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SHORT COMMUNICATION

Gastroenterology

Food insecurity screening practices in a pediatric gastroenterology population

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Abstract

Food insecurity is a rising concern for US households and leads to adverse child health outcomes. Pediatric gastroenterology providers are uniquely equipped to help guide families experiencing this challenge given their specialized training in nutritional support and dietary therapy for disease management. Hence, this study aimed to evaluate food insecurity screening practices from the perspectives of patient caregivers and healthcare providers in a tertiary pediatric gastroenterology practice. A survey was administered to 1279 caregivers and 121 providers. Of the 248 completed caregiver responses, 10%–15% reported being asked about food insecurity. Among the 36 healthcare provider responses, 53% expressed comfort in conducting food insecurity screening but only 14% routinely screened. The most cited barrier to screening was the lack of readily available patient resources. Further research is imperative to address these screening barriers and assess the impact of food insecurity screening and interventions on pediatric gastrointestinal health outcomes.

KEYWORDS

food insecurity, pediatric gastroenterology, pediatrics

1 | INTRODUCTION

Food insecurity, or limited access to adequate food due to money or other lack of resources, is prevalent among US households.[1] In fact, recent data from the US Department of Agriculture revealed that more than 1 in 10 children live with household food insecurity.[2] The repercussions of food insecurity are long-lasting and children affected by food insecurity are more likely to be sick, recover from illness slower, and are more frequently hospitalized.[3,4] Moreover, there are higher rates of lifetime asthma diagnosis, emergency department use, depressive symptoms, and delayed or missed medical care in children of households who are food insecure.[4]

Because of these negative impacts on child health outcomes, the American Academy of Pediatrics (AAP) suggests that pediatricians screen for food insecurity using the Hunger Vital Sign™ and intervene accordingly.[5] The Hunger Vital Sign™ questionnaire is a validated tool to identify households at risk for food insecurity with a 97% sensitivity and 83% specificity.[6] While the burden of screening generally falls on primary care physicians (PCPs), PCPs often don't have adequate time or resources to follow all recommended preventative care, particularly for patients with chronic gastrointestinal diseases.[7] Moreover, many conditions managed by pediatric gastroenterologists including celiac disease, eosinophilic esophagitis (EoE), inflammatory bowel disease (IBD), malnutrition, obesity, or metabolic dysfunction-associated steatotic liver disease (MASLD) are treated with dietary interventions that may introduce new issues with food insecurity for families. Thus, addressing food insecurity

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in the pediatric gastroenterology population is not only paramount to effectively treating patients but may also improve healthcare outcomes.

The aims of this study were to (1) to measure the screening rates of food insecurity among patients seen in a large tertiary care pediatric gastroenterology practice and (2) determine provider and staff perceptions regarding food insecurity screening and potential barriers to the implementation of screening.

What is Known

- Food insecurity affects more than 1 in 10 children in the United States.
- The American Academy of Pediatrics recommends that pediatricians screen for food insecurity due to its significant impact on pediatric health outcomes.

What is New

- Among patients evaluated at a pediatric gastroenterology clinic, 10%–15% of caregivers report being asked about food insecurity.
- Among providers, more than 53% feel "comfortable" or "somewhat comfortable" inquiring about food insecurity, and 14% routinely screen.
- Barriers to food insecurity screening include lack of readily available access to resources (61.1%) and time constraints (38.9%).

2 | METHODS

To complete our aims, we performed two anonymous surveys (see Tables 1 and 2 for survey questions). The first survey was sent to caregivers of patients ages 1 month to 18 years old seen for a gastroenterology visit at a large tertiary pediatric hospital from December 20 to December 31, 2021. This time period was chosen out of convenience given ease of gathering data for our institution's research personnel. Electronic surveys were requested by email with a link to a REDCap® survey. If email was not available, caregivers received a paper version via mail. After two email requests, all non-responders received a paper survey through mail. Caregivers were queried about whether each one of the Hunger Vital Signs™ questions were asked during their clinic visit. If the response was "yes," a follow-up question was asked to identify which healthcare provider conducted the screening. Caregivers were also questioned about the primary diagnosis for the visit.

The second survey was sent to healthcare providers and staff within the gastroenterology department. Healthcare providers/staff included physicians, advance practice providers, nurses, medical assistants, dietitians, social workers, and administrative staff. In total, the survey was sent to 121 individuals. The survey was sent by email with a link to a REDCap® survey. One reminder email was sent to all providers. The survey consisted of questions regarding clinical role, perception, and practice toward food insecurity screening, use of Hunger Vital Signs™ questionnaire, and barriers to food insecurity screening. Providers did not receive formal training from the division regarding food insecurity questions or use of Hunger Vital Signs™. This study was approved by the Colorado Institutional Review Board.

3 | RESULTS

3.1 | Caregiver survey

The caregiver survey was sent to the parents and caregivers of 1279 patients. We received 248 responses with a response rate of 19.4%. The response by disease was 13.7% celiac disease ($n = 34$), 25.4% EoE ($n = 63$), 9.4% IBD ($n = 48$), 18.6% malnutrition ($n = 46$), 4.0% obesity ($n = 10$), 3.2% MASLD ($n = 8$), and 41.5% other ($n = 103$). Other diagnoses listed by caregivers included reflux ($n = 8$, 3.2%), gastrostomy tube ($n = 5$, 2.0%), constipation ($n = 13$, 5.2%), short bowel syndrome ($n = 4$, 1.6%), pancreatitis ($n = 2$, 0.8%), gastrointestinal "other" ($n = 29$, 11.7%), liver disease or transplant ($n = 10$, 4.0%), and no response ($n = 29$, 11.7%). Overall, only 10.5%–15.3% of caregivers of patients reported being asked about food insecurity. Caregivers reported that nurses were most likely to screen for food insecurity, however most survey participants did not remember who asked food insecurity-related questions. Table 1 depicts responses to each question from the caregiver survey.

3.2 | Provider survey

The provider survey was sent to all 121 providers and staff of our pediatric gastroenterology and hepatology practice. The Hunger Vital Sign™ has been available in our screening tab in the electronic medical record since 2016. We received 36 responses with a response rate of 29.8%. The distribution of providers and staff responses were 63.9% physician and advanced practice providers ($n = 23$), 16.7% nurses ($n = 6$), 2.8% medical assistants ($n = 1$), 8.3% registered dietitians ($n = 3$), 2.8% social workers ($n = 1$), 5.6% other ($n = 2$). Only three providers (8.3%) reported using the Hunger Vital Signs™ questions when screening for food insecurity. Roughly 14% of providers "mostly"

TABLE 1 Caregiver survey with responses to Questions 1 and 2 by total responses and separated by condition seen during visit.

	Total *N* (%)	Celiac disease	EOE	IBD	Malnutrition	Obesity	MASLD	Other
Question 1: Within the past 12 months, did anyone at your child's gastroenterology visit ask whether you were worried if food would run out before you had money to buy more?								
Yes	38 (15.3%)	2 (5.9%)	10 (15.9%)	1 (2.1%)	9 (19.6%)	3 (30%)	3 (37.5%)	18 (17.5%)
No	173 (69.8%)	25 (73.5%)	38 (60.3%)	44 (91.7%)	28 (60.9%)	5 (50%)	5 (62.5%)	74 (71.8%)
Unsure	37 (14.9%)	7 (20.6%)	15 (23.8%)	6 (12.5%)	9 (19.6%)	2 (20%)	0 (0%)	8 (7.8%)
Question 2: Within the past 12 months, did anyone at your child's gastroenterology visit ask if the food you bought didn't last and if you didn't have money to get more?								
Yes	26 (10.5%)	1 (2.9%)	5 (7.9%)	0 (0%)	7 (15.2%)	3 (30%)	3 (37.5%)	13 (12.6%)
No	182 (73.4%)	26 (76.5%)	43 (68.3%)	43 (89.6%)	30 (65.2%)	5 (50%)	5 (62.5%)	78 (75.7%)
Unsure	39 (15.7%)	7 (20.6%)	15 (23.8%)	7 (14.6%)	9 (19.6%)	2 (20%)	0 (0%)	9 (8.7%)

Identity of provider who screened			
Question 1a. If you answered "yes" to Question 1, who asked during the visit?		Question 2a. If you answered "yes" to Question 2, who asked during the visit?	
Physician or APP	3 (7.9%)	Physician or APP	2 (7.7%)
Nurse	8 (21.1%)	Nurse	7 (26.9%)
MA	1 (2.6%)	MA	3 (11.5%)
Dietitian	5 (13.2%)	Dietitian	2 (7.7%)
Social worker	2 (5.3%)	Social worker	1 (3.9%)
Don't remember	19 (50%)	Don't remember	12 (46.2%)

Abbreviations: APP, advance practice providers; EOE, eosinophilic esophagitis; IBD, inflammatory bowel disease; MASLD, metabolic dysfunction-associated steatotic liver disease.

screen, but most providers did not routinely screen for food insecurity with 80% indicating they only "sometimes" or "rarely" conduct screening. The most common barrier to screening was "concern for access to available resources if identified" (61.1%) followed by "not enough time during visits to ask about food insecurity" (38.9%). Table 2 depicts responses to the survey questions including frequency and comfort in screening, diagnoses associated with screening, motives toward asking about food insecurity, and additional barriers to screening.

4 | DISCUSSION

In this single-center cross-sectional study, we found that only 10%–15% of caregivers of patients were asked about food insecurity. We also demonstrated that providers recognize the value of screening however felt uncomfortable with screening due to limited time in clinic and lack of readily available resources.

Despite the high prevalence of food insecurity in US households and its relevance to pediatric gastroenterology practices, we found that screening in our center was infrequent. Many families across the United States struggle with having enough food to eat, and research has consistently demonstrated its correlation with adverse pediatric healthcare outcomes.[4,8] Etiologies of food insecurity include poverty, unemployment, low-income, lack of affordable housing, systemic racism and racial discrimination, chronic health conditions, expensive dietary treatments, and lack of access to healthcare.[9] Within pediatric gastroenterology clinics, prior studies reported rates of food insecurity ranging from 13% to 17%.[10,11] Caregiver responses from our survey indicated that 10%–15% of families recalled being asked about food insecurity by a healthcare team member despite the numerous studies showing the impact that it may have on disease management. For example, a study of patients with celiac disease demonstrated that one in six patients faced food insecurity, and less than one-quarter of those patients adhered to a gluten-free diet.[10] Furthermore, another study of patients with celiac disease found patients who endorsed food insecurity were more likely to have intentional gluten exposures.[12] In a youth population with MASLD, individuals who faced food insecurity had a 27-fold higher likelihood of having unmet health-related social needs.[11] In a recent study involving adult patients with IBD, researchers discovered that one out of eight patients experienced food insecurity, and those who faced food insecurity were

TABLE 2 Provider survey with questions and responses.

How often do you ask about food insecurity?	
Always	0
Mostly	5 (14%)
Sometimes	7 (19%)
Rarely	22 (61%)
Not applicable	2 (6%)
How comfortable do you feel asking about food insecurity?	
Comfortable	8 (22%)
Somewhat comfortable	11 (31%)
Somewhat uncomfortable	13 (36%)
Uncomfortable	4 (11%)
Which GI diagnosis or diagnoses do you feel it is important to ask about food insecurity?	
Celiac disease	31 (86.1%)
EOE	27 (75%)
IBD	29 (80.6%)
Malnutrition	35 (97.2%)
Obesity/MASLD	23 (63.9%)
Other not listed	17 (47.2%)
What drives you to ask about food insecurity?	
Medical history/diagnosis	21 (58.3%)
Demographics	11 (30.6%)
I'm not sure	8 (22.2%)
I ask all patients	3 (8.3%)
Not applicable	4 (11.1%)
Other	5 (13.9%)
What is the reason(s) for not asking about food insecurity?	
I don't want to make patients/parents feel ashamed	9 (22.2%)
I think people should make their own choices regarding food without healthcare provider input	2 (5.6%)
I think it is the role of the primary care provider to ask about food insecurity	4 (11.1%)
There is not enough time during visits to ask about food insecurity	14 (38.9%)
I don't have readily available access to resources if food insecurity is identified	22 (61.1%)
Other reasons not stated above	12 (33.3%)

Abbreviations: EOE, eosinophilic esophagitis; GI, gastrointestinal; IBD, inflammatory bowel disease; MASLD, metabolic dysfunction-associated steatotic liver disease.

more prone to experiencing cost-related medication nonadherence.[13] Along with improving screening rates in gastroenterology practices, it will likely be beneficial to improve screening across primary pediatric clinics.

Our provider survey also revealed that the primary barrier to screening was a lack of resources once food insecurity is identified. To increase screening rates across all types of providers, it is crucial to address the prevalent barriers that hinder the identification of and response to food insecurity. Addressing food insecurity can be facilitated through changes in public policy and advocacy, which can promote screening, referral, and the integration of social services.[14] In November 2022, Colorado passed House Bill 22-1414 (Healthy Meals for all Public-School Students) as a measure to address food insecurity and pediatric obesity. This bill provides reimbursement for free meals to students who do not qualify for free or reduced-price meals under the current federal school meals program.[15] Food pantries offer a resource to enhance support for food-insecure families but face certain limitations. While food banks play a crucial role in promptly addressing food insecurity, they are constrained by the lack of nutrient-dense food options.[16] Hospital-based food pantries are enjoyed by patients[17] but often lack consistent funding and long-term sustainability. Despite these limitations, hospital-based food pantries remain a viable and promising option. One tertiary children's hospital has demonstrated success by establishing a food pantry entitled “Family Food Connections” which serves over 4500 families through consistent funding and partnerships with local food banks.[18] Additionally, the FOOD (Food to Overcome Outcome Disparities) intervention is an example of a successful hospital-based food pantry program that not only delivered meals to at-risk patients but also provided medically tailored food for the past decade.[17]

Our survey also revealed that time constraints during visits pose another barrier to screening. This is consistent with a prior study showing that 35% of providers expressed concerns about limited time.[19] In a survey of 76 US children's hospital representatives, authors found that 58.8% of screening took place during inpatient visits, suggesting it may be more feasible within the constraints of available time.[20] Within the realm of pediatric gastroenterology, the majority of patients are managed predominantly in the outpatient setting; thus screening only inpatients would miss many at-risk patients, including patients where primary therapy may be solely or predominantly food and nutrition-based.

While this study represents an important first step in understanding the prevalence of food

insecurity screening on children with chronic gastrointestinal diseases and provider perception, it is not without limitations. First, this is a single center study in a large academic center and may not be generalizable to all pediatric gastroenterology practices. Second, because this study relied on caregiver recall, it may be susceptible to recall bias from participants. Third, it is unclear the socioeconomic and diversity distribution of our patient population since it was not part of the survey. During December 2021, a structured data report found patients were 38% Medicaid payers and 62% payers with other form of insurance and with regard to ethnicity 67% were "Not Hispanic or Latino," 25.3% were "Hispanic or Latino," and 7.7% were "Not Reported." Finally, our response rate was relatively low at 19.4% thus the study population may not be fully representative of all patients seen. Despite these limitations, this study stands out as one of the few assessments of food insecurity screening practices in children with gastrointestinal diseases.

In this study, we examined food insecurity screening practices from the perspectives of both caregivers and healthcare providers. We discovered that 10%–15% of caregivers reported being asked about food insecurity during their pediatric gastroenterology visit. Among healthcare providers, more than 50% of respondents felt "comfortable" or "somewhat comfortable" inquiring about food insecurity, but only 14% routinely screened. This discrepancy between comfort levels and the actual implementation of screening arises from multiple barriers. The primary reason cited by providers for not screening is the lack of readily available access to resources (61.1%), followed by time constraints (38.9%). Future studies should not only address barriers related to food insecurity screening but also measure the impact of such screening and interventions on pediatric gastrointestinal health outcomes. Attempts should also be made to implement existing AAP educational resources for GI providers to improve comfort with screening and provide assistance with finding resources.

CONFLICT OF INTEREST STATEMENT

M. G. S.: Consultant for Takeda (celiac disease advisory board) and Pfizer (DSMB for celiac disease clinical trial). E. L.: Consultant for Takeda Pharmaceuticals. The remaining authors declare no conflict of interest.

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