

Abstract

Diabetes is a chronic disease with no permanent cure and with severe health implications if not managed properly. Sri Lanka is placed among the countries with highest diabetes prevalence rates in the world. It is estimated to have 2.8 million Sri Lankans with diabetes or pre-diabetes and significant proportions of them are yet to be diagnosed. Patients with diabetes need lifelong care to prevent complications, which imposes a significant burden on the country's expenditure on health care. Furthermore, for the optimal management of diabetes, patients need to maintain a constant contact with the health care provider which aggravates the burden to patients, health care system and the economy of the country.

Hence, this study was conducted to examine the suitability of a Telemedicine application containing an Electronic Personal Health Record as a solution to the above problem, to maintain the patient health information and to coordinate the continuity of care.

Telemedicine is the use of Information Communication Technology to provide health care at a distance. It can enhance communication between patient and health care provider without the physical presence of both of them in one place. Telemedicine can link health care professionals from different corners of the globe to share knowledge and expertise. Evidence showed that the telemedicine is a viable alternative to conventional care with equal or superior results.

The author had the opportunity to collaborate with two other Post Graduate trainees, Diabetes Research Unit of Department of clinical medicine, Faculty of Medicine University of Colombo and a mobile telecommunication provider to design and develop a Telemedicine/m-Health application.

A fully functional application was developed using the open source tools such as JEE and MySQL. This telemedicine application, which is integrated with mobile phone and electronic Personal Health Record, is capable of delivering diabetes education, coordinating effective management, and screening diabetes status. Users can utilize all the services in their preferred native language in Sri Lanka viz. the Sinhala, Tamil, and English.

The users can access services via internet as well as a wide array of mobile communication devices including basic mobile phone.

The evaluation of the application revealed a higher level of user acceptance and a moderate level of usability.

The author recommends that the Telemedicine is a viable alternative to the conventional care in the management of diabetes. It is recommended to accommodate suggestions from participants to improve usability of the application. It is also recommended that further research to be carried out to determine the level of usability before the practical implementation.

Keywords: Diabetes, Health care, Telemedicine, m-Health, Electronic Personal Health Record, Acceptance, Usability

