Tracking Carbohydrate Intake With an App and the Effect on Type 2 Diabetes Mellitus

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Project Purpose
Evaluate if the utilization of a mobile health app to track daily carbohydrate intake improves clinical outcomes in patients with type 2 DM as evidenced by:
- Improved glycemic control
- Reduction in weight
- Improved perception of self-management of DM
- Decrease in death
- Decrease in economic burden

Inclusion criteria
- Age 18 years or older
- HbA1c greater than 6.0
- BMI greater than 25

Methodology
10 participants (6 female, 4 male)

First meeting:
- Starting weight, BMI, and A1c collected
- Week 1 details discussed
  - Continue typical diet and lifestyle regimen and keep a paper log of diet
  - Monitor daily blood glucose
  - Consents signed
  - Questionnaire using Likert scale administered
  - Provided contact information

Second meeting:
- Patient’s paper logs from week 1 collected
- Second phase of project discussed
  - Download “Carb Manager” onto mobile device of their choice
  - Change from “keto” to “low carb” recommendations
  - Utilize app and its recommendations to document daily intake and monitor daily blood glucose for 4 weeks

Final meeting:
- Final weight and average blood glucose collected
- Diabetes questionnaire re-administered

Results

<table>
<thead>
<tr>
<th>Participant</th>
<th>Pre-Weight</th>
<th>Post-Weight</th>
<th>Pre-Glucose</th>
<th>Post-Glucose</th>
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</thead>
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Average Blood Glucose Level

Average
- Weight loss: 4%
- BMI decrease: 4.24%
- Glucose decrease: 26%

Implications for Practice
Utilization of an app such as Carb Manager into diabetic management could:
- Increase patient autonomy in managing their DM
- Improve clinical outcomes associated with DM
- Promote the patient–provider dynamic relationship
- Promote interprofessional communication
- Improve patient, family, and provider satisfaction

Recommendations
Incorporate an app such as Carb Manager into diabetic education
Provide patients the opportunity to explore the app and promote self-management

Contact
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Diabetes Self-Care Questionnaire

Likert Type Scale from 1-4 with 1 being the least and 4 being the most

Participants were asked 7 questions related to self-management of DM

<table>
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<th>Likert Scale Rating</th>
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<tr>
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Average Diabetes Self-Care Questionnaire

Average

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