

Evolution of Data Management Tools for Managing Self-Monitoring of Blood Glucose Results: A Survey of iPhone Applications

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Abstract

Background:

Studies have indicated that sharing of self-monitoring of blood glucose (SMBG) data and subsequent feedback from the health care provider (HCP) can help achieve glycemic goals such as a reduction in glycated hemoglobin. Electronic SMBG data management and sharing tools for the PC and smartphones may help in reducing the effort to manage SMBG data.

Methods:

We reviewed software and top-ranking applications (Apps) for the iPhone platform to document the variety of useful features. Additionally, in an attempt to assess metrics such as task analysis and user friendliness of diabetes Apps, we observed and surveyed patients with diabetes as they recorded and relayed sample SMBG results to their hypothetical HCP using three Apps.

Results:

Observation and survey demonstrated that the WaveSense Diabetes Manager allowed the participants to complete preselected SMBG data entry and relay tasks faster than other Apps. The survey revealed patient behavior patterns that would be useful in future App development.

Conclusion:

Being able to record, analyze, seamlessly share, and obtain feedback on the SMBG data using an iPhone/iTouch App might potentially benefit patients. Trends in SMBG data management and the possibility of having interoperability of blood glucose monitors and smartphones may open up new avenues of diabetes management for the technologically savvy patient.

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Abbreviations: (ANOVA) analysis of variance, (Apps) applications, (BGM) blood glucose monitor, (BSDC) Blood Sugar Diabetes Control, (DDL) Diamedic Diabetes Logbook, (DM) diabetes mellitus, (HbA1c) glycated hemoglobin, (HCP) health care provider, (PDA) portable digital assistant, (SMBG) self-monitoring of blood glucose, (T1DM) type 1 diabetes mellitus, (T2DM) type 2 diabetes mellitus, (WDM) WaveSense Diabetes Manager

Keywords: blood glucose monitor, data management, iPhone, self-monitoring of blood glucose

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