Mobile-Supported Life Charting for Bipolar Patients – User Requirements Study

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Abstract and Objective

It is assumed that bipolar disorder patients can benefit from monitoring their mood, sleep, medicine intake and behavior which could be both done by patients themselves and in cooperation with health care professionals. This study aims at understanding what is required from a computerized system, as seen from the view of therapists and the patients, and how the newer mobile technologies (smart phones and tablets) can be utilized to support development of such a system. The study focuses on several existing solutions available either freely or on the market. Then these solutions are evaluated by both patients and medical professionals as a part of the system requirements study to be used in a new system development that will utilize mobile technologies to support the performance and patient outcomes

Keywords:

Mobile technologies, disease management, therapeutic drug monitoring, treatment, bipolar disease

Introduction

There are several systems for supporting treatment of bipolar patients by enabling them to log information such as sleep patterns, mood fluctuations, anxiety, irritability, medicine and other variables connected to the patient's well-being. The most known of its kind and appreciated in therapy is the chart developed by NiMH, named Life-Charting Methodology [1].

Bipolar disease management includes monitoring to understand disease triggers and onsets, patient general welling assessed by scores indicating what is normal, elevated, and depressed state. This kind of insight, together with compliance with the suggested medication and therapy, benefits patient outcome. The research reported here concerns understanding users needs and preferences regarding implementation of system functionalities that both patients and medical professionals participating in the study would found important to implement.

Critical Review of Existing Solutions

Gathering data in the clinical environment in outpatient therapy makes the user requirement cycle accurate and programming solutions more fitting into the user needs [2].

There are both smart phone apps and online solutions for monitoring well being, as well as the more traditional paper based ones. A selection of these solutions could give a basis for a critical user evaluation.

Hands-on and Interview-based User Evaluation

A selected number of mobile systems are assigned to patient groups at the outpatient ward of the Sandviken Hospital in Bergen. The patients log in their data anonymously and daily in order to gain a complete picture of patient well being over a period of time. The adherence to logging (that is the number of days the patient has provided data in the solution) is considered an important usability factor.

In semi-structured interviews about the benefits and limitations in the system they evaluated. Patients are interviewed about their experiences, feasibility, easiness of use and compliance with the tested system solutions.

The medical health care providers are presented the results of the logging activity from patients and are asked to comment on the results and their presentation, readability and value they bring to the treatment. They are invited to suggest improvement and enhancing the performance outcomes, in terms of usability and potentials of adding mobile devices to the paper solutions and outpatient therapy.

Both the groups are asked about adding new functionalities such as a reminder to take medicine, inquires about last night sleep in the morning, or receiving reminders for group meetings and conferences. The latter would be considered in designing a new, user tailored mobile application.

Results and Conclusion

User evaluation of the existing solutions, interviewing patient and medical professionals results in:

1)   performance outcomes: screening for mood disorder episodes, insights from patient self monitoring using notes and mood scoring, grounds for more efficient, wireless consultation;

2)   patient outcomes: functional status (psychological, physical), patient-initiated consultation for symptom and disease management.

References

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