Research Exhibition in Mathematics and Computer Sciences (REMACS 6.0)/
ISBN: 978-629-97440-5-4

E-DIARY FOR DYSTONIA PATIENTS USING MOBILE APPLICATION

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ABSTRACT - A disorder called dystonia causes people to have trouble controlling some hyperkinetic movements. Patients frequently use a diary as a tool to monitor their health. e-Diary is now a tracker that enable patients to track daily symptoms at precise times and record their occurrence, frequency, and duration regardless of location. Therefore, an e-Diary mobile application for dystonia patient is developed using Flutter. Mobile health user interface design principles are incorporated which are intuitive, interactive, comfortable, adaptive and tailored. Usability and functionality testing have been conducted on this mobile application. Expert like doctors and caretakers and dystonia patients are among participants that tried e-Diary and answered the questionnaire provided. Most of the users agreed that this application manage to facilitate the monitoring that can be done for dystonia patients to obtain results about their disease and also as an aid to treat their disease. e-Diary application also supports patients as the it is easier for them to update their health status as reference to doctors.

Keywords: Dystonia, mobile application, e-diary, usability testing, functionality testing

1. INTRODUCTION

A disorder called dystonia causes people to have trouble controlling some hyperkinetic movements that restricts and limits their movement. Among its characteristics include improper posture, repeated movements, or both, as well as continuous or random muscular contractions that result in movement (Bailey et al., 2022). Patients frequently use a diary as a tool to monitor their health. For symptom-limited illnesses, diaries enable patients to track daily symptoms at precise times and record their occurrence, frequency, and duration. In a perfect world, an accessible interface would provide patients with feedback in the form of progress reports and visual findings that could be flexibly customized for clinical care and research settings. To solve this, a mobile application for creating an e-Diary for dystonia sufferers was created. The application provides a simple platform for users to readily update their condition information. The major goal of this e-Diary application is to help users keep accurate and timely illness data. The software uses mobile technology to allow people to track and update their health information. With this, they will be able to identify the seriousness of the disease they are facing. If their level of seriousness is at a high level, they will be advised to do treatment to reduce it.

2. METHODOLOGY

The Waterfall Model is an organized and sequential research process used to create an e-Diary application for dystonia patients. It is divided into five phases, which are requirement analysis, design, development, testing, and documentation. Requirement analysis is gathered through many resources such as articles and journals. Doctors and Dystonia patients were interviewed. From the feedback collected, user interface design principles of mobile health are applied. Mobile health prioritizes four important design elements such intuitive, interactive, comfortable and adaptable and tailored. e-Diary is developed using Flutter that integrates with Firebase to securely store user data, making it easy to retrieve and sync across devices. Usability and functionality testing were also undertaken to analyze the level of user satisfaction with the e-Diary application to deliver a seamless user experience. The process of e-Diary is important for patients to make an update (through e-Diary application as shown in figure 1, figure 2, figure and 4) about their daily assessment to track their health and to assist patients in identifying the kind of treatment they might undertake to lessen their disease.

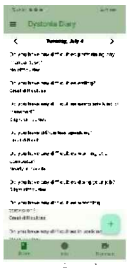

Figure 1. e-Diary interface

Figure 2. Dystonia disorder information

Figure 3. Dystonia health tips

Figure 4. Update e-Diary interface

3. RESULTS AND DISCUSSION

There are two sorts of tests that have been performed on the application to evaluate the usability and functioning of the e-Diary application. Target users such as doctors, patients, caretakers, and students are used in usability testing. They need to download the e-Diary application and use all the features available in this application on their own mobile phones. They were then provided with an online questionnaire link to share their thoughts on the application. Furthermore, functional tests are carried out by the developers to evaluate the e-Diary application for Dystonia patients to analyze the functionality of each feature in the application. Most of the users agreed that this application manages to facilitate the monitoring that can be done for dystonia patients to obtain results about their disease and also as an aid to treat their disease. e-Diary application also supports patients as it is easier for them to update their health status as reference to doctors.

4. NOVELTY OF RESEARCH / PRODUCT

The development of a mobile application for an e-Diary built exclusively for dystonia patients. This mobile application is designed to fulfil the special demands and problems that people with dystonia encounter, by providing functions and features that are uniquely relevant and helpful in managing their disease. This e-Diary application allows dystonia patients to conveniently record and track their symptoms. E-Diary collects information directly from patients and assesses the overall illness (Clark et al., 2022). Real-time data tracking features of the app allow for dynamic monitoring and symptom analysis of their condition (Carolina & Rosa, 2021).

5. CONCLUSION

Finally, the development of a mobile application for an e-Diary built exclusively for dystonia sufferers can aid in the treatment of their condition. Mobile devices accessibility and ease allow patients to effortlessly record and update their e-Diary in their personal care. Overall, the mobile application for dystonia patients' e-Diary helps to better self-care and ultimately, the well-being and quality of life of people with dystonia.

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