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"Everyone's struggling right now": Impact of COVID-19 on addressing food insecurity in rural primary care

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Background: Primary care practices can address food insecurity (FI) through routine screening, practice-based food programmes, and referrals to community resources. The COVID-19 pandemic had disproportionate impacts on health outcomes for food-insecure households.

Objective: To describe the impact of the COVID-19 pandemic on FI screening and interventions in rural primary care practices in northern New England.

Methods: We conducted semi-structured interviews with thirteen providers and staff regarding changes to FI screening and interventions, community resources and partnerships, and patient food needs during the pandemic. Themes and exemplar quotations were identified through iterative discussion.

Results: Practices reported more frequent informal discussions with patients about FI during the pandemic. Despite limitations in site operations, practices created programmes to distribute food at practice locations or through food deliveries. The adoption of telemedicine had variable impacts on FI screening, creating challenges for some while facilitating screening outside of scheduled visits for others. Practices reported increased food availability due to new or expanded community programmes, but lack of transportation and delivery availability were challenges. New and stronger connections formed between practices and community partners. Increased awareness of FI among both patients and practice staff resulted in decreased stigma.

Conclusion: Screening for and addressing FI was a priority for rural primary care practices during the pandemic. The implementation of practice-based FI interventions was supported by stronger practice-community connections and a decrease in stigma. The experiences of providers and staff during the pandemic provide insight into best practices for engaging primary care practices in reducing FI.

Key words: access to healthy foods, COVID-19, food insecurity, primary health care, social determinants of health

Introduction

Food insecurity (FI) remains a significant public health issue and a key social determinant of health in the United States, affecting 1 in 10 households in 2021.[1] FI is associated with increased risk of chronic diseases, including diabetes, hypertension, heart disease, and depression, higher healthcare utilization, and decreased health-related quality of life.[2] Primary care practices play an important role in addressing by routinely screening patients for FI, implementing practice-based food programmes, and connecting patients to community resources.

The COVID-19 pandemic had a disproportionate impact on health outcomes for low-income, food-insecure households, and magnified existing disparities in food access.[3] Early reports suggested a 32.3% increase in FI among households since the start of the pandemic.[4] Expanded federal benefits through the Supplemental Nutritional Assistance Program (SNAP) and Supplemental Nutrition Assistance for Women, Infants, and Children (WIC) were insufficient for many recipients due to delays in implementation, highlighting the need for alternative strategies and innovations at the community level.[5–7] Despite growing acceptability of FI screening and interventions in primary care settings,[8] there remains a significant national gap in screening with only 28% of clinician practices routinely screening for FI.[9]

The COVID-19 pandemic may have impacted FI screening and interventions in primary care practices. In our recent survey of rural primary care and prenatal practices in northern New England, 59.5% of reported at least one new food programme in the practice or community during the pandemic, the most common being school lunch programmes and food drives/shelves.[10] Other practices have reported targeted screening and referral for food delivery services in high-risk patients and clinic partnerships with community-supported agriculture programmes.[11,12] Rural practices face unique barriers to addressing FI, such as a lack of transportation and food distribution services, which may have been further impacted by changes in clinic processes, resources, and

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Key messages

- COVID-19 impacted how primary care practices address food insecurity.
- Rural practices prioritized food insecurity screening and interventions.
- Community partnerships and decreased stigma supported practice interventions.
- Travel distances and fewer in-person visits created barriers for practices.
- Rural practices created and shared innovations to enhance patient outreach.

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food needs due to the COVID-19 pandemic.[13] Using semi-structured interviews, we examined the impacts of the pandemic on how rural primary care practices address FI.

Methods

We conducted a qualitative sub-analysis of semi-structured interviews from a mixed methods study to assess the impact of the COVID-19 pandemic on addressing FI in rural primary care practices in northern New England (New Hampshire, Vermont, and Maine, USA). This research was approved by the Dartmouth Health Institutional Review Board. Study participants gave verbal consent before the start of interviews and received a $50 gift card as an incentive.

Sample

Participants included primary care clinicians or staff recruited through 3 practice and research networks in northern New England: the Northern New England CO-OP Practice and Community-based Research Network, the Bi-State Primary Care Association, and the Northern New England Clinical and Translational Research Network. Practices were defined as rural if the Rural-Urban Commuting Area (RUCA) Code associated with the practice zip code was ≥ 4.[14] Participants in the qualitative portion of the study were a convenience sample who agreed to be interviewed after completing an initial quantitative survey.

Data collection

Participants completed semi-structured interviews regarding how their practices identified and addressed FI between January and May 2021. Questions specific to the COVID-19 pandemic addressed the impact of the pandemic on FI screening and interventions, changes to community resources and clinic-community partnerships, perspectives about impact on patients, and changes to practice resources and funding (see Supplementary Appendix A for interview guide). Interviews were conducted by trained members of the research team and audio recorded. Audio recordings of interviews were transcribed verbatim using an online transcription service.

Data analysis

Three research team members (AS, KH, MK) conducted a thematic analysis of interview transcripts using a hybrid deductive-inductive approach.[15,16] All 3 team members are primary care clinicians without prior personal relationships with the interview participants. A preliminary codebook was developed a priori based on Consolidated Framework for Implementation Research domains,[17] interview content, reflection on key concepts discussed by participants, and existing literature. Pairs of researchers independently coded each interview transcript in Dedoose Version 9.0.46,[18] followed by discussion to reach a consensus. The codebook was iteratively revised based on emerging codes until a coding framework was finalized. All transcripts were reviewed again using the final codebook (see Supplementary Appendix B) to verify appropriate code application. Coded excerpts were subsequently organized into categories and reviewed by the research team to identify themes and sub-themes in an iterative process of data review and discussion. For each theme and associated sub-themes, illustrative quotes were selected based on consensus discussion.

Results

Thirteen clinicians and staff from unique primary care practices participated in the study. Characteristics of practices are listed in Table 1. Themes and sub-themes were organized around categories of screening and intervention processes, community factors, patient factors, pandemic impacts on FI, external factors, and practice factors.

Table 1. Characteristics of practices and respondents (*n* = 13).

Characteristics	Respondents/ Practices *n* (%)
Respondent role	
Clinician	5 (38.5%)
Community health worker	3 (23.1%)
Practice administrator	3 (23.1%)
Nurse	1 (7.7%)
Care coordinator	1 (7.7%)
Practice type	
Hospital-affiliated	6 (46.2%)
Federally qualified health centre	4 (30.8%)
Private practice	2 (15.4%)
Other	1 (7.7%)
Practice specialty[a]	
Family Medicine	8 (61.5%)
Paediatrics	4 (30.8%)
General Internal Medicine	5 (38.5%)
Obstetrics/Gynaecology	2 (15.4%)
Other	1 (7.7%)
Practice size	
2–5 clinicians	2 (15.4%)
6–10 clinicians	4 (30.8%)
>10 clinicians	7 (53.8%)

[a]Some practices were multispecialty.

Screening and intervention processes

Screening frequency. There was variability among practices in the use of formal screening tools versus informal discussions to screen for FI. Several participants reported more frequent informal discussions with patients about FI during the COVID-19 pandemic because of disruptions to normal patient routines during the pandemic.

> "Once we talk about how people are limiting their movements, and how people are limiting the people that they're seeing, we open up that conversation of like, "How are you doing with shopping? How are you getting to the grocery store? Are you able to do it?" It becomes part of the conversation. It's not really documented on the PRAPARE, but it's more of a conversation, and it's just a more acceptable conversation now."—Administrator B

Some participants reported that the frequency of formal screening was unchanged because it could be conducted in person or remotely, and screening requirements did not change. On the other hand, some practice staff reported that overall screening rates declined due to fewer visits in general.

> "The reminders [for screening] are still the same. They still come up when you do a phone visit, even if it's not an in-person visit. So, if you feel like they need something, you can always ask more than you're required but the requirement itself hasn't changed."—Provider E
>
> "It certainly I think affected our screening rates. People were delaying care or, again, that care was happening only via telehealth, in which case patients weren't getting the questionnaire or filling it out. It wasn't getting back into our hands or into our EHR. That made the actual screening process less frequent than we probably would have liked."—Administrator C

Availability of interventions. Some practices that already had interventions to address food insecurity were able to continue them, while others created new programmes to improve food access at practice locations or through food deliveries to patients.

> "A food program…has been developed due to COVID. And they have funding through the end of June. So, these two programs, one of them is an every other week food box pickup, and the other is weekly meals. And so, if a patient is referred to me for food insecurity, I enroll them in one or the other…"—Care coordinator A
>
> "We're working with local EMS agencies. They're out in peoples' houses all the time. We've worked with them to let them know about the [food bags], and they can carry them on their rigs if they want to, or they can just let our local practice know, and we'll get [food bags] out to wherever it is that they're going. They're in and out of peoples' houses all the time, so they know who doesn't have food."—Administrator B

A limitation to FI interventions included restrictions on in-person activities, which impacted onsite operations.

> "The COVID policies are restricting in-person access, so people have to have an appointment. We discourage walk-ins. We're not doing group appointments. And so, the COVID restrictions are probably limiting, for example, if we wanted to start or to serve as a food pantry or to have people pick stuff up. That would be difficult to organize, given the COVID restrictions."—Provider A

Rural-specific challenges included difficulties building awareness about FI interventions and delivering food to patients given travel distances, even when food was available.

> "We're really, really rural. Transportation is a big issue out here, as is broadband access. So, in terms of advertising when there are food drop-offs or expanded hours at food pantries, it's harder to get the word out because a lot of people are not online…it's hard to get somebody a basket of food when they're 50 miles away in their house."—Administrator C

Impact of shift to telemedicine. Practices differed in how they adapted FI screening and interventions in response to the rapid shift from in-person to virtual care. The shift to telemedicine sometimes made FI screening more challenging, but in other cases allowed more time for screening to be completed outside of scheduled visits.

> "In COVID times, [we are] doing [screening] on the phone, which is not as personal for the patient. You can't read body language and you're not observed by anybody except for the person doing it. So, if there was a deficit in the knowledge or the approach of the person doing it, I could see that as an issue because there's no formal training as to how to approach this topic with patients lightly to try to elicit the accurate information that you're hoping for."—Provider E
>
> "When somebody has a telehealth visit, the nurse will actually do a call before the provider sees them, a couple of hours in some cases, to go over some of the screening questions…So I actually think there's more time to actually do the screenings."—Community Health Worker B

Community factors

Availability and access to community resources. Overall, practices reported increased food availability due to new or expanded community food programmes and broadened eligibility for existing programmes, including school meals. Many practices appreciated the adaptability of community resources to serve local needs by expanding their service region or arranging food delivery in rural towns.

> "Yes. So, on a clinic base, there's been a lot more identified with the food insecurity and we've been able to have the local food pantries be more open or extend their hours, become a bit more flexible…and provide more food for the families to get what they need."—Community Health Worker A
>
> "Sometimes there's phone numbers and sometimes brochures or pamphlets. So of course, now delivering those things in the mail a week later, it's not the same

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thing, as putting it in hands when they're in front of you. Things have changed a little bit in that way, but I do think there's more community partners, increased volume and changes to programs that maybe didn't exist prior."—Provider E

Despite expanded options, some participants noted challenges in community food access due to lack of transportation or delivery availability in rural communities and difficulty coordinating with agency staff due to offices being closed.

"With the pandemic we've been experiencing that people nationwide can get food deliveries, [but] here that's not often an option…getting groceries delivered that you see in more urban areas has been a challenge especially for the elderly."—Nurse A

New and stronger community connections. New and stronger connections between practices and community partners formed as a result of the pandemic, including community taskforces focussed on FI. These changes resulted in better communication and coordination of services to address FI as well as more resource sharing between organizations.

"We bring a lot of voices to the table who connect with the community, and at those meetings we are able to…talk about food distribution. Maybe we have extra produce, so we could divide it. We kind of have this dynamic conversation where we see where inefficiencies are happening or where certain communities are maybe even forgotten."—Administrator A

"I mean, because the need increased, I think the frequency and the scope of partners broadened beyond what it had been earlier. So, I think it's really brought people together, organizations together I guess more frequently to address the needs. So, in a way that's strengthened already preexisting relationships and built a few new ones, around that common goal."—Administrator C

Patient factors

Food resource awareness. Participants perceived that patients in their practices who needed food assistance during the pandemic were more aware of available resources, which facilitated practices' ability to address FI.

"People will be aware, more widely aware of, 'Oh, I haven't had to access this in the past, but now I know that it exists and it's here for me when I need it.' So, I hope that has spread…And if those people can tell other people that they know, 'Hey, it's okay, and there are resources in the community.'"—Administrator C

"I think in some cases, the resources that we have out there make it easier for people to be open to the screening process, to answer those questions."—Community Health Worker B

Stigma. As resource awareness increased, practices reported decreased stigma around FI during the pandemic due to a shared belief that everyone was struggling. This facilitated conversations and screening for FI as well as access to available resources.

"I almost want to say I think it's become a little less stigmatized because everyone's struggling right now, so it makes everyone feel maybe a little less isolated in that struggle."—Care coordinator A

Lockdowns and safety concerns. Despite increased availability and awareness of food resources, participants also noted that some patients did not access food resources due to lockdowns and because they wanted to minimize contact with other people.

"It did affect, though, our vulnerable patients, our medically complex patients because…they know that they're medically complex and they can't get to what they needed to get to. So, those became barriers for them accessing their food and transportation, as well."—Community Health Worker A

Pandemic impacts on FI

Perceived change in FI. Perceived changes in rates of FI were variable, depending on interactions with patients and community members. Participant perceptions were also influenced by anecdotes heard and shared among practice staff. Practices that had onsite food shelves noted fluctuating levels of usage depending on other available community resources.

"… our care coordinators and our providers have verbally said they are seeing an increase in food insecurity amongst the patient population. However, kind of contradictory…people from the [local] food pantry said that they really saw almost no increase. But then we have a program called 211 [and] they saw a very high increase of folks who reached out about food options in the community."—Administrator A

"What we've noticed is there's almost always this influx of new people, so maybe people aren't coming as frequently, but there's definitely more people, new people coming. Sometimes they're accessing it once or twice and then that's it, and other times they're like, a new sort of regular shopper."—Administrator B

Financial impact and job loss. One of the major impacts of the pandemic that participants reported seeing in their patients was higher rates of food insecurity due to job loss and associated financial struggles. Practices also reported more referrals to community resources as a result of patient job loss.

"So, some of the people who were working were maybe not discussed…where they're just over the edge of doing fine, and so we don't think about them. And then, when they lose their job, it all falls apart, and we think about them a lot. And I think there's a lot of people who sort of teeter on that edge of financial insecurity, because of their tenuous work situation."—Provider B

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External factors

Funding and support. A variety of funding sources from federal and state COVID relief funds supported community and practice level FI interventions. While most new programmes were external to practices, participants noted that practices were highly involved in sharing information on new food programmes and coordination of services.

> "The state of Vermont has come up with funding where they pay local restaurants $10 for every frozen meal that they're able to provide to the community. The restaurants are paid and the community gets fed, and it's just been this incredible partnership."—Administrator A

Practice factors

Changes in clinic resources. Practices redistributed clinic resources and staff to meet pandemic-related needs. In some cases, this resulted in increased capacity to address FI (e.g. through new or changed roles focussed on food programmes), and in other cases, supportive programmes were put on hold. Sometimes, this limited opportunities to continue prior non-food programming.

> "It wasn't the role that I was hired for, but COVID happened. And so, that eliminated some of the responsibilities and role requirement that I was initially hired for. And so, [food programs] became my new niche."—Care coordinator A
>
> "I know, before the pandemic, there was an effort to bring teaching kitchens around to the practices and things. And I'm sure those efforts will resume."—Provider B

Prioritization of FI. Overall, participants reported that practices placed a higher priority on food needs during the pandemic due to a perceived increase in FI rates and awareness, which facilitated FI screening and interventions.

> "I think people are more aware of the food insecurity that's out there in our community with our patients…But making sure that this screening is actually done during COVID time, I think there's been more of an emphasis on that, because of the need that's out there in our patients."—Community Health Worker B

Some practices were unable to implement new FI screening or interventions due other pandemic-related priorities.

> "I guess if we were to institute some sort of systematic screening process, it would be one more task that we'd have to integrate into the workflow, which can be a challenge since we're dealing with COVID restrictions and PPE and now trying to get people lined up for vaccinations."—Provider A

Patient outreach. In response to decreasing clinic visits, a few participants reported that their practices began direct outreach to at-risk and vulnerable patients. Practice staff called patients for periodic check-ins and provided information about food resources.

> "When the pandemic really started hitting, we kind of went through our list of patients and said, 'Who is vulnerable? Who's at high risk?' So we just kind of check in with them, just letting them know that we're here and then kind of of earn their trust to reach out to us as something comes up."—Nurse A

Discussion

Our study explored how primary care practices in northern New England were impacted by and responded to FI during the COVID-19 pandemic. Interview themes underscore how the perceived increase in FI led to increased prioritization of FI among practice providers and staff. Practice-initiated efforts were supported by increased availability and access to community resources, decreased stigma among patients, as well as federal and state funding. Yet, practices also reported a multitude of challenges that limited their ability to address patient needs, including fewer in-person visits and geographic limitations on the scalability of FI interventions.

Several practices highlighted how they adapted approaches to FI screening due to the pandemic, including direct telephone outreach to at-risk patients, and conducting pre-visit telephone screening for telehealth encounters. While limited time has frequently been reported as a major barrier to screening for FI,[19,20] these adaptations facilitated FI screening and interventions outside of busy clinic visits. Pre-visit screening has also been demonstrated to improve clinic efficiency while providing additional time for practice staff to prepare resources and referrals for patients.[21] A greater reliance on telemedicine itself was noted by interview participants to be both a facilitator and a barrier for FI screening. Despite the utility of telehealth services in maintaining connectivity between patients and providers, patients may perceive video encounters to be impersonal and therefore find it difficult to disclose sensitive topics such as FI.[22] There is unlikely to be a singular approach effective for all patients, and more research is necessary to identify best practices in screening for FI and other social determinants using telehealth.[22]

As practices were limited in their ability to host onsite operations and patients were travelling to fewer in-person visits, interview participants reported a shift in FI interventions to focus on food delivery programmes and connecting patients with local community food resources. This aligns with other reports of pandemic-driven FI interventions, including food delivery projects,[11,23,24] community supported agriculture initiatives,[12] food voucher programmes,[25] and optimization of school lunch programmes.[26] Interventions reported by practices in this study also addressed previously reported COVID-specific barriers to obtaining food, including fear of exposure to COVID-19, not finding enough food at grocery stores, and difficulties with transportation access.[27] For rural practices in our study, the lack of food delivery services and gaps in broadband coverage served as additional barriers. These limitations have previously been shown to reduce the impacts of the federal SNAP expansion to include online grocery delivery, necessitating community-based approaches and partnerships with local vendors in rural areas.[28]

In addition to novel practice interventions, interview participants also reported new and stronger community connections during the pandemic that resulted from a shared desire to address increased rates of FI. Clinic–community partnerships

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have been shown to facilitate information sharing, as community organizations may be more aware of the frequent changes in the availability of FI resources in the community.[29] In a national landscape assessment of 22 clinic-community partnerships prior to the pandemic, referrals to outside resources, patient navigation, and federal benefit application assistance were the most common FI interventions.[29] In addition to these benefits, interview participants also reported a sense of camaraderie that fuelled resource sharing between organizations.

Interview participants noted a decrease in stigma associated with food insecurity during the pandemic. Prior studies reporting stigma as a barrier to FI screening, limiting the voluntary disclosure of food-related challenges to medical providers.[7,30] It is possible that FI became a more acceptable topic of conversation given the prevalence of challenges faced by community members during the pandemic. Increased communication and outreach from practices may have also facilitated trust between patients and practice staff, facilitating discussions around FI.[13] Additional studies are necessary to examine the long-term impacts on patient acceptability around FI screening and interventions following the pandemic, evaluate the effectiveness and sustainability of new pandemic food programmes, and identify best practices for primary care practices to address FI in the post-pandemic setting.

Limitations

Our recruitment strategy using 3 practice and research networks in northern New England allowed us to interview a breadth of primary care providers and staff across several states. However, the views of participants who are members of these networks and agreed to be interviewed may differ from others in the region. Though our convenience sample was small and not driven by theme saturation, a variety of staff roles and practice types provided a range of perspectives, and our codebook was finalized (i.e. no additional codes emerged) after the first 9 interviews. Our study sample size is also consistent with prior studies evaluating sample sizes necessary for saturation in qualitative research.[31] The similar positionality of the researchers as primary care clinicians should be acknowledged as this could have impacted our interpretation of findings. Additionally, we interviewed clinicians and staff during an early period of the COVID-19 pandemic when external state and federal supports were available for practices. The ability of practices to address FI may have evolved over the course of the pandemic and is not fully represented by our cross-sectional study.

Conclusion

In this study, we examined FI screening and interventions among rural primary care practices during the COVID-19 pandemic. Stronger practice-community connections, decreased patient stigma, and increased federal and state funding facilitated FI screening and interventions. At the same time, practices faced barriers in terms of limited capacity for onsite food distribution, the loss of some existing food programmes, and difficulty integrating telemedicine into existing clinic workflows. These experiences provide insight into innovations and best practices for engaging primary care practices in reducing FI, both during and after a pandemic.

Supplementary material

Supplementary material is available at *Family Practice* online.

Author contributions

KH, CC, AD, MB, and MK conceptualized and designed the study. All authors contributed to data collection, analysis, and interpretation. AS drafted the manuscript and all authors critically reviewed and revised drafts. All authors read and approved the final manuscript.

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Ethical approval

This study was reviewed and determined exempt by the Dartmouth-Hitchcock Health System IRB.

Conflict of interest

The authors have no conflicts of interest to disclose.

Data availability

De-identified data can be made available from the corresponding author on reasonable request.

References

1. Coleman-Jensen A, Rabbitt MP, Gregory CA, Singh A. Household Food Security in the United States in 2021. ERR-309, U.S. Department of Agriculture, Economic Research Service. 2022 September. https://www.ers.usda.gov/webdocs/publications/104656/err-309.pdf?v=2322.6 (cited 25 December 2022).
2. Hanmer J, DeWalt DA, Berkowitz SA. Association between food insecurity and health-related quality of life: a nationally representative survey. *J Gen Intern Med*. 2021;**36**(6):1638–1647.
3. Wolfson JA, Leung CW. Food insecurity and COVID-19: disparities in early effects for US adults. *Nutrients*. 2020;**12**(6):1648.
4. Niles MT, Bertmann F, Belarmino EH, Wentworth T, Biehl E, Neff R. The early food insecurity impacts of COVID-19. *Nutrients*. 2020;**12**(7):2096.
5. Fitzpatrick KM, Harris C, Drawve G, Willis DE. Assessing food insecurity among US adults during the COVID-19 pandemic. *J Hunger Environ Nutr*. 2021;**16**(1):1–18.
6. Leddy AM, Weiser SD, Palar K, Seligman H. A conceptual model for understanding the rapid COVID-19-related increase in food insecurity and its impact on health and healthcare. *Am J Clin Nutr*. 2020;**112**(5):1162–1169.
7. Dolin CD, Compher CC, Oh JK, Durnwald CP. Pregnant and hungry: addressing food insecurity in pregnant women during the COVID-19 pandemic in the United States. *Am J Obstet Gynecol MFM*. 2021;**3**(4):100378.
8. Kopparapu A, Sketas G, Swindle T. Food insecurity in primary care: patient perception and preferences. *Fam Med*. 2020;**52**(3):202–205.
9. Fraze TK, Brewster AL, Lewis VA, Beidler LB, Murray GF, Colla CH. Prevalence of screening for food insecurity, housing instability, utility needs, transportation needs, and interpersonal violence

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by US physician practices and hospitals. *JAMA Netw Open*. 2019;**2**(9):e1911514.
10. Hatchell KE, Canavan CR, D'cruze T, Suresh A, Dev A, Boardman M, Kennedy MA. The impact of the COVID-19 pandemic on food insecurity in northern New England primary and prenatal care settings. *J Prim Care Community Health*. 2022;**13**:21501319221106626.
11. Bridges KM, Woodward J, Murray M, Mumm E, Greiner KA. Pandemic food response in primary care to minimize exposure for elderly food insecure population. *Kans J Med*. 2022;**15**:148–154.
12. Brown R, Reilly G, Patel F, Freedman C, Virudachalam S, Cullen D. Farm to families: clinic-based produce provision to address food insecurity during the pandemic. *Pediatrics*. 2022;**150**(4):e2022057118.
13. Canavan CR, D'cruze T, Kennedy MA, Hatchell KE, Boardman M, Suresh A, Goodman D, Dev A. Missed opportunities to improve food security for pregnant people: a qualitative study of prenatal care settings in Northern New England during the COVID-19 pandemic. *BMC Nutr*. 2022;**8**(1):8.
14. *Rural-Urban Commuting Area Codes*. Washington (DC): U.S. Department of Agriculture Economic Research Service; c2020 –. 2020. http://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx (cited 17 May 2021).
15. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;**3**(2):77–101.
16. Fereday J, Muir-Cochrane E. Demonstrating rigor using thematic analysis: a hybrid approach of inductive and deductive coding and theme development. *Int J Qual Methods*. 2006;**5**(1):80–92.
17. Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci*. 2009;**4**:50.
18. Dedoose, web application for managing, analyzing, and presenting qualitative and mixed method research data. Version 9.0.46 [software]. SocioCultural Research Consultants, LLC. 2022. www.dedoose.com (cited 25 December 2022).
19. Barnidge E, LaBarge G, Krupsky K, Arthur J. Screening for food insecurity in pediatric clinical settings: opportunities and barriers. *J Community Health*. 2017;**42**(1):51–57.
20. Pooler JA, Hoffman VA, Karva FJ. Primary care providers' perspectives on screening older adult patients for food insecurity. *J Aging Soc Policy*. 2018;**30**(1):1–23.
21. Taher S, Persell SD, Kandula NR. Six recommendations for accelerating uptake of national food security screening in primary care settings. *J Gen Intern Med*. 2022;**37**(6):1531–1533.
22. Bernhardt C, King C. Telehealth and food insecurity screenings: challenges and lessons learned. *Mhealth*. 2022;**8**:10.
23. Garba NA, Sacca L, Clarke RD, Bhoite P, Buschman J, Oller V, Napolitano N, Hyppolite S, Lacroix S, Archibald A, *et al*. Addressing food insecurity during the COVID-19 pandemic: intervention outcomes and lessons learned from a collaborative food delivery response in South Florida's underserved households. *Int J Environ Res Public Health*. 2022;**19**(13):8130.
24. Haney KE, Measom MT, Timmons JZ, Hole MK. Mitigating food insecurity during the COVID-19 pandemic: a replicable food delivery service using public-private partnerships. *J Health Care Poor Underserved*. 2022;**33**(4S):195–201.
25. Haidar A, Markham C, Marshall A, Chuang R-J, Spence M, Boone J, Pomeroy M, Dachman R, Davis JN, Sharma SV. Innovative partnerships to address food insecurity during the COVID-19 pandemic: the brighter bites produce voucher program. *Int J Environ Res Public Health*. 2021;**18**(17):9175.
26. McLoughlin GM, McCarthy JA, McGuirt JT, Singleton CR, Dunn CG, Gadhoke P. Addressing food insecurity through a health equity lens: a case study of large urban school districts during the COVID-19 pandemic. *J Urban Health*. 2020;**97**(6):759–775.
27. Reimold AE, Grummon AH, Taillie LS, Brewer NT, Rimm EB, Hall MG. Barriers and facilitators to achieving food security during the COVID-19 pandemic. *Prev Med Rep*. 2021;**23**:101500.
28. Beese S, Amram O, Corylus A, Graves JM, Postma J, Monsivais P. Expansion of grocery delivery and access for Washington SNAP participants during the COVID-19 pandemic. *Prev Chronic Dis*. 2022;**19**:E36.
29. Lundeen EA, Siegel KR, Calhoun H, Kim SA, Garcia SP, Hoeting NM, Harris DM, Khan LK, Smith B, Blanck HM, *et al*. Clinical-community partnerships to identify patients with food insecurity and address food needs. *Prev Chronic Dis*. 2017;**14**:E113.
30. Knowles M, Khan S, Palakshappa D, Cahill R, Kruger E, Poserina BG, Koch B, Chilton M. Successes, challenges, and considerations for integrating referral into food insecurity screening in pediatric settings. *J Health Care Poor Underserved*. 2018;**29**(1):181–191.
31. Hennink M, Kaiser BN. Sample sizes for saturation in qualitative research: a systematic review of empirical tests. *Soc Sci Med*. 2022;**292**:114523.

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