Abstract

Evaluating the Usability and Usefulness of a Mobile Application for Atrial Fibrillation Using Qualitative Methods: Exploratory Pilot Study

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Abstract

Background: Atrial fibrillation (AFib) is the most common form of heart arrhythmia and a potent risk factor for stroke. Non-vitamin K antagonist oral anticoagulants (NOACs) are routinely prescribed to manage AFib stroke risk, however non-adherence to treatment is a concern. Additional tools that support self-care and medication adherence may benefit patients with AFib.

Objective: To evaluate the perceived usability and usefulness of a mobile application (app) designed to support self-care and treatment adherence for AFib patients who are prescribed NOACs.

Methods: A mobile app to support AFib patients was previously developed based on early stage interview and usability test data from clinicians and patients. An exploratory pilot study consisting of naturalistic app use, surveys, and semi-structured interviews was then conducted to examine patients' perceptions and everyday use of the app.

Results: Twelve individuals with an average age of 59 years and a diagnosis of AFib completed the 4-week study. All participants somewhat or strongly agreed that the app was easy to use, and 92% (11/12) reported being satisfied or very satisfied with the app. Participant feedback identified changes that may improve app usability and usefulness for patients with AFib. Areas of usability improvement were organized by three themes: app navigation; clarity of app instructions and design intent; and software bugs. Perceptions of app usefulness were grouped by three key variables: core needs of the patient segment; patient workflow while managing AFib; and the app's ability to support the patient's evolving needs.

Conclusions: The results of this exploratory study suggest that mobile tools that target self-care and treatment adherence can be helpful to AFib patients, particularly those who are newly diagnosed. Additionally, participant feedback provided rich insight into the varied needs and health experiences of AFib patients, which may improve the design and targeting of the intervention. The benefits of qualitative methods for gaining rich insight into the real-world use and acceptability of health applications are well documented, and the value of incorporating patient perspectives during the early stages of intervention design is supported by a growing body of research. Yet, it is still rare in medical research to use qualitative methods to examine patient perceptions of a treatment at an early stage, or at all, prior to implementation. This often leads to less than optimal, or even negative outcomes for patients who receive the intervention. The results from this study we hope will help clinicians and researchers in the field of AFib care learn from our qualitative research and design insights, and ultimately build better tools for patients with this burdensome condition. Additional studies evaluating the AFib Connect mobile app over a longer period, and including a larger, more diverse sample of AFib patients, will be helpful for understanding whether the app is more broadly useful and effective in supporting patient self-care and medication adherence.

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KEYWORDS

medication adherence; pilot study; nonvalvular atrial fibrillation; patient self-care; mobile application; exploratory research; usability study; acceptability study

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