Failing the challenge: Diabetes apps & long-term daily adoption

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“A diabetes app is a constant reminder that you have a life-threatening chronic condition.” - P16

Introduction
Diabetes spending is responsible for more than 10% of worldwide health costs1. Mobile health has emerged as a strategy for supporting healthier lifestyles and relieving over-burdened medical systems. In 2013 only 1.2% of diabetics with a smartphone were estimated to be using a diabetes app.2 We looked at the real-world behavior of people with diabetes who had used these apps, in order to learn more about the effects of these products in their lives. Participants were interviewed about their views and experiences on diabetes and non-diabetes related apps. We found the majority of participants were no longer using apps as part of their daily diabetes self-management, despite a generally positive assessment of these products. The lack of “stickiness” (the tendency to stay and return to a product), suggests that significant barriers to adoption remain to be solved.

Methods
Qualitative and quantitative study data were collected and analyzed. Inclusion criteria: Diabetic or parent of a diabetic minor; personal ownership of a smartphone; previous experience with a diabetes app. Participants were recruited for structured interviews through diabetes related social media, and diabetes related events. Participants: n=27, 26 T1, 1 T2. Age range: 3-61 years, mean 31.3 years (SD ±13.1). Diabetes duration: range 1-54 years, mean 15.67 (SD± 12.26). Gender: 37% female.

Results
While the majority of respondents reported diabetes apps as “very” or “somewhat” helpful this did not translate to daily long-term usage. There were many reasons given, but most seemed reluctant to add workload without significant gains.

<table>
<thead>
<tr>
<th>Reasons for ceasing diabetes app use</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too much work</td>
<td>48%</td>
</tr>
<tr>
<td>Cost/benefit ratio</td>
<td>22%</td>
</tr>
<tr>
<td>Lack of CGM/Pump integration</td>
<td>11%</td>
</tr>
<tr>
<td>No perceived benefit</td>
<td>8%</td>
</tr>
<tr>
<td>Negative Emotions</td>
<td>7%</td>
</tr>
<tr>
<td>Doctor’s resistance</td>
<td>3%</td>
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</tbody>
</table>

Conclusions
This pilot survey suggests that there is still much work to be done to support long-term daily adoption of diabetes apps. While there are numerous technical hurdles to be overcome, such as better device connectivity and automation, understanding the user experience of the consumer will be critical in building apps that people want to use. We need to better understand the needs, goals and feelings of actual users, recognizing that short-term clinical studies are very different from real-world conditions.

Discussion & Further Research
What substantial benefits can a diabetes app offer beyond the ability to view logged data and earn virtual badges?
Are there differences for implementation of chronic disease management apps vs. general health apps?
Will reducing workload through automating data input be enough to encourage adoption?
How do we determine which app approach has the best chance of adoption for a given person or personality type?

References
3. AADE Guidelines for the Practice of Diabetes Self-Management Education and Training, 2010

Citations:

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