000) it is possible to identify a temporal relationship. The link between stress and epilepsy remained quite controversial for a long time. There is now a substantial body of pre-clinical evidence suggesting that chronic stress can worsen seizures in established epilepsy and, in selected cases, may even be a causal factor in epilepsy (13). The paper by Gelisse is definitely along these lines and further confirms the need for healthcare professionals working with people with epilepsy to pay more attention to stress in clinical practice.

The Top 10 list of downloaded articles is also of notice as it should represent the interest of researchers and clinicians on specific topics (**Table 2**). It is quite interesting that only three of the articles in the Top list of those cited in the media are also in the Top list of those downloaded, namely the two research papers on cannabis (3) (5) and the review article on the shared neurobiology between autism and epilepsy (9). This was evident also in last year analysis and definitely confirms the obviously divergent interests between media and scientists.

As usual, 60% of the Top downloaded papers are review articles, but interestingly enough, the first one is a novel statistical approach for a proper selection of the preictal period, which can also be considered a potential measure of predictability of a seizure (14). Four papers are part of a Special Issue on “Status Epilepticus” from the 5<sup>th</sup> London – Innsbruck Colloquium on Status Epilepticus and Acute Seizures (15). One of them focuses on which EEG patterns in coma are suggestive of non-convulsive status epilepticus (16). This is still a controversial issue in clinical neurophysiology with very limited data on the diagnostic and prognostic implications of some EEG patterns in critically ill patients.

In conclusions, Special Issues still deserve an important role in increasing the visibility of journals and individual articles among researchers and clinicians. Social media play a growing position in scientific research dissemination and communication.

#### **Acknowledgments and conflict of interests**

No conflict of interests.

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**Table 1. Top 10 Epilepsy & Behavior 2015 papers in social media (only most relevant social media listed).**

<b>Paper</b>	<b>PMID</b>	<b>Bloggers</b>	<b>Twitters</b>	<b>Google</b>	<b>News outlets</b>	<b>Facebook walls</b>	<b>F1000</b>	<b>Peer review sites</b>	<b>Mendeley readers</b>	<b>Altimetric score</b>
Press et al. 2015 (3)	25845492	1	15	3	4	13	0	0	36	61
Hussain et al. 2015 (5)	25935511	0	22	1	1	12	0	0	44	34
Yildiz et al. 2015 (17)	26021601	0	26	0	0	0	0	0	3	19
Veenstra et al. 2016 (18)	26720703	1	2	0	1	3	0	0	1	17
Ladino et al. 2016 (7)	26874992	0	22	0	0	0	0	0	0	15
Wakeford et al. 2015 (10)	26474368	0	7	1	1	0	0	0	18	14
Sawchuk and Buchhalter 2015 (19)	26409129	0	18	1	0	0	0	0	1	13
Lee et al. 2015 (9)	25600226	0	22	0	0	0	0	0	32	13
Gelisse et al. 2015 (12)	26037844	0	17	0	0	0	0	0	10	12
De Oliveira et al. 2015 (20)	26827298	0	12	0	0	5	0	0	1	11

PMID: PubMed reference number

**Table 2. Top 10 Epilepsy and Behavior 2015 downloaded paper.**

<b>Paper</b>	<b>Title</b>	<b>Paper type</b>	<b>Request for full text</b>
Bandarabadi et al. 2015 (14)	On the proper selection of preictal period for seizure prediction	Full length article	5629
Frye 2015 (21)	Metabolic and mitochondrial disorders associated with epilepsy in children with autism spectrum disorder	Review article	5085
Trinka and Leitinger 2015 (16)	Which EEG patterns in coma are nonconvulsive status epilepticus?	Review article	3527
Hussain et al. 2015 (5)	Perceived efficacy of cannabidiol-enriched cannabis extracts for treatment of pediatric epilepsy: A potential role for infantile spasms and Lennox-Gastaut syndrome	Short communication	2982
Press et al. 2015 (3)	Parental reporting of response to oral cannabis extracts for treatment of refractory epilepsy	Full length article	2591
El Achkar and Spence 2015 (22)	Clinical characteristics of children and young adults with co-occurring autism spectrum disorder and epilepsy	Review article	2378
Brigo et al. 2015 (23)	Nonintravenous midazolam versus intravenous or rectal diazepam for the treatment of early status epilepticus: A systematic review with meta-analysis	Review article	1868
Gorter et al. 2015 (24)	Status epilepticus, blood-brain barrier disruption, inflammation, and epileptogenesis	Review article	1801
International Steering Committee of the StEp Audit (25)	Preliminary results of the global audit of treatment of refractory status epilepticus	Full length article	1719
Lee et al. 2015 (9)	Autism spectrum disorder and epilepsy: Disorders with a shared biology	Review article	1682