

Benchmarking South Carolina Recreation Providers' Role in Addressing Summertime Food Insecurity

Barry A. Garst

Clemson University

Thomas Clanton

Young Harris College

David White

Clemson University

Lori Dickes

Clemson University

Sarah Griffin

Clemson University

Ryan J. Gagnon

Clemson University

Abstract

During the summer months food insecurity increases for some children because many youth who receive meals during the academic year do not receive meals during the summer. Federal summer feeding program data suggest that recreation providers play a role in addressing summertime food insecurity, but few targeted studies have been conducted. This study assessed South Carolina recreation provider participation in programs addressing summertime food insecurity as well as challenges associated with summer feeding program implementation. Data were collected from 58 South Carolina recreation providers (i.e., summer camps and parks and recreation agencies) via an online questionnaire. Provider-reported quantitative, qualitative, and spatial data were analyzed. Findings were visualized using concept mapping and ArcGIS Pro mapping. Twenty-three of the 58 (39.6%)

Barry A. Garst is a Professor in the Department of Parks, Recreation and Tourism Management at Clemson University. **Thomas Clanton** is an Assistant Professor in the Department of Outdoor, Sport, and Recreation Studies at Young Harris College. **David White** is a Research Assistant Professor in the Department of Parks, Recreation and Tourism Management (PRTM) at Clemson University. **Lori Dickes** is an Associate Professor in the Department of Political Science at Clemson University. **Sarah Griffin** is a Professor in the Department of Public Health Sciences at Clemson University. **Ryan J. Gagnon** is an Assistant Professor in the Department of Parks, Recreation and Tourism Management at Clemson University. Please send all correspondence to Barry A. Garst at bgarst@clemson.edu.

responding organizations participated in a summer feeding program. Transportation of youth to a feeding site was the most salient challenge. Spatial analyses suggest that communities with the greatest economic needs are underserved by recreation providers in this study sample. Recreation providers are important community-based intermediaries between federal, state, and local food suppliers and youth/families in need, with food distribution via recreation providers occurring through diverse youth program mechanisms (i.e., camp sessions, parks, recreation centers, and after school program sites). However, more recreation providers can be engaged as summer feeding sponsors or sites. Future research examining summertime food insecurity following the onset of COVID-19 as well as the ways in which summer feeding program recipients are engaging with recreation providers is needed.

Introduction

During the academic year children have access to daily meals through their schools, but during the summer months food insecurity increases for many children (Gordon et al., 2017). Food insecurity is defined as “consistent, dependable access to enough food for active, healthy living” (Coleman-Jensen et al., p. v). To address children’s greater susceptibility to food insecurity during summertime, federal summer feeding programs (e.g., Summer Food Service Program; SFSP) were developed to reimburse sponsors like schools, local government agencies, camps, faith-based organizations, and other community-based organizations that serve free, nutritious meals and snacks to low-income children during the summer months (Food Research & Action Center, 2018; Giglotti, 2005).

Sponsor participation in summer feeding programs requires organizations to take on responsibilities outside of their normal day-to-day operations, including in some cases the management of multiple feeding sites (Giglotti, 2005). In addition to being fully responsible for administering their summer feeding program (U.S. Department of Agriculture, 2013), sponsors must also attend training; recruit eligible sites; hire, train, and supervise staff and volunteers; competitively procure food to be prepared or identify a vendor who can deliver meals; monitor all sites; prepare claims for reimbursement; ensure sites are sustainable; and maintain all program documents for three years (Food Research & Action Center, 2018; US Department of Agriculture, 2013). This administrative responsibility and accountability may constrain some providers from participating in summer feeding programs. For example, Molaison and Carr (2006) found that paperwork volume was the number one constraint faced by state agency directors when starting an SFSP. The researchers also cited a lack of trained staff and access to appropriate facilities as major barriers for organizational participation in an SFSP program (Molaison & Carr, 2006). State agency directors further suggested that partnerships with community groups, such as the YMCA, and improved federal resources and training would help encourage their agencies to participate.

Although the USDA tracks organizational involvement in SFSP, a limited number of studies have examined summer feeding program involvement from the perspective of recreation providers like summer camps and park and recreation (P&R) agencies (Popkin et al., 2019; Singletary et al., 2012). Further, institutions representing these recreation providers have limited data on the role of their member organizations in addressing food insecurity. For instance, the American Camp Association—the national organization representing camps across sectors (e.g., for-profit, not-for-profit, governmental)—has collected no state or national-level data on camp participation in summer feeding programs and other strategies used by camps to address food insecurity (L. Brown, personal communication, March 19, 2019). This knowledge gap provides an opportunity to better understand organizational participation in summer feeding programs as well as factors that prevent organizations from participating in such programs (Beaulieu, 2014).

Thus, the primary purpose of this study was to assess South Carolina recreation provider participation in programs and initiatives targeting summertime food insecurity, where the term “recreation provider” included summer camps and P&R agencies. A better understanding of such participation may inform strategies for engaging and supporting summer feeding sponsors and sites from the overall population of recreation providers. The study research questions were:

1. What are the characteristics of South Carolina recreation providers involved in addressing summertime food insecurity?
2. How are South Carolina recreation providers addressing summertime food insecurity?
3. What challenges do South Carolina recreation providers experience when implementing summer feeding programs?
4. How are South Carolina recreation providers collaborating within community contexts to address summertime food insecurity?, and
5. What geographic areas of South Carolina are served by recreation providers involved in summer feeding programs?

Literature Review

FOOD INSECURITY

More than 11% of US households face food insecurity (Coleman-Jensen et al., 2019). When access to food is insecure, families often reduce the quality, variety, and desirability of their food and reduce calorie intake due to the lack of resources to access higher quality and more desirable food (Beaulieu, 2014). As with many challenges facing less-resourced populations, food security is conceptualized on a spectrum, from the absence of food (i.e., starvation) to

more acute conditions (i.e., regular hunger, reduced diet quality) (Hendriks, 2015; US Department of Agriculture, 2019a).

Although close to 35% of households under 185% of the Federal Poverty Line are food insecure (Beaulieu, 2014), food insecurity can fluctuate depending on household characteristics, socioeconomic factors, and the distribution of racial and ethnic minorities within a region (Elsheikh & Barhoum, 2013; Havewala, 2020). For instance, households with adolescents may exhibit lower food security, as these older children require more calories to be adequately fed, resulting in these families needing to provide for the higher food demand (Anderson et al., 2016). These challenges often lead adult family members to go without food or for younger children to receive less than the recommended amount of food (Anderson et al., 2016).

Food insecurity can differ based on the race and ethnicity of a given population. In fact, racialization of food access and income inequality are widely recognized as leading causes of food insecurity among ethnic minority populations (Elsheikh & Barhoum, 2013; Morales et al., 2020). Additionally, racial segregation impacts the availability of healthy food options, leaving more segregated neighborhoods with fewer healthy food outlets and greater distances to travel to access them (Havewala, 2020). Food deserts (i.e., areas in the US where residents have limited access to healthy and affordable food) are most often associated with the percentage of the population identifying as a minority, the percentage with less than a high school degree, and the percentage in poverty (Dutko et al., 2012).

Experiencing food insecurity can contribute to youth's physical and mental changes and have negative consequences for their cognitive development, physical well-being, psychological health, and family life (Bhattacharya et al., 2004). Furthermore, the stress associated with household food insecurity can result in behavioral and psychological dysfunction in children and adults (Cook et al., 2006). Given this combination of stress and hunger, evidence suggests food insecure children experience greater rates of anxiety and irritability than their low-income peers who are not experiencing hunger (Kleinman et al., 1998). Further, food insecurity is associated with lower resilience levels for youth and their families and correspondingly poorer ability to successfully navigate negative or stressful life events (Rutter, 2012). For these reasons, food insecurity is a critical issue facing organizations providing programs and services to youth and their families.

The study was informed by Weiser et al.'s (2015) food security and health framework, which identifies individual, household, and community factors that can influence the relationship between food insecurity and health. The community level focuses on structural factors such as food availability and education. It is within the community level that summertime recreation providers may influence structural factors impacting food insecurity, such as improving access to food support through feeding sites or facilitating summer

feeding program enrollment among youth and families being served. These structural factors are central to this study's examination of summertime feeding program participation among South Carolina recreation providers.

FOOD INSECURITY IN SOUTH CAROLINA

Food insecurity presents a serious challenge to South Carolina families (Helsel et al., 2019; Mobley et al., 2020). While an estimated 4 million South Carolina children are served through a summer feeding program (South Carolina Department of Education, 2018), 1 in 6 South Carolina children reside in a home that experiences food insecurity (Feeding America, 2020).

Food insecurity is more prevalent in some areas of the state, such as within counties included in the "I-95 corridor." South Carolina's I-95 corridor is a 17-county region that includes approximately one million people and stretches from North Carolina to Georgia (see Figure 3). Communities within the I-95 corridor face significant challenges. As noted by Moore and Lawrence (2009), "the Corridor has long been under-developed. With that underdevelopment have come problems ranging from struggling schools to cyclical poverty to lagging health and social well-being indicators" (p. 17). In short, counties along the I-95 corridor are the poorest in the state and include 7 of the 8 poorest South Carolina counties (Moore & Lawrence, 2009). Furthermore, the I-95 corridor is notably more racially and ethnically diverse than the rest of the state, with 45% of the state made up of individuals identified as "African-American," "Hispanic or Latino," or multiracial (Moore & Lawrence, 2009).

RECREATION PROVIDER PARTICIPATION IN SUMMER FEEDING PROGRAMS

Access to food through summer feeding programs typically occurs from May to September, reflecting the typical summer schedule based on traditional school calendars. For example, through the SFSP, breakfast and lunch are served for free through open or enrolled sponsors (US Department of Agriculture, 2019b). While it is estimated that federal food programs provide 3 million children with a meal on a typical summer day, 84% of students (~17.9 million children) who received free or reduced-price meals during the 2014 academic year (i.e., October to April) did not receive a meal from a federal summer food program (Food Research & Action Council, 2015). Thus, there is a gap between youth who need access to food during the summer and those receiving food through summer feeding programs.

While recreation providers such as parks and recreation agencies and summer camps are prominent sponsors of (and sites for) summer feeding programs, few targeted studies of recreation provider involvement in summer feeding programs have been conducted, particularly from the perspective of summer feeding sponsors. Rather, data about recreation provider involvement in summer feeding programs have been aggregated within larger reports

of sponsor involvement in summer feeding programs (US Department of Agriculture, 2020) or grouped within broader categories (e.g., combining parks and recreation within a “government” category and combining summer camps with colleges and universities) (US Department of Agriculture, 2019c). The studies of recreation provider involvement in addressing food insecurity that have been conducted have only examined factors that impacted program success. For example, in a food insecurity study involving community stakeholders that included community-based recreation providers, Popkin et al. (2019) found that expanding summer feeding options and supporting mobile food services were needed as strategies sponsors could use to address transportation and access barriers experienced by youth and families in rural areas. Other food insecurity studies have considered recreation providers’ involvement in collaborations (e.g., Food Planning Associations) as part of comprehensive community strategies for addressing food insecurity (Singletary et al., 2012). Given the gap in the literature specific to the experience of recreation providers in addressing summertime food insecurity, this study explored this topic within the state of South Carolina. Specifically, this study examined recreation provider organizational characteristics; summer feeding program participation, barriers, and collaborations; and geographic areas of the state served by recreation providers.

Methods

PARTICIPANTS AND DATA COLLECTION

This study was approved by the Institutional Review Board of Clemson University and informed consent was obtained for all participants. South Carolina recreation program administrators (i.e., camp directors, parks and recreation agency administrators) were recruited through a collaboration with the American Camp Association (ACA) and the South Carolina Recreation and Parks Association (SCRPA). ACA and SCRPA recruited recreation program administrators using the email addresses they had on file for their respective members. The entire population of ACA-accredited and affiliated South Carolina camps ($n = 28$) and SCRPA-affiliated member agencies ($n = 105$) were recruited into the study (total $n = 133$). After receiving a recruitment email from ACA or SCRPA, prospective respondents were directed to an online consent letter that provided them with information about the study. Once prospective respondents agreed to participate, they were directed to a Qualtrics questionnaire. Those who completed the questionnaire were entered into a drawing to receive a \$100 gift card incentive. An additional incentive (i.e., map of their organization’s service area) was provided for respondents who shared zip code data for their service area.

Of the 133 recreation providers recruited, 76 surveys were attempted through Qualtrics. Respondents who did not complete any questions or did not answer the question about hosting a summer feeding program (e.g., “Does your organization currently participate in a summer feeding program?”) ($n = 14$, 18.4%) were deleted from the data set, as this question provided the essential context for the quantitative analyses. In addition, because only one response was retained per organization, when organizational duplication was identified, the case with the least completed responses ($n = 4$, 5.3%) was removed from the data set. The remaining 58 cases (RR = 43.6%) comprised the final dataset. Respondents tended to be Directors ($n = 34$, 58.6%), Executive Directors ($n = 7$, 12.1%), or Program Directors ($n = 8$, 13.8%). Respondents who selected “Other” (15.5%) described their roles as Recreation Leader, Youth Program Supervisor, Owner, Food Service Director, Recreation Supervisor, Park Superintendent, Program Superintendent, Deputy Director, and City Administrator.

MEASURES

The questionnaire elicited mixed (i.e., quantitative and qualitative) data regarding organizational characteristics, summer feeding program involvement, summer feeding program implementation challenges and barriers, community collaborations to address summertime food insecurity, and geographic service area based on zip code.

Organizational Characteristics

Respondents were asked to provide information about their organization, including organizational type (e.g., summer camp, parks and rec agency, college/university), structure (e.g., public, private, public-private partnership, nonprofit), service area (e.g., one county, one city, geographic region of SC, statewide, multiple states), and populations targeted (e.g., children ages 12 and under, adolescents ages 13–17, adults up to 55, adults 55 and older). In addition, a 10-item measure of organizational priorities (e.g., enhancing quality of life, skill development, providing a safe space) on a 1 (least priority) to 10 (top priority) scale, based on the research team’s knowledge of common youth development organizational practices and in consultation with ACA and SCRPA, was utilized. Respondents were asked to rank the priorities that best reflect those of their organization using a click and drag approach (with the most important priorities at the top and the least important priorities at the bottom). These measures of organizational characteristics and priorities were developed by the research team.

Summer Feeding Program Involvement

Respondents were asked to indicate yes or no to the question, “Does your organization currently participate in a summer feeding program (i.e., offering

free meals to youth through one or more sites)?” If they responded with “yes,” then other questions (informed by Molaison & Carr, 2006) were presented, including “How many years has your organization participated in a summer feeding program?,” “How many summer feeding sites (individual locations) does your organization sponsor?,” and an open-ended question, “Describe how your organization is involved in summer feeding programs, from formal summer food service programs to informal strategies like community gardens.”

Summer Feeding Program Implementation Challenges

Respondents were asked to identify challenges experienced in implementing a summer feeding program. This information was solicited in two ways. First, respondents were asked, “Rate each of the following challenges based on your experiences implementing a summer feeding program.” Molaison and Carr’s (2006) 12-item scale of challenges to summer feeding program implementation was adapted and included items such as “program overhead costs are too high,” “too much paperwork,” and “transportation of children to the sites is difficult.” Items were rated on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale. Second, respondents were asked to respond to the open-ended question, “Explain your primary barrier to implementing a summer feeding program.”

Summer Feeding Program Collaborations

Collaborations to address summer food insecurity were measured using an open-ended question informed by Thomson et al. (2009): “Does your organization collaborate with other organizations to address youth/family food insecurity needs? If so, please describe how your organization collaborates with other organizations.”

Geographic Service Area

Zip code data reflecting respondents’ organizational service area was solicited through the questionnaire. Specifically, these zip codes represented youth and families served by the recreation provider. Respondents were asked to upload anonymized zip code data when they responded to the Qualtrics questionnaire. Requests for spatial data were limited to zip code to avoid additional survey response burden (Snijkers et al., 2013) and privacy sensitivities based on feedback from SCRPA and ACA. The use of zip code data is supported by its importance in other studies of food insecurity (Bartfeld et al., 2010; Janda et al., 2021). Notably, in the Three Square Food Bank (2015) study, the researchers stressed, “zip code maps are used to drive both policy and programmatic decisions around government and charitable responses to hunger in Southern Nevada” (para. 6).

DATA ANALYSIS

Quantitative Analyses

Scale-item responses were analyzed using the statistical package RStudio version 1.3.959. Descriptive statistics were calculated for all items. Additionally, nonparametric tests were used to analyze differences in organizational priorities and challenges. Nonparametric tests were used for all quantitative analyses due to the small sample size ($n = 58$) and non-normality (skewness -2.50 to 1.11 ; kurtosis -1.583 to 4.73) of the data.

Independent two-sample nonparametric Mann-Whitney U tests were conducted to compare organizational priorities between organizations who offered summertime feeding programs and those who did not. These tests were conducted to determine if there was a difference in organizational priorities between those who offered summer feeding programs and those who did not. Non-parametric Kruskal-Wallis (one-way analysis of variance) tests were also conducted to compare the effect of organizational priorities on different organization types (i.e., parks and recreation agency). This analysis was conducted using the 10-item scale previously described (i.e., please rank the following priorities to best reflect your organization) using a 1 (*top priority*) to 10 (*least priority*) scale.

Kruskal-Wallis tests were conducted to compare challenges to summer feeding program implementation between different organization types (i.e., parks and recreation agency). These analyses were conducted on six survey questions that asked about implementation challenges (e.g., Please rate each of the following challenges to summer feeding program implementation, based on your experiences—Community support) using a 1 (*strongly disagree*) to 5 (*strongly agree*) Likert scale. The Kruskal-Wallis tests evaluated whether challenges to implementation of summer feeding programs differed based on organizational type.

Qualitative Analyses

The open-ended questions were framed as *process questions* (Maxwell, 2013) to better understand events and how they occurred. These questions were analyzed in different ways. Responses to the open-ended question “Please describe how your organization is involved in summer feeding programs (from formal summer food service programs to informal strategies like community gardens)” were analyzed by one research team member using a non-coding disassembling procedure using identified “derived notes” (Yin, 2016, p. 200) that were then reassembled using concept mapping (Jackson & Trochim, 2002). Responses to the remaining open-ended questions (e.g., questions about barriers to implementing a summer feeding program and organizational collaborations to address food insecurity) were analyzed using conventional content analysis (Hsieh & Shannon, 2005) to identify

patterns across responses to each question. One team member coded the data based on portions of text that represented one idea and then developed categories reflecting similarities across codes (Hsieh & Shannon, 2005). This was followed by an audit of the data, codes, categories, interpretations, and concept map to ensure trustworthiness (Cutcliffe & McKenna, 2004). For both open-ended questions, an independent audit was performed by another research team member to verify the concept map and conventional content analysis codes accurately reflected the data.

Spatial Analyses

Three maps support spatial analysis of the respondent data and underlying demographic and socioeconomic patterns: 1) a service area analysis representing youth and families served by the recreation provider, 2) income equality across South Carolina as represented by the GINI Index (Gini, 1936) with a focus on the I-95 corridor, and 3) percent minority racial composition and food deserts in South Carolina.

Thirteen zip code datasets were received from respondents representing youth and families served by the recreation providers. Datasets were inspected for errors and converted to five-digit zip codes when nine-digit zip codes were present and saved as Comma Separated Value (CSV) files. Upon inspection of the submitted data, it was found that two respondents submitted lists that reported two or more occurrences of the same zip code. The first record of the duplicate was kept, and all other occurrences of the same zip code were removed. All other respondents submitted unique zip code lists, meaning that the respondent did not report multiple client occurrences (i.e., youth and families served) per zip code. A unique identifier for each respondent was created and added to the original aggregated zip code dataset.

GIS shapefiles consisting of nationwide US Census Bureau TIGER/Line five-digit zip code, county, and state boundary shapefiles were downloaded from the National Historical Geographic Information System (NHGIS) (Manson et al., 2019). Additionally, American Community Survey (ACS) tabular data consisting of the 2015–2019 GINI index, racial demographic data, and census tract data were downloaded from NHGIS (Manson et al., 2020). NHGIS modified the TIGER/Line definitions only by erasing coastal water areas. US Census Bureau TIGER/Line Primary Roads shapefile and 2020 USDA Food Environment Atlas tabular data were also downloaded (US Census Bureau, 2016; US Department of Agriculture, 2017).

Several processing steps were used to generate the three maps. For the service area analysis, an R (version 3.6.1) script was written to import CSV files, the 2017 five-digit zip code shapefile, and generate shapefiles for mapping (R Core Team, 2019). After importing data into R, the `sp::merge` function performed a join using the zip code attribute from each data set resulting in a state-wide

zip code service area (Pebesma & Bivand, 2005; Bivand et al., 2013). A shapefile was exported from R. The respondent addresses were geocoded in ArcGIS Pro (ESRI, 2019), and a final service area map was generated.

All further processing steps were performed in ArcGIS Pro (version 2.5.1). The GINI index tabular data were joined to the zip code data using the “GISJOIN” attribute available in both data sets for the income equality map. The “GISJOIN” is a unique identifier for each zip code in both the spatial and tabular data sets available in NHGIS data. Using the 2016 TIGER/Line Primary Roads shapefile, the Interstate 95 feature class for South Carolina was generated through an attribute selection and clip function followed by a dissolve realizing the mapped feature. Corridor of shame counties, i.e., counties on the I-95 corridor in South Carolina, were selected manually from TIGER/Line county data using literature references to identify the 17 counties (Moore & Lawrence, 2009). A graduated color Natural Breaks (Jenks) quantitative classification was applied and a final map generated.

To create the percent minority and food desert map several processing steps were performed. To develop the percent minority data, South Carolina census tracts were subset from national data using a select by attribute query followed by a join between census tract spatial data and the demographic table using the “GISJOIN” attribute and the feature class was exported. A percent minority was calculated using the following method at a census tract level after adding a new attribute. A summation was applied to all minority demographic classes, including 1) Black or African American, 2) Asian, 3) Native Hawaiian or other Pacific Islander, 4) some other race alone, and 5) the total of two or more races. The summation of all minority classes was divided by each census tract’s total population and multiplied by 100, resulting in the percent minority metric, and a graduated color Natural Breaks (Jenks) quantitative classification was applied. A quality control step to verify that the minority percentage and the White percentage equaled 100% was performed. To complete the map, the USDA Food Desert Locator tabular data were also joined to the NHGIS census tract data using the census tract unique identifier available in both data sets. The USDA Food Desert classification of one mile for urban areas and ten miles for rural areas is used to demarcate those census tracts classified as food deserts (USDA, 2017).

Results

CHARACTERISTICS OF SOUTH CAROLINA RECREATION PROVIDERS

The first research question was “What are the characteristics of South Carolina recreation providers involved in addressing summertime food insecurity?” Results associated with organizational characteristics are summarized in

Table 1. Organizations represented in the sample of 58 respondents included 17 camps (29.3%), 37 P&R agencies (63.7%), 3 colleges/universities (5.1%), and 1 after-school program (1.7%). Of the 17 camps represented in the sample, 15 (88.2%) identified as resident camps and 2 (11.8%) identified as day camps. With regard to the organizational service area, the largest number of respondents reported serving a single city (27; 46.6%). However, 11 camps and universities (19%) acknowledged serving multiple states. Additionally, 10 organizations (17.2%), served a single county, 7 organizations (12.1%) served the entire state of South Carolina, and 3 organizations (5.2%) served a geographic region within South Carolina.

When asked to identify their organizational priorities, most respondents (28; 48.3%) identified enhancing quality of life as their primary focus. Respondents also listed safe space (9; 15.5%), youth development (8; 13.8%), promoting health and physical activity (6; 10.3%), spiritual development (4; 6.9%), inclusive programs and services (2; 3.5%), and environmental education (1; 1.7%) as top priorities for their organization.

With regard to populations served, all but one organization (57; 98.3%), a university, identified serving participants 12 years or younger. Thirty-two (55.1%) organizations served participants 13 to 17 years old. Fourteen (24.1%) organizations served populations up to 55, and fourteen (24.1%) organizations served participants above 55.

As another way to understand the characteristics of recreation providers involved in addressing summertime food insecurity, respondents were asked to rank their organizational priorities by marking a list of 10 priorities with a 1 signifying top priority and 10 representing the bottom priority. The results of the independent two group Mann-Whitney U test indicated a significant difference ($p < .05$) in the median scores of several priorities when comparing organizations who hosted summer feeding programs to those who did not. A Mann-Whitney test indicated that quality of life received a significantly more prominent ($p = .029$, effect size $r = .288$) median rank (median = 1, IQR = 1) for organizations who offered summer feeding programs than those who did not offer these programs (median = 2, IQR = 5). Organizations who hosted summer feeding programs (median = 4, IQR = 3) also significantly prioritized ($p = .004$, effect size $r = .382$) providing inclusive programs and services more than organizations who did not offer summer feeding programs (median = 7, IQR = 3.5). On the other hand, organizations who did not offer summer feeding programs (median = 7, IQR = 4) prioritized environmental education significantly more than ($p = .027$, effect size $r = .291$) organizations who did not offer summer feeding programs (median = 9, IQR = 3). Organizations who did not offer summer feeding programs (median = 6, IQR = 3) also significantly prioritized ($p = .007$, effect size $r = .355$) leadership development more than those organizations who offered summer feeding programs (median = 8, IQR = 2).

Table 1: Organizational characteristics of South Carolina recreation providers

	Participants (n)	Percentage (%)
Organizational Type		
Summer Camp	17	29.3
Parks and Recreation Agency	37	63.7
College/University	3	5.1
After-School Program	1	1.7
Organizational Structure		
Public	43	74.1
Private	2	3.4
Public-Private	4	6.9
Nonprofit	9	15.5
Organizational Service Area		
Single City	27	46.6
Single County	10	17.2
Geographical Area within South Carolina	3	5.2
All of South Carolina	7	12.1
Multiple States	11	19
Organizational Priorities		
Quality of Life	28	48.3
Providing Youth with a Safe Space	9	15.5
Youth Development	8	13.8
Health and Physical Activity	6	10.3
Spiritual Development	4	6.9
Inclusive Programs	2	3.5
Environmental Education	1	1.7
Populations Served		
Youth 12 Years or Younger	57	98.3
Youth 13 to 17 Years Old	32	55.1
Adults Up to 55 Years Old	14	24.1
Adults 55 Years Old or Older	14	24.1

Table 2: Organizational priorities independent two sample Mann-Whitney U Descriptives

	Organizations with Summer Feeding Programs	Organizations without Summer Feeding Programs	Median	r	Mann Whitney U	Skewness	Kurtosis
Enhancing quality of life	1	2	.288#	273*	.854	-.864	
Environmental education	9	7	.291#	539.5*	-.551	-.917	
Leadership development	8	6	.355##	569.5**	-.591	-.718	
Promoting health/Phys activity	4	4	.066#	371	-.439	-1.088	
Providing a safe space for participants	2	3	.053#	378	1.368	1.363	
Providing inclusive programs and services	4	7	.382##	220.5**	-.038	-1.115	
Skill development	6	6	.056#	429	-.004	-.773	
Service/Social responsibility	7	7	.028#	389.5	-.343	-1.193	
Spiritual/Religious development	10	10	.209#	471	-2.495	4.731	
Youth development/Education	4	4	.115#	457	.193	-.759	

*p < .05 ** p < .01; #small effect size, ##moderate effect size, ###large effect size

Table 3: Organizational priorities Kruskal-Wallis Test Descriptives

	Summer camps	Parks & Rec	After-School Program	College/University	Median	Kruskal-Wallis chi square	Epsilon squared	Skewness	Kurtosis
Enhancing quality of life	6	1	4	7	7	20.171**	.354###	.854	-.864
Environmental education	7	8	9	4	4	3.280	.058#	-.551	-.917
Leadership development	5	7	5	5	5	12.463**	.219##	-.591	-.718
Promoting health/Phys activity	6	3	7	8	8	22.734**	.399###	.439	-1.088
Providing a safe space for participants	2	3	1	4	4	2.672	.047#	1.368	1.363
Providing inclusive programs and services	8	5	3	6	6	8.040*	.141##	-.038	-1.115
Skill development	7	6	6	5	5	1.3048	.023#	-.004	-.773
Service/Social responsibility	5	8	8	6	6	4.814	.085##	-.343	-1.193
Spiritual/Religious development	10	10	10	10	10	14.946**	.262###	-2.495	4.731
Youth development/Education	3	5	2	1	1	12.529**	.220##	.193	-.759

*p < .05 ** p < .01; #small effect size, ##moderate effect size, ###large effect size

Organizational priorities were also measured by organizational type (i.e., Summer Camp, Parks and Recreation Agency, College/University, or After-School Program). A Kruskal-Wallis test was used to measure if there was a difference between the four organizational types. When the null hypothesis was rejected, multiple comparisons (the Dunn post-hoc test) were performed. Using the Kruskal-Wallis test, there were statistically significant differences between organizational types in regard to the priority placed on quality of life ($p < .001$, epsilon squared = .354), leadership development ($p = .005$, epsilon squared = .219), promoting health and physical activity ($p < .001$, epsilon squared = .399), providing inclusive programming ($p = .045$, epsilon squared = .141), spiritual/religious development ($p = .002$, epsilon squared = .262), and youth development/education ($p = .005$, epsilon squared = .220). The Dunn post-hoc tests showed that parks and recreation agencies prioritized quality of life (median = 1, IQR = 1; median = 6, IQR = 5) and promoting health and physical activity (median = 3, IQR = 2; median = 6, IQR = 3) significantly more than ($p < .001$; $p < .001$) summer camps, while summer camps prioritized leadership development (median = 5, IQR = 3; median = 7, IQR = 2) and spiritual/religious development (median = 10, IQR = 6; median = 10, IQR = 0) significantly more than ($p = .013$; $p < .001$) parks and recreation agencies. The Dunn post hoc test also revealed that summer camps prioritized promoting health and physical activity (median = 3, IQR = 2; median = 8, IQR = 0.5) significantly more than ($p = .008$) colleges and universities. See Tables 2 and 3 for all comparisons.

FOOD INSECURITY STRATEGIES OF SOUTH CAROLINA RECREATION PROVIDERS

The second research question was, “How are South Carolina recreation providers addressing summertime food insecurity?” While a majority of respondents (i.e., 35 organizations; 60.3% of the sample) reported their organizations did not participate in a summer feeding program, 23 organizations (i.e., 4 camps and 19 P&R agencies, representing 39.7% of the sample) had sponsored a summer feeding program or currently serve as a summer feeding site. The majority (52.2%) of organizations operated out of a single feeding site and primarily served one (34.8%) or two (39.1%) meals a day. Five organizations reported serving three (21.7%) meals a day, while one (4.3%) organization reported serving five meals a day. All organizations reported that at least one meal contained fresh fruits and vegetables. Feeding programs operated from a range of three weeks (4.3%) to twelve weeks (8.7%) over the summer. The majority of programs (39.1%) operated for eight weeks. Of the 23 organizations offering a summer feeding program, nine respondents reported hosting their feeding program for five years or less. However, four respondents reported hosting a summer feeding program for at least 20 years. For example, the City of Charleston has participated in a summer feeding

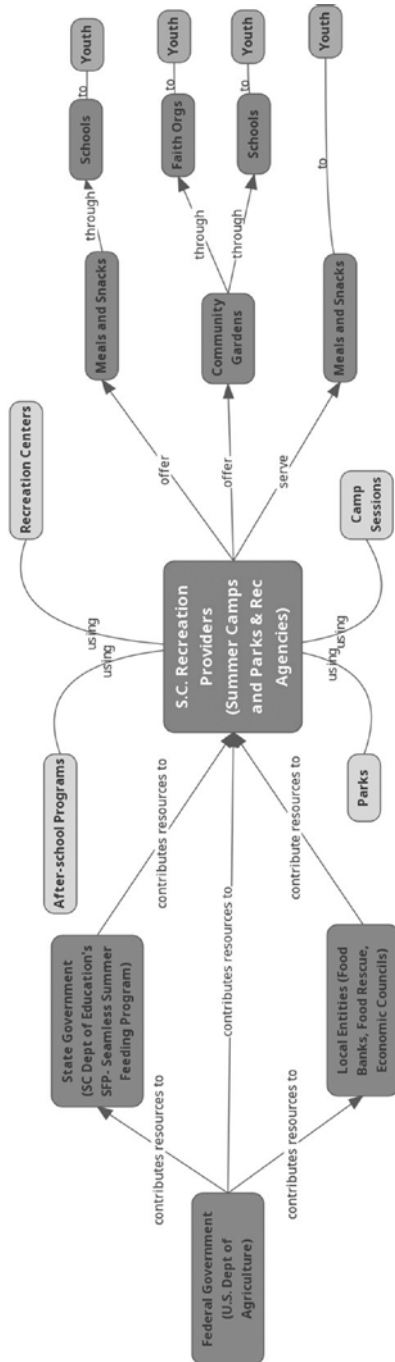


Figure 1: Process map of South Carolina recreation providers' role in addressing summertime food insecurity

program for 30 years, and Camp Asbury Hills reported sponsoring a summer feeding program for 50 years.

Participants were asked to identify how their feeding programs were funded and to identify funding sources. Respondents identified a mix of funding sources. Out of the 23 organizations participating in a summer feeding program, 12 received at least 50% of their funding through a federal entity (e.g., US Department of Agriculture; 52%), three received at least 50% of their funding through a state entity (e.g., South Carolina Department of Social Services; 13%), one received at least 50% of their funding through a local entity (e.g., school district or county government; 4.3%), three received at least 50% of their funding through donations and philanthropy (e.g., grants; 13%), and five received at least 50% of their funding through operational funds (22%). As these findings indicate, funding sources for summer feeding programs vary and are intermingled, with providers receiving funding from multiple sources most often channeled through governmental entities.

Finally, respondents were asked the open-ended question, “Please describe how your organization is involved in summer feeding programs.” As described by respondents, South Carolina recreation providers acquire food and related resources through state government or local entities (e.g., food banks, food rescue) often via funding that originated with the federal government (e.g., USDA). Next, through programs and sites that include after-school programs, recreation centers, parks, and camps sessions, recreation providers offer meals and snacks to youth as well as access to other fresh foods through the provision of services such as community gardens. These meals and snacks are sometimes offered directly to youth (for example, through summer camps that used the food as part of breakfast or lunch service), and in other instances the recreation providers function as an intermediary and offer meals, snacks, and access to gardens through other direct providers such as schools and faith-based organizations. Concept mapping (informed by Jackson & Trochim, 2002) was used to visualize the processes respondents described regarding their involvement in summer feeding programs (see Figure 1).

FACTORS INFLUENCING SC RECREATION PROVIDER PARTICIPATION IN SUMMERTIME FOOD INSECURITY

Initiatives

The third research question was, “What challenges do South Carolina recreation providers experience when implementing summer feeding programs?” Data associated with this question were solicited in two ways. Respondents were first asked to identify challenges associated with implementing a summer feeding program (see Table 4). On a scale of 1–5,

Table 4: Organizational profiles barriers Kruskal-Wallis Test Descriptives

	Mean	SD	Median	Median	Median	Kruskal-Wallis chi square	Epsilon squared	Skewness	Kurtosis
			Summer camps	Parks & Rec					
Community support is limited	2.86	1.315	4	2	2	4.400*	.077##	.001	-1.583
Inadequate number of children	2.86	1.276	2	1	1	.505	.009#	.760	-1.012
Overhead costs	2.57	1.326	3	3	3	.925	.016#	.159	-1.069
Insufficient staff	2.52	1.327	3	2.5	2.5	.529	.009#	.135	-1.473
Too much paperwork	2.43	1.207	4	3	3	2.72	.047#	-.022	-1.197
Transportation difficulties	2.43	1.399	3	3	3	0	0#	-.128	-1.227
Government regulations	2.38	1.161	3	3	3	2.082	.037#	.160	-1.134
Inadequate facilities for serving food	2.29	1.309	1	1.5	1.5	.587	.010#	1.113	.013
Lack of experience preparing meals	2.24	1.375	2	2	2	.045	.001#	.691	-.893
Problems with the physical location	2.10	1.338	2	1.5	1.5	.489	.009#	.790	-.937
Too many restrictions on allowable food	1.90	1.221	4	2	2	3.150	.055#	.400	-1.263
Vender/ distribution	1.90	1.136	3	1.5	1.5	2.536	.045#	.384	-1.277

*p < .05 **p < .01; #small effect size, ##moderate effect size, ###large effect size

where 1 = strongly disagree and 5 = strongly agree, the most salient challenges to program implementation were transportation of children to the feeding site (2.86, SD = 1.315), too much paperwork (2.86, SD = 1.276), government regulations (2.57, SD = 1.326), and insufficient staff to operate the program (2.52, SD = 1.327).

Challenges to implementing a summer feeding program were then measured based on recreation provider type. The Kruskal-Wallis test was used to determine if there was a difference between the four organizational types. The sample size decreased from 58 to 21 because organizations who programs did not host a summer feeding program ($n = 35$) were not asked this question. Additionally, two organizations who do host summer feeding programs did not answer the questions about implementation challenges. These missing cases were removed using listwise deletion. When the null hypothesis was rejected, multiple comparisons (the Dunn post-hoc test) were performed. Using the Kruskal-Wallis test, statistically significant differences were identified between organizational types regarding challenges faced in receiving community support ($p = .036$, epsilon squared = .077). The Dunn post-hoc test indicated that parks and recreation agencies faced a significantly greater challenge in receiving support from their communities than summer camps did (median = 2, IQR = 2; median = 4, IQR = .5, $p = .036$).

Respondents were then asked the open-ended question, "Please explain your primary barrier to implementing a summertime feeding program." Eighteen respondents provided an answer to this question. While five respondents identified no barriers (28%), the remaining sites identified one or more barriers. Barriers identified by at least two respondents included staffing (e.g., "finding quality help to administer the program"), program continuity (e.g., "ensuring that it will continue by the outside organization so our program participants can receive the benefit"), and the location of the feeding sites in relation to family residences (e.g., "[we are a] large county in terms of geographic area so it can be difficult to reach all parts of the county by way of sites").

South Carolina Recreation Providers' Collaborations to Address Summertime Food Insecurity

The fourth research question was, "How are South Carolina recreation providers collaborating within community contexts to address family food insecurity?" Respondents were asked whether their organizations collaborated to address youth/family food insecurity. Ten respondents provided an answer to this question. Collaboration categories included food distribution, (e.g., "partner with local Boys and Girls club to offer the federally funded, state operated year-round feeding program"), food funding (e.g., "applying for grants"), food procurement (e.g., "collaborating

to provide breakfast for our camp participants” and “working closely with food banks and charity groups to offer food”), and participant identification (e.g., “we partner to read and interpret food desert maps in our counties and municipalities to make sure we know where these are for better programming.”)

Geographic Areas Served by South Carolina Recreation Provider Summer Feeding Programs

The fifth research question was, “What geographic areas of South Carolina are served by recreation providers involved in summer feeding programs?” Figures 2, 3, and 4 provide the results of the spatial analyses. Figure 2 reports the recreational service area for the respondents that submitted zip code data. Figure 3 reports the same recreation provider zip code data as Figure 2, but shows the GINI index for South Carolina counties and the path of I-95 through the I-95 corridor counties. The GINI index is a measure of statistical dispersion that represents income inequality within a region. The GINI coefficient is a number from 0 to 1, where 0 implies perfect equality and 1

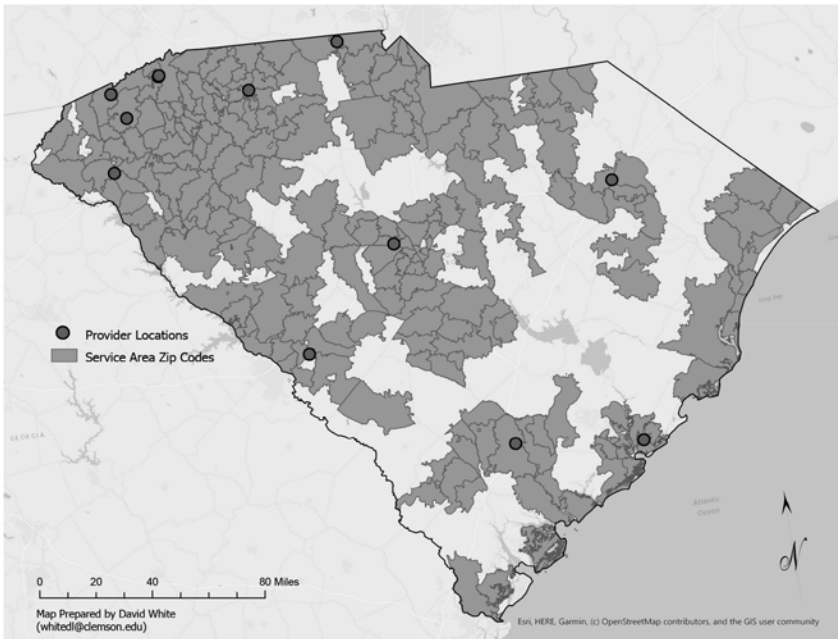


Figure 2: Communities served through summer feeding programs implemented by South Carolina recreation providers. Areal units are zip codes.

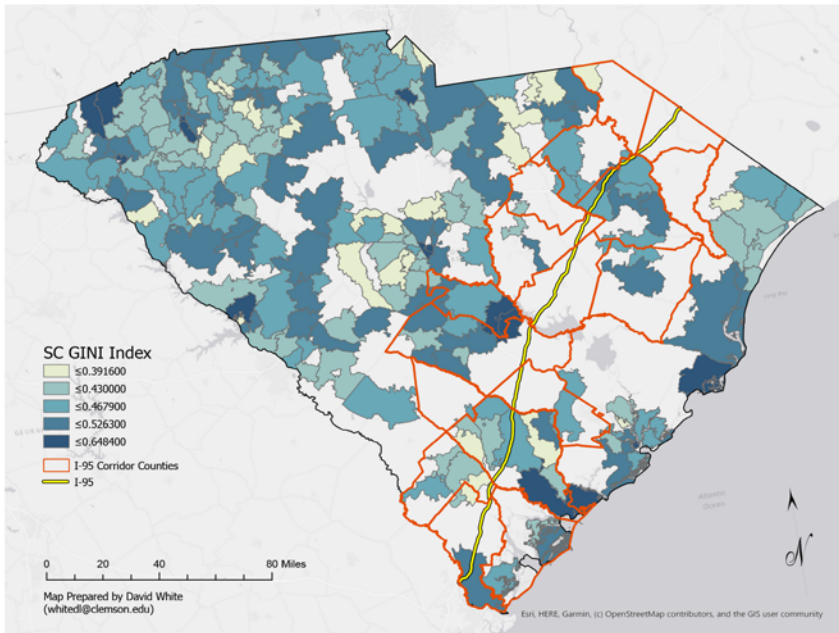


Figure 3: Statistical dispersion (GINI Index) representing income equality across South Carolina. Areal units are zip codes. (Note: The GINI coefficient is a number from 0 to 1, where 0 implies perfect equality and 1 implies perfect inequality. Counties included in the I-95 corridor are outlined in red, and I-95 is shown in yellow.)

implies perfect inequality. Figure 4 reports the percentage of racial minorities across South Carolina along with the location of food deserts and I-95 at the census tract level. The spatial results suggest some areas of the state are better served by recreation providers engaged in addressing summertime food insecurity. In addition, the I-95 corridor is not well represented by recreation providers engaged in addressing summertime food insecurity, although youth and families in those counties may be more food insecure. Further analyses confirm this observation. An analysis of the overall state-wide service area found that the 13 recreational respondents cover 53% of SC zip codes. Removing the I-95 corridor zip codes from the analysis found that respondents reported activity in 81% of those SC zip codes, while the recreational provider respondents cover only 32% of the total zip codes in the I-95 corridor. These analyses suggest that recreation providers in this sample underserved the I-95 corridor.

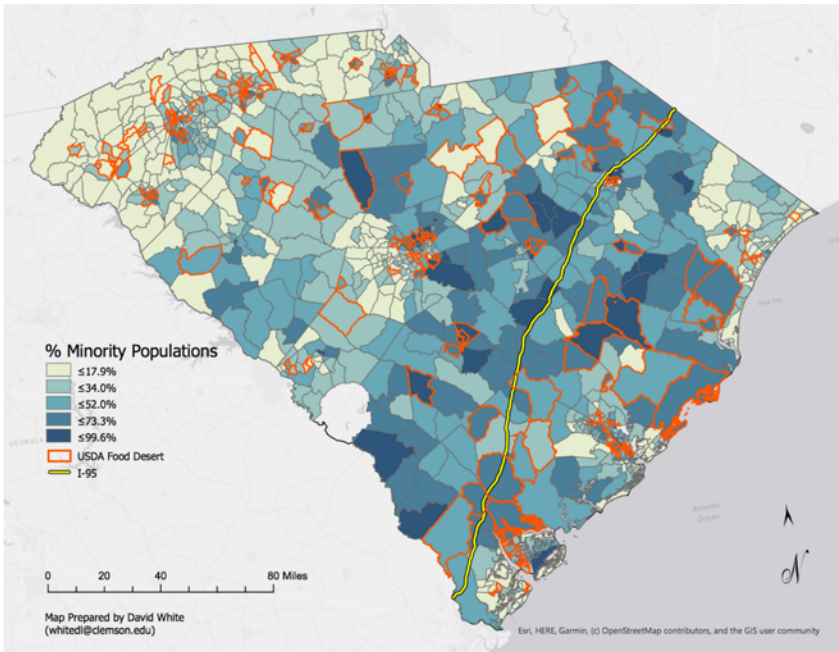


Figure 4: Percentage of racial minorities across South Carolina. Areal units are census tracts. (Note: Food deserts are outlined in orange, and I-95 is shown in yellow.)

Discussion

This study provided the first targeted examination of South Carolina recreation providers' role in addressing summertime food insecurity, barriers to involvement in food insecurity programs and initiatives, and organizational collaborations to address summertime food insecurity. This study involved a sample of recreation providers recruited through intermediaries (i.e., ACA, SCRPA). The findings situate recreation providers (both summer camps and parks and recreation agencies) as community-based intermediaries between federal, state, and local food suppliers and youth/families in need. Furthermore, the findings highlight how food distribution via recreation providers occurs through different youth program mechanisms (i.e., camps, parks, recreation centers, and after-school program sites). National, state, and local intermediaries are critical actors in addressing youth and family needs (Wicks et al., 2007), which was a central conclusion of a national consensus of

studies on children's summertime experiences (National Academy of Science, Engineering, and Medicine, 2019). This study provides further evidence for the important role played by these intermediaries.

Our findings indicate that while approximately 40% of the South Carolina recreation providers in this study are involved in formal summer feeding programs (e.g., USDA Summer Food Service Program, South Carolina Child and Adult Care Food Program), the majority are not participating in these programs. In this state-level survey, more than 60% did not report involvement in a summer feeding program. The limited involvement of summer feeding program "sponsors" (in this study, recreation providers) has been noted in the literature, with Miller (2016) stressing the need for new sponsors to enroll in summer feeding programs, the need for existing sponsors to operate new summer feeding sites, and the need for existing summer feeding sites to remain open for more days and longer hours.

The spatial data findings (particularly Figures 3 and 4) allowed for a comparison between the geographic areas served by recreation providers and South Carolina's "I-95 corridor." While the study sample may not be entirely representative of the state population of recreation providers, they do represent a cross-section of urban and rural camps and P&R agencies. It is notable that many summer feeding programs are offered by recreation providers in localities not included within the I-95 corridor. This study's benchmark (i.e., ~40%) of recreation provider involvement in summer food service programs, as well as the spatial data showing where youth and families are currently being served, the percentage of racial minorities in the areas currently being served, and the locations of food deserts, suggest an opportunity for more recreation providers to be engaged in addressing summertime food insecurity. This need appears to be particularly salient in counties with higher rates of Black, indigenous, and people of color.

In this study the program implementation barriers identified by recreation providers were consistent with those identified in previous studies of summer feeding sponsors. For example, the most salient barriers to recreation provider implementation of a summer feeding program included transporting youth to the feeding sites, paperwork volume, government regulations, and insufficient staffing, which support findings by Molaise and Carr (2006) who highlighted how administrative responsibilities constrained involvement in summer feeding programs. There was also no significant difference between reported barriers to implementation based on organizational types or structures. Additionally, lack of funding emerged as a barrier within both the scale and open-ended responses consistent with the literature (Food Research & Action Center, 2018), which may partially explain the lack of recreation provider summer feeding sites in areas with higher poverty (as suggested in the spatial analyses described earlier).

The contrasting findings associated with barriers to summer food service program implementation faced by recreation providers suggests the significance of the local context in which programs were implemented. In other words, summer food service program implementation barriers may be unique to the specific context in which recreation providers are implementing them. Within the context of recreation and leisure, researchers (and their respective frameworks) have noted the importance of the broader ecology in which a program participation barrier/constraint may be experienced (see Stodolska et al., 2019). Barriers identified in this study, although contextually bound, indicate where additional resources may be needed (e.g., transportation) in order to enhance the reach of existing recreation provider summer food service programs.

In some communities there is a struggle to engage summer feeding sites where they are easily accessible by families facing food insecurity. For these communities there is a need for more summer feeding sites. Both camps and P&R agencies can play multiple roles in addressing food insecurity, including becoming a sponsor, becoming a feeding site, preparing meals for a sponsor, and having staff and youth serve as volunteers at a feeding site (American Camp Association, 2020). Recreation providers considering these opportunities may benefit from the results of this study (as well as from studies by Binder [2016] and Molaise & Carr [2006]) when preparing for program implementation. Furthermore, national and state intermediaries (including but not limited to ACA and SCRPA, who collaborated on this study), as well as state and federal agencies, should consider targeted efforts to engage recreation providers in summer feeding programs. Such engagement could include disseminating information about summer feeding programs in organizational publications and through major professional development events, as well as supporting local entities and programs interested in summer feeding initiatives.

FUTURE DIRECTIONS

The findings of this study could inform future research and practice in several ways. First, the role of recreation providers in addressing summertime food insecurity needs to be contextualized for the COVID-19 pandemic. COVID-19 has changed the food insecurity landscape in that it has caused sharp increases in food insecurity rates in the United States and created a public health crisis (Bauer, 2020; Van Lancker & Parolin, 2020). For instance, in 2018 3.1% of mothers with a child age 12 and under reported a lack of food for their children because their family could not afford enough food in the past year. In April 2020, 17.4% of mothers with children ages 12 and under reported a similar situation in which their children were not eating enough because the family could not afford sufficient amounts of food, with COVID-19 specifically identified by mothers as a critical factor contributing to a lack of resources for

food (Bauer, 2020). Negative impacts of the pandemic on food insecurity have disproportionately impacted Black, indigenous, and people of color (Morales et al., 2020). Within the context of COVID-19, innovative approaches for addressing food insecurity are being implemented, such as “Grab-n-Go” meal sites that can provide children with five days of meals at one time (Dunn et al., 2020). These innovations have been applied to an academic year response but have not been tested during summertime. Additionally, youth-serving agencies such as the YMCA of the USA (2020) have developed targeted programs and services in response to COVID-19, but the extent to which these programs are successful, and the strategies developed to implement these programs, have not been assessed or reported.

Second, more investigation is needed to better understand how recreation providers may be collaborating within communities to address summertime food insecurity. This study’s findings associated with recreation provider collaborations are mixed. While the concept map (see Figure 1) suggests South Carolina recreation providers are addressing food insecurity within a fully collaborative process involving food provision and distribution partners, only 43% (10 out of 23) of recreation providers specifically identified a collaborator or described how they were collaborating to address food insecurity. Innovative collaborations (called “summer food service coalitions”) have been proposed as “working groups to create and/or tailor model joint-use/shared-use agreements for local entities to adopt to utilize sites such as indoor and outdoor physical activity facilities at schools, nongovernmental organizations, or parks and recreational centers, among others” (Fleischhacker et al., 2020, p. 122). Future studies guided by conceptual models examining the five dimensions of collaboration (i.e., governance, administration, mutuality, norms, and agency) (Thomson et al., 2009) may be constructive in elucidating information about how community collaborations play a role in addressing summertime food insecurity.

In addition, future studies involving recreation provider community collaboration to address food insecurity may be enriched by mapping collaborators in addition to feeding sites and families served, which may provide better data to inform potential service gaps. Furthermore, exploring how recreation providers and community collaborators are resourced to address food insecurity, especially organizations operated by Black, indigenous, and people of color (BIPOC), may identify additional disparities reflecting the racialized nature of food insecurity as suggested by Elsheikh and Barhoum (2013) and Odoms-Young (2018). Further, the study findings suggest that only the most resourced recreation providers with the capacity to complete the required paperwork and navigate other barriers such as transportation are participating in summer feeding programs. Future research is needed to understand how alleviating barriers to summer feeding program participation for smaller, less-resourced, and decentralized community-based organizations

may result in better summertime food insecurity outcomes for youth and families.

Third, while this study examined food insecurity from the perspective of South Carolina recreation providers, future studies conducted with recipients of South Carolina recreation provider food service programs could examine outcomes of those programs and inform a theory of change for better modeling of both predictors of change as well as program or recipient characteristics that moderate change. Such modeling may also shed light on the relationship between food security and health outcomes resulting from summer feeding programs. As noted by Weiser et al. (2015), “the relationship between food security and health outcomes is bi-directional, causing households and individuals to be caught in a ‘vicious cycle’ of poor outcomes” (p. 40). Because evidence suggests that summer camps may not be settings in which children make good decisions when it comes to the consumption of healthy foods and beverages (Kenny et al., 2017), evaluating youth outcomes (across health, youth development, and related domains) associated with summer feeding programs within recreational settings is needed (Fleischhacker et al., 2020). These reasons tend to be highly contextual, as family decisions to engage with summer feeding sites are made based on local factors embedded in availability and accessibility.

STUDY LIMITATIONS

Some study limitations are acknowledged. First, data were collected from South Carolina recreation providers and are not generalizable to recreation providers in other states. Further, while the ~44% response rate is respectable, some data may be incomplete, including the spatial data, and therefore the work of some South Carolina recreation providers who are addressing summertime food insecurity may not be represented in this study. The limitations of zip code data as areal units of measure can be problematic especially in urban areas where racial and socioeconomic populations can be separated by neighborhoods and roads that all fall within a single zip code. The use of smaller level of geography units such as census tract, block groups, and blocks would provide a more accurate representation of the spatial variability of these observations. The small sample size further prevented a more robust statistical analysis of results. Second, data reported in this study were collected through a self-report strategy, and as such the findings were susceptible to respondent recall bias. As previously noted, other unreported barriers or collaborations may be influencing the provision of food service programs within the context of recreation settings.

This exploratory study examined the role of South Carolina recreation providers in addressing summertime food insecurity to identify benchmarks against which future data could be compared, as well as to further illuminate

how recreation providers are involved within community food insecurity processes and collaborations. The study findings highlight that South Carolina recreation providers (i.e., summer camps and P&R agencies) are critical community-based intermediaries in the process of providing youth and families with food during summertime. Further, the study identifies that more recreation providers can be engaged as sponsors of summer food service programs or as summer feeding sites to reduce food insecurity and increase youth access to healthy foods during summertime.

REFERENCES

- American Camp Association. (2020). *Summer food service program—U.S. Department of Agriculture*. <https://www.acacamps.org/resource-library/summer-food-service-program-us-department-agriculture>
- Anderson, P. M., Butcher, K. F., Hoynes, H. W., & Whitmore Schanzenbach, D. (2016). Beyond income: What else predicts very low food security among children? *Southern Economic Journal*, 82(4), 1078–1105. <https://doi.org/10.1002/soej.12079>
- Anderson, S. A. (Ed.). (1990). Core indicators of nutritional state for difficult-to-sample populations. *The Journal of Nutrition*, 120(suppl_11), 1555–1600.
- Bartfeld, J. S., Ryu, J. H., & Wang, L. (2010). Local characteristics are linked to food insecurity among households with elementary school children. *Journal of Hunger & Environmental Nutrition*, 5(4), 471–483.
- Bauer, L. (2020). *The COVID-19 crisis has already left too many children hungry in America*. The Hamilton Project. https://www.hamiltonproject.org/blog/the_covid_19_crisis_has_already_left_too_many_children_hungry_in_america#_ftn1
- Beaulieu, S. (2014). *Current and prospective scope of hunger and food security in America: A review of current research*. https://www.rti.org/sites/default/files/resources/full_hunger_report_final_07-24-14.pdf
- Bhattacharya, J., Currie, J., & Haider, S. (2004). Poverty, food insecurity, and nutritional outcomes in children and adults. *Journal of Health Economics*, 23(4), 839–862. <https://doi.org/10.1016/j.jhealeco.2003.12.008>
- Binder, C. (2016). *Summer meals barriers analysis*. Hunger Free NYC. https://www.hungerfreeamerica.org/sites/default/files/atoms/files/Summer%20Meals%20Barrier%20Analysis%202016_online_o.pdf
- Bivand, R.S., Pebesma, E., Gomez-Rubio, V. (2013). *Applied spatial data analysis with R* (2nd ed.). Springer.
- Clancy, K. (2017). Transdisciplinary and systems approaches to food security. *Journal of Agriculture, Food Systems, and Community Development*, 7(4), 13–16. <http://dx.doi.org/10.5304/jafscd.2017.074.012>
- Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A. (2019). *Household food security in the United States in 2018*. U.S. Department of Agriculture Economic Research Service. <https://www.ers.usda.gov/webdocs/publications/94849/err-270.pdf?v=963.1>

- Cook, J. T., Frank, D. A., Berkowitz, C., Black, M. M., Casey, P. H., Cutts, D. B., Meyers, A. F., Zaldivar, N., Skalicky, A., Levenson, S., Heeren, T., & Nord, M. (2004). Food insecurity is associated with adverse health outcomes among human infants and toddlers. *The Journal of Nutrition*, 134(6), 1432–1438. <https://doi.org/10.1093/jn/134.6.1432>
- Cook, J. T., Frank, D. A., Levenson, S. M., Neault, N. B., Heeren, T. C., Black, M. M., Berkowitz, C., Casey, P. H., Meyers, A. F., Cutts, D. B., & Chilton, M. (2006). Child food insecurity increases risks posed by household food insecurity to young children's health. *The Journal of Nutrition*, 136(4), 1073–1076. <https://doi.org/10.1093/jn/136.4.1073>
- Cutcliffe, J. R., & McKenna, H. P. (2004). Expert qualitative researchers and the use of audit trails. *Journal of Advanced Nursing*, 45(2), 126–133.
- Dietz, W. H., & Trowbridge, F. L. (1990). Symposium on the identification and prevalence of undernutrition in the United States: Introduction. *The Journal of Nutrition*, 120(8), 917–918.
- Dunn, C. G., Kenney, E., Fleischhacker, S. E., & Bleich, S. N. (2020). Feeding low-income children during the COVID-19 pandemic. *New England Journal of Medicine*, 382(18), e40.
- Dutko, P., Ver Ploeg, M., & Farrigan, T. (2012). *Characteristics and influential factors of food deserts* (No. 1477-2017-3995). United State Department of Agriculture.
- Elsheikh, E., & Barhoum, N. (2013). *Structural racialization and food insecurity in the United States*. University of California. <https://belonging.berkeley.edu/sites/default/files/Structural%20Racialization%20%20%26%20Food%20Insecurity%20in%20the%20US-%28Final%29.pdf>
- Environmental Systems Research Institute. (2019). *ArcGIS Pro 2.4.3: Release 10*. Environmental Systems Research Institute.
- Feeding America. (2020). *Hunger in South Carolina*. <https://www.feedingamerica.org/hunger-in-america/south-carolina>
- Fleischhacker, S., Turner, L., & Mande, J. R. (2020). U.S. Department of Agriculture Summer Meals Program: What's hot? *Nutrition Today*, 55(3), 116–124.
- Food Research & Action Center. (2015). *Parks and recreation: Making summer meals healthier*. <http://frac.org/blog/parks-recreation-making-summer-meals-healthier>
- Food Research & Action Center. (2018). *Parks and recreation: Making summer meals healthier*. http://frac.org/wp-content/uploads/sfsp_fact_sheet.pdf
- Giglotti, K. (2005) *Summer food service program*. <https://www.ncsl.org/print/statefed/humserv/SFSP.pdf>
- Gini, C. (1936). On the measure of concentration with special reference to income and statistics. *Colorado College Publication, General Series*, 208(1), 73–79.
- Gordon, A. R., Briefel, R. R., Collins, A. M., Rowe, G. M., & Klerman, J. A. (2017). Delivering summer electronic benefit transfers for children through the Supplemental Nutrition Assistance Program or the Special Supplemental Nutrition Program For Women, Infants, And Children: Benefit use and impacts on food security and foods consumed. *Journal of the Academy of Nutrition and Dietetics*, 117(3), 367–375.e2.

- Havewala, F. (2020). The dynamics between the food environment and residential segregation: An analysis of metropolitan areas. *Food Policy*, 1–9.
- Helsel, B., Liang, J., Williams, J. E., Griffin, S. F., & Spitler, H. (2019). Family and friend influence on fruit and vegetable intake in elementary aged children. *Journal of Community Health*, 44(5), 932–940. <https://doi.org/10.1007/s10900-019-00640-x>
- Hendriks, S. L. (2015). The food security continuum: A novel tool for understanding food insecurity as a range of experiences. *Food Security*, 7(3), 609–619.
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288.
- Jackson, K. M., & Trochim, W. M. (2002). Concept mapping as an alternative approach for the analysis of open-ended survey responses. *Organizational Research Methods*, 5(4), 307–336.
- Janda, K. M., Salvo Dominguez, D., Ranjit, N., Hoelscher, D. M., Price, A., & van den Berg, A. (2021). Mapping food insecurity-related 2-1-1 calls in a 10-county area of central Texas by zip code: Exploring the role of geographic food access, urbanicity and demographic indicators. *Journal of Community Health*, 46(1), 86–97.
- Kenney, E. L., Lee, R. M., Brooks, C. J., Craddock, A. L., & Gortmaker, S. L. (2017). What do children eat in the summer? A direct observation of summer day camps that serve meals. *Journal of the Academy of Nutrition and Dietetics*, 117(7), 1097–1103.
- Kleinman, R. E., Murphy, J. M., Little, M., Pagano, M., Wehler, C. A., Regal, K., & Jellinek, M. S. (1998). Hunger in children in the United States: Potential behavioral and emotional correlates. *Pediatrics*, 101(1), e3–e3.
- Manson, S., Schroeder, J., Van Riper, D., & Ruggles, S. (2019). *IPUMS National Historical Geographic Information System: Version 14.0* [Database]. IPUMS.
- Manson, S., Schroeder, J., Van Riper, D., & Ruggles, S. (2020). *IPUMS National Historical Geographic Information System: Version 15.0* [dataset]. IPUMS. 2020. <http://doi.org/10.18128/D050.V15.0>
- McLaughlin, B., & Pitcock, S. (2009). *Building quality in summer learning programs: Approaches and recommendations*. Wallace Foundation.
- Miller, D. P. (2016). Accessibility of summer meals and the food insecurity of low-income households with children. *Public Health Nutrition*, 19(11), 2079–2089.
- Mobley, C., Hossfeld, C., Eichinger, M., & Hossfeld, L. (2020). *Hunger and food insecurity in Pickens County, South Carolina: 2019*. Clemson University College of Behavioral, Social, and Health Sciences. Research Report. <https://www.clemson.edu/cbshs/about/building-communities/images/uwpc-report.pdf>
- Molaison, E. F., & Carr, D. H. (2006). Summer Food Service Program sponsors' perceived benefits and barriers related to participation in the program. *Journal of Child Nutrition Management*, 2(1), 1–10.
- Moore, T., & Lawrence, S. (2009). *Creating greater opportunity in South Carolina's I-95 corridor: A human needs assessment: Report*. Francis Marion University.
- Morales, D. X., Morales, S. A., & Beltran, T. F. (2020). Racial/ethnic disparities in household food insecurity during the COVID-19 pandemic: A nationally representative study. *Journal of Racial and Ethnic Health Disparities*, 1–15.

- National Academies of Sciences, Engineering, and Medicine. (2019). *Shaping summertime experiences: Opportunities to promote healthy development and well-being for children and youth*. National Academies Press. <https://doi.org/10.17226/25546>
- National League of Cities. (2019). *The Five LMCTC Goals*. <https://www.healthycommunitieshealthyfuture.org/the-five-lmctc-goals>
- Odoms-Young, A. M. (2018). Examining the impact of structural racism on food insecurity: Implications for addressing racial/ethnic disparities. *Family & Community Health, 41*, S3–S6.
- Pebesma, E. J., & Bivand, R. S. (2005). Classes and methods for spatial data in R. *R News, 5*(2). <https://cran.r-project.org/doc/Rnews>
- Popkin, S. J., Gilbert, B., Harrison, E., Arena, O., DuBois, N., & Waxman, E. (2019). *Evidence-based strategies to end childhood food insecurity and hunger in Vermont*. Research Report 60. Metropolitan Housing and Communities Policy Center.
- R Core Team. (2019). R: A language and environment for statistical computing. R Foundation for Statistical Computing. <https://www.R-project.org>
- Rutter, M. (2012). Resilience as a dynamic concept. *Development and Psychopathology, 24*(2), 335–344. <https://doi.org/10.1017/S0954579412000028>
- Singletary, J., Everett, J. K., & Nolen, E. (2012). Advancing childhood food security through organizing strategies. *Journal of Applied Research on Children: Informing Policy for Children at Risk, 3*(1), 1–15.
- Snijkers, G., Haraldsen, G., Jones, J., & Willimack, D. (2013). *Designing and conducting business surveys*. John Wiley & Sons.
- South Carolina Department of Education. (2018). *South Carolina Department of Education 2018 Food Service Program*. <https://ed.sc.gov/districts-schools/nutrition/special-programs/usda-summer-meal-programs/summer-food-service-program/scde-sponsor-training-manual-2018>
- Stodolska, M., Shinew, K. J., & Camarillo, L. N. (2019). Constraints on recreation among people of color: Toward a new constraints model. *Leisure Sciences, 1*–19.
- Tarasuk, V., Mitchell, A., McLaren, L., & McIntyre, L. (2013). Chronic physical and mental health conditions among adults may increase vulnerability to household food insecurity. *The Journal of Nutrition, 143*(11), 1785–1793. <https://doi.org/10.3945/jn.113.178483>
- Thomson, A. M., Perry, J. L., & Miller, T. K. (2009). Conceptualizing and measuring collaboration. *Journal of Public Administration Research and Theory, 19*(1), 23–56.
- Three Square Food Bank. (2015). *Food insecurity by zip code 2015*. <https://www.threesquare.org/learn/research>
- United States Census Bureau. (2016). *TIGER/Line Shapefiles*. U.S. Census Bureau. http://www2.census.gov/geo/tiger/TIGER2016/PRIMARYROADS/tl_2016_us_primaryroads.zip
- United States Department of Agriculture. (2005). *Model programs booklet USDA Summer Food Service Program*. https://fnsprod.azureedge.net/sites/default/files/Model_Programs_Booklet_2005.pdf

- United States Department of Agriculture. (2013). *How to become a sponsor*. <https://www.fns.usda.gov/sfsp/how-become-sponsor>
- United States Department of Agriculture. (2017). *Food environment atlas*. <https://www.ers.usda.gov/webdocs/DataFiles/80591/documentation.pdf?v=6478.9>
- United States Department of Agriculture. (2018). *Measurement*. <http://www.ers.usda.gov/food-nutrition-assistance/food-security-in-the-us/measurment.aspx>
- United States Department of Agriculture. (2019a). *Definitions of food security*. <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx>
- United States Department of Agriculture. (2019b). *Comparing programs*. <https://fns-prod.azureedge.net/sites/default/files/sfsp/smt-comparison.pdf>
- United States Department of Agriculture. (2019c). *SFSP characteristics study*. <https://www.fns.usda.gov/sfsp/summer-food-service-program-characteristics-study>
- United States Department of Agriculture. (2020a). *Program data overview*. <https://www.fns.usda.gov/pd/overview>
- United States Department of Agriculture. (2020b). Economic Research Service (ERS). *Food environment atlas*. <https://www.ers.usda.gov/data-products/food-environment-atlas/>
- Van Lancker, W., & Parolin, Z. (2020). COVID-19, school closures, and child poverty: A social crisis in the making. *The Lancet Public Health*, 5(5), e243–e244.
- Weiser, S. D., Palar, K., Hatcher, A. M., Young, S. L., Frongillo, E. A., & Laraia, B. (2015). Food insecurity and health: A conceptual framework. In L. Ivers (Ed.), *Food insecurity and public health* (pp. 23–50). CRC Press.
- Wicks, A., Beedy, J. P., Spangler, K. J., & Perkins, D. F. (2007). Intermediaries supporting sports-based youth development programs. *New Directions for Youth Development*, 2007(115), 107–118.
- Yin, R. K. (2016). *Qualitative research from start to finish*. Guilford Publications.
- YMCA of the USA. (2020, March 18). *YMCA of the USA COVID-19 statement*. <https://www.ymca.net/news-releases/covid19>

Reproduced with permission of copyright owner.
Further reproduction prohibited without permission.