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Letter to the Editor

Variations in Clinic Staffing for Adult and Pediatric Diabetes Centers in the United States: Data From T1D Exchange

To the Editor:

Various studies have established that adequate staffing in hospitals is associated with improved clinical outcomes among patients; patients with diabetes have been reported to have better outcomes with a higher provider-to-patient ratio.[1] The International Society for Pediatric and Adolescent Diabetes Clinical Practice Guidelines, 2022, suggest an optimal resource allocation of 1.0 to 1.25 diabetes nurses, 0.75 to 1.0 pediatric diabetologists, 0.5 dietitians, and 0.3 social workers/psychologists per 100 patients.[2] However, when considering the population with type 1 diabetes (T1D), where a team of providers, including nurses, diabetes educators, doctors, etc, plays a role in patient glycemic management, there are no studies that have looked at describing the provider staffing ratio in pediatric and adult endocrinology centers.

We used data from the T1D Exchange Quality Improvement Collaborative, a network of 54 endocrinology clinics across the United States,[3] to determine the average full-time equivalents (FTEs) by providers for academic pediatric and adult endocrinology sites. Data were collected using a clinic practice survey using Qualtrics (www.qualtrics.org) to describe the current state of adult and pediatric diabetes practices from October 5 to November 19, 2021. This survey was completed by 34 centers (25 pediatric and 9 adult centers). The FTEs of different disciplines at each diabetes clinic were reported. The FTEs of diabetes team members from various disciplines per 1000 patients and differences in support staff between pediatric and adult sites were also evaluated.

When analyzed per 1000 patients, the FTEs were greater in pediatric sites than in adult sites across every provider discipline (Table). Specifically, we found greater physician, registered nurse, and social worker FTEs per 1000 patients for pediatric sites than for adult clinics. The physician staffing (MD/DO) reported in pediatric versus adult sites was 3.6 versus 1.6 FTE per 1000 patients, respectively ($P < .001$). The registered nurse staffing reported in pediatric versus adult sites was 2.3 versus 0.5 FTE per 1000 patients, respectively ($P < .001$). The registered dietician staffing was also greater in the pediatric setting, with pediatric versus adult sites reporting 1.2 versus 0.27 FTE per 1000 patients, respectively. Moreover, behavioral health support was also greater at pediatric sites, with the social work staffing reported in pediatric versus adult sites as 0.9 versus 0.09 FTE per 1000 patients, respectively ($P < .001$).

These data identify a marked disparity in the availability of behavioral health providers between pediatric and adult centers as well as in the number of patients assigned to providers trained in endocrinology across the country. Although a greater provider-to-patient ratio may lead to better outcomes in people with diabetes, glycemic control in children and adolescents with T1D tends to be worse than that in adults; therefore, pediatric clinics may need more provider FTE. Hence, in this study, a comparison of pediatric versus adult clinics does not address the diagnosis and demographic-specific needs of clinics. Further,

Table
Total Full-Time Equivalents of Diabetes Team Members Among Pediatric and Adult Clinics in the T1D Exchange Quality Improvement Collaborative

Total FTE of diabetes team members	Overall clinic average FTE N = 34	Pediatric clinic average FTE N = 25	Adult clinic average FTE N = 9	Pediatric clinic FTE average per 1000 patients (SD)	Adult clinic FTE average per 1000 patients (SD)	Pediatric versus adult FTE average per 1000 patients *P* value[a]
MD/DO	7.87	8.0	7.6	3.6 (2.4)	1.6 (1.5)	<.001
NP/PA	3.31	3.4	3.1	1.5 (0.8)	0.7 (0.6)	.003
Social worker	1.63	2.0	0.5	0.9 (0.6)	0.09 (0.2)	<.001
Clinical pharmacist	0.10	0.08	0.2	0.07	0.04	.5
Registered dietician	1.8	2.2	1.0	1.2	0.27	<.001
RNs only	4.59	5.3	2.7	2.3 (1.7)	0.5 (0.8)	<.001
CDCES	6.32	7.3	3.8	3.3 (1.7)	0.8 (1.1)	<.001
Psychology	0.7	0.8	0.3	0.4 (0.4)	0.06 (0.2)	.003

Abbreviations: CDCES = certified diabetes care and educations specialists; FTE = full-time equivalent; NP = nurse practitioner; PA = physician assistant; RN = registered nurse; T1D = type 1 diabetes.
[a] *t* test.

Abbreviations: FTE, full-time equivalent; T1D, type 1 diabetes.

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the FTE needs of people with T1D, many of whom are using diabetes technology requiring intense training and education, are very different from those of people with type 2 diabetes not on insulin.

A limitation of this study is that we only focused on T1D FTE and not type 2 diabetes. Follow-up studies are needed to address the role of staffing in outcomes in patients with diabetes.

Disclosure

The authors have no multiplicity of interest to disclose.

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References

1. Guttmann-Bauman I, Thornton P, Adhikari S, et al. Pediatric endocrine society survey of diabetes practices in the United States: what is the current state? *Pediatr Diabetes*. 2018;19(5):859–865.
2. Limbert C, Tinti D, Malik F, et al. ISPAD Clinical Practice Consensus Guidelines 2022: the delivery of ambulatory diabetes care to children and adolescents with diabetes. *Pediatr Diabetes*. 2022;23(8):1243–1269.
3. Weinstock RS, Prahalad P, Rioles N, Ebekozien O. T1D Exchange Quality Improvement Collaborative: a learning health system to improve outcomes for all people with type 1 diabetes. *Clin Diabetes*. 2021;39(3):251–255.

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