

Diabetes Knowledge in Youth with T1DM and their Caregivers-A Cross-Sectional Study

Acg_cj]hn'5'z'5'YI' ?bYY'AG²z' :fmXaUb'9'z'5''Yb' <

specific elements of a diabetes education curriculum are essential for better clinical outcomes.

In this study, we sought to evaluate diabetes knowledge in youth with T1DM and their caregivers and its association with clinical outcomes. We hypothesized that better diabetes knowledge is associated with a lower A1C. We attempted to determine predictors of adequate diabetes knowledge.

Study design/sample: To study diabetes knowledge in children with T1DM and their caregivers and its association with clinical outcomes, we conducted a cross-sectional descriptive study and approached all patients with T1DM aged 2-21 who had been diagnosed for at least 3 months coming for their routine follow-up appointments in our clinic during 2011-2012 (~750 clinic patients). Patients in state custody were excluded from the study. Our study included two groups of respondents: Adolescent participants aged 14 years and older and caregivers of the younger children.

T is

a guide to evaluate meaningful clinical differences. Analysis was conducted using Stata v14.0 (StataCorp, LP College Station, TX). This study was approved and overseen by Baystate Medical Center's institutional review board.

The secondary exploratory analysis evaluated predictors of diabetes knowledge among adolescents or caregivers. In general, continuous variables are represented as means and standard deviations (SD) while categorical variables are represented as frequencies and percentages. The overall and sub-scale percentage correct scores are reported along with 95% confidence intervals (CI). The prevalence of adequate diabetes knowledge was calculated using logistic regression. Results are presented graphically along with 95% confidence intervals. Exploratory hypothesis testing was conducted assessing the within group (e.g. within-adolescent and within-caregiver) differences between demographics, socio-economic and clinical factors. Statistical significance was set at an alpha of 0.05; however, this was used only as

A total of 215 subjects completed the 22-item diabetes knowledge questionnaire as well as demographic and clinical surveys (Table 1). Over half of them were adolescent respondents.

	5Xc`YgWYbhi`FYgdcbXYbHg	7UfY[]jYf`FYgdcbXYbHg
8]UVYhYg`_bck`YX[Y`ei`Ygh]cbbU]fY	b1%&(`fl)+`+` i L	b1-%`fl(&`+` i L
8Y a c [fUd\]Wg		
Age: mean (sd)	17.1 (2.0)	10.5 (2.5)
Caucasian race: n (%)	90 (72.6)	74 (81.3)
Male gender: n (%)	71 (57.3)	43 (47.3)
English as primary language: n (%)	110 (88.7)	85 (93.4)
Public insurance: n (%)	31 (25.0)	23 (25.3)
High school education or less: n (%)	34 (27.4)	20 (22.0)
missing	3 (2.4)	2 (2.2)
Married parents: n (%)	77 (62.1)	69 (75.8)
missing	2 (1.6)	1 (1.1)
7`]b]WU`W\UfUWhYf]gh]Wg		
Years since diagnosis: mean (sd)	7.7 (4.3)	3.8 (2.8)
A1C: mean (sd)	8.1 (1.6)	8.0 (1.4)
A1C >9: n (%)	27 (21.8)	22 (24.2)
Insulin pump: n (%)	79 (63.7)	70 (76.9)
Visits in past year: n (%) 1 to 3	40 (32.3)	13 (14.3)
4	51 (41.1)	39 (42.9)
5 to 6	33 (26.6)	39 (42.9)
Hosp1Å		

The majority of subjects were white (73% of adolescents, and 81% of caregivers), spoke English as their primary language (89% of adolescents, and 93% of caregivers), had married parents with at least a college education (73% of adolescents, and 78% of caregivers), and had

probability of adequate knowledge rose the longer their child had been diagnosed ($p=0.33$). Pathophysiology probability of adequate knowledge trended up for adolescents the longer they had been diagnosed ($p=0.26$) and although no clear trend was observed, caregivers adequate pathophysiology knowledge worsened over time.

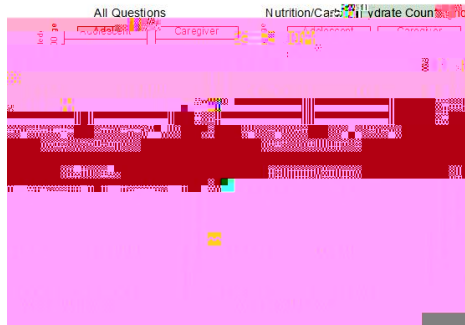


Figure 4 Associations between diabetes knowledge and the duration since patients' T1DM diagnosis.

socioeconomic factors than parents' and caregivers. Many other studies have also found that poor glycemic control is associated with lower socioeconomic status [14-16]. Our results suggest that diabetes knowledge may play a role in impacting this disparity. Particular attention then should be given to helping teach adolescents from

7]hU]cb. Moskovitz A, Alex Knee MS, Frydman E, Allen H and Tonyushkina K (2018) Diabetes Knowledge in Youth with T1DM and their Caregivers-A Cross-Sectional Study. J Diabetes Clin Prac 1: 101.

17. Cox DJ, Kovatchev BP, Gonder-Frederick LA, Summers KH, McCall A, et al. (2005) Relationships between hyperglycemia and cognitive performance among adults with type 1 and type 2 diabetes. Diabetes Care 28: 71-77.