Screening for Food Insecurity in the Primary Care Setting: Type of Visit Matters

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INTRODUCTION

In 2018 over 11% of American households experienced food insecurity (FI), a condition of limited or uncertain access to food, putting those individuals at higher risk of chronic diseases including diabetes, obesity, depression, and hypertension.¹

Primary care providers can help address patients' FI, but screening protocols vary widely, and standards of practice have not been identified. The likelihood that a patient will screen positively for FI may depend on the setting, timing, and format in which screening is performed. Many clinics screen for FI at annual health maintenance exams (HME), even though socioeconomically disadvantaged groups are less likely to attend routine health checks.²

We performed a retrospective cohort study to evaluate disparities in FI screening and prevalence based on visit type and patient demographics at a community health center serving low-income patients in Southeast Michigan.

METHODS

We obtained de-identified electronic health record data for all adult patient visits at the Ypsilanti Health Center between March 2018 and February 2019. This clinic employed a two-question FI screener.³ Patients aged 18–25 were excluded in order to eliminate visits with pediatricians from the analysis.

Characteristics of the screened and non-screened visits were compared using cross-tabulations and chi-squared tests. We assessed for differences in categorical variables using Pearson's chi-square and assessed the likelihood of being screened and having FI using logistic regression (R, Australia, 2013).

RESULTS

Table 1 displays the characteristics of the sample population stratified by screening status. 24.5% of all visits were screened, and among all screened visits, 22.8% screened positive for FI (5.6% of the total study population). After adjustment, (Table 2) screening was much more likely to occur at HME (OR 3.0, 95%CI: 2.8–3.3) or New Patient (NP) visits (OR 1.8, 95%CI: 1.4–2.2) than return visits. Hispanic patients were less likely to be screened than white patients (OR: 0.58, 95%CI 0.49–0.69). Elderly patients were more likely to be screened compared to adults aged 25–64 (OR 1.7, 95%CI: 1.5–1.9).

Compared to white patients, non-Hispanic Black patients had 2.0 higher odds (95%CI: 1.7–2.4) of screening positive for FI. Women had 1.9 higher odds (95% CI: 1.6–2.3) of screening positive. FI was more prevalent among those with public insurance (OR 1.7, 95%CI: 1.4–2.0) compared to private insurance. FI was less prevalent among HME visits (OR 0.82, 95%CI: 0.68–0.98) and among urgent care visits (OR 0.48, 95%CI: 0.26–0.89) compared to return visits.

DISCUSSION

At this community health center, FI was less common among patients attending HME visits, though patients were three times more likely to be screened there than any other visit type. FI was more common among non-Hispanic Black patients, females, and those with public insurance. These findings suggest that a screening process in which questionnaires are completed only at annual visits will not fully capture FI, particularly among at-risk populations.

These findings do not account for access to healthcare, screening method, or repeat visits, all of which could impact screening efficacy and are important to consider.

These results suggest that FI screening ought to align with AAFP recommendations⁴ for all patients regardless of visit type, and for patients who are at highest risk of being socioeconomically disadvantaged, whether due to race, insurance type, or sex. These findings are especially relevant in light of evidence of very high rates of FI, and income-based disparities in FI brought about by the COVID-19 pandemic.⁵ Screening only during new visits and health maintenance examinations may exacerbate

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Table 1 Sample Characteristics Representing All Adult Visits to YHC from March 2018 to February 2019

	All visits <i>N</i> = 15,103 <i>N</i> (%)	Not screened <i>N</i> = 11,401 <i>N</i> (%)	Screened <i>N</i> = 3702 <i>N</i> (%)	<i>p</i> value
Visit type				< 0.0001
Health maintenance exam	2661 (17.6)	1510 (13.2)	1151 (31.1)	
New patient visit	412 (2.7)	288 (2.5)	124 (3.3)	
Return visit	11,659 (77.2)	9313 (81.7)	2346 (63.4)	
Urgent	367 (2.4)	287 (2.5)	80 (2.2)	
Age				< 0.0001
25–65 years	12,992 (86.0)	9999 (87.7)	2993 (80.8)	
66–100 years	2111 (14.0)	1402 (12.3)	709 (19.2)	
Sex				0.06
Male	5097 (33.7)	3800 (33.3)	1297 (35.0)	
Race				< 0.0001
Non-Hispanic Black	6235 (41.3)	4752 (41.7)	1483 (40.1)	
Non-Hispanic White	6187 (41.0)	4533 (39.8)	1654 (44.7)	
Hispanic	1173 (7.8)	982 (8.6)	191 (5.2)	
Other or mixed race	1049 (6.9)	787 (6.9)	262 (7.1)	
Insurance type				0.03
Private	8087 (53.5)	6044 (53.0)	2043 (55.2)	
Public	5883 (39.0)	4499 (39.5)	1384 (37.4)	
Uninsured	78 (0.5)	66 (0.6)	12 (0.3)	

Table 2 Predictors of Food Insecurity Screening and Food Insecurity Prevalence Among Patients at YHC

Predictor	Odds ratio	95% CI	<i>p</i> value
Odds of being screened for food insecurity during health center visit (<i>N</i> = 14,619)			
Visit type			
Return visit	[Ref]		
Health maintenance exam	3.0	2.8–3.3	< 0.0001
New patient visit	1.8	1.4–2.2	< 0.0001
Urgent visit	1.1	0.86–1.4	0.41
Age			
Age 25–65	[Ref]		
Age > 65	1.7	1.5–1.9	< 0.0001
Sex			
Male	[Ref]		
Female	1.1	0.97–1.1	0.19
Race			
Non-Hispanic White	[Ref]		
Non-Hispanic Black	0.94	0.86–1.0	0.14
Hispanic	0.58	0.49–0.69	< 0.0001
Other or mixed race	0.95	0.82–1.1	0.56
Insurance type			
Private	[Ref]		
Public	0.90	0.83–0.98	0.02
None	0.59	0.31–1.1	0.10
Odds of food insecurity among screened patients (<i>N</i> = 3590)			
Visit type			
Return visit	[Ref]		
Health maintenance exam	0.82	0.68–0.98	0.03
New patient visit	1.4	0.91–2.1	0.13
Urgent Visit	0.48	0.26–0.89	0.02
Age			
Age 25–65	[Ref]		
Age > 65	0.40	0.31–0.52	< 0.0001
Sex			
Male	[Ref]		
Female	1.9	1.6–2.3	< 0.0001
Race			
Non-Hispanic White	[Ref]		
Non-Hispanic Black	2.0	1.7–2.4	< 0.0001
Hispanic	0.78	0.52–1.2	0.23
Other or mixed race	0.79	0.55–1.1	0.19
Insurance type			
Private	[Ref]		
Public	1.7	1.4–2.0	< 0.0001
None	3.1	0.96–10.2	0.06

existing disparities in care based on race, income, or gender by reducing the likelihood of detection.

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