Self Management in Epilepsy: Web-Based Seizure Tracking Applications

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Background / Rationale

- In today's increasingly digital world, several electronic resources are available to patients and providers for seizure tracking and epilepsy self-management.
- Benefits of these resources include more efficient, time-stamped data entry and the ability to generate graphical summaries
- A number of free epilepsy mobile tools are available for use by patients and providers, and they are seeing increased use in today's mobile age.

Methods

- We review three of the most commonly used, free web-based epilepsy self management applications: SeizureTracker, Epilepsy Foundation My Seizure Diary, and EpiDiary.
- We trialed the web and mobile versions of each of the applications using 'dummy' patient accounts, spoke to the developers of each application, and reviewed their ratings on the user-driven "App Store."
- Here, we note relevant strengths and weaknesses of each of these applications, and compare and contrast various available features.

Results

- All three apps allow for generation of graphical summaries to examine trends over time, in addition to a number of other features.
- We found that these applications offer similar 'core' features, such as the ability to log seizures on mobile devices, enter detailed descriptions of seizure semiology, share information with caregivers and healthcare providers, and generate graphical summaries to examine trends over time (Figure 1).

Results

	Seizure Tracker	Epilepsy Foundation My Seizure Diary	EpiDiary
Ease of use	Moderate	More challenging	Easy
Rating on App Store (out of 5 stars) As of May 6, 2018	iOS: 4.5 Android: 4	iOS: 2.5 Android: 2	iOS: 5 Android: 3.5
Seizure Logging	✔	✔	✔
Medication Regimen	✔	✔	✔
Daily medication adherence	X	✔	✔
Graphical Reports	✔	✔	✔
Share with Healthcare Providers	✔	✔	✔
Compatibility	Website, iOS, Android, Watch OS, Amazon Alexa	Website, iOS, Android	Website, iOS, Android
Built-in Reminder System	X	✔	✔
VNS Settings	✔	X	X
Recording Info for Seizure-Free Days	X	✔	✔
YouTube video directly linked to seizures	✔	X	✔
Pictures of pills in app	X	X	✔

Table 1. Comparison of certain features across the three reviewed applications.

- With all three apps, patients can input many characteristics of their seizures and can include the presence of aura, duration, triggers, event and post-event descriptors, and rescue medications used. Patients also have the option to freely enter text about the seizure.

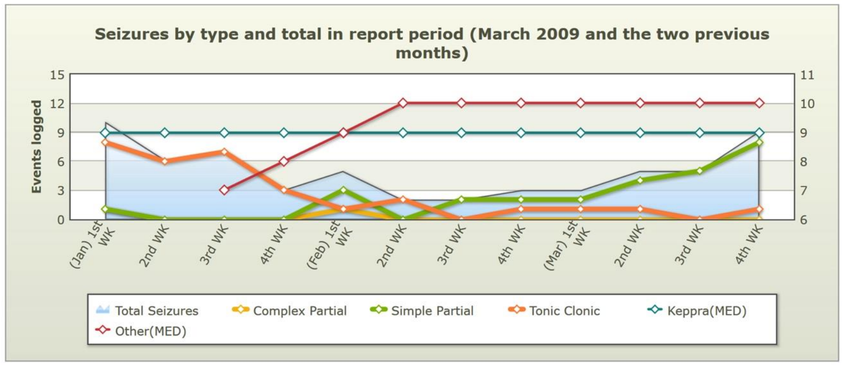

Figure 1. A sample report details a patient's recent seizure history, subdivided by patient's seizure type, in relation to time and recent medication dosing changes (from SeizureTracker).

- These tools differ significantly in terms of ease of use, supplementary features, and a number of other factors (Table 1).
- For example, SeizureTracker does not include information about seizure-free days, which can lead the physician to make false conclusions about seizure control if not familiar with the program.

Discussion

- The goal of web-based seizure tracking applications is to empower people to take charge of their health by being proactive in their care, and allowing them to manage their data in a user-friendly application
- Clinicians should develop familiarity with some of the most commonly used resources. These tools emphasize similar features, but do so in different ways.
- Limitations of seizure diaries include the need for some degree of digital sophistication, the cost of the underlying electronic platform, the requirement for ongoing patient/caregiver engagement, and the potential for privacy issues with data entry.

Conclusions

Overall, these findings represent the first clinician-authored comparison of these three highly utilized seizure self-management applications.