

PIZZA PERFECT BLOOD SUGARS? A QUALITATIVE EVALUATION OF THE IMPACT OF MEAL-TRACKING AND PEER SUPPORT FOR TYPE 1 DIABETES SELF- MANAGEMENT

Svea Arlena Krutisch, Kevin Nils Röh1¹

¹HTW Berlin – University of Applied Sciences, Business School, Berlin, Germany

Background and Aims

People with type 1 diabetes (T1D) make 180 additional daily decisions compared to people without diabetes², considering roughly 42 different factors that can influence blood glucose levels in different ways³. Even though people with diabetes (PwD) need to manage their glucose levels based on this, they often lack resources and need to constantly reevaluate different impacts in their day-to-day life, creating a vast mental load and furthering the risk of psychological comorbidities⁴. Making these decisions on their own requires a high degree of experiential knowledge and health literacy. It has been shown that PwD regard medical experts’ knowledge as insufficient for managing their disease daily and instead, especially value the experiential knowledge of peers experiencing the same reality⁵. Thus, it has been called for specific intervention methods in patients’ daily lives in order to improve their self-management⁶. In this study, the app *meala* was used as such an intervention method, combining meal tracking and peer support to evaluate carb estimation abilities and overall diabetes self-management. This intervention was tested with pizza, one of the trickiest foods to manage because of its high content of fat, protein as well as carbohydrates.

Methods

15 participants living with type 1 diabetes were asked to participate in the “pizza challenge”, eat the same pizza twice and use the app *meala* to track their carbohydrate estimations and overall diabetes self-management. Before eating the second pizza, a focus group interview was conducted during which participants exchanged experience and knowledge from eating the first pizza. Using a qualitative self-reported pre-post-survey, they were then asked to indicate their self-management and whether the evaluation using *meala* had made them adjust their therapy in any way.

Results



On average, participants estimated 79.73 g of carbohydrates in the first intervention and 89.2 g in the second intervention, showing that crowd intelligence and peer support can lead to a more accurate estimation, since the actual amount of carbohydrates was 95 g. Overall, 9 participants estimated more carbohydrates in the second intervention, whereas 3 participants estimated less and 3 participants estimated the same amount as before. However, all participants reported that they had adjusted their self-management in some way, injecting a different amount of insulin or splitting the bolus differently than the first time. By evaluating their own management using the app *meala* and peer support, 10 participants reported an improvement in their CGM data while 2 participants’ reported outcomes did not change drastically and 3 participants reported negative CGM outcomes. Participants emphasized that using their own data from *meala*, they were able to be more confident in estimating the correct amount of carbs and give the right amount of insulin in the second intervention, when they had had a mental block to do so in the first intervention.

Conclusion

Repeatedly tracking one’s own diabetes management for the same food and using peer support for decision support can lead to behavioral adjustments and have positive impact on therapy outcomes in people with type 1 diabetes.

Estimating the correct amount of carbohydrates is not the only factor at play when aiming for blood glucose to stay in range. This study has shown that using digital tracking tools such as *meala* can be helpful for people living with type 1 diabetes to evaluate the different factors at play in daily life settings. Other factors that were emphasized to be especially helpful for evaluation included peer support and the exchange of experience as well as knowledge with other people living with type 1 diabetes. This supports the claim that besides medical support by healthcare professionals, specific intervention methods in patients’ daily lives are needed in order for them to be able to improve their self-management themselves. More research should be focused on providing people with these tools in order to sustainably improve health outcomes.

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