WIC Professionals' Adaptations in Clinical Practice to Better Assess and Address Household Food Insecurity in Diverse Nonmetropolitan Families

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ABSTRACT

Background: While research on Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) participation and proximal health indicators has been considerable, literature on best practices for assessing and addressing household food insecurity in public health clinics remains limited. The purpose of this study was to examine WIC professionals' approaches to assessing and addressing household food insecurity in participating families.
Method: During January 2018, we conducted four focus groups utilizing a semi-structured interview guide with public health staff (N = 24) across four diverse nonmetropolitan public health districts in Midwestern counties. WIC staff included social workers, nurses, nutritionists, and ancillary staff. All interviews were audio-recorded, transcribed, and verified. NVivo 11.4.2 software was used for data organization and qualitative analysis.
Results: WIC providers spoke at length about adapting their approach to assess and address food insecurity in settings with unique characteristics due to cultural diversity. Four key themes emerged: 1) Language adaptation to assess food insecurity, 2) Challenges posed by male presence while assessing food insecurity, 3) Individualized client education to promote use of WIC food items, and 4) Diverse WIC staff can better assess food insecurity in diverse populations.
Conclusion: Findings from this study bring attention to important and previously undocumented adaptations to clinical practice that WIC staff utilize to best meet the needs of their local populations.

Keywords: Food insecurity, WIC, low-income, maternal child health, diversity, nonmetropolitan

INTRODUCTION

Food insecurity, defined as not having enough food to have a healthy and active life, is a major global health problem. Although the United States is one of the most affluent countries in the world (World Bank, 2018), 15.6 million Americans were food insecure at least sometime during 2017 and were at risk for detrimental consequences (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2017). There is extensive evidence that food insecurity impedes normal growth and development in pediatric populations {Rose-Jacobs, 2008 #14864;Schmeer, 2017 #14884}. Overall, food insecurity among children is associated with obesity {Dubois, 2006 #14865;Metallinos-Katsaras, 2012 #14866;Kral, 2017 #14883}, poor general health {Chilton, 2009 #14867;Gundersen,

2009 #14868;Schmeer, 2017 #14884}, and increased hospitalizations {Eisenmann, 2011 #14869}. Moreover, food insecurity has negative impacts on children's psychosocial skills, including self-control, attentiveness, and task persistence {Howard, 2011 #14870;Faught, 2017 #14881}.

Among adults, food insecurity increases risks for hypertension, diabetes {Seligman, 2010 #14871}, obesity {Pan, 2012 #14872}, and low cognitive performance {Gao, 2009 #14873}. Among childbearing women in particular, food insecurity is associated with increased gestational weight gain, gestational diabetes {Laraia, 2010 #14874;Barbara, 2015 #14885}, and maternal depression {Casey, 2004 #14878;Nagata, 2018 #14882}. Women are vulnerable to food insecurity around the time of pregnancy. Food insecurity during pregnancy is associated with increased stress and weight gain in the postpartum period {Laraia, 2015 #15;Laraia, 2010 #14}. Last, access to proper nutrition is essential for proper weight gain during pregnancy. Improper weight gain is associated with adverse integrational outcomes for offspring, such as preterm birth {Tabb, 2017 #497}.

The U.S. federal government supports programs to address nutrition deficiency and food insecurity among low-income individuals. For example, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) addresses maternal and child risk factors related to nutrition. Those eligible to participate include pregnant women, breast-feeding and non-breast-feeding postpartum women, infants, and children up to five years of age (U.S. Department of Agriculture, 2017). Moreover, those who can participate must be under 185% of the poverty threshold (U.S. Department of Agriculture, 2017). During fiscal year 2017, WIC served over 7.3 million individuals, with two-thirds of them being infants and children (U.S. Department of Agriculture [USDA], Food and Nutrition Service [FNS], 2017). Previous research on the effectiveness of WIC has shown that an increased length of participation in WIC is linked to improved food security status for an ethnically diverse sample of mothers and children {Metallinos-Katsaras, 2012 #14866;Metallinos-Katsaras, 2011 #14877}. One longitudinal study revealed that each additional WIC clinic visit significantly decreased household food insecurity, demonstrating the effectiveness of the program {Metallinos-Katsaras, 2011 #14877}.

Although anyone can be affected by food insecurity, there are rising disparities. Recent data show that the rate of food insecurity for Black-headed households is 22.5%, 18.5% for Latinx-headed households, and 9.3% for White-headed households. These rates demonstrate there is a clear disparity; racial/ethnic minorities have a much higher rate of food insecurity compared to their White counterparts (Coleman-Jensen, Rabbitt, Gregory & Singh, 2017). Moreover, the rate of food insecurity among households that are under 185% of the poverty threshold is 31.6%, demonstrating a clear need among those who are eligible to participate in the WIC program. In fact, previous studies have shown that low-income women find WIC to be increasingly helpful in addressing food insecurity {Metallinos-Katsaras, 2012 #14866}. To date, most research on the effectiveness of WIC on food insecurity has focused on interviewing program participants about their experiences. However, with a growing number of clients from diverse backgrounds, it is necessary to identify the ways in which WIC staff members assess and address food insecurity among these diverse populations. In many cultures, discussing the issue of food insecurity might pose a difficult challenge because it can be socially unacceptable to disclose such information {Coates, 2006 #14876}. The purpose of this study was to examine WIC professionals' knowledge and perspectives on how to assess and address household food insecurity in diverse nonmetropolitan WIC families residing in the Midwest.

LITERATURE REVIEW

The concept of food security is based on three domains: availability, access, and utilization, which are intrinsically linked to community and household resources {Pérez-Escamilla, 2008 #14879}. Previous research shows that families with children, low-income families, and women heads of household are more likely to experience food insecurity at some point during the year {Coleman-Jensen, 2017 #14880}. The most recent trends suggest that 16.5% of households with children, 38.3% of households living under the federal poverty line, and 31.6% of

single-mother households were food insecure at some point during 2016 {Coleman-Jensen, 2017 #14880}.

In order to address food insecurity, it is necessary to consistently screen and assess families for food insecurity. Pediatric clinics, WIC offices, and other health-care facilities have the opportunity to screen families for food insecurity given that these sites are routinely visited {Coker, 2014 #14886}. Most of the literature regarding food insecurity screening comes from assessing food insecurity in pediatric clinics in metropolitan cities. A recent study {Essel, 2017 #14887} investigated the frequency of food insecurity screening among 85 pediatric providers in Washington, DC. The researchers found that the majority of providers did not screen for food insecurity frequently, unless there was a particular concern {Essel, 2017 #14887}. Another study carried out a program evaluation in three pediatric clinics to test the effectiveness of using a two-question screening tool to assess food insecurity {Knowles, 2018 #14888}. This study found that the screening tool was successful in screening more people and identifying more clients who are food insecure. Moreover, clients reported concerns regarding stigma and fear regarding disclosure of food insecurity because the caregivers were afraid of being reported to authorities {Knowles, 2018 #14888}. These studies demonstrate that there are on-going efforts to better assess for food insecurity in pediatric populations; however, to date there is a scarcity of research investigating food insecurity assessment at WIC offices. Given that many WIC participants have similar demographic characteristics to those who are predominantly food insecure (e.g., households with children and low income), it is necessary to accurately screen and measure food security among program participants.

Measuring food insecurity can be a challenge, given that there are several ways to assess it. Food insecurity can be assessed at the national, community, household, and individual levels, and there are multiple measures available at each level {Pérez-Escamilla, 2008 #14879}. Regarding the measurements available at the household and individual levels, food insecurity can be assessed using the Household Consumption and Expenditure Surveys (HCES), which are an amalgamation of surveys that collect information on income, food expenditure, and consumption (Zezza, Carletto, Fieldler, Gennari & Jolliffe, 2017). Another instrument used to measure household food insecurity is the Household Dietary Diversity Score (HDDS), which measures the diversity of food groups consumed in the household over the last 24 hours (Swindale & Bilinsky, 2006).

A widely used household measure of food insecurity predominantly found in African countries is the Coping Strategies Index, which is a measure used to determine whether the family has changed their eating patterns due to economic distress, and the coping mechanisms the family has used (Maxwell, Watkins, Wheeler & Collins, 2003). Another widely used tool to assess household food insecurity is the Household Food Insecurity Access Scale (HFIAS), which is a 9-item questionnaire that assesses food access over the past four weeks (Coates, Swindale, & Bilinsky, 2007). This measure was developed from the Household Food Security Survey Measure (HFSSM), which is the most commonly used instrument in the United States (Coates, Swindale, & Bilinsky, 2007). The measurements identified are not an exhaustive list of all available instruments, but they demonstrate the different methods used to gather information on the level of food insecurity in a household. All these measurements have been applied to certain contexts more than others, and they tackle different aspects of food insecurity. For instance, most questionnaires assess food access, but some aim to understand food quality and diversity, like the HDDS. Determining the use of these instruments depends on the context and the main outcome that needs to be identified.

The HFSSM is a questionnaire that assesses food access over the past 12 months (USDA, 2012). The instrument consists of 15 items and three sub-items, yielding a score ranging between 0 and 18 (USDA, 2012, to access the instrument visit: https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/survey-tools/). Cutoffs have been developed to classify the summative score into four levels of food security: high, marginal, low, and very low (USDA, 2012). This scale has been validated in U.S. and international populations {Pérez-Escamilla, 2008

#14879}. For instance, this tool has also been tested and validated for its use in other countries including Brazil, Colombia, Mexico, Burkina Faso, and others {Coates, 2006 #14876}.

Testing and validating the use of these instruments in other contexts is imperative, given that not all cultures may experience food insecurity in the same way. However, there are some universal domains of food insecurity, which were identified by a seminal cross-national study by Coates and colleagues (2006). In their study, Coates and colleagues (2006) examined 22 studies from 15 different countries that described the personal experience of people who were food insecure and identified four domains of food insecurity that were commonly shared across cultures. For instance, the majority of studies identified that participants felt anxiety about where the next meal would come from {Coates, 2006 #14876}. Also, participants from all different countries expressed concern about not eating healthy foods {Coates, 2006 #14876}. The third shared experience of food insecurity was food insufficiency; not having enough food to eat {Coates, 2006 #14876}. The last shared experience was social unacceptability, although this experience was implicitly measured since people were not readily open to discussing their experience {Coates, 2006 #14876}. A particular finding of Coates and colleagues (2006) was that people from different countries had diverse levels of openness disclosing food insecurity to others. While in Bangladesh, people did not go to great lengths to hide that they were food insecure, in other countries, people did hide their situation and even felt alienated due to their situation {Coates, 2006 #14876}.

The research by Coates and colleagues (2006) demonstrates that there are some shared experiences related to food insecurity and that it can be measured and assessed across different cultures. However, the study also found that disclosing information about food insecurity in certain cultures might pose a challenge, and some people might even try to hide their current situation due to shame or fear of alienation. Assessing food insecurity is a difficult task; however, this social fear of disclosure can pose a particular threat to primary care providers and WIC staff members who work with immigrant and highly diverse populations. Given that low-income women are particularly vulnerable to food insecurity and that WIC offices are one of the main points of assessment, it is necessary to identify the knowledge and perspectives of WIC staff members on food insecurity assessment. This has become particularly relevant in recent years, given U.S. economic challenges and demographic shifts. To our knowledge, this is among the first studies to investigate the experiences of WIC staff members assessing food insecurity among diverse low-income families in nonmetropolitan cities.

THEORETICAL BACKGROUND

This study seeks to describe how WIC professionals assess for food insecurity among diverse nonmetropolitan families in the post-2008 recession era. As this study is exploratory in nature, no formal theory is being tested. Measuring food insecurity is difficult, and more theory is needed in the area {Webb, 2006 #638}. Therefore, the qualitative focus group interviews will be theory-generating, with the goal of better understanding the views and experiences of food-insecure families. Thus, this study aimed to answer the following questions: 1) How do WIC professionals assess household food insecurity among diverse WIC participants in nonmetropolitan communities? 2) What cultural adaptations have been made by WIC professionals to assess food insecurity among immigrant populations? 3) Are there ever instances of concealment of food insecurity by WIC families? If so, how do WIC professionals address this?

METHODS

Setting

The setting for this study comprises three WIC programs housed within public health clinics in nonmetropolitan counties and rural counties in a Midwestern state. Each of these three counties has a population density of approximately 150,000, with the largest best described as a micro urban area. Collectively, these nonmetropolitan counties are home to more than 20,000 migrants, immigrants, and refugees; with growing French-Congolese and Central American populations. Each of these three public health clinics is responsible for administering the WIC program that includes access to

supplemental foods, healthcare referrals, and nutrition education to nutritionally at-risk, low-income, childbearing women and their children up to age five residing in the county. Each family's food security status is among items discussed between WIC staff and program participants during their visits.

Data collection and data analysis

During January 2018, we conducted four focus groups with 24 participants who were all WIC-providing public health clinic staff members (WIC professionals). Two trained facilitators (SDS, KT) concurrently led each of the four groups. Participants provided informed consent and completed a demographic questionnaire prior to the start of the interview. The focus group interviews followed a semi-structured interview guide with a set of questions related to assessment of food insecurity in WIC families, with particular interest in culturally diverse populations and concealment of food insecurity. Please see Table 1 for examples of questions asked to WIC clinic staff members. In addition to the interview guide, probing questions clarified responses of study participants to interview questions. Focus groups interviews lasted until saturation of emerging themes were met.

Table 1. Example of questions asked to clinic staff members

How do you assess food insecurity in your practice?
How do you assess food insecurity among the culturally diverse populations you serve?
Are there ever situations where the respondent is concealing their level of food insecurity?

Interviews lasted 45–55 minutes in length. All focus groups interviews were audio recorded. Audio recordings were transcribed verbatim (MEB, SMS) and verified (KCK). Data entry of demographic questionnaire data was completed (KCK) and was then analyzed utilizing SPSS 24. The focus group interviews were analyzed via thematic analysis utilizing NVivo 11.4.2 software. The analysis was conducted by six of the authors (SDS, KT, MP-L, MEB, SMS, KCK) who read each of the four transcriptions and identified codes. Following identification of codes, the raters met to discuss differences and similarities among codes to ensure consistency. Codes were refined and discussed until consensus among raters was reached. For the purposes of this paper, codes related to WIC professionals' adaptations in assessing and addressing food security were synthesized into four key themes expressing the collective lived experience of our study participants.

Ethical approval

All data collection processes, procedures, and related paperwork received proper approval from the DePaul University Institutional Review Board, University of Illinois Institutional Review Board, and local public health research integrity committees prior to initiation of the research study.

WIC clinic staff participants

A convenience sample of 24 female WIC public health clinic staff was recruited through announcements in staff meetings, emails sent to their professional accounts, and word of mouth. Participants included staff with backgrounds in diverse fields including: four public health nurses (16.7%), five social workers (20.8%), five dietitians/nutritionists (20.8%), four clerical staff (16.7%), and six "other" (25%). Study participants had spent an average of nine years in public health practice, range 0.9–26.75 (S.D. = 7.7). Study participants reported, on average, having served in their current position for seven years, range 0.2–24 (SD = 6). The study sample's formal education included: 1 "high school" (4.2%), 3 "some college" (12.5%), 4 "associates degree" (16.7%), 10 "bachelor's degree" (41.7%), and 6 "master's degree" (25%). The majority of the participants spoke English only; however, 25% of participants in the study sample spoke Spanish in addition to English, and one participant was fluent in Mandarin. Among WIC staff members who self-reported their race, 70.8% identified as White, 16.7% as Black or African American, and 8.3% as Asian. In addition, 12.5% of the study sample identified as Latinx.

RESULTS

We found four key themes that were related to WIC professionals' adaptations in clinical practice to better assess and address household food insecurity in participating families (see Table 2). We started each interview with probing questions that assessed for food insecurity, during which time participants spoke of the client-centered or patient-centered approaches in which they informally assess WIC participants' food security status and overall needs in the context of a larger conversation about the ongoing health and welfare of their family. The majority of participants were able to identify the importance of assessing and addressing food insecurity with participating families; however, major barriers and related adaptations allow them to best complete this task within the context of their positions. The four key themes are presented as follows.

Table 2

Four organizing themes and illustrative quotes from focus group interviews with WIC staff members in a public health clinic in 2018.

Theme	Illustrative quotes
Language adaptation to assess food insecurity	
Sub-Theme: Cultural Adaptation	"I usually ask them do you have hard time finding...food that… you usually eat in this [geographic] region."
	"We don't ask them [do] "you have problem getting food?" I usually ask them do you have hard time finding the food that you [are] familiar with in a certain area."
	"I really try to make the conversation as natural as possible and not intimidating to the client because I don't want to ever come off as if I'm assuming, they need food."
Sub-Theme: Conversational Approach to Assessments	"We try to let it kind [of] happen naturally as part of the conversation."
	"It's kind of just easing all those fears like, that's not what this is for, we're really trying to help you, so just trying to normalize the conversation. And just kind of just present it to them like ok this is a service that we provide; just real nonchalantly and then it makes them more comfortable to open up. And then sometimes after asking them about food, you get them when they feel more comfortable you get them opening up about other things that they may need (ok) like clothing or shelter, or whatever... other insecurities they may have."
	"We try not to have… a specific script. We try to make it very client-centered."
	"I think it's more of it comes up in conversation, rather than it's a direct question. That's not a question I add into the nutrition education each time but if I feel like the conversation is heading that direction I will ask 'do you have feel like you have enough food in the home?'"
Challenges posed by male presence while assessing food insecurity	
	"I was thinking about... the African [immigrant] community. They're very 'macho' culture. If there is a male head of the household, and I've seen this more than once. He feels he has failed you if you ask them 'do you need food?' and I have a husband and wife in my office where he said no. He was speaking for the family. And she said 'yes! Please!' you know.... You have to cross that boundary if you want these people to accept [help] even when they really need it. You have to present it in a way that the man doesn't feel like he's begging."
	"You do have those different cultures that especially if the male is there you can see the apprehension of 'no, we don't [need food]' when the mom is like 'yes, please.'
	"[With Congolese families] because mom doesn't speak English…we have a kind of interesting situation because there's one gentleman that comes with everybody... he's just helping them out."

	"Sometimes if they don't have interpreters or let us know they need one they bring [a male] friend to interpret and I think a lot gets lost…[A male] friend or family member will answer for them, [I] try and ask them to ask the person but sometimes they will just continue to answer for them."
	"Are they related? he's like, 'no, she's my friend' but like he's answering all her questions for her. How much weight did you gain while you're pregnant, her friend answers... like how do you know? So it's not necessarily their husband or partner."
Individualized client education to promote use of WIC food items	
	"I think how it's presented makes a difference."
	"I [will] ask...ok what foods do they like eating?"
	"We ask them multiple questions trying to figure out what do they like? How can we adjust something for them or give them an idea of how to adjust something? That's typically how we address [client education]."
	"They do not know how to use the beans. They do not really drink a lot of milk. They do not use a lot of cheese. So it is a matter of asking and teaching them...what you can do... I will usually suggest to them to pick certain things [where] you can use the cheese... that suits your palate."
	"They want to know how [to] use [WIC foods] they just don't know how."
	"I'm thinking about a home visit I did for this woman [who] was African French-speaking, spoke some English. Enough to get through the home visit with her. She's a gestational diabetic and had just gotten that diagnosis and so she's opening her pantries asking me, can I eat this? Can I eat that? And it was American food. They gave her the ingredients to make tacos. It was just completely out of her realm, let alone her gestational diabetes."
	"With Hispanic population[s] I see a lot more beans, rice, tortillas, cheese, yogurts. And I'll focus on those foods and how to gear those toward healthier variety within their cultural preferences."
Diverse WIC staff can better assess food insecurity in diverse populations	
	"If I have a Chinese speaking client, if I speak to them [in Chinese and] they feel more comfortable to disclose."
	"You know that's a connection because they can see that, they can connect to you. They're more ready to disclose."
	"They feel more comfortable. [When] I speak to somebody [in] Spanish and then they disclose their need[s]… So I see that cultural part, that connection part."
	"[French speaking staff member] help[s] with the Congolese families and translate[s]... It's the connection."

	"It’s the connection to your culture that you feel more comfortable to open up."
	"Because of the language they feel more comfortable calling you…so I see that cultural part, that connection part. You connect more toward your people from the same ethnic group…you couldn’t take [that cultural connection] away."

1. Language adaptation to assess food insecurity

One of the major themes that was discussed consistently in each focus group was language adaptations used by WIC staff in their assessment of food insecurity in families. WIC staff reported assessing food insecurity with every WIC client during every visit. WIC staff reported being unfamiliar with a formal survey questionnaire, such as the 1-item questionnaire designed to assess food insecurity in households with children and reported integrating their food insecurity assessment as a component of the overall conversation with WIC clients. The theme of language adaptation to assess food insecurity includes two subthemes: cultural adaptation and utilizing a conversational approach to assessments.

Subtheme 1. Cultural Adaptation. For WIC staff serving diverse clients, including Latinx and foreign-born populations, a commonly discussed adaptation included addressing not only whether or not the clients had enough food but also whether or not they were able to find food they were familiar with and that was culturally appropriate in terms of their nutritional preferences. Language used to express this adaptation included asking them if they "have a hard time finding food that they usually eat" or "finding food that they are familiar with."

Subtheme 2. Conversational Approach to Assessments. WIC staff consistently reported the importance of allowing assessments such as those for food insecurity "kind of happen naturally as part of the conversation" and trying to avoid a "specific script" in favor of a "client-centered" approach. One participant captured the importance of making WIC visits client-centered and conversational:

It's kind of just easing all those fears like, that's not what this is for, we're really trying to help you, so just trying to normalize the conversation. And just kind of just present it to them like, ok this is a service that we provide, just real nonchalantly, and then it makes them more comfortable to open up. And then sometimes after asking them about food, you get them, when they feel more comfortable, you get them opening up about other things that they may need like clothing or shelter, or whatever...other insecurities they may have.

Allowing conversation to flow naturally while being sure to assess food insecurity helps WIC clients to feel "more comfortable" in expressing their concerns and opening up about food insecurity.

2. Challenges posed by male presence while assessing food insecurity

Since the WIC clinics serve clients from a wide range of ethnic and language backgrounds, challenges related to male presence at women's WIC visits, related to both culture and language, was identified as a barrier to assessing and addressing food insecurity in WIC families. Culturally speaking, WIC staff interviewed spoke of the importance of navigating culture in families where the "male head of the household" may have difficulty disclosing food insecurity. As stated by one focus group participant: He feels he has failed you if you ask them, "Do you need food?"…. You have to cross that boundary if you want these people to accept [help] even when they really need it. You have to present it in a way that the man doesn't feel like he's begging. A common theme included incongruence between the responses offered by the male head of the household and the mother, in which the husband says "no" but the wife says "yes, please!"

WIC staff also spoke of the role of cultural brokers in their public health clinics, such as with Congolese families in one area, "We have a kind of interesting situation because there's one gentleman that comes with everybody." For WIC clients who do not speak English, WIC staff explained:

Sometimes if they don't have interpreters or let us know they need one they bring [a male] friend to interpret, and I think a lot gets lost…. [A male] friend or family member will answer for them, [I] try and ask them to ask the person, but sometimes they will just continue to answer for them.

A male presence, whether related to the WIC client or a cultural broker for the community, poses a

significant barrier to WIC staff's ability to best assess and address food insecurity.

3. Individualized client education to promote use of WIC food items

Based on their direct experiences of providing nutrition counseling to WIC clients, focus group participants indicated that individualized client education to promote the use of WIC food "makes a difference" in promoting the use of WIC food items in families' diets, particularly for WIC participants of diverse cultural backgrounds. Focus group participants commonly expressed beginning individualized nutrition education by asking, "What foods do they like eating?" to then formulate how to "adjust" their food preferences toward "healthier variet[ies] within their cultural" norms. In speaking of nutrition education with WIC clients of diverse cultural backgrounds, one focus group participant noted:

They do not know how to use the beans…milk…[or] cheese. So it's a matter of asking and teaching them…what you can do…. I will usually suggest to them to pick certain things [where] you can use the cheese…that suits your palate.

There is a desire among WIC participants to utilize the provided foods as echoed in one focus group participant's remark, "They want to know how to use [WIC foods], they just don't know how," but barriers persist. One focus group participant spoke of a home visit for a WIC participant of African origin whose unfamiliarity with American foods posed a barrier in utilizing items given to her as well as proper management of her gestational diabetes and recalled,

She's opening her pantries asking me, "Can I eat this? Can I eat that?" And it was American food. They gave her ingredients to make tacos. It was just completely out of her realm.

WIC staff consistently noted the importance of individualizing client education to promote use of WIC food items, particularly for clients of diverse cultural backgrounds.

4. Diverse WIC staff can better assess food insecurity in diverse populations

Focus group participants also vocalized the importance of diversity in the staffing of WIC clinics, noting that diverse WIC staff can better assess food insecurity in diverse populations. Participants noted that it's the connection to culture that helps WIC clients feel more comfortable in opening up. One focus group participant stated, "If I have a Chinese speaking client, if I speak to them [in Chinese, then] they feel more comfortable to disclose." WIC staff consistently remarked that being able to speak with WIC clients in their native language enables WIC clients to feel that "they can connect to you" and "disclose their need[s]." As stated by one focus group participant:

Because of the language they feel more comfortable calling you…so I see that cultural part, that connection part. You connect more toward your people from the same ethnic group… you couldn't take [that cultural connection] away.

The focus group participants reported that measuring food insecurity can be a difficult task given the sensitivity of the topic, especially in nonmetropolitan communities that are seeing an unprecedented growth of Latinx and French-speaking African immigrants, but that having diversity among WIC staff, especially WIC professionals that share cultural and language connections with the local WIC client population, greatly enhances the program's ability to assess and address food insecurity.

DISCUSSION

This qualitative study identified a range of food insecurity assessment approaches commonly used by WIC professionals in culturally diverse communities. Four themes emerged from four focus groups related to the experiences of WIC professionals screening for food insecurity: 1) Language adaptation to assess food insecurity, 2) Challenges posed by male presence while assessing food insecurity, 3) Individualized client education to promote use of WIC food items, 4) Diverse WIC staff can better assess food insecurity in diverse populations.

The language and cultural adaptations we found follow a similar content model to the adaptations that are made in prevention interventions delivered to diverse populations {Pineros-Leano, 2017 #14480;Castro, 2004 #14632}. Castro and colleagues (2004) developed a model that categorizes cultural adaptations into three types: 1) cognitive informational, 2) affective-motivational, and 3) environmental. Cognitive informational adaptations help address language issues, which is related to the first, third, and fourth theme that we found. Although language adaptations and modifications are the most superficial, they are also the most important ones since they help establish connection and verbal communication between the WIC provider and the client. Moreover, having a diverse pool of WIC providers is also a type of adaptation by promoting openness since the clients may be able to relate to the providers and can develop rapport faster (Castro et al., 2004). The second type of adaptation—affective-motivational—modifies the content of the interventions to make them relevant to the population of interest. In our study, we found that themes two and three were affective-motivational modifications that WIC providers made to facilitate food insecurity disclosure and to promote the utilization of foods provided by WIC.

WIC providers in this study also noted that they needed to make adaptations in order to get through the barrier of having a male presence in the room who might feel uncomfortable disclosing issues of food insecurity. This finding is similar to past studies that show facilitators for screening and referral included having a trusting and caring relationship between the caregiver and the provider, which encouraged disclosure of sensitive information (Knowles et al., 2018). In addition, WIC providers noticed that it was vital to provide clients with personalized education about the types of food they receive from WIC since many of them might not be accustomed to those types of foods. Although Castro (2004) mentions a third adaptation—environmental—we did not find that type of adaptation in our study. Environmental adaptations consider the ecological systems of the different populations. Usually these adaptations provide transportation to clients and flexible business hours (Castro et al., 2004; Pineros-Leano et al., 2017). It is possible that in this study we did not find such modifications because, as a government entity, these adaptations might be much more complicated and out of reach for WIC providers. Nonetheless, this study offers insight into how WIC professionals are attempting to provide client-centered care by assessing for food insecurity informally.

In addition, new immigrant destinations such as the locations utilized in this study often do not have the infrastructure to identify and serve food-insecure foreign-born families. Historically, immigrants predominantly settled in 10 states, including California, Texas, and Florida (Lichter & Johnson, 2009). However, starting in the 1990s, immigration trends have changed, and immigrants have started to migrate to new destinations, including states in the Midwest and the South (Donato et al., 2007; Lichter & Johnson, 2009). However, because these destinations do not have a history of immigration, they do not enjoy the same infrastructure and resources that traditional destinations do, making it difficult for newcomers to settle. Across the four focus groups, there was inconsistency in how WIC staff assessed for food insecurity among diverse populations. As a strength, two of the WIC programs employed staff from diverse backgrounds who were bilingual in Spanish, French, or Mandarin and used their language skills and shared cultural identity to assess for food insecurity. Given the rapid change in demographics, public institutions need to adapt faster to the ways in which they assess the needs of these communities. Particularly, assessing and screening diverse immigrant communities can be challenging given that some communities might not be willing to disclose this information, or the scales used might not be validated among some communities. This study reinforces the importance of clinics having the funding to provide on-site translators and WIC staff that mirror the background of local populations served.

This qualitative study has a number of strengths since it was one of the first attempts to explore WIC professionals' experiences assessing for food insecurity among diverse low-income families. Without qualitative exploration, it is unclear if providers are using a uniform assessment such as the USDA risk assessment or a client-centered adapted

assessment. We were successful in recruiting consenting active WIC professionals in three public health districts to share their experiences and perspectives. Despite these strengths, there is a limitation because we interviewed a convenience sample of WIC professionals in a central region of a Midwestern state. Thus, the experiences of the interviewed WIC professionals do not speak to the experiences of all WIC professionals and/or professionals in other nonmetropolitan destinations of new immigrants.

CONCLUSION

This qualitative focus group study examined WIC professionals' approaches to assessing and addressing food insecurity among the diverse maternal–child clientele that nonmetropolitan WIC programs serve. It identified key adaptations that WIC staff utilize to authentically connect with WIC families, especially Latinx and immigrant families. This study adds confirmation to the importance of employing patient-centered care approaches in public health prevention programming. Future studies are needed to further identify adaptations as related to service use and program retention. As the composition of our WIC participating populations becomes increasingly more diverse, it will be important for policy makers and public health clinic administrators to take into account considerations for the hiring of WIC staff from diverse backgrounds that mirror local populations served. More importantly, clinics will need to make provisions for all staff to complete ongoing training on culturally appropriate approaches to assessment of food insecurity. These measures will enhance the ability of public health programming to improve the well-being of nutritionally at-risk maternal–child populations.

References

Casey, P., Goolsby, S., Berkowitz, C., Frank, D., Cook, J., Cutts, D., . . . Meyers, A. (2004). Maternal Depression, Changing Public Assistance, Food Security, and Child Health Status. Pediatrics, 113(2), 298-304. doi:10.1542/peds.113.2.298

Castro, F. G., Barrera, M., & Martinez, C. R. (2004). The Cultural Adaptation of Prevention Interventions: Resolving Tensions Between Fidelity and Fit. Prevention Science, 5(1), 41-45. doi:10.1023/B:PREV.0000013980.12412.cd

Chilton, M., Black, M. M., Berkowitz, C., Casey, P. H., Cook, J., Cutts, D., . . . Frank, D. A. (2009). Food Insecurity and Risk of Poor Health Among US-Born Children of Immigrants. Am J Public Health, 99(3), 556-562. doi:10.2105/ajph.2008.144394

Coates, J., Frongillo, E. A., Rogers, B. L., Webb, P., Wilde, P. E., & Houser, R. (2006). Commonalities in the Experience of Household Food Insecurity across Cultures: What Are Measures Missing? The Journal of nutrition, 136(5), 1438S-1448S. doi:10.1093/jn/136.5.1438S

Coker, T. R., Moreno, C., Shekelle, P. G., Schuster, M. A., & Chung, P. J. (2014). Well-Child Care Clinical Practice Redesign for Serving Low-Income Children. Pediatrics. doi:10.1542/peds.2013-3775

Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A. (2017). Household food security in the United States in 2016.

Donato, K. M., Ii, C. M. T., Nucci, A., & Kawano, Y. (2007). Recent Immigrant Settlement in the Nonmetropolitan United States: Evidence from Internal Census Data. Rural Sociology, 72(4), 537-559. doi:10.1526/003601107782638666*

Dubois, L., Farmer, A., Girard, M., & Porcherie, M. (2006). Family food insufficiency is related to overweight among preschoolers'. Social science & medicine, 63(6), 1503-1516. doi:https://doi.org/10.1016/j.socscimed.2006.04.002

Eisenmann, J. C., Gundersen, C., Lohman, B. J., Garasky, S., & Stewart, S. D. (2011). Is food insecurity related to overweight and obesity in children and adolescents? A summary of studies, 1995–2009. Obesity reviews, 12(5), e73-e83. doi:doi:10.1111/j.1467-789X.2010.00820.x

Essel, K., Burke, M. P., Weissman, M., & Dietz, W. (2017). Exploring Food Insecurity Screening and Referral Practices of Pediatric Providers in Metropolitan Washington, DC. The FASEB Journal, 31(1_supplement), 297.297-297.297. doi:10.1096/fasebj.31.1_supplement.297.7

Faught, E. L., Williams, P. L., Willows, N. D., Asbridge, M., & Veugelers, P. J. (2017). The association between food insecurity and academic achievement in Canadian school-aged children. Public Health Nutrition, 20(15), 2778-2785. doi:10.1017/S1368980017001562

Gao, X., Scott, T., Falcon, L. M., Wilde, P. E., & Tucker, K. L. (2009). Food insecurity and cognitive function in Puerto Rican adults. The American journal of clinical nutrition, 89(4), 1197-1203. doi:10.3945/ajcn.2008.26941

Gundersen, C., & Kreider, B. (2009). Bounding the effects of food insecurity on children's health outcomes. Journal of Health Economics, 28(5), 971-983. doi:https://doi.org/10.1016/j.jhealeco.2009.06.012

Howard, L. L. (2011). Does food insecurity at home affect non-cognitive performance at school? A longitudinal analysis of elementary student classroom behavior. Economics of Education Review, 30(1), 157-176. doi:https://doi.org/10.1016/j.econedurev.2010.08.003

Andrew D. Jones, Francis M. Ngure, Gretel Pelto, Sera L. Young; What Are We Assessing When We Measure Food Security? A Compendium and Review of Current Metrics, Advances in Nutrition, Volume 4, Issue 5, 1 September 2013, Pages 481–505, https://doi.org/10.3945/an.113.004119

Knowles, M., Khan, S., Palakshappa, D., Cahill, R., Kruger, E., Poserina, B. G., . . . Chilton, M. (2018). Successes, Challenges, and Considerations for Integrating Referral into Food Insecurity Screening in Pediatric Settings. J Health Care Poor Underserved, 29(1), 181-191.

Kral, T. V., Chittams, J., & Moore, R. H. (2017). Relationship between food insecurity, child weight status, and parent-reported child eating and snacking behaviors. Journal for Specialists in Pediatric Nursing, 22(2), e12177. doi:doi:10.1111/jspn.12177

Laraia, B., Vinikoor-Imler, L. C., & Siega-Riz, A. M. (2015). Food insecurity during pregnancy leads to stress, disordered eating, and greater postpartum weight among overweight women. Obesity, 23(6), 1303-1311. doi:doi:10.1002/oby.21075

Laraia, B. A., Siega-Riz, A. M., & Gundersen, C. (2010). Household food insecurity is associated with self-reported pregravid weight status, gestational weight gain, and pregnancy complications. J Am Diet Assoc, 110(5), 692-701. doi:10.1016/j.jada.2010.02.014

Lichter, D. T., & Johnson, K. M. (2009). Immigrant gateways and Hispanic migration to new destinations. International Migration Review, 43(3), 496-518.

Maxwell, D., Watkins, B., Wheeler, R., & Collins, G. (2003). Food Security in Complex Emergencies: Building Policy Frameworks to Address Longer-term Programming Challenges. Retrieved from: https://s3.amazonaws.com/academia.edu.documents/40469839/The_Coping_Strategies_Index_A_tool_for_r20151129-14788-cvh2fz.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1539900913&Signature=P%2FeVNUIGjx01sxRbF1paO9yHunU%3D&response-content-disposition=inline%3B%20filename%3DThe_Coping_Strategies_Index_A_tool_for_r.pdf

Metallinos-Katsaras, E., Gorman, K. S., Wilde, P., & Kallio, J. (2011). A Longitudinal Study of WIC Participation on Household Food Insecurity. Maternal and child health journal, 15(5), 627-633. doi:10.1007/s10995-010-0616-5

Metallinos-Katsaras, E., Must, A., & Gorman, K. (2012). A Longitudinal Study of Food Insecurity on Obesity in Preschool Children. Journal of the Academy of Nutrition and Dietetics, 112(12), 1949-1958. doi:10.1016/j.jand.2012.08.031

Nagata, J. M., Gomberg, S., Hagan, M. J., Heyman, M. B., & Wojcicki, J. M. (2018). Food insecurity is associated with maternal depression and child pervasive developmental symptoms in low-income Latino households. Journal of Hunger & Environmental Nutrition, 1-14. doi:10.1080/19320248.2018.1434101

Pan, L., Sherry, B., Njai, R., & Blanck, H. M. (2012). Food Insecurity Is Associated with Obesity among US Adults in 12 States. Journal of the Academy of Nutrition and Dietetics, 112(9), 1403-1409. doi:10.1016/j.jand.2012.06.011

Pérez-Escamilla, R., & Segall-Corrêa, A. M. (2008). Food insecurity measurement and indicators. Revista de Nutrição, 21, 15s-26s.

Pineros-Leano, M., Liechty, J. M., & Piedra, L. M. (2017). Latino immigrants, depressive symptoms, and cognitive behavioral therapy: A systematic review. Journal of Affective Disorders, 208, 567-576. doi:http://dx.doi.org/10.1016/j.jad.2016.10.025

Rose-Jacobs, R., Black, M. M., Casey, P. H., Cook, J. T., Cutts, D. B., Chilton, M., . . . Frank, D. A. (2008). Household Food Insecurity: Associations With At-Risk Infant and Toddler Development. Pediatrics, 121(1), 65-72. doi:10.1542/peds.2006-3717

Schmeer, K. K., & Piperata, B. A. (2017). Household food insecurity and child health. Maternal & child nutrition, 13(2), e12301. doi:doi:10.1111/mcn.12301

Seligman, H. K., Laraia, B. A., & Kushel, M. B. (2010). Food Insecurity Is Associated with Chronic Disease among Low-Income NHANES Participants. The Journal of nutrition, 140(2), 304-310. doi:10.3945/jn.109.112573

Swindale, A., & Bilinsky, P. (2006). Household dietary diversity score (HDDS) for measurement of household food access: indicator guide. Washington, DC: Food and Nutrition Technical Assistance Project, Academy for Educational Development.
Tabb, K. M., Malinga, T., Pineros-Leano, M., & Andrade, F. C. (2017). Impact of Pre-Pregnancy Weight and Gestational Weight Gain on Birth Outcomes by Nativity in the United States: A Systematic Review. Paper presented at the Healthcare.
Webb, P., Coates, J., Frongillo, E. A., Rogers, B. L., Swindale, A., & Bilinsky, P. (2006). Measuring household food insecurity: why it's so important and yet so difficult to do. The Journal of nutrition, 136(5), 1404S-1408S.
Zezza, A., Carletto, C., Fiedler, J. L., Gennari, P., & Jolliffe, D. (2017). Food counts. Measuring food consumption and expenditures in household consumption and expenditure surveys (HCES). Introduction to the special issue. Food Policy, 72, 1-6. https://doi.org/10.1016/j.foodpol.2017.08.007