Blackberry eLearning Platform for Interactive Patient Education

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Abstract and Objective

Cell phones can potentially serve as a powerful health communication channel. However, the value of cell phones for interactive patient education has not been studied systematically. We developed an interactive patient learning system for use on Blackberry devices to educate health consumers about hypertension and to enforce knowledge retention by questioning the user. The system uses the Blackberry's internet connection to retrieve hypertension information from a knowledge database and is guided by adult learning theories. Multimedia hypertension curriculum is delivered in an interactive format. The application was successfully implemented and tested on the BlackBerry 7100i smartphone with Nextel as a service provider. A feasibility evaluation demonstrated high acceptance by potential health consumers and statistically significant increase in hypertension knowledge score after using the mobile education platform.

Keywords:

Mobile health, Hypertension, Health information

Methods

System Design

The algorithm for self-paced interactive education is guided by adult learning theories and has been described in detail previously [1-3]. The system was developed for the J2ME (Java Micro Edition) platform with MIDP and CDLC frameworks.

When the program begins a title screen is displayed, followed by the section title. The user completes an educational section where they are shown informative facts along with audio of the text and answer a question about the fact just shown. This continues until all of the facts for a given section are shown and corresponding questions are answered correctly. Then the user is given a short quiz consisting of several questions from the section without the corresponding information screens and audio. If all questions are answered correctly, the user moves on to the next section, otherwise the current section is repeated from the beginning. Once all learning sections are successfully completed by the user the program ends.

Pilot study

The Blackberry Hypertension **co**mputer-assisted **ed**ucation (CO-ED) system was pilot tested with 9 healthy adults who did not have prior experience in studying hypertension.

Results

The application was successfully implemented and tested using the BlackBerry 7100i smartphone using Nextel as a service provider. The program successfully uses an internet connection to connect to a server, runs a Java servlet, downloads the data, and takes the user through the hypertension information course.

Pilot study

The application was generally well received by study participants. The Attitudinal Survey demonstrated that about 89% of the participants found the device to be either not complicated at all or slightly complicated. Participants responded positively to the content and thought it "…was good introduction for people without any medical background."

Conclusion

The Blackberry smartphone platform is a viable environment for developing patient learning systems. This system can be efficiently implemented for hypertension, as well as other conditions, and is recommended for future use and expansion. The system presented in this article can be utilized as a universal mobile eLearning platform for interactive patient education.

References

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