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The Impact of Health-Related Social Needs on Health Outcomes among Youth Presenting to a Midwest Pediatric Diabetes Clinic Network

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INTRODUCTION

- Adverse social factors can lead to health-related social needs (HRSNs) and adverse health outcomes, including worsened diabetes control/complications.^{1,2,3}
- Screening for HRSNs is recommended for more equitable routine diabetes care.⁴

METHODS

- Baseline data were collected from patients whose parent/guardian completed a HRSN screen as part of their child's diabetes clinic intake from 9/1/21 to 8/30/22.
- A 6-item questionnaire was adapted from the Accountable Health Communities HRSNs screening tool to screen for HRSNs in: 1) housing, 2) utilities, 3) transportation, & 4) food.
- Longitudinal data were analyzed from the time of first screen through 8/30/23.
- Comparisons were made using chi-square or independent t-test.

RESULTS

Demographics	Total n (%) n = 1880	HRSN Positive n (%) n=259	HRSN Negative n (%) n=1621	p value
Sex				
Female	894 (47.6)	125 (48.3)	769 (47.4)	0.8
Age at first screen (years)*	13.6 (4.2)	13.6 (4.2)	13.6 (4.1)	1.0
Race/Ethnicity				
Hispanic	180 (9.6)	37 (14.3)	143 (8.8)	Ref
Non-Hispanic Black	153 (8.1)	44 (17.0)	109 (6.8)	<0.001
Non-Hispanic White	1430 (76.1)	158 (61.0)	1272 (78.5)	<0.001
Other	117 (6.2)	20 (7.7)	97 (6.0)	<0.001
Insurance				
Commercial	1073 (57.1)	82 (31.7)	991 (61.1)	<0.001
Medicaid	748 (39.8)	167 (64.5)	581 (35.8)	
Other	59 (3.1)	10 (3.9)	49 (3.0)	
Diagnosis				
Type 1 Diabetes	1730 (92.0)	211 (81.5)	1519 (93.7)	<0.001
Type 2 Diabetes	126 (6.7)	40 (15.4)	86 (5.3)	

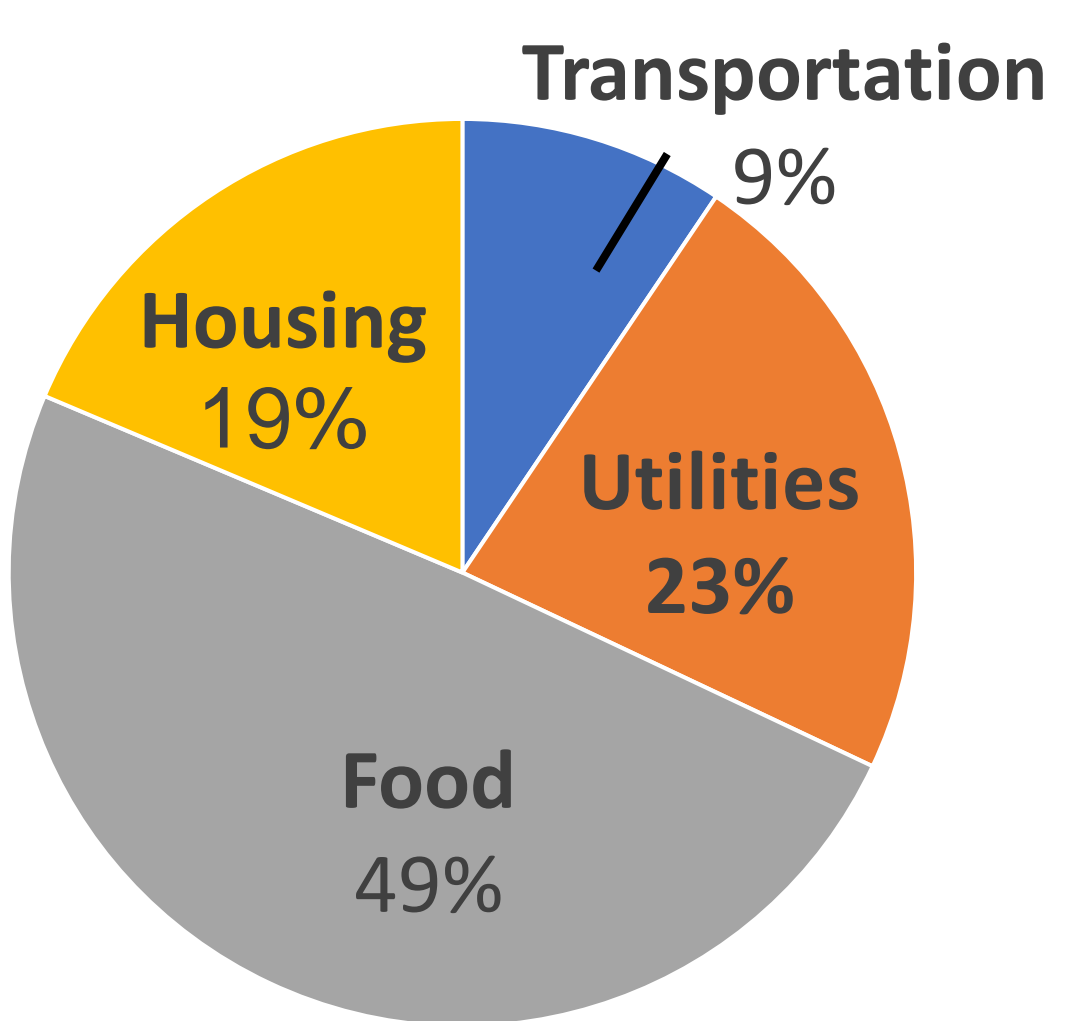
Longitudinal Outcomes	All n (%) n=1880	HRSN Positive n (%) n=259	HRSN Negative n (%) n=1621	p value
Date Difference Between Initial Screen and 8/30/23 (months)*	14.8 (2.04)	14.8 (2.3)	14.82 (2.0)	1
+HRSN on subsequent screen	151 (8.0)	75 (29.0)	76 (4.7)	<0.001
Longitudinal Outcomes				
DKA Admission	78 (4.1)	15(5.8)	63 (3.9)	0.153
ICU Admission	36 (1.9)	6 (2.3)	30 (1.9)	0.611
ED Visit	245 (13.0)	45 (17.4)	200 (12.3)	0.025
A1c >10%	397 (21.1)	84 (32.4)	313 (19.3)	<0.001
A1c >13%	85 (4.5)	22 (8.5)	63 (3.9)	<0.001
CGM Use	1384 (73.6)	150 (58.0)	1234 (76.1)	<0.001
Pump Use	1360 (72.3)	151 (58.3)	1209 (74.6)	<0.001
Positive PHQ4 Screen	233 (12.4)	56 (21.6)	177 (10.9)	<0.001
Any Missed Diabetes Visit	530 (28.2)	108 (41.7)	422 (26.0)	<0.001

*mean (SD), otherwise data are reported as n (%).

Abbreviations: HRSN, health related social need; CGM, continuous glucose monitor; DKA, diabetic ketoacidosis; ICU, intensive care unit; ED, emergency department; PHQ4, Patient Health Questionnaire-4 for depression/anxiety

Baseline Diabetes Control	All n (%) n=1880	HRSN Positive n (%) n=259	HRSN Negative n (%) n=1621	p value
Hemoglobin A1c*	8.44 (2.0)	8.9 (2.2)	8.4 (1.97)	<0.001
Time in Range on CGM as % *	52 (20.3)	45 (19)	53 (20)	<0.001
CGM use	1185 (63.0)	114 (44.0)	1071 (66.1)	<0.001
Pump Use	735 (39.1)	76 (29.3)	659 (40.7)	<0.001

HRSN by Category



DISCUSSION

- Youth with positive HRSN screenings during diabetes clinic appointments experience suboptimal diabetes-related outcomes, including higher A1c levels, increased rates of missed appointments, anxiety/depression, ED visits, and less utilization of diabetes technologies.
- It is imperative to address social risk factors when treating diabetes to enhance equity in delivery of care and improve health outcomes.

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