Acceptability of Sharing Behavioral Risk and Glucose Data between Patients and Clinicians: A Pilot Study

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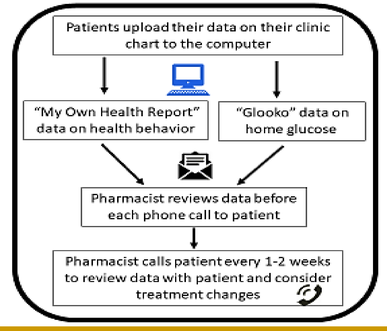
Background & Objective

- Patients with uncontrolled type 2 diabetes face complex challenges managing blood glucose and lifestyle behavior.
- Technology packages have improved clinical outcomes by allowing remote patient monitoring of glucose (Glooko©) and behavioral health risks (My Own Health Report, MOHR).
- However, adoption has been limited in primary care.
- **How the method used in this project relates to planning pragmatic research:** as acceptability to key stakeholders is an overarching predictor of adoption, we sought to evaluate the acceptability of Glooko/MOHR among key stakeholders: patients and clinicians.

Overview: 60-day pilot RDM program

60-day program of phone calls every 1-2 weeks with clinic pharmacist



Methods

- We enrolled patients with uncontrolled type 2 diabetes mellitus (Hemoglobin A1c >8%) and their treating clinicians from three academic primary care clinics.
- Acceptability was rated after a demonstration of the process of sharing Glooko/MOHR data between patients and clinicians.
- All quantitative data are reported as mean ± SD.
- **We considered survey ratings of 70-80% and >80% as moderately and highly acceptable, respectively**.

Results

Figure 1: Demographic Information of the Clinicians (PharmDs & PCPs) & Patients

- Age: 65.7 ± 12.8 Years
- Gender: 58% Female
- Race: 67% White; 17% African American

- Age: ≤ 49 years old (70%)
- Gender: 89% Female
- Experience: 12.6 ± 9.9 Yrs

Figure 2: Patient Acceptability of Sharing Glooko and MOHR data

MOHR Perceived usefulness: Helpful visual patterns for lifestyle behavior; Promotes accountability
"It's helpful because the "green part (shows)…- I'm really eatin' right. I'm exercising, or the light orange is telling me that I could probably do a little more, but I'm doin' okay. Then the darker orange is telling me that I need to get up and do somethin'. I can look at that and say, "I got a really dark orange today. Maybe I could sweep the floor or go around the block…to change that."

MOHR

Highly Acceptable (>80% rating)
- Perceived usefulness (85.5±8.1%)
- Self-efficacy (83.5±12%)
- Social influence (83±0%)

Unacceptable (<70% rating)
- Resistance to change (58.5±12%)
- Qualitatively, some patients indicated that MOHR data are particularly useful for self-management rather than sharing with clinic teams frequently
- Accordingly, there was a notion that it is better to share these data "just-in-time" before scheduled visits rather than on a more regular/routine basis

Glooko

Highly Acceptable (>80% rating)
- Intention to use (91.5±12%)
- Perceived usefulness (89.5±8.1%)
- Social influence (83±0%)

Unacceptable (<70% rating)
- No unacceptable ratings

Glooko Perceived Usefulness: Understanding patterns in high/low glucose; Promotes accountability
"I'm hoping that I will get a better handle on how to gauge my own blood sugar and kind of things that I do or don't do that affects it and what I can do to change and get it more into normal limits. Decrease the highs."

Perceived Usefulness: efficient way to review accurate data; ↑engagement with patients "I do think that one of the benefits for patients here is that they're keeping their numbers maybe in a logbook, or in their meter, and they might not know how to look back. This gives them an easy way to see trends... they may not have had before. I think awareness and knowledge are really helpful and empowering for patients."

Figure 3: Clinician Acceptability of Sharing Glooko and MOHR data

Highly Acceptable (>80% rating)
- Perceived Usefulness (88.1 ± 4.2%)
- Facilitators (84.2 ± 8.6%)
- Intention to Use (82 ± 15.6%)

Unacceptable (<70% rating)
- Subjective Norms (50.2 ± 16%)
- Low perceived support among patients (27%), colleagues (55%), and health managers (55%).

Subjective Norms/Others' support:
Won't work for patients with low technology/health literacy: "If patients don't have easy access to technology or a lot of technology familiarity, they might be hesitant to enroll."
Avoid worsening clinician burnout: If a patient… needs help with troubleshooting technology, is that going to be me?

**Acceptability for each domain is reported as the percentage of respondents (mean ± SD) who reported agreement with statements regarding how the RDM technology is acceptable within this TAM domain

Discussion

Main findings:
- The perceived usefulness of technology to share glucose and behavioral risk data between visits was rated as highly acceptable by patients and clinicians.
- To reach the promise of using remote technology and patient-reported data to address health challenges:
  - Patients may prefer sharing behavioral risk data with clinics just prior to clinic visits than on a routine basis
  - Clinics will need to address factors causing perceptions of limited support from patients and staff, including ensuring "technical" staff are sustainably supported to troubleshoot purely technical issues.

Limitations:
- This project required integrating Glooko© and MOHR data with the electronic health record.

Future Directions

- The Technology Acceptance model offers insights as to the aspects of technology-based interventions that are and are not acceptable to staff and patients.
- To promote stakeholder buy-in for these remote data monitoring approaches, implementation strategies need to address these acceptability concerns
- A value proposition to stakeholders should highlight the greater patient engagement and motivation we observed

Conflict of Interest Disclosure

- No relevant conflicts of interest – this work was funded by the University of Colorado Data to Value initiative – employees of Glooko and My Own Health Report assisted with data integration but had no role in study design or data analysis.