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Feasibility of Food Insecurity Screening in Dental Clinics: Findings from the South Texas Oral Health Network

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Short Report

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Abstract

Introduction:

Food insecurity is associated with poorer oral health, yet little is known about whether dental clinics can feasibly identify food-insecure patients. The current study evaluated the feasibility of food insecurity screening across three dental practices.

Methods

Three dental practices in San Antonio, Texas, offered adults a self-administered, English-language Hunger Vital Sign screener at check-in between March 11 and May 22, 2026. An affirmative response to either item was classified as a positive screen for risk of food insecurity. Positive-screen prevalence was assessed overall and by clinic.

Results

A total of 423 completed screens were analyzed, of which 104 (24.6%) indicated positive for risk of food insecurity. Positive-screen prevalence varied across the three study clinics, ranging from 14.6% to 33.3% (*P* = .003). Of the positive screens, 76.9% included affirmative responses to both items on the Hunger Vital Sign screener.

Conclusion

This study provides preliminary evidence that incorporating brief screening tools into routine dental workflows is feasible and can help identify food-insecure patients. Future studies are needed to assess whether dental clinics can successfully connect identified food-insecure patients to services that alleviate food insecurity and improve oral health.

Introduction

Food insecurity, defined as limited or uncertain access to adequate and safe food, affects millions of people in the United States (US) each year.[1] In 2024, an estimated 47.9 million people lived in food-insecure households.[1] Prevalence of food insecurity varies across the US, with Texas, the current study setting, reporting higher rates. From 2022 to 2024, Texas had an estimated household food insecurity prevalence of 17.6%, compared with the national three-year average of 13.3% over the same period.[1] Food insecurity is a critical public health concern, as it is associated with a range of adverse outcomes, including chronic disease, poorer mental health, and premature mortality.[2–4] Furthermore, growing

evidence links food insecurity to poorer oral health outcomes, including higher rates of dental caries, periodontal disease, tooth loss, and lower dental care utilization.[5–10]

Despite lower dental care utilization, many food-insecure individuals continue to seek dental services, presenting an opportunity for dental practices to identify patients at risk of food insecurity.[9] Integrating brief screening into routine dental care may facilitate early identification and connections to community resources, including food banks and nutrition assistance programs. Because a substantial share of the US population has a dental visit in a given year, dentistry may play a vital role in identifying and addressing food insecurity and its associated oral health consequences.[11]

Despite this potential, little is known about whether dental clinics can feasibly serve as a point of identification and intervention for food insecurity. A necessary first step is determining whether a standardized screening instrument can be implemented into routine dental care to identify patients at risk for food insecurity. One prior study has examined screening in a pediatric dental clinic. Radandt et al.[12] analyzed surveys from 141 parents and guardians at a single university-affiliated pediatric dental clinic in Washington State. The study identified a 31% prevalence of food insecurity using the US Department of Agriculture Six-Item Short Form of the Food Security Survey Module. To evaluate the effectiveness of a shorter screening approach, researchers compared the two-item Hunger Vital Sign[13] screener against the six-item measure, demonstrating 95.4% sensitivity and 83.5% specificity. Recent research has also identified varying levels of support and implementation barriers for food insecurity assessments among dental practitioners.[14,15]

Whether food insecurity screening is feasible across non-academically affiliated general dental practices serving adult populations, particularly in a state with a high burden of food insecurity, has not been previously studied. The purpose of this study was to extend the previous research by evaluating the feasibility of food insecurity screening using the two-item Hunger Vital Sign screener[13,16] among adult patients across three general dental clinics in Texas.

Methods

Study Design and Setting

This study was conducted in 2026 at three general dental clinics affiliated with the South Texas Oral Health Network (STOHN) in San Antonio, Texas. STOHN is a practice-based research network (PBRN) whose mission is to build a research infrastructure with dental practitioners to generate practical and timely evidence that improves the quality and effectiveness of oral health care.[17] Network members are practicing dentists and dental hygienists across Texas who partner with academic investigators to design, implement, and disseminate research conducted in real-world practice settings. The study was approved by the University of Texas Health Science Center at San Antonio Institutional Review Board STUDY00002157.

Screening Procedures

The study conducted screening from March 11, 2026, to May 22, 2026. During this period, each clinic offered the food insecurity screener to patients at check-in. Participating dental clinics' front-desk staff provided all patients aged 18 or older with an iPad on which the screener was self-administered in English. Responses were recorded directly into REDCap and were not linked to the patient's dental record.

Measures

Risk of food insecurity was assessed using the Hunger Vital Sign, a validated two-item screening tool derived from the US Department of Agriculture Household Food Security Survey Module.[13,16] Respondents indicated whether each of the following statements was "often true," "sometimes true," or "never true" for their household within the past 12 months: (1) "We worried whether our food would run out before we got money to buy more," and (2) "The food we bought just didn't last and we didn't have money to get more." Consistent with the tool's scoring guidelines, a response of "often true" or "sometimes true" to either item was classified as a positive screen for food insecurity risk. The Hunger Vital Sign screener has been previously validated in adult populations, demonstrating > 97% sensitivity and > 70% specificity.[16]

Statistical Analysis

The analytic sample comprised all completed screens during the study period. A screen was classified as positive if the respondent answered "often true" or "sometimes true" to either Hunger Vital Sign item. Responses of "don't know/refused" were treated as non-affirmative. Positive screen prevalence was calculated overall and by clinic using the total number of completed screens as the denominator. Completed screens without a clinic identifier were included in overall estimates but not in clinic-specific estimates. Differences in positive-screen prevalence across clinics were tested with the chi-square test, and pairwise clinic comparisons used Fisher's exact test. Analyses were conducted in Stata version 18 SE.

Results

Screening occurred between March 11 and May 22, 2026, and 423 completed screens were analyzed. Completed screens were recorded on 37, 37, and 30 distinct days at Clinics A, B, and C, respectively. Completed screens were unevenly distributed across sites, with Clinic A contributing 206 (48.7%), Clinic B 137 (32.4%), and Clinic C 78 (18.4%). The remaining 2 completed screens (0.5%) lacked a clinic identifier and are included in overall totals only.

Overall, 104 of 423 completed screens (24.6%) were positive for food insecurity risk (Table 1). The majority of positive screens, comprising 80 screens (18.9% of all completed screens; 76.9% of positive

screens), included affirmative responses to both items (i.e., worrying that food would run out and that food did not last). Additionally, 35 screens (8.3% of all completed screens; 33.7% of positive screens) included an “often true” response to at least one item. Overall, the worry item was endorsed slightly more often than the food-did-not-last item (23.2% vs 20.3% of all completed screens).

Table 1
Food Insecurity Screening Outcomes by Dental Clinic

Completed screens, n	**Clinic A**	**Clinic B**	**Clinic C**	**Total**
	206	**137**	**78**	**423**
Positive screen (at risk for food insecurity), n (%)	**57 (27.7)**	**20 (14.6)**	**26 (33.3)**	**104 (24.6)**
Item-level responses, n (%)				
Worried food would run out (“sometimes” or “often” true)	54 (26.2)	18 (13.1)	25 (32.1)	98 (23.2)
Food bought did not last (“sometimes” or “often” true)	45 (21.8)	17 (12.4)	23 (29.5)	86 (20.3)
Affirmative on both items	42 (20.4)	15 (10.9)	22 (28.2)	80 (18.9)
“Often true” on either item	17 (8.3)	5 (3.6)	12 (15.4)	35 (8.3)
“Don’t know/refused” on either item	3 (1.5)	6 (4.4)	0 (0.0)	9 (2.1)

Note: Percentages are column percentages of completed screens. Item-level categories are not mutually exclusive (e.g., a screen affirmative on both items may also include an “often true” response), so rows do not sum to the positive-screen total. Two completed screens lacked a clinic identifier and are included in the Total column only (one of these was a positive screen, affirmative on both items with an “often true” response); the clinic columns therefore sum to 421 completed screens and 103 positive screens.

Among the 421 completed screens with a clinic identifier, positive-screen prevalence varied significantly by clinic ($\chi^2 = 11.68$, $P = .003$), ranging from 14.6% at Clinic B to 27.7% at Clinic A and 33.3% at Clinic C. Prevalence at Clinic B was lower than both Clinic A ($P = .005$) and Clinic C ($P = .002$). Clinics A and C did not differ significantly ($P = .38$). The proportion reporting “often true” on either item followed a similar pattern ($\chi^2 = 9.24$, $P = .01$), with the lowest proportion of 3.6% at Clinic B, followed by 8.3% at Clinic A and 15.4% at Clinic C.

Discussion

The current study provides preliminary evidence demonstrating the feasibility of screening for food insecurity in dental clinics. Across the three STOHN-affiliated clinics, 423 screens were completed using the two-item Hunger Vital Sign screener, with 24.6% screening positive for risk of food insecurity. This proportion is similar to the estimated food insecurity rate in Bexar County, Texas (the county encompassing San Antonio), which was 22.6% in 2024.[18]

Similar findings in previous research were reported by Radandt et al., who identified food insecurity in 31% of surveyed households at a single university-affiliated pediatric dental clinic using the USDA Six-Item Short Form of the Food Security Survey Module.[12] Together, these findings highlight the burden of food insecurity among dental patient populations and reinforce the potential value of incorporating brief screening into routine dental practice. These findings have implications for expanding dentistry's role in identifying and addressing social determinants of health.

Overall, this study demonstrated that the first step in addressing food insecurity—identifying patients at risk—can be incorporated into the dental front-desk workflow. The two-item screener is quick and can be self-administered on a tablet at check-in, providing a practical process for both patients and dental staff. The logical next step is to test whether dental clinics can serve as a point of intervention, for example by pairing a positive screen with a referral to a local food bank, assistance with Supplemental Nutrition Assistance Program enrollment, or on-site resource navigation, and then whether these connections to services reduce food insecurity and improve oral health outcomes. Future research should evaluate referral uptake, patient and staff acceptability, wait time, workflow burden, and the sustainability of screening beyond a pilot period. It is also critical to note whether addressing food insecurity identified in dental settings translates into improved dietary quality, oral health behaviors, or clinical outcomes such as dental caries incidence. Pragmatic designs that can be embedded in practice-based research networks, such as stepped-wedge or cluster-randomized trials, are well suited to answer these questions.

Limitations

There are limitations in the current study. First, we could not determine the total number of eligible patient visits during the study period, so the proportion of patients who were offered or completed the screener is unknown. Second, the screener did not collect demographic or insurance information, which precluded analysis of which patients were most likely to screen positive and limited our ability to explain the variation between clinics. Third, English-only tablet administration may have also limited participation. Finally, the three participating clinics were located in San Antonio, Texas, and were members of a practice-based research network with an existing interest in research. These features may limit generalizability to other practices and regions.

Conclusion

A brief, tablet-based screening for food insecurity at check-in across three dental clinics in San Antonio, Texas was feasible in this study. Approximately one-quarter of completed screens were positive, indicating risk of food insecurity. Dental clinics represent a promising and underused setting for identifying food insecurity. Future research should test whether linking positive screens to food resources improves patients' food security and oral health.

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