The Effect of Certified Diabetic Education on Hemoglobin A1C Levels in Patients with Type 2 Diabetes Mellitus

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Background

- Type 2 Diabetes Mellitus is a nationwide growing epidemic that leads to health care complications, increased mortality, and decreased quality of life.
- This chronic condition contributes to hundreds of billions of dollars of health care costs per year.
- Patients with diabetes are responsible for controlling approximately 95% of their care in order to adequately control their blood glucose levels.
- Type 2 Diabetes Mellitus requires a high level of self care including strict medication regimens, close monitoring of blood glucose, consumption of a healthy diet, and regular physical activity.
- Diabetes self-management education and support (DSMES) can lead to decreased costs and complications, as well as improved blood glucose control and quality of life. It requires a referral by a primary care provider.
- Referral is recommended at diagnosis, annually, when treatment goals are not being met, and when complications arise.

Methods

A retrospective chart review was conducted on patients with Type 2 Diabetes Mellitus ages 18-65 who received at least one diabetes education session.

Inclusion Criteria
Patient at UT Family Medicine for at least one year
Seen from January 1, 2019 through August 31, 2021
Age 18-65
Diagnosis of Type 2 Diabetes
Recipient of at least one diabetes education session with a CDE or PharmD
At least two documented visits with Hemoglobin A1C (HbA1c) checked before and after education

Procedures
Demographic data, baseline HbA1c, and post-education HbA1c were extracted from 29 random charts.
All patients were deidentified to only include gender and HbA1c results.
A two-tailed paired samples t-test was conducted to determine the mean difference in pre- and post-intervention HbA1c.

Purpose

The purpose of this quality improvement project is to determine the effect of diabetes education provided by a Certified Diabetes Educator (CDE) or PharmD on hemoglobin A1C levels in patients with Type 2 Diabetes Mellitus.

Results
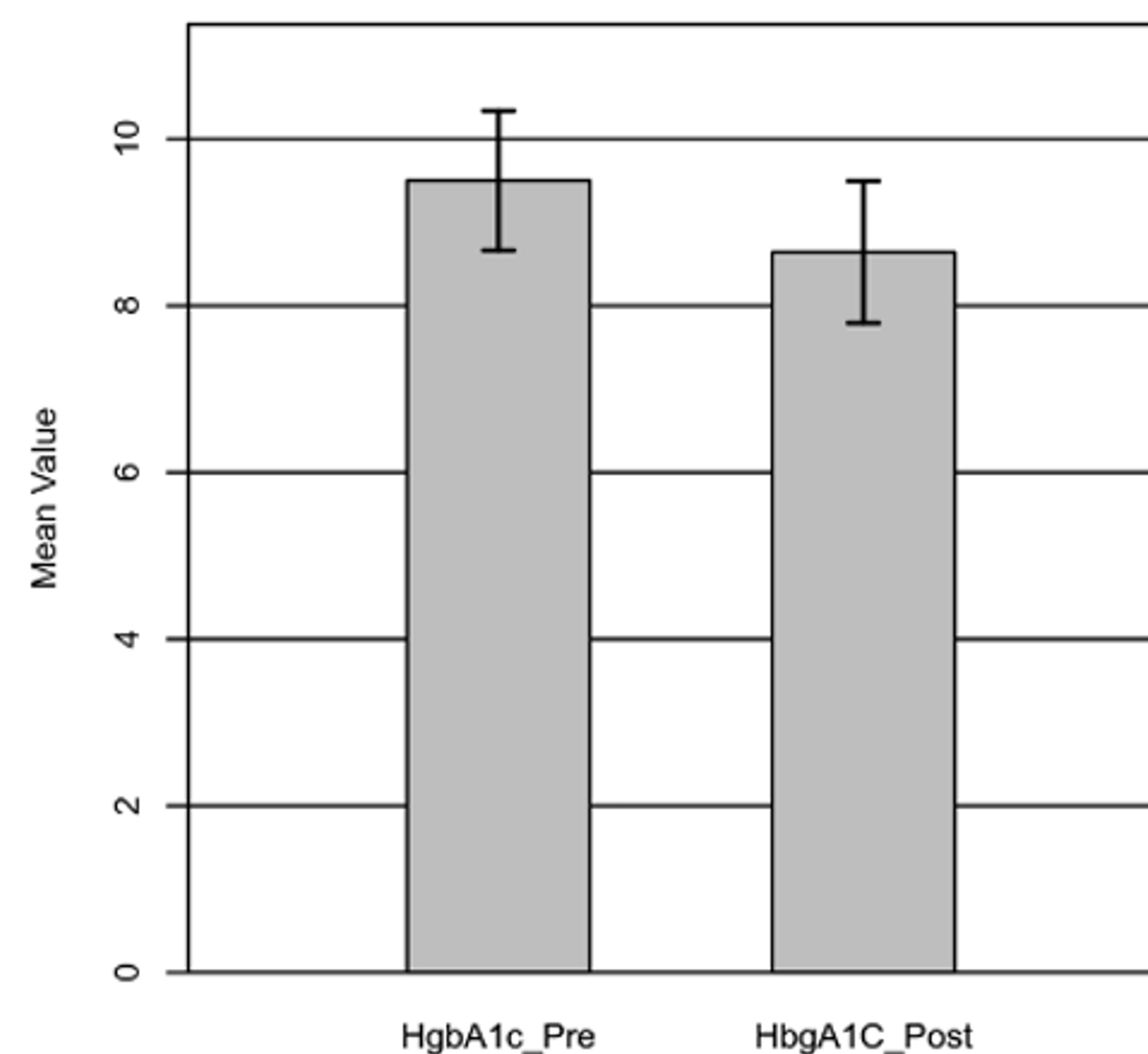
Results

Retrospective Chart Review of Pre and Post CDE HbA1c

Variable	M	SD	n	SE_M	Min	Max	Skewness	Kurtosis
HgbA1c Pre	9.50	2.30	29	0.43	5.20	13.50	-0.09	-0.99
HbgA1C Post	8.64	2.34	29	0.43	5.50	14.30	0.48	-0.64

While our results were not statistically significant (p = .069), there was a detectable decrease of mean HbA1c in 66% of patients (n=19), with a larger decrease of mean HbA1c reflected in men (1.7) compared to women (0.54).

Implications for Practice

- Diabetes education by a CDE or PharmD is a beneficial self-management tool to use for patients with Type 2 Diabetes Mellitus.
- Diabetes education has the potential to improve management of Type 2 Diabetes Mellitus, decreasing avoidable complications and reducing healthcare costs including office visits and hospitalizations.
- The implementation of diabetes education for patients with Type 2 Diabetes Mellitus can positively impact long-term glucose control and should routinely be included as part of the standard of care.
- We wish to further explore and determine if the frequency and quantity of education encounters affects HbA1c levels.
- It would be beneficial to determine the effectiveness of various diabetes education methods and materials currently being used in practice including: audio, visual, written, interactive, and demonstration.

References

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