
Poster

Developing a Patient-Centered mHealth App for Diabetes

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Abstract

Background: Type 1 diabetes (T1D) afflicts approximately 154,000 people under the age of 20. T1D care is complex, which is why parents often manage their child's disease. Once the child reaches adolescence, they must begin to transition from parent care to self-care. As a result of the inherent complexity of managing T1D, this transition is often difficult. During this time, adherence to the prescribed treatment regimen drops. Uncontrolled T1D can lead to blindness, nervous system disease, kidney disease, amputations, and premature mortality. mHealth apps have been shown to be successful at monitoring and managing chronic diseases, including diabetes. This project is in the formative stages of developing an app for adolescents with T1D to connect with their parents to bridge the transition of care. Our proposed app, MyT1D_Hero, is unique in that it links the child's information to their parent's cell phone and promotes positive communication within families. Research suggests this interaction is imperative for a successful transition in care.

Objective: The goal of this study was to determine the perceptions of adolescents with T1D and their parents regarding how best to aid in the transition to diabetes self-management.

Methods: We conducted two sets of focus groups to examine perceptions of the proposed app. The first study included focus groups and interviews with adolescents aged 13-22 with T1D (n=12) and parents (n=9). These focus groups and interviews helped inform the development of a second set of focus group protocols conducted with adolescents aged 10-13 with T1D (n=5) and parents (n=7). Using grounded theory, the transcripts were analyzed by generating codes based on an iterative examination of the data. Members of the research team then coded the interviews independently; any discrepancies were discussed and resolved. These codes were applied to the transcripts and a list of key themes emerged.

Results: The analysis of the initial focus groups and interviews yielded the following key themes: (1) adolescents were more likely to have a phone because they have diabetes and (2) both groups felt that parents nagged and believed an app might reduce conflict. The second session yielded the following key themes: (1) parents want to feel confident in their child's ability to manage their diabetes independently, but they want to be engaged in managing their child's T1D; (2) children want more positive communication from their parents regarding their T1D; and (3) customization of the app was important, including adjusting the level of parent involvement. Both studies revealed that incentives and gamification will encourage long-term use of the mobile app.

Conclusions: Taking a patient-centered approach to gain insight into the daily management of T1D supports the development of a T1D mHealth app to aid in the transition toward self-management. The first study established the need for and projected usefulness of an app. The second study demonstrated additional necessities for creating an app that meets the needs of adolescents and their parents. Additionally, both studies demonstrated the importance of supportive patient-centered research to tailor mHealth interventions.

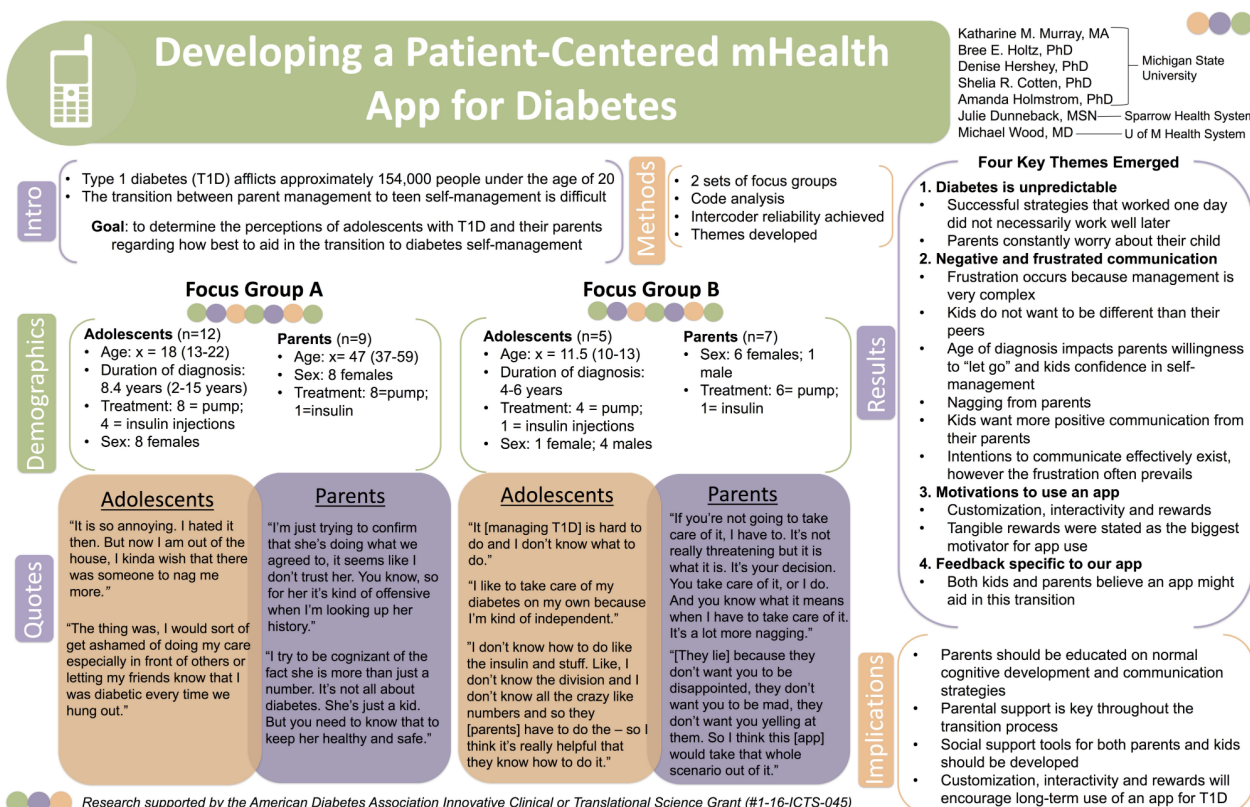
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KEYWORDS

mHealth; type 1 diabetes; diabetes self-management; adolescent health

This poster was presented at the Connected Health Symposium 2016, October 20-21, Boston, MA, United States. The poster is displayed as an image in [Figure 1](#) and as a PDF in [Multimedia Appendix 1](#).

Figure 1. Poster.



Multimedia Appendix 1

Poster.

[\[PDF File \(Adobe PDF File\), 289KB-Multimedia Appendix 1\]](#)

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