Shared Medical Appointments to Improve Outcomes for Adults with Type 1 Diabetes

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Purpose

• To implement an evidence-based quality improvement project at the USF Diabetes Center in Tampa, Florida.
• To assess improvements in care outcomes of adults with type 1 diabetes, through the implementation of shared medical appointments (SMA) with a focus on carbohydrate counting education.

Background

• Diabetes mellitus type 1 is a chronic disease that places individuals at a higher risks for complications and mortality at an early age.
• Serious health complications include kidney failure, heart disease, stroke, lower-limb amputations and blindness.
• In the United States, more than 70% of patients ages greater than 30 with type 1 diabetes are not at glycemic goal of Hb A1c less than 7%.
• The American Diabetes Association has recognized there is a lack of continuous comprehensive care throughout the lifespan of adults with type 1 diabetes.
• The SMA concept was developed by Dr. Edward Noffsinger, PhD in the 1990s.
• SMAs were designed to overcome the restrictive traditional time-limited visits for patients with chronic diseases.
• SMA is defined as “a cluster of individual, comprehensive appointments focused on facilitated peer interaction around self-management and empowerment.”

Methods

• Three SMA sessions were held at the USF Diabetes Center.
• Sample
  • A convenience volunteer sample was recruited from the two USF Diabetes Center clinics in Tampa, Florida.
  • The target population for this project was adults 20 to 45 years old diagnosed with type 1 diabetes mellitus with a Hb A1c greater than 8%.
• Outcome Measures
  • The primary outcome measured was Hb A1c levels before and 3 months post-SMA.
  • Adult CarbQuiz scores before and post-SMA were measured to assess knowledge gained from carbohydrate counting education.
  • An anonymous satisfaction questionnaire was administered to gauge patient satisfaction with this type of visit.

Results

• Nine adults with type 1 diabetes from the USF Diabetes Center participated in this study.
• Seven of the 9 participants completed all before and post-SMA Hb A1c, Adult CarbQuiz, and satisfaction questionnaire.

<table>
<thead>
<tr>
<th>Table 1 Participants demographics</th>
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<tbody>
<tr>
<td>Mean Age</td>
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<tr>
<td>Gender (%)</td>
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<tr>
<td>Mental Status (%)</td>
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<tr>
<td>Occupation (%)</td>
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<tr>
<td>Highest level of education (%)</td>
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<tr>
<td>Age of diabetes diagnosis (%)</td>
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<td>Diabetes education classes ever attended (%)</td>
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| Table 2 Paired Sample t-test for Hb A1c and Adult CarbQuiz scores |
|-------------------|------------------|
| Before | Mean | SD | Post | Mean | t | DF | p |
| Hb A1c (%) | 10.31 | 2.49 | 9.33 | 3.24 | 3.52 | 6 | 0.012 | 0.42 |
| Adult CarbQuiz scores | 29.22 | 6.59 | 33.11 | 5.69 | -3.03 | 6 | 0.016 | 0.63 |

• The participant’s Hb A1c prior to the SMA ranged from 8.0-14.0%, with a mean of 10.3% (SD = 2.49). Hb A1c after the SMAs ranged from 6.8-12.2%, with a mean of 9.3% (SD = 2.14).

Discussion

• There was an improvement in the care outcomes among adults with type 1 diabetes over 3 months.
• The participant’s satisfaction with the SMA was high at a level of 4.67 out of 5.
• Although there is limited literature of SMAs and type 1 diabetes, the results of this study were similar to the published findings on the beneficial impact of SMAs on Hb A1c in patients with type 2 diabetes.
• While most participants had been diagnosed with diabetes for at least 10 years and had attended multiple diabetes education classes, the implemented SMA showed a statistically significant improvement in Hb A1c and increased their knowledge on carbohydrate counting.
• Recommendations for further research in this area include implementing larger studies of SMAs over a longer period of time.
• SMAs should become a component of standard care for adults with type 1 diabetes and the education component of SMAs should include various topics including physical, mental and emotional health.

References


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