Association between Symptoms and Hemoglobin A1C Levels in Mexican Americans with Type 2 Diabetes
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Background: Type 2 diabetes (T2DM) is a growing epidemic in the United States and Mexican Americans have T2DM 1.5-2.0 times the rate for non-Hispanic Whites. Research has shown an association between several symptoms (e.g., increased hunger and blurry vision) and increased hemoglobin A1C levels, a measure of diabetes control. Understanding the association between symptoms and A1C could lead to better management of T2DM.

Purpose: To analyze the relationships between 1) frequency of 38 individual symptoms such as dry mouth and increased urination with A1C levels and 2) the total number of symptoms with A1C levels in Mexican Americans with T2DM, and 3) to compare mean A1C levels of those who experienced each symptom even once in the previous week to those who did not.

Sample: The convenience sample included 72 Mexican American men and women with T2DM recruited from community settings and clinics serving low-income populations in urban and rural settings.

Methods: A quantitative secondary analysis was conducted on data gathered for a diabetes educational intervention randomized controlled trial. Baseline data, including participants’ A1C levels, symptoms (using the Diabetes Symptom Self Care Inventory), comorbid conditions, and demographic characteristics, were analyzed with descriptive statistics, Pearson correlation, and t-tests.

Results: Participants were 67% women, aged 40-59 years who had T2DM for an average of 7 years. Participants who reported intense thirstiness and flushing had significantly higher A1C levels ($t =2.260, df =68, p =0.027$ and $t =2.156, df =23, p =0.042$, respectively). Six of 38 symptoms had small but significant correlations with A1C ($r =.237-.391$). A small but statistically significant correlation was also found between A1C levels and total number of symptoms ($r =.215, p =.038$).

Discussion & Conclusion: Symptoms have a small but statistically significant correlation with A1C. The six symptoms that were correlated with A1C could serve as indicators to prompt patients in their diabetes management. Nurses should assess symptoms and teach patients how to manage them. Future research should explore symptom clusters as they might more accurately represent how individuals experience symptoms.