

The Diabetes and Technology for Increased Activity (DaTA) Pilot Study: Usability and Patient Compliance with Remote Health Monitoring Systems in a Rural Community

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Background and aims: The metabolic syndrome (MS) increases the risk of cardiovascular disease. This risk can be modified by lifestyle change however access to preventive care may be limited in rural settings. The objective of this pilot included determining the factors related to compliance, feasibility, and usability of using Healthanywhere software with a Blackberry® to remotely monitor patients' response to a lifestyle intervention delivered in rural Ontario.

Methods and materials: Twenty-four participants (56.7 ± 8.9 years) were recruited from a rural community in South Western Ontario. All participants had the MS. For the duration of the study, participants were given a Blackberry equipped with a connection to the Healthanywhere application, a Bluetooth® enabled glucometer and blood pressure monitor, and a pedometer. Each participant had a one-on-one instructional session upon commencement of the study and access to technological support throughout. Compliance was measured as the percentage of readings that were completed. A technology usability survey was administered to assess comfort level using the technology.

Results: At the time of submission, 13 participants were included in the analysis. 96.9 ± 7.29% of morning glucose, 97.27 ± 8.38% of bedtime glucose, 93.98±/-17% of blood pressure readings, 96.87 ± 5.24% of pedometer readings and 91.15 ± 10.93 % of all body weight readings were submitted. The technology survey indicated that despite low levels of experience with personal digital assistants or Blackberries, participants were comfortable using the technology. It further indicated that remote monitoring improved their overall sense of well-being. Reasons for missed readings were shift work, technology failure and forgetfulness.

Conclusions: This study confirmed the feasibility of using a remote monitoring system (Blackberry and Healthanywhere software) to monitor cardiovascular risk factors within a rural community. Further research is underway to determine whether self-monitoring using this technology positively affects risk factor status in participants with MS.

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