

The Association between Driving Distance and Glycemic Control in Rural Areas

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Abstract

Background:

In order to optimize care and improve outcomes in people with diabetes, adequate access to health care facilities and resources for self-management is required.

Methods:

Data on 3369 individuals with type 2 diabetes who received education at 7 diabetes centers were collected prospectively between June 2005 and January 2007. The driving distances of subjects who were in good control [hemoglobin A1c (A1C) $\leq 7.0\%$] were compared with the driving distances of those who were not (A1C $> 7.0\%$). The association between A1C and improvement in A1C with travel burden was tested.

Results:

The mean distance subjects traveled to visit their center was 13.3 miles. The results indicated that residing more than 10 miles from the diabetes management center [odds ratio (OR) = 1.91, $p < .0001$], being younger (OR = 0.99, $p = .00015$), and having a longer duration of diabetes (OR = 1.03, $p = .0007$) were significant contributors to a A1C $> 7\%$ adjusted for individual- and community-level factors. In addition, those who lived within 10 miles of their center were 2.5 times more likely to have improved their A1C values between their first and last office visits.

Conclusion:

Health care providers should be aware of travel burden as a potential barrier to glycemic control. In the future, it may be useful to minimize driving distance for individuals with diabetes, perhaps by improved public transportation, more diabetes center locations in rural areas, telemedicine, or home visits.

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Abbreviations: (BMI) body mass index, (DBP) diastolic blood pressure, (A1C) hemoglobin A1c, (LDL) low-density lipoprotein, (OR) odds ratio, (SBP) systolic blood pressure, (SES) socioeconomic status

Keywords: diabetes, driving distance, glycemic control, rural

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