

No gain without pain: using pain tracking mobile Apps

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Abstract: Chronic pain often remains untreated because tracking its causes and symptoms is difficult. By recording details of pain episodes, retrospectively analyzing data around pain and sharing it with experts, pain management can be demystified and better treatment options can be suggested.

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Chronic pain is a major problem in certain populations but treating it has always been an issue. Healthcare providers often do not have sufficient data on their patient's pain symptoms and causes which makes it difficult to recognize, assess and control pain in their patients. This leaves patients dissatisfied with their providers and strains patient-provider relationships. More importantly, persistent pain enhances depression, and leads to various functional limitations in patients.

Pain tracking mobile applications can help patients collect contextual data about their pain episodes that they can share with their providers for better diagnosis and treatment. This data can also help patients engage in self-reflection so they can better understand the impact of their everyday choices on their pain. One of the major differences between the existing pain applications is the manner in which they engage an individual in the collection, reflection and understanding of their own pain data.

'Manage My Pain Pro' is one of the top rated mobile apps available in Google Play Store. This app has been designed in consultation with medical professionals. People can personalize it with their medications and health conditions. Patients can journal their pain episodes with details specifically desired by pain experts (*Figure 1*). In particular, pain intensity, pain location, pain promoters and inhibitors, pain medications and several other useful details can be documented with user-friendly interfaces. The 'results' feature of the app becomes more useful as more and

more pain episodes are recorded over time. Charts, graphs and calendar can help patients visualize data aggregated over longer periods of time, enabling identification of patterns and trends (*Figure 2*). Based on the tracked data, people can come to various conclusions such as what makes pain worse or better. Summary of the aggregated data, along with charts and graphs can also be exported as a pdf file (*Figure 3*) that can be directly emailed to the physician. 'Manage My Pain Pro' is especially useful in helping patients make physician appointments more effective. Patients who forget their symptoms and do not recall enough information to share during their medical appointments should feel empowered with this tool.

'My Pain Dairy' is another useful pain tracking application that allows individuals to track their pain episodes with similar details (*Figure 4*). It may be especially useful for people who are facing multiple pain conditions such as fibromyalgia, headache, arthritis etc., as this application invites individuals to classify their entries according to their conditions. The other two features of 'My Pain Dairy' deal with data exploration and sharing. The data exploration feature is interactive as it allows people to visualize relationships among up to four different variables of their choice, such as location of pain, vital signs, weather and cure, at one time (*Figure 5*). People can select and choose different variables to simultaneously explore relationships between them and find answers to questions with multiple layers of causality such as 'does walking

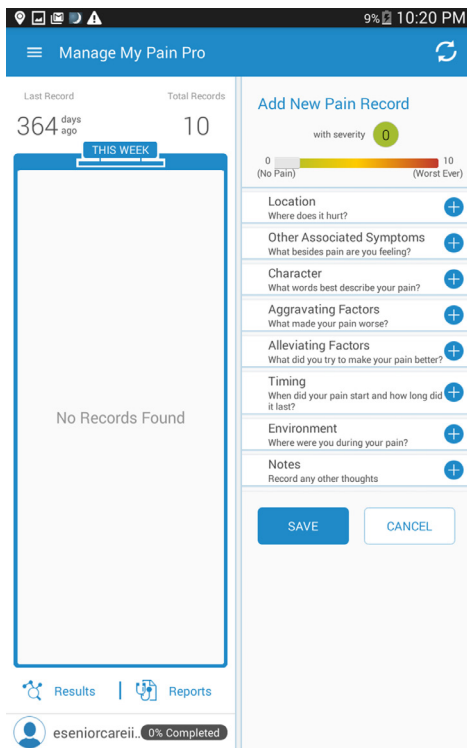


Figure 1 Pain episode recording—courtesy Manage My Pain Pro.

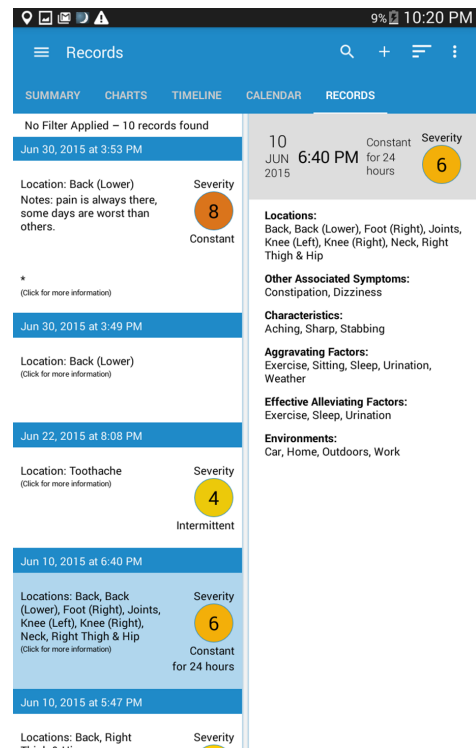


Figure 3 Pain report for experts—courtesy Manage My Pain Pro.

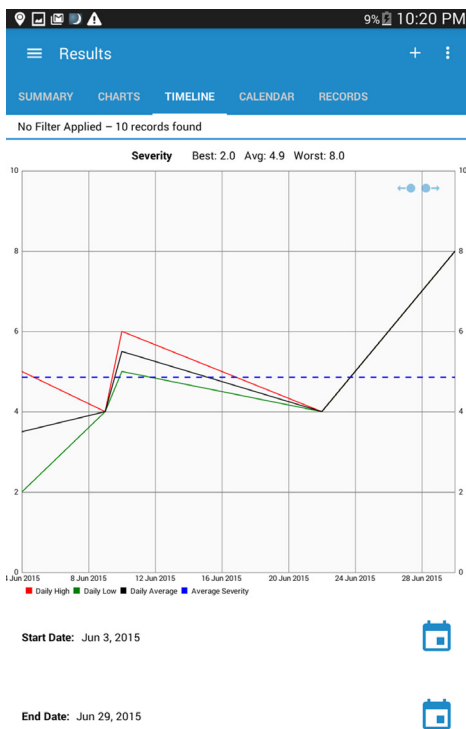


Figure 2 Pain data exploration—courtesy Manage My Pain Pro.

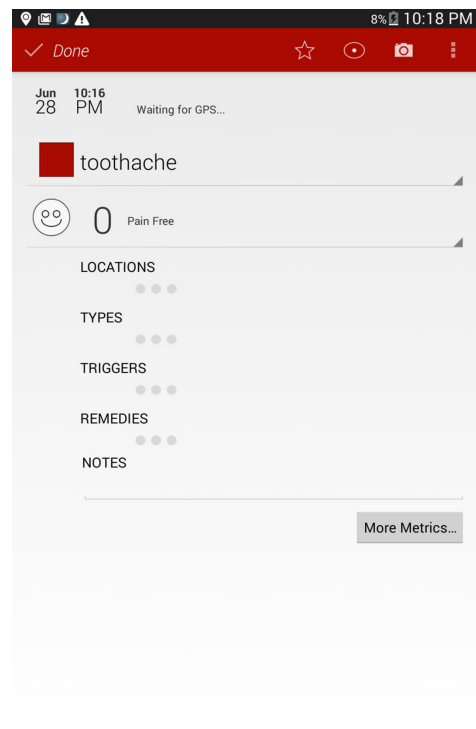


Figure 4 Pain episode recording—courtesy My Pain Diary.

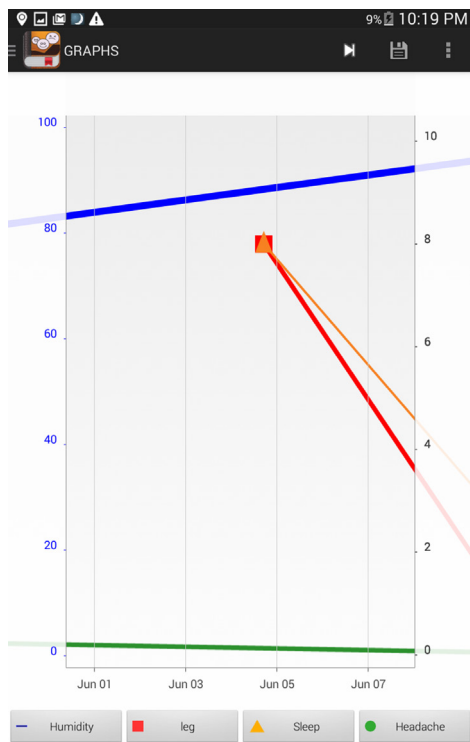


Figure 5 Pain data exploration—courtesy My Pain Diary.

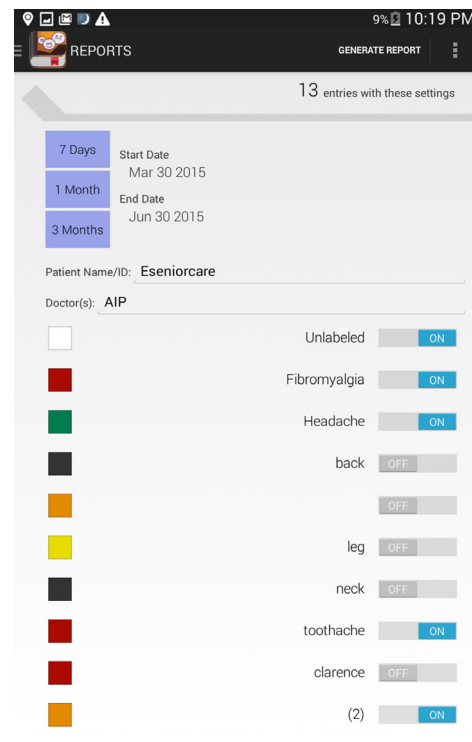


Figure 6 Report generation—courtesy My Pain Diary.

on rainy days causes me sharp back pains?’ The report generation feature is also interactive as it allows people to select the data points and the time period they want to include in the report (Figure 6). This report can be emailed to the provider who can then use it for diagnostic purposes. Overall, the level of interactivity in ‘My Pain Diary’ has the potential to empower people to engage in the self-exploration their own data with more freedom.

No matter which mobile application people will end up choosing for tracking and understanding their pain, they should be looking for three main features—pain episode recording, pain data exploration and pain data sharing. Pain episode recording should allow individuals to record their pain along with variables known to influence pain. Data exploration should enable people to understand and

recognize trends in their pain data, leading to insights around causes, and cures. Finally, data sharing should enable people to share data with experts facilitating diagnosis and treatment.

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Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

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