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Envisioning Food Security: Highlighting Neighborhood Resident Expertise through Community-Based Research

ACTION-RESEARCH

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ABSTRACT

Food security in the U.S. presents a paradox: despite being one of the wealthiest countries in the world, 13.7 million U.S. households experienced food insecurity in 2019. El Paso County, Colorado, is no exception. Through a community-academic partnership, we formed a diverse research team that conducted a collaborative qualitative analysis to identify residents' desires, knowledges, and visions towards more just and equitable food access in their communities. This analysis utilized 35 in-depth interviews with residents from three food-insecure neighborhoods in Colorado Springs, Colorado, from 2019–2020. We find that residents expressed a holistic vision for community food security and endeavored to make this vision a reality by navigating various and intersecting food-access challenges. Our findings challenge previous literature on food choice that has identified low-income residents as either lacking an appropriate nutrition knowledge or lacking interest in pursuing a healthy diet. Residents held complex understandings of healthy food and food systems. Additionally, residents employed a range of strategies to gain access to the healthy foods they desired, attempting to confront various structural barriers to healthy food access. They held extensive knowledge about what their community needs to move closer to the visions they expressed. These insights will provide critical knowledge for successful food security interventions.

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INTRODUCTION

Food security in the U.S. presents a paradox: despite being one of the wealthiest countries in the world. 13.7 million U.S. households experienced food insecurity in 2019 (Coleman-Jensen et al., 2020). Food security is a matter of social equity, affected by race and class among other factors. Past studies have found that people of color and low income are more likely to face food insecurity (Bowen et al., 2021; Coleman-Jensen et al., 2020). Disparities hold long-term consequences; food insecurity is associated with several adverse health outcomes (Gundersen & Ziliak, 2015). El Paso County, Colorado, is no exception. In 2019, El Paso stood 32nd out of 60 Colorado counties for health outcomes, with a greater prevalence of premature death, low birth weights, and poor or fair health days than Colorado at large (University of Wisconsin Population Health Institute, 2019). Adverse health outcomes are geographically concentrated; there is a 16-year difference in life expectancy across census tracts in Colorado Springs, the county's urban center (El Paso County Public Health, 2018). Reflecting patterns in the literature, the areas of Colorado Springs with lower food and vehicle access, higher rates of poverty and public assistance usage, greater proportions of people of color, and greater disparity in life expectancy are overlapping (El Paso County Public Health, 2018; U.S. Census Bureau, 2019; USDA Economic Research Service, 2021a).

Literature indicates the benefits of having multiple food access interventions in a single community, as community members may face different kinds of food insecurity or prefer different resources (Edge & Meyer, 2019). Traditional interventions such as federal and charitable assistance can coexist alongside alternative grassroots efforts that focus on community ownership of food production and distribution (Caspi et al., 2017; Edge & Meyer, 2019; Neff et al., 2009; Pothukuchi, 2004). Research indicates that building redundancy into a food system is not inefficient but instead promotes food system resilience (Tendall et al., 2015).

This research collaboration between community leaders and sociologists engages with residents of low-income, low-food access neighborhoods to inform individual-, community-, and structural-level solutions to inequitable food access. Utilizing 35 in-depth interviews with residents from three low-income, low-food access neighborhoods in Colorado Springs, Colorado collected from 2019 to 2020, this paper identifies residents' food-related knowledge, skills, and desires to inform more just and equitable food access in their communities. According to indigenous scholar Eve Tuck, academics operate on a flawed theory of change, which assumes that "documenting damage"—highlighting stories of pain, humiliation, and oppression—will create social change (Tuck, 2009). Rather than documenting damage, we instead center participant perspectives and engage community members in analysis to "search for desire" (Tuck, 2009) and generate a resident-driven vision of food access that can inform neighborhood interventions.

Through a community-academic partnership, we formed a research team to conduct a collaborative qualitative analysis. We are three staff members and one youth intern from Food to Power, a local community-based food justice organization, and two members of the Colorado College Department of Sociology. We are six women, including four women of color, who combine our multiple forms of knowledge, lived experiences, skills, and resources. As a place-based study, this research generates specific knowledge geared toward actionable change in one city. However, we believe our collaborative methodology and desire-based approach can serve as a model for others tackling food access challenges in their cities and communities.

BACKGROUND

FOOD ACCESS AND SOCIAL INEQUALITY

Access to fresh food is a basic requirement for life. Food insecurity—"a household-level economic and social condition of limited or uncertain access to adequate food" (USDA Economic Research Service, 2021b)—is a prevalent and well-studied phenomenon (Coleman-Jensen et al., 2020; Gunderson & Ziliak, 2018). An estimated 13.7 million households in the U.S. faced food insecurity in 2019 (Coleman-Jensen et al., 2020). The consumption of adequate, nutritious food is a cornerstone of health; lack of food access is associated with various negative long-term health impacts (Gundersen & Ziliak, 2015, Laraia, 2013; Lee et al., 2012). Food insecurity, and its attendant consequences, are not evenly distributed in society: low-income households, Black and Latinx households, households with children, and single-parent households are all overrepresented among the food-insecure (Coleman-Jensen et al., 2020). Moreover, scholars argue that the structural inequalities embedded into our social and economic systems are fundamental causes of inequitable access to healthy food (Bowen et al., 2021; Holt-Giménez, 2017; Neff et al., 2009).

FOOD ACCESS BARRIERS AND COPING MECHANISMS

Barriers to fresh and culturally relevant food access are complex and intersecting. Transportation to food retailers is a key factor in access, and Americans overwhelmingly use their cars to go grocery shopping (Coveney & O'Dwyer, 2009; Ver Ploeg et al., 2015). Food insecure families are more likely to use someone else's car, walk, bike, or use public transit when compared to food secure households (Kaiser et al., 2019; Ver Ploeg et al., 2015). Additionally, food prices are an important consideration for many households working with a limited budget (Farrell et al., 2018; Kaiser et al., 2019; MacNell

et al., 2017). Nutrient-dense foods, like fresh fruits and vegetables, often cost more per calorie (Drewnowski & Spector, 2004). Low-income households purchase less healthy foods than their wealthy counterparts (Allcott et al., 2017). Higher social capital, social support, and social cohesion are associated with food security (Dean & Sharkey, 2011; King, 2017), while the sense of having no friends in the neighborhood can contribute to the racial gap in food security (Koh et al. 2020). These factors and more (availability of culturally appropriate foods, arrangement of household finances, knowledge of health and nutrition, cooking ability, food preferences) converge in complex ways as people endeavor to access food (Coveney & O'Dwyer, 2009; Freedman et al., 2013; MacNell et al., 2017; Moak et al., 2018; Whelan et al., 2002; Wiig Dammann & Smith, 2009). The focus of some food access literature on geographic factors, primarily the presence (or absence) of nearby grocery outlets, is contested (Sadler et al., 2013; Wrigley et al., 2002). Scholars caution that analyses based solely on geographic measures, particularly the emphasis on "food deserts," oversimplify the issue of food access (Coveney & O'Dwyer, 2009; MacNell et al., 2017; Sadler et al., 2016). By failing to acknowledge the structural issues around food deserts, namely financial insecurity, spatial-focused studies ignore the complex realities of food procurement (George & Tomer, 2021). The present study contributes to this literature, using qualitative methods to highlight the complexity of food access issues in a specific local context.

Qualitative studies have further revealed the coping mechanisms that limited-resource households employ to prevent or minimize food shortages, such as going to multiple stores to find the best prices, stretching leftovers across multiple meals, utilizing their social network, and utilizing institutions from federal food assistance to local charities (Ahluwalia, 1998; Jarrett et al., 2014; Kempson, 2003). Building off scholars such as Jarrett et al. (2014) and MacNell et al. (2017), this study emphasizes participant agency and creativity in navigating barriers to healthy food access. Beyond "coping mechanisms," we conceptualize residents' food access strategies as important sources of local expertise that can be used to generate interventions tailored to the specific assets and challenges of these neighborhoods.

INTERVENTIONS PROMOTING NUTRITIONAL FOOD ACCESS

Interventions to improve food access range widely in scope and impact. Federal food assistance programs, such as the Supplemental Nutrition Assistance Program (SNAP), provide households with more resources to acquire food. However, not all eligible households enroll in SNAP, and many households remain food insecure while participating in the program (Gunderson & Zilliak, 2018; Koh et al., 2020; Cheng & Tang, 2016; Schanzenbach, 2019). Traditional charitable interventions, like food pantries, provide participants with food directly. However, pantries often provide nonperishable staples and lack nutrient-dense foods like fresh produce (Simmet et al., 2017).

On the other end of the spectrum are educational interventions that focus on changing individuals' behavior. Healthy food access interventions following this model seek to improve individuals' food purchasing choices and shopping behavior, personal health, hygiene, and nutritional knowledge (Kaiser et al., 2015; Medeiros et al., 2005; Wardlaw & Baker, 2012). As Neff et al. (2009) argue, "focusing exclusively on individual behavior in the absence of larger systemic changes may not only be less effective or ineffective, but it can also result in victim-blaming" (p. 284). We find that such models lack a structural analysis and often operate on paternalistic assumptions about low-income or food insecure people's desires, skills, and knowledge. Such interventions may fail to take advantage of existing assets by presuming deficits in these areas.

Finally, community-based initiatives offer hope for interventions at the local level. Scholars suggest effective community food assessments and interventions should be guided by local stakeholders and tailored fit that particular community's context and desires (Cohen et al., 2002; Freedman et al., 2013; Moak et al., 2018; Pothukuchi, 2004; Vásquez et al., 2007). Strategies that give control to the community can focus on small-scale, immediate needs while simultaneously "improving the quality of life and economic opportunities" (O'Hara & Toussaint, 2021, p. 6). Exemplified by the Urban Food Hubs in Washington, DC, the District of Columbia provided direct resources to community organizations to scale existing initiatives and used a model that prioritized "upfront investment" (O'Hara & Toussaint, 2020, p. 6). Similarly, the success of the Victory Garden's direct provision of seeds during the Covid-19 pandemic in Lawrence County, Kentucky, speaks to how community-based initiatives not only close gaps in food accessibility but improve community well-being, both physically and mentally (Kirk, 2021). We focus on the complex interaction between both structure and agency as individuals navigate structural barriers and envision changes that could enhance food access.

FIELD SITES: MEADOWS PARK, KNOB HILL, AND HILLSIDE NEIGHBORHOODS

This paper focuses on resident perspectives from three neighborhoods in Colorado Springs with characteristics associated with food insecurity: Meadows Park, Knob Hill, and Hillside (El Paso County Public Health, 2018). Home to 5,582 people, Meadows Park is located just south of downtown Colorado Springs, hedged in on all sides by three major thoroughfares (U.S. Census Bureau, 2019). Notably, the Meadows Park median household income, $34,088, is about half of the median household income

in the county (U.S. Census Bureau, 2019). Located east of downtown Colorado Springs, an estimated 3,755 people reside in the Knob Hill neighborhood. Though Knob Hill is both the whitest and wealthiest neighborhood in our sample, the median income is still significantly lower than the county average, and the percentage of white residents is marginally lower. Finally, Hillside is located directly southeast of the downtown Colorado Springs neighborhood. Hillside is home to 6,593 residents and has the densest population of Black and Latinx residents among the three neighborhoods (U.S. Census Bureau, 2019).

Though these neighborhoods have slightly different demographic characteristics, they all fall significantly below the median household income and are more racially diverse than El Paso County as a whole. Knob Hill and Hillside are identified by the USDA Economic Research Service as "Low Income and Low Access" at one mile to the nearest supermarket and "Low Vehicle Access," meaning a "significant number of residents are more than ½ mile from the nearest supermarket" and that "more than 100 [of] the housing units do not have vehicle[s]" (2021a). Meadows Park is identified as "Low Income and Low Access" at half a mile to the nearest supermarket (USDA Economic Research Service, 2021a). The demographics of residents in these three neighborhoods disproportionately represent populations impacted by food insecurity compared to El Paso County as a whole.

The demographics of Meadows Park, Knob Hill, and Hillside align with literature that implicates race and class in food insecurity (see Table 1). Scholars show that structural racism may be a fundamental cause of food insecurity (Bowen et al., 2021; Koh et al., 2020). Black, Latinx, and low-income people are more likely to reside in food deserts than their white or wealthy counterparts (Walker et al., 2010; Treuhaft & Karpyn, 2010). Even when food retailers are present, they provide less fresh or nutritious food than stores located in higher-income or predominantly white areas (Treuhaft & Karpyn, 2010). The present study solicits individual residents' perspectives on food access in their neighborhoods—where disparities often take shape due to the continued segregation of U.S. cities by race and class (Iceland & Wilkes, 2006).

METHODS

COMMUNITY-ACADEMIC PARTNERSHIP

The goal of this research partnership was to create a co-learning experience for all members of the team, following a Community-Based Research (CBR) approach. Although CBR methodologies vary, there are a few essential qualities scholars agree upon. CBR 1) is based on equitable community-academic relationships; 2) values and combines multiple forms of knowledge; 3) is aimed toward actionable change (Stoecker, 2012; Wallerstein & Duran, 2006).

Research Team Positionality

Through a community-academic partnership, we formed a diverse research team to combine insider and outsider community knowledge, lived expertise, and academic skills and resources for this qualitative analysis. Florencia Rojo is an assistant professor of sociology trained in qualitative research. Her ethnic and gender identities (queer, bilingual English/Spanish-speaking immigrant Latina woman) inform her analysis of marginalized experiences. However, having been food secure for most of her life, she relies on the expertise of community partners for insights into access. Eliza Guion was an undergraduate student when we began our research. She is a white woman with familial wealth who has not personally experienced food insecurity. She began her relationship with FTP as a volunteer and continues to work in food justice. Erin Taylor is the Director of Food Education at FTP. She is a white cis woman raised in the upper-middle class. She has worked in food education for

	EL PASO COUNTY	MEADOWS PARK	KNOB HILL	HILLSIDE (TRACT 28)
Population	698,974	5,582	3,755	6,593
Median household income	$68,779	$34,0888	$42,384	$41,583
Families living in poverty (%)	7.0%	23.2%	15.3%	12.9%
Children living in poverty (%)	13.2%	46%	27.3%	17.8%
White residents	69.1%	53.8%	64.4%	53.0%
Black residents	6.0%	11.5%	7.6%	14.9%
Hispanic/Latino residents	17.1%	22.1%	20.7%	25.1%
Multiracial residents	4.1%	9.9%	4.8%	2.1%
Life expectancy	81.74 (women)/77.85 (men)	72.9	69.0	73.1

Table 1 Demographic Information by Neighborhood and County.
(Data Sources: El Paso County Public Health, 2017; Tejada-Vera et al., 2020; U.S. Census Bureau, 2019).

over a decade and has been a SNAP recipient, food service worker, and farmworker. Cordelia Feess-Armstrong is the Volunteer and Youth Education Manager at FTP. She is a multiracial (Black and white) woman born and raised in Colorado Springs. She grew up in a single-parent household, and her family has been on food stamps, and at times food insecurity has impacted their lives. Patience Kabwasa is the Executive Director of FTP. She is a multiracial (Black, Latina, and white) single mother who draws on her personal experience of growing food to supplement what she could provide for her family when she was earning a low income. She was one of two interviewers in this study and shared her lived experience with participants to build rapport. Gabriela Gil was an intern with the FTP Food-Systems Leadership for Youth program and a recent high school graduate when she joined the research team. She is a Latina woman and resident of Knob Hill. The Food Access Manager for FTP, a Latina woman who grew up in Colorado Springs, also conducted interviews for this study.

In addition to our individual identities and social positions, we also formed a "research team identity" through the process of conducting this project, which materialized in a "collective perspective on the work" (Muhammad et al., 2015, p. 1057). Our shared interests in food justice, community power, and equitable partnership guided our decision making.

DATA COLLECTION

In acknowledgment of county-wide disparities, local stakeholders organized a Food Systems Assessment (FSA) in El Paso County to inform food access initiatives. This project was facilitated through a partnership between Food to Power (FTP) and the El Paso County Public Health department. In the first stage, the FSA partnership identified areas of opportunity for neighborhood-based solutions to healthy food access based on ratios of less healthy to healthy food retail outlets, transit access, poverty levels, and life expectancy (El Paso County Public Health, 2018). Food to Power then identified four target neighborhoods within these areas of opportunity that also had higher proportions of residents of color compared to the city and county as a whole. In the second phase, during 2019–2020, two FTP staff members conducted semi-structured interviews with residents of these neighborhoods: 14 interviews with Meadows Park residents (including one with two participants), ten interviews with Knob Hill residents (including one with three participants), and eleven interviews in Hillside (including two interviews with three participants each), for a total of 42 participants across 35 interviews. Data from the fourth neighborhood, Pikes Peak Park, was incomplete due to challenges with data collection during the Covid-19 pandemic and was excluded from the analysis.

Because of the two interviewers' positionality (staff members of a respected local food justice organization, both women of color from Colorado Springs), they had already gained entrée into several community spaces where they recruited participants for the study. They began by recruiting interviewees through door-to-door canvassing. When the COVID-19 pandemic began, and canvassing was not feasible because of public health concerns, they began recruiting at No-Cost Grocery programs. Additionally, they identified local leaders who were involved in delivering services and/or running businesses in each neighborhood. These key informants helped FTP staff identify additional participants. Finally, participants were recruited via flyers, word of mouth, informal networks, and tabling during community events.

In semi-structured interviews, participants were asked about perceptions of food retail options ("What do you like about shopping for food in your neighborhood?"), health ("What does healthy food mean to you?," "Do you feel like your health has been affected by your surroundings?"), current shopping habits ("Where do you get most of your food?," "How do you decide where to get your food?"), cooking knowledge/ability ("Do you have any barriers that prevent you from cooking?"), and opinions on proposed interventions ("If there were a farm and art market in your neighborhood, would you attend?," "What location would be best?"). As new themes emerged, we added questions to the interview guide, e.g., perceptions of local/organic foods ("What is your impression of organic foods?").

Interviews took place in participants' homes, community centers, local businesses, and gathering spaces. Semi-structured interviews lasted approximately 30 minutes, and participants received a $25 gift card for their participation. Informed consent was obtained from all participants. No identifying information was recorded, and identifying information shared by participants during the interview was excluded from the analysis. It is FTP's practice to provide no-cost groceries without requiring individuals to answer questions or provide documentation in an effort to eliminate barriers to food access and avoid surveilling community members. In order to maintain trust with residents, FTP staff employed this same practice in our research partnership and did not collect participant demographic characteristics. To maintain confidentiality, we used pseudonyms to refer to participants. Interviews were audio-recorded, transcribed using machine learning software (Otter.ai), and then cleaned by members of the research team for accuracy.

ANALYSIS

From fall 2020 to spring 2021, a collaborative partnership was formed between two academic researchers, three FTP staff, and one FTP youth intern (the co-authors of this paper) to conduct a qualitative analysis of the data from Meadows Park, Knob Hill, and Hillside. In community-academic collaborations, community partners are most likely to participate in recruitment and data collection

and least likely to participate in the analysis and interpretation stages of research (Cashman et al. 2008). However, community partner involvement in analysis creates an opportunity to strengthen community capacity and improve findings. Because of this, our team prioritized community partner participation in analysis, and all co-authors contributed substantively to the findings. The team utilized a grounded theory analysis method through coding and memo-ing (Charmaz, 2006).

The co-authors met biweekly for approximately six months to conduct analysis. In early meetings, Florencia Rojo offered workshops on qualitative coding for FTP staff to build organizational and community research capacity. The research team then practiced coding for descriptive, interpretive, and analytic themes in interview excerpts. Once all team members felt confident in their coding abilities, each researcher was assigned transcripts to code between meetings. Transcripts were coded manually in text documents. Although this method was time-intensive (e.g. manually pulling code reports), it was more cost effective for community researchers who did not need to be trained in specific software or acquire a software license. Through this process, the research team developed a list of initial codes and sub-codes and developed the first iteration of the codebook. In subsequent meetings, the team discussed the coding process, new codes that emerged from the data, and reviewed one another's transcripts. Throughout this process, co-authors collaboratively developed and modified the codebook of all codes. All co-authors wrote analytic memos during the coding process between meetings, which were discussed as a group and utilized to elaborate, refine, and define the focused codes (Charmaz, 2006). Emerging themes related to how residents view healthy food and the strategies residents use to access food were used for this article (see Table 2).

Community dissemination and feedback

Ongoing dialogue among researchers, FTP staff, and community members (including those at the intersection of these categories) is critical to ensuring the credibility of our results. In 2021, the co-authors created a one-page flyer and a set of posters summarizing the key findings of this analysis. The posters and flyers were utilized at a community event to share findings with residents who had the opportunity to provide reflections at interactive stations. We have also distributed the flyer at four food distribution locations in Colorado Springs, located within the field sites of this study, along with a brief survey to solicit resident feedback about our findings, beginning in 2022. This iterative cycle of research and dialogue will continue to inform FTP programs and advocacy and future lines of inquiry for our research team.

FINDINGS

This paper aims to highlight neighborhood residents' food-related knowledge, skills, and desires to inform a community-driven vision of food security in Colorado Springs. What follows are the results of the qualitative project with residents from three food insecure neighborhoods. We find that residents expressed a holistic vision for community food access and navigated various food-access challenges as they endeavored to make this vision a reality. First, residents held complex understandings of healthy food and food systems. Second, residents employed a range of strategies to access the healthy foods they desired, attempting to confront various structural barriers to healthy food access. They held bigger picture knowledge about what their community needed to move closer to the visions they expressed.

RESIDENTS KNOW AND VALUE HEALTHY FOODS

The first major theme in this study centered on residents' knowledge of and attitude toward healthy food. While we were most interested in what residents themselves consider "healthy," for this paper, we reference residents' concepts against the USDA's Dietary Guidelines for Americans. The recommended dietary pattern for U.S. adults includes vegetables, fruits, grains, dairy, protein, and oils (in order of descending amount) (USDA & USDHHS, 2020). We find that residents possess a high

THEMES	FOCUSED CODES	INITIAL CODES
Residents Know and Value Healthy Food	Defining Good Food	fresh food, healthy food, local food, organic food, taste of food, pleasurable food, homemade food
	Knowing Food Systems	food systems knowledge, interrogating food systems, food knowledges, "knowing your food," food system interdependence, contesting "organic"
Residents Strategize Their Resources	Asserting Agency	asserting agency, creativity under constraints, navigating bureaucracy, strategizing finances, strategizing time
	Utilizing Family and Community Networks	working together, relying on community, "doing your part," community investment, community resources, mutual aid, using social network, social support for transportation
	Knowing Community Needs	community knowledge, growing food knowledge, food politics, advocating for change,

Table 2 Coding Structure.

level of food knowledge from nutrition to food systems and value healthy eating. Residents' definitions of good food were frequently complex and accounted for several interrelated factors (e.g., freshness, flavor/taste, nutritional value, origin, etc.). Many complicated the dominant image of organic as the food label to strive for, offering more nuanced and complex analyses of systemic impacts on food, including both environmental and economic factors.

Defining Good Food: Fresh, Nutritious, and Balanced

Residents envisioned a healthy diet as comprised of fresh foods, pairing this idea of freshness with items such as fruits, vegetables, and meats. Even when they had limited access to food they considered healthy, residents held complex definitions of what good food meant. When asked what healthy food meant, participants' most common response involved freshness. Even when residents also had other definitions of "good food," freshness always came up, and all residents discussed fresh food at some point in their interview. Residents defined freshness in several ways; some connected it to locally grown or hunted food, others to how long the food sat in the grocery store, or how many steps in the supply chain between the food's origins and the resident's dinner table.

Residents were specific about foods they desired and considered healthy. Many residents listed certain food items; most of these were produce (avocados, squash, chilis, peaches, cucumber, tomato, broccoli, beets, potatoes, corn, etc.) and meat ("good meat," game, pork, shrimp, catfish, etc.). These foods all fall within the USDA's recommended healthy dietary pattern (USDA & USDHHS, 2020). Several residents described "processed" foods as harmful, unhealthy, or undesirable in quality.

In addition to freshly sourced foods, residents valued freshly prepared or home-cooked meals that enabled control over what they eat. For Marisa, a resident of Knob Hill, cooking locally grown food at home constituted good, healthy food:

> **Marisa:** Healthy food is something I would cook at home. Something that is fresh, not frozen. Probably something that is homegrown or grown in the area and not filled with preservatives and things like that.

Marisa's vision of healthy food was multifold. She includes freshness, local sourcing, and home-cooking alongside a specific ingredient requirement: no preservatives. Some residents shared the latter sentiment, expressing distrust and fear of highly processed foods with long ingredient lists, including preservatives. Residents felt they could achieve healthy eating when they had control over what they put in their bodies and through home cooking. Like many residents, Marisa's complex definition of "healthy food" was hard to realize in her daily life. Later in the interview, Marisa described doing most of her shopping at Walmart because of its price and proximity, but she said it could be challenging to find fresh foods there except in the organic section, which was out of her price range. Nonetheless, she did most of her own cooking.

Several residents described assessing foods for freshness when they went shopping. For Monty, a Meadows Park resident, signs that vegetables came from the earth indicated that they were "fresher" than pristine vegetables often found at grocery stores. Like Marisa, he mostly shopped at Walmart, citing the price and convenience. However, he was enthusiastic about his experience at Farmers Markets, exclaiming, "Yeah, oh yeah! I enjoyed it. You get the fresh beets, you know, dirty and everything. We're pretty, we're from, we're made out of dirt so it don't matter." Anticipating that some people might find dirt on their food off-putting, he drew connections between the soil on fresh vegetables and human bodies. Monty enjoyed accessing food at farmers markets, where he could easily identify foods as fresh from the earth by their dirty appearance. Meredith, a resident from Meadow Park, also described visually assessing her food for freshness, with particular attention to meats:

> **Meredith:** Some people get theirs ordered. I don't like to order my food online; I like to sit there and look at it, you know, check the meats. Make sure it's not been sitting there for a long time, you know, 'cause they *do* do that in the store. There will be packaged meat. I like to pick out my food... [I'm concerned about] processed meat, packaged meat. Sometimes you buy like the little steak meats, and you open it, it look bright on the outside, but when you flip them over, they're brown.

The quality of meat, judging by how it was raised, how long it sat at the store, its color, etc., was important to many residents. For Meredith, finding meat that was up to her standard (fresh, brightly colored) was challenging, but she went out of her way to "look at it" and "check the meats" herself. Other participants echoed this sentiment, both in their value of what they considered "good meat" and the challenges in obtaining it. For example, one participant mentioned that "good meat" was one of the most difficult items to obtain at a food pantry.

Some residents also understood healthy food to entail certain nutritional qualities. Emily brought up the federal MyPlate guidelines: "So there's the whole food guidelines, the MyPlate, where you do half fruits and vegetables, quarter grain and quarter protein. So that's what I usually tend to go for." Not only did Emily share knowledge of nutrition guidelines, but she also reported basing food choices on this information. Other residents employed the same concept of nutrition albeit more loosely, mentioning "balanced" meals or

listing multiple food groups like fruits and vegetables, proteins, or grains as important. Two residents identified themselves as diabetic, and both described gaining health expertise due to managing their condition, which shaped their nutritional knowledge and food choices. Overall, residents described multicomponent definitions of healthy food that included freshness (in sourcing and preparation) alongside nutrition and reported a desire for diets comprised of fresh, nutritious foods.

Knowing Food Systems

Alongside their definitions of healthy food, residents also reported complex knowledge of the larger food system, from production to distribution. One question in particular generated responses that illuminated residents' understanding of the food system: What is your impression of organic foods? Many residents contested the dominant discourse around organic foods, which frames organic practices as better for people and the planet. Many participants took issue with the price of organic foods, which put these products out of reach of low-income consumers. Even those who desired organic foods had trouble affording them. A few residents went beyond a critique of organic prices and offered analyses of organic agriculture more broadly, including the polluted growing environment and the economic challenges that small farmers face. Gina explained why she perceives organic food as overrated:

> **Gina:** As a person who grows things, I can tell you there's no… I believe in my opinion there is no true organics. The air is polluted, the water is polluted, the ground is polluted; how can you have pure organic?…I don't think [organic is] all that great. I mean, yeah, obviously, when you have lettuce from the Salinas Valley that's been polluted from cow runoff, yes, that's a big issue; that's an obvious one…I think you just have to know what you're buying and prepare it properly and store it properly. And I think cooking from scratch making things from scratch is better than buying stuff that's already chopped up because already you compromised it by having a human touch it. Chop it, store it, shelf-life is diminished, and nutrients are diminished.

Gina grounds her critique of organic foods on her own experience with food production. She names the polluted state of the wider growing environment as a concern and points to a local case study. In addition, she voices concern about the loss of nutritional value along the food supply chain. While Gina is critical of the food system she operates in, she is also careful to highlight how she acts as an agent. She describes exerting control where one can as an imperative: "you have to know what you're buying…" Not only did Gina possess a high level of knowledge about her local food system, but she also reported basing her food buying, preparing, and storing practices on this knowledge.

Deirdre, who grew up on a farm in Colorado, also contested the value of organic foods while demonstrating a complex understanding of food systems. She was specifically concerned about the role of agribusiness in the food system and the challenges small producers confront:

> **Deirdre:** The ones that like to say 'oh, organic is everything,' I get that, yeah. Knowing your food doesn't have chemicals, that's great, that's fantastic. However…if people actually knew where the food was coming from and how it was being made…maybe our food would be produced a lot better…You got the country people; they don't call their food organic…It's just food, it's just grown properly, no chemicals…But you hike up the bills on the farmers…yes, it's going to make it harder for us to have access to these foods. My mom had to shut down most of her farm due to the fact of the price of seed. You lose your farmers, you lose your food. It doesn't matter whether you think it's organic or it's chemical…The companies are the ones that are making it chemical, not the farmers.

Deirdre expanded the scope of responsibility for healthy food production practices beyond farmers and implicated agriculture companies. Drawing on her family's experience, she describes farmers' experience under competitive market systems that favor large-scale producers. She underscores the importance of food systems knowledge, arguing that production practices could change if consumers knew more about the food system they operate in. While Deirdre supports the premise of organic foods in theory, she critiques over-reliance on the "organic" label, which she sees as signaling status and access more than actual quality.

RESIDENTS STRATEGIZE THEIR RESOURCES

The second major theme that emerged from the data was the skills residents use to navigate intersecting structural barriers to accessing food. Food access cannot be obtained by addressing one element alone, such as cost, distance, time constraints, transportation, food quality, etc. Instead, participants engage in complex decision making in which they evaluate and strategically utilize interconnected food-related resources. Additionally, many residents view limited food access as a collective (rather than individual- or household-level) issue that requires re-envisioning the neighborhood's relationship to food from production to distribution. They highlight the collective assets that can promote food security at a community level.

Asserting Agency: Creativity Under Constraints

Residents deployed various resources and strategies at their disposal in order to surmount structural barriers to healthy food access. From economic oppression (poverty) to accessibility, unsafe infrastructure, and poor public transportation, residents highlighted the many obstacles they navigated to achieve a healthy diet. For some residents, what they wanted to eat was still out of reach, despite their best efforts.

While residents described structural barriers, they also centered their agency. For example, when Vanessa was asked why she did not feel her health had been affected by her surroundings, she replied, "Because I don't allow it to," a sentiment shared among other residents. Residents indicated an awareness that their surroundings could negatively impact their health but framed their strategic actions and decisions as mitigating this potential harm.

Residents spent time and energy performing the mental calculations necessary to organize their various resources for healthy food access. Residents strategized about when to go to grocery outlets by going when they received their paycheck and loading up for the month, attending the farmers market near the end of the day when prices dropped, going to a food pantry on the "right" day of the week, or grocery shopping on the way to or from somewhere else. As one participant described:

> **Alana:** I go to Save-A-Lot or Walmart, and if I can't get a ride since I don't drive, I'll go to the Safeway right here. But like I said, Safeway and King Soopers, I'm wasting my money. It's too expensive. You don't walk out with a happy cart of food for a hundred dollars that I can feed my family. I go to this food pantry thing on Thursdays, and then I try to get into the restaurant…during the week sometime. And that's literally what feeds my children and my family. It's those two spots that I hit for food banks. Because before I had, like I said, the money we'd go to Costco, you know what I mean?

Participants like Alana exerted a great deal of cognitive labor (the often invisible, strenuous mental work of running a household) on planning how, when, and where to access affordable food to feed their families. Strategies included: considerations of where to get different items on their list, going to a farther but more specialized store, using limited financial resources to buy at the grocery store what they knew the pantry wouldn't offer (e.g. meat), going to multiple pantries throughout the week, or going to grocery outlets which balance affordability with quality. Hillside resident Barbara even analyzed the sale patterns of different foods by looking at ads, saying:

> **Barbara:** If you look at the ads, most, most of the things that go on sale, go on sale every six weeks. So when chicken goes on sale, I'm the crazy lady in the grocery store that probably has ten packs of chicken breast in her cart. And by the time I get to the end of that, it's on sale again.

Like Alana, Barbara is highly strategic in her food purchases and demonstrates the level of mental energy required to procure something expensive like chicken without easy access to affordable foods.

Sometimes when people could not get what they wanted, despite their best strategizing, they made tradeoffs, and even these tradeoffs were thoughtful. Xavier, a resident of Knob Hill, went to extreme lengths to access the food he desired and considered healthy. While Xavier's experience of walking multiple miles was not widespread among residents, his description of his decision-making process captures the way many residents considered the tradeoffs of their food choices:

> **Xavier:** So, nutrition is the main thing. See, I'll walk. If there's a McDonald's 20 ft away from me and Chipotle two miles away, I'll walk to the Chipotle to get that food. Cause if you go to McDonald's, you spend 40 percent of the money, get 20 percent of the nutrition, and be hungry two hours later.

Here, Xavier simultaneously considered distance, affordability, nutrition, and hunger satisfaction. He explained how he would utilize his resources (time, physical ability) to access food and how he makes tradeoffs between affordability and food quality, ultimately deciding to pay more for what he considers more nutritious and filling food. Many residents described similarly complex food-decision making processes that considered their desires, the resources at their disposal, the access barriers they faced, and the sacrifices they were willing to make.

Utilizing Family Ties and Community Networks

An important means of accessing healthy foods for residents was leveraging their social networks. A common example of this was using connections with friends and family to carpool or borrow a car to get to a grocery outlet. For example, Meredith used her daughter's car to go grocery shopping, while Sue took the bus to the grocery store and asked her children to pick her up for the ride home with full grocery bags. In addition, Anna Rose, an 82-year-old resident of Hillside, demonstrated her significant reliance on social networks to access groceries, stating:

> **Anna Rose:** Well, I have a friend that picks me up because she's a younger friend because she goes and picks up food too. So, she come pick me up and take me. And then if people there will help me carry it if I got, you know, I can't carry a lot of stuff. They'll help me take it out and put it in the car.

Without the support of community ties, it would be difficult to arrange transportation to the store. The physical excursion required to shop would create another barrier to accessing food. Like Anna Rose, Monty described coordinating rides home from the Meadows Park Community Center No-Cost Grocery program with his wife:

> **Monty:** This really close by to me, it's really close, I can walk here. Then my wife comes by later on and picks me up. It's pretty much easy for me because I really got to know the people. You know, like I said there, I've only been here for about a year, so, we really kind of like click. Plus, I'm a funny guy.

In addition to strategizing transportation and timing to bring food home from the community center, Monty explains that accessing food there has facilitated additional social connections. For residents who used the community center to access groceries, the program's social atmosphere was a highlight.

Residents described a wide variety of ways they utilized social networks in addition to coordinating transportation needs. A woman from Ellis' church helped him with food shopping and cooking. Melvin called on his extended family to bring him food during snowstorms. Kelly used a friend's connection to the Air Force Commissary to buy cheaper meat and avoid spending extra at the supermarket. Polly picked up extra food at the food pantry for her daughter, who had trouble with SNAP. Emily and her neighbors shared produce from their backyard gardens with each other. Overall, residents identified their family ties and community networks as important resources to both give and receive food-related support.

Knowing Community Needs, Assets, and Opportunities

In addition to thinking creatively and strategically about accessing food for themselves and their families, residents viewed food knowledge as a collective asset. Many had ideas about improving their community's relationship to food, food access, and ownership over food production and distribution. These visions were grounded in complex knowledge of the neighborhood's specific resources, potential, and constraints. For example, Monty was passionate about youth empowerment, and he saw food education as one way to achieve this,

> **Monty:** Just knowing where your food comes from, like, from [farm] to plate type of deal. There should be more restaurants here showing the kids how to do that stuff. You know from the garden, and then how they use it at the restaurant, the pig, the cow. So the kids could know.

Monty envisioned practical food education and skill-building, particularly for youth. In these ways, residents positioned food education as promoting food security by increasing their and their fellow residents' agency in the food system. Rather than emphasizing individual knowledge, Monty saw community-level education as a pathway to improving neighborhood food security. Bill had experience working as a dietary aide in a nursing home. He talked about meeting different dietary needs, such as allergies or certain levels of fats and salts in food: "It's a lot of stuff that pertains to food that people just neglect and don't know about." His comment suggests that individual food education could be useful when it is tailored to residents' specific needs and preferences.

Residents not only had visions of how to improve neighborhood food security but also identified what the challenges of actualizing such interventions might be. Emily shared Monty's desire for collective food education, discussing the benefits of bringing garden education and food-sharing networks into her neighborhood, Meadows Park. She also discussed the potential limitations to her vision:

> **Emily:** Because Colorado Springs, it's pretty hard to grow food here…[there's a] short growing season. And then we have massive hailstorms that really are difficult to deal with…So I think that's something, but there's a something I heard about in I think it's in either Washington or Oregon, where…you could sign up as a gardener. And then sell your produce…my neighbor and I both garden, and so when we have extra zucchini or whatever, I give it to neighbors and stuff like that…Or even just having gardening classes where people can learn how to grow their own food…So, like at my school, I'm trying to start that up, but it's just my time is limited… Teaching it through school is good, but it's not necessarily going to be the most effective for gardening because most of the time, those kids have to have their own space to grow things.

Emily was particularly knowledgeable and passionate about gardening, mentioning it over fifteen times throughout her interview. However, her vision of community food access was not unique among residents. Here, Emily recognized the climate-related challenges of growing food in Colorado and the potential shortcomings of using the public school system to promote garden education. Yet, even as she named these constraints, she remained excited about finding ways to promote food production knowledge and local food exchanges. Residents' expertise in local contexts and their unique opportunities and challenges provide key insight for identifying and successfully implementing local food security interventions.

DISCUSSION

This study indicates that residents of low-income and low-food access neighborhoods in Colorado Springs hold complex and nuanced understandings of food, food systems, and how to create better systems for food access in their communities. In the face of multiple, intersecting structural barriers, residents employ creative strategies to access food.

Residents of the three low-income low-food access neighborhoods in this study encountered barriers to accessing food consistent with those identified elsewhere, including transportation (Kaiser et al., 2019; Ver Ploeg et al., 2015), budget and prices (Farrell et al., 2018; Kaiser et al., 2019; MacNell et al., 2017), and in some cases, social isolation (Dean & Sharkey, 2011; King, 2017). Many residents described the particular challenge of accessing food they considered nutritious and fresh, which lower-income households are less likely to purchase (Allcott et al., 2017). However, our findings challenge some previous literature on food choice that has presented low-income residents as lacking appropriate nutritional knowledge or lacking interest in pursuing a healthy diet (Wiig Dammann & Smith 2009; Wiig & Smith 2008) or presented individual food education as a solution to healthy food access (Kaiser et al., 2015; Medeiros et al., 2005; Wardlaw & Baker, 2012). On the contrary, we found that residents of three low-income, low food-access neighborhoods have specific, detailed, and informed visions of healthy eating and engage in strategic and collective processes to obtain nutritious foods. These findings support the notion that social and economic inequalities, not individual behaviors and knowledge, are the fundamental cause of low food access (Bowen et al., 2021; Holt-Giménez, 2017; Neff et al., 2009).

Residents described these multiple factors not as isolated barriers but as intersecting conditions that shaped their strategies for accessing food (Ahluwalia et al., 1998; Coveney & O'Dwyer, 2009; Freedman et al., 2013; MacNell et al., 2017; Moak et al., 2018; Whelan et al., 2002). Residents exercise a great deal of mental work to manage these intersecting barriers and organize their resources towards obtaining food. Building from existing literature that has identified the many coping strategies that limited-resource households employ (e.g., Jarrett et al., 2014; Ahluwalia, 1998; Kempson, 2003), we conceptualize these strategies as a form of expertise that can be leveraged toward community-based solutions (Moak et al., 2018; Vásquez et al. 2007).

Additionally, many residents had knowledge about the nutritional value of foods and had a complex understanding of food systems and how these systems, from production to distribution, had the potential to contribute to or reduce the health and well-being of a community. Combined with their expertise in their neighborhoods and regions' social, environmental, institutional, and economic conditions, residents used this food system knowledge to envision and propose neighborhood projects.

Due to the complex nature of food access issues, holistic, multi-prong approaches that combine multiple interventions may be the most effective (Neff et al., 2009). While we would caution against behavior-change education models that presume that low-income residents have skill and knowledge deficits, we recognize that several residents expressed a desire to learn more about food. Many of them also envisioned community education and empowerment opportunities, such as youth gardening programs. Scholarly work shows examples of successful interventions that combine educational programming with increased resources, such as healthy cooking classes that take place at a food pantry, where participants can acquire the items necessary to cook (An et al., 2019; Caspi et al., 2017; Kaiser et al., 2015). One educational model we propose in light of our findings is to leverage residents' existing knowledge and skills through peer-to-peer educational programs. Rather than spending time and resources training staff on skills (e.g., gardening), organizations can bring together community experts and provide a platform for local knowledge-sharing. FTP is currently developing a pilot that would compensate neighborhood residents for sharing their expertise and encourage residents to apply their wisdom to larger-scale projects.

Most importantly, any strategy to address food insecurity or promote food access should honor the unique characteristics, desires, and assets of residents of the community in question. Local stakeholders should guide the priorities of any given intervention to ensure its effectiveness (Cohen et al., 2002; Freedman et al., 2013; Moak et al., 2018; Pothukuchi, 2004; Vásquez et al., 2007). Our findings highlight the importance of selecting appropriate methodological approaches to analyze community well-being. By establishing a community-academic partnership, our research team drew on various forms of knowledge (Muhammad et al., 2015). The analytical insights from community workers embedded in the neighborhoods of study, with insider knowledge of food insecurity, protected the team from relying on unconscious stereotypes of people experiencing poverty and assumptions established in the literature (Cashman et al., 2008). The academic training of Colorado College partners brought rigorous and systematic qualitative analysis to the research process. Several findings in this study increased the research team's understanding of the community's vision for greater and more equitable food access in Colorado Springs. Already, Food to Power has put these findings into action by creating a food center in the Hillside neighborhood that will be a space for urban farming, composting, micro-enterprise development, workshops, and fresh grocery distribution. Here, neighbors will come together to learn, teach one another, gain employment, and advocate for fresh food.

LIMITATIONS

Our findings are likely not representative of all low-income low-food access residents of Colorado Springs and other similar cities as we rely on resident perspectives from three neighborhoods. Nonetheless, we believe these findings can be useful for organizational program development in these communities and as a framework for developing programs elsewhere. Because neighborhood leaders recruited many (though not all) interviewees, participants may have had more contact with community organizations and services than the typical resident. They, therefore, may have more knowledge of resources available in their community. Because demographic characteristics of participants were not collected, there are limitations in the conclusions we can make regarding the importance of race and gender, among other factors, which are salient in the literature. Additionally, because participation was entirely voluntary, there is additional potential for bias.

CONCLUSION

As food insecurity is socially produced (Bowen et al., 2021; Holt-Giménez, 2017; Neff et al., 2009; Weiler et al., 2015), it follows that responses to food insecurity should be conceived at the collective and neighborhood level rather than exclusively through individual behavioral interventions. In line with literature that suggests improving community well-being requires an understanding of structural conditions and broader food environments, this study offers a collective, neighborhood-level vision of food access from residents with deep knowledge of broader food systems and their communities (Corburn, 2007; David & Messer, 2011; Lee, 2002; Neff et al., 2009; Weiler et al., 2015). This study builds on existing qualitative literature that has identified the various social, economic, and environmental conditions that shape food access, and extends it to include the community assets in the form of neighborhood resources and expertise that can be leveraged toward neighborhood food security (Coveney & O'Dwyer, 2009; Cannuscio et al., 2010; Freedman et al., 2013; MacNell et al., 2017; Moak et al., 2018; Whelan et al., 2002).

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COMPETING INTERESTS

The authors have no competing interests to declare.

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