ANALYSIS ON THE EFFICACY OF DIABETES SELF MANAGEMENT EDUCATION AMONG AN UNDERSERVED POPULATION

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BACKGROUND

Diabetes mellitus is a common and serious disease affecting over 30 million people in the USA. It directly caused 80,000 deaths in 2015 and was a contributing factor to over 250,000 more. Diabetes will primarily manifest with altered blood sugar but its complications include nerve damage, kidney damage, blindness, ulcers, infection, heart disease and stroke. In 2014 there were 7.2 million hospitalizations and 14.2 million emergency room visits for diabetes related complications amounting to $245 billion dollars in health care expenditures.

Individuals of lower socioeconomic status bear a disproportionate burden of diabetes. Reduced access to regular doctor’s visits, healthy food and safe places to exercise results in a higher rate of occurrence and increased mortality compared to higher-income patients. Diabetes currently has no cure, and management must involve a thorough combination of medications, diet control, exercise, and regular follow-up with a physician. Diabetes Self Management Education (DSME) programs have been designed to improve the self-efficacy of patients with diabetes, helping them to learn strategies to better manage their own disease.

OBJECTIVE

To evaluate the effects of attendance to a Diabetes Self-Management Education program on comprehensive diabetic control in an underserved population.

Primary Outcome:
Comprehensive diabetic control, a passing value in ≥70% of variables

Secondary Outcomes:
- A1c ≤ 8%
- Blood Pressure ≤ 140/90
- ACE Inhibitor if there is evidence of hypertension (BP ≥ 140/90) or microalbuminuria
- Lipid Panel on file
- Statin if ≥40yo or < 60yo with a cardiovascular disease risk factor
- Foot Exam within the last 12 months
- Eye Exam within the last 24 months
- Kidney Function Test within the last 12 months
- Vaccinations

METHODS

Subjects were recruited through a chart review at the St.Vincent de Paul free medical clinic.

Inclusion Criteria:
Patients 21yo who have diabetes attended at least one primary care visit for diabetes

Exclusion Criteria:
- ≥80yo
- Diabetes related hospitalization more than 6 months prior
- Insulin therapy

The treatment group consisted of participants who had attended ≥4 of the 7 classes with the DSME program.

The control group consisted of participants who did not attend any DSME classes.

BASELINE CHARACTERISTICS

<table>
<thead>
<tr>
<th>Group</th>
<th>Age (mean ± SD)</th>
<th>Sex</th>
<th>Ethnicity</th>
<th>Months since last visit (mean ± SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>53±8.3</td>
<td>44%</td>
<td>56%</td>
<td>29±7.11</td>
</tr>
<tr>
<td>Control</td>
<td>56±13.1</td>
<td>52%</td>
<td>48%</td>
<td>38±2.56</td>
</tr>
</tbody>
</table>

RESULTS

The results of the study show that attendance to a DSME program more than doubled an individual’s odds of maintaining diabetic control. The design of the study did not measure the rates of diabetic complications, but with the assumption that the changes in metrics could even cause a 10% reduction in adverse events, then this type of education nationwide could prevent 33,000 deaths each year and reduce yearly healthcare costs by $245 billion.

CONCLUSIONS

Overall, the DSME program was found to significantly affect the long-term diabetic control among patients who attended. 46% of patients who attended the class were found to have good diabetic control compared to only 19% among those who didn’t attend.

- A subject who attended the DSME program was found to:
  - 3.4 times more likely to have good overall diabetic control
  - 4 times more likely to have a healthy A1c
  - 3.9 times more likely to have a healthy blood pressure
  - 1.3 times more likely to have adequate exercise
  - 1.3 times more likely to modify their diet

DISCUSSION

The study showed that attendance to a DSME program more than doubled an individual’s odds of maintaining diabetic control. This is not an ideal number, and changes have been made to the SVdP primary care clinic so patients will be transitioned in a more effective manner to ensure continuity of care at the clinic they follow up at.

- Weaknesses of the study include:
  - A small sample size
  - Bias in motivated patients vs patients looking for medical care
  - Short interval to follow up. 5 years post intervention would be ideal
  - Change in leadership in the clinic – improved primary care led to improvements in patient care for participants in the second half of the study

REFERENCES


Acknowledgements

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References

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