Factors Associated with Participation in the Oregon Summer Food Program: A Mixed Methods Analysis

Alethea Chiappone, MPH, MSW, Gretchen Swanson Center for Nutrition
Teresa M. Garvin, MS, PhD, Gretchen Swanson Center for Nutrition
Casey Blaser, MS, Gretchen Swanson Center for Nutrition
Hollyanne E. Fricke, MPH, Gretchen Swanson Center for Nutrition
Lisa Weissenburger-Moser Boyd, PhD, MPH, Gretchen Swanson Center for Nutrition
Tom Barnard, MPH, Gretchen Swanson Center for Nutrition
Amy L. Yaroch, PhD, Gretchen Swanson Center for Nutrition

Corresponding Author: Alethea Chiappone, achiappone@centerfornutrition.org

ABSTRACT

The Summer Food Service Program (SFSP) was established to ensure children eligible for the National School Lunch Program (NSLP) continue to receive meals outside of the school year. However, participation in SFSP is relatively low (2.8 million annually) when compared with NSLP participation (30.4 million annually), suggesting that challenges exist in reaching children. Using a mixed methods approach, this study explored factors associated with SFSP participation. A secondary data analysis of the Oregon SFSP identified factors associated with SFSP participation at the Oregon SFSP-, sponsor-, and site-levels. Semi-structured interviews with SFSP sponsors explored barriers and facilitators to SFSP participation. Results showed increases in the total number of meals served as well as number of sponsors and sites for the Oregon SFSP over the study period. Sponsor average daily participation (ADP) demonstrated a significant decrease over the study period. Sponsors that offered more meal types, greater number of activities, and were school districts had a higher ADP. Results from interviews showed themes of organizational characteristics, site environment, and meal logistics. Findings suggest that strengthening existing sites and tailoring the current SFSP model to allow successful expansion of the program to new sites may have the greatest impact on increasing average daily participation and improve the operational sustainability of the SFSP.

Keywords: Program Evaluation; Public Health Practice; Child Nutrition Services; Mixed Methods Analysis; Summer Food Service Program; United States Department of Agriculture
INTRODUCTION

In 2016, over three million United States (US) households with children (8%) experienced food insecurity, defined as limited or uncertain availability of nutritionally adequate and safe foods, and/or limited or uncertain ability to acquire acceptable foods in socially acceptable ways (Coleman-Jenson, Rabbitt, & Singh, 2016). Food insecurity is especially prevalent among low-income households as well as racial and ethnic minorities (Balisteri, 2016), and is associated with negative health and quality of life outcomes in children, such as increased hospitalizations, developmental problems, lower cognitive functioning, and lower academic achievement (Cook et al., 2013; Council on Community Pediatrics [COCP], 2015; Johnson & Markowitz, 2017). In 1946, the United States Department of Agriculture (USDA) established the National School Lunch Program (NSLP), which aims to address food insecurity and malnutrition by providing nutritious and free or reduced price lunches at school to low-income children (Hopkins, Hooker, & Gunther, 2017). Subsequently, the Summer Food Service Program (SFSP) was established in 1975 to ensure children eligible for the NSLP continued to receive meals outside of the school year as well as to reduce food insecurity in the summer (COCP, 2015; Hopkins et al., 2017). The number of children participating in the SFSP is relatively low (2.8 million) when compared with NSLP (30.4 million) (COCP, 2015; USDA, 2017b). During the 2015/2016 school year, only 16% of students participating in NSLP participated in the SFSP (Food Action Resource Center [FRAC], 2017).

The state of Oregon experiences similar, but unique, challenges when compared to the rest of the US, as 16% of households with couples and children experienced hunger or food insecurity, but 54% of households with single mothers and children experienced hunger or food insecurity (Edwards, 2017). Moreover, a discrepancy was seen in NSLP and SFSP participation in the state of Oregon, as only 16% of students participating in NSLP participated in the SFSP (FRAC, 2017). The difference in meal program participation from the school year to summer is problematic, as food insecurity among children increases during the summer in locations where fewer SFSP meals are offered (Nord & Romig, 2006). The inconsistency in meal program participation also shows that challenges exist in reaching eligible children during the summer, thereby contributing to increased food insecurity among low-income children during the summer (COCP, 2015; Hopkins et al., 2017; Nord & Romig, 2006; Bartfeld & Dunifon, 2006).

In an effort to increase SFSP participation, the USDA has provided multi-level outreach, improved policies, and developed partnerships at the local, state, and national level (FRAC, 2017; Gordon, Briefel, Collins, Rowe, & Klerman, 2017). Further, Congress and the USDA have improved access to the SFSP through streamlining paperwork processes, making it easier for sponsors (i.e., administrating agencies) to establish SFSP sites (i.e., locations where SFSP meals are served) (Wauchope & Stracuzzi, 2010). However, sponsors and state administrators indicate that barriers to SFSP participation still exist. Moinaisi & Carr (2006) conducted interviews and surveys with SFSP state administrators and sponsors, respectively, and reported transportation, paperwork, and staff capacity for meal production as strong barriers to SFSP participation. Wauchope & Stracuzzi (2010), as well as Gordon (2003), conducted interviews with state administrators and surveys with SFSP sponsor and found, in their respective evaluations, that key barriers to SFSP participation included transportation, population density, inadequate facilities, overhead costs, weather, and children’s lack of interest in leaving the house (Wauchope & Stracuzzi, 2010; Gordon, 2003).
Currently, there is limited peer-reviewed research on factors associated with SFSP participation. Accordingly, the purpose of this study was to explore factors associated with SFSP participation at the sponsor and site level. Findings from this study may be used to develop recommendations for program improvement aimed at increasing SFSP participation, and ultimately improve the impact of the SFSP. To our best knowledge, this is the first mixed methods study in this topic area that has applied a multi-level approach (i.e. Oregon SFSP-, site-, and sponsor-level) to exploring factors associated with SFSP participation.

METHODS

The current study utilized a convergent parallel mixed methods design, in which quantitative and qualitative data were collected separately, analyzed separately, and then merged to interpret findings (Creswell & Plano-Clark, 2011). More specifically, the quantitative component encompassed secondary data analysis from the Oregon SFSP to identify factors associated with SFSP participation. The qualitative component involved conducting and analyzing semi-structured interviews with site coordinators from SFSP sponsors to explore barriers and facilitators to SFSP participation at the Oregon SFSP, sponsor-, and site-level. Site coordinators were employed by SFSP sponsors to oversee one or more SFSP sites. Specifically, sponsors located eligible sites; hired, trained, and supervised staff and/or volunteers; arranged for meals to be prepared and/or transferred to sites; monitored site compliance with SFSP regulations; prepared and received claims for federal reimbursement; and attended a statewide agency training (USDA, 2016a; USDA, 2016b). Quantitative and qualitative results are presented separately and then merged in the discussion to substantiate and corroborate results. All study activities were approved by the University of Nebraska Medical Center Institutional Review Board.

Intervention

From 2011 to 2015, the Oregon SFSP provided funds to organizations (i.e., sponsors) to serve meals to children during the summer when school was not in session (USDA, 2016b). SFSP sponsors included school districts, government agencies, non-profit organizations, faith-based organizations, tribal organizations, and camps, established and oversaw sites at locations, such as parks, schools, libraries, and churches (USDA, 2016b). Sponsors served meals at one or at multiple sites, which were classified either as open sites (i.e., served meals to any child 18 years or younger) or closed sites (i.e., limited meal participation to a specific group, such as camps) (USDA, 2016b). Some Oregon SFSP school district sponsors participated in the Seamless Summer Option, which is a streamlined option for providing summer meals by continuing to follow several of the same operational requirements of the NSLP (e.g., filing claims).

Meals were required to meet USDA reimbursable meal guidelines, and could include breakfast, morning snack, lunch, afternoon snack, and/or supper (USDA, 2016b). Sites were eligible for the SFSP if they met one of two criteria: 1) were located within the attendance area of a public school where 50% or more students are eligible for NSLP free or reduced price meals, or 2) if the site was located in an area where 50% or more of the area’s children live in households at or below 185% of the federal poverty level based on U.S. Census data (USDA, 2016b). Though not required, sites often offered learning and/or recreational activities for children (USDA, 2016a; USDA, 2016b).

Quantitative
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Sample. Secondary data from the Oregon SFSP from 2010 to 2015 were provided by the Oregon Department of Education. Throughout the six-year period, there were a total of 164 unique sponsors (i.e., administrating agencies), with an average of 132 sponsors per year and 1,393 unique sites (i.e., locations where SFSP meals are served), with an average of 802 active sites each year. No observations were excluded from this analysis.

Measures. A subset of variables from the provided dataset was utilized for this analysis (Table 1). The primary outcome variable was sponsor average daily participation (ADP), which was calculated on a yearly basis as the sum of all meal service variables (breakfast, morning snack, lunch, afternoon snack, and supper) across all sites within a sponsor, divided by the sum of the sites’ operating days. Specifically:

\[
\text{Sponsor ADP} = \frac{\sum_{j=1}^{k} \text{Total Meals Served}_j}{\sum_{j=1}^{k} \text{Days}_j}
\]

where “k” is the total number of sites within that sponsor.

Other covariates included in this study were at the Oregon SFSP-level, sponsor-level and/or site-level. Oregon SFSP-level variables included: number of participants (sponsors, sites); number of participants lost from prior year (sponsors, sites); meals served (breakfast, morning snack, lunch, afternoon snack, and supper). Variables at the sponsor-level included sponsor-type (school district vs. non-school district, such as a food pantry or community center); average number of operating days; number of sites; average number of meal service types; and year. Variables at the site-level included rurality (rural vs. urban); enrollment type (open vs. closed enrollment); and activities (offered vs. not offered). Lastly, we constructed sponsor-level variables from site-level variables. The first was sponsor rurality, which was the proportion of rural sites within a sponsor. The second was sponsor activities, which was the proportion of sites hosting activities within a sponsor.

Statistical Analysis. SAS (version 9.4, SAS Institute Inc., Cary, NC) was used for all statistical analyses. Descriptive statistics were estimated using means or percentages. All analyses are presented at the site level or higher. Longitudinal linear mixed models were used to examine differences in ADP served among subsamples of the sample while controlling for year, number of sites within a sponsor, average operating days, and average number of meal types served. Subsamples were selected based on hypotheses generated by the research team. The Base Model included covariates of year, number of sites within a sponsor, average operating days, and average number of meal types served. Model 1 added sponsor rurality to the Base Model. Model 2 added school district to the Base Model. Model 3 added sponsor activities to the Base Model. LLMM incorporated random effects due to sponsor differences as well as an auto-regressive covariance pattern to capture the relatedness of observations within sponsors across the study period. Statistical significance was set at a two-sided alpha level of p<0.05.

Qualitative

Sample. The sample was recruited from a list of SFSP sponsors located in Oregon and active in 2015 (n=140). Purposive sampling techniques, which involved selecting individuals knowledgeable about or experienced with the topics of interest in this study, were used to recruit 10 site coordinators from SFSP sponsors representative across rurality (rural vs. urban), sponsor type (school district vs. non-school district, such as a food pantry or community center), enrollment type (open vs. closed enrollment), activities (offered vs. not offered), and site count. A total of 63 sponsors were invited to participate via email. Of the 63 sponsors, 17 (27%) agreed to participate,
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13 (21%) declined to participate, 25 (40%) did not respond to interview requests, and 4 (6%) referred the request on to another individual. Of the four interview requests that were forwarded, one agreed to participate and three did not respond. Of the 17 that agreed to participate, 10 completed an interview and 7 did not respond to multiple correspondence attempts. The resulting sample of sponsors (n=10) oversaw an average of 15.4 sites (range: 2-62); 7 had open enrollment sites and 3 had a combination of open and closed sites; 6 were school districts; 9 were rural; 6 served lunch only; and 4 served a combination of lunch and breakfast.

Data Collection. A semi-structured interview guide was developed by the research team and addressed facilitators and barriers to SFSP participation at the sponsor- and site-levels, examining information about the sponsor and its sites, site environment characteristics, and sponsor and site capacity. Interviews were conducted in 2016 by one of three trained interviewers, using a standard protocol of interview questions and probes (Tashakkori A & Teddlie, 2003). Interviews lasted approximately 45-60 minutes and were conducted via telephone. Interviewees received $20 as compensation for their time.

Data Analysis. Interviewees provided verbal consent to participate and be audio-recorded. Interviews were transcribed verbatim. Coding and analysis was conducted using Dedoose, a web-based qualitative analysis platform. Initially, two members of the research team independently reviewed transcripts and developed a list of codes using a Grounded Theory approach (Lewis-Beck, Bryman, & Liao, 2003). The list of codes was then reviewed and discrepancies were discussed further until consensus was reached, resulting in an initial list. Two coders used the initial code list to independently review five transcripts each. During this process, the research team met for peer debriefing sessions to address truth value (i.e., represent participant’s perspectives clearly and accurately) (Noble & Smith, 2015). During these sessions, the coding list was discussed and refined as needed, by adding, removing, or modifying codes. A third member of the research team reviewed coded transcripts. After coding was completed, codes were conceptually grouped into emergent themes through frequency of coding within similar context across interviews. The final coding scheme resulted in three themes with eleven sub-themes.

RESULTS

Quantitative

Table 1 shows characteristics of the Oregon SFSP by year. The total meals served by the Oregon SFSP increased in only two of the five years, leading to an overall 2.7% year-to-year increase. Throughout the study period, there was a general trend of growth in the number of sponsors and sites across the state; specifically, there was a net average of 3.2 more sponsors and 30.4 sites per year, even after considering losses in sponsors and sites. On average, 59.1% of sponsors were school districts and 89.5% had activities occurring at one or more sites. Also, 93.4% of sites were rural, 92.7% were open enrollment, and 66.5% of sites offered activities.
Table 1. Oregon SFSP-, sponsor-, and site-level characteristics by year, 2010-2015

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oregon SFSP-Level</strong></td>
<td></td>
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<tr>
<td>Participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sponsors</td>
<td>124</td>
<td>126</td>
<td>128</td>
<td>133</td>
<td>137</td>
<td>140</td>
</tr>
<tr>
<td>Sites</td>
<td>715</td>
<td>761</td>
<td>789</td>
<td>811</td>
<td>868</td>
<td>867</td>
</tr>
<tr>
<td>Loss in Participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Sponsors</td>
<td>--</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Sites</td>
<td>--</td>
<td>69</td>
<td>117</td>
<td>121</td>
<td>143</td>
<td>194</td>
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<tr>
<td>Meals served</td>
<td>1,821,15 8</td>
<td>2,012,17</td>
<td>1,969,47 1</td>
<td>1,923,77 0</td>
<td>2,066,02</td>
<td>3,026,15 0</td>
</tr>
<tr>
<td>Breakfast</td>
<td>379,726</td>
<td>400,432</td>
<td>368,867</td>
<td>378,682</td>
<td>436,788</td>
<td>424,274</td>
</tr>
<tr>
<td>AM snack</td>
<td>668</td>
<td>652</td>
<td>732</td>
<td>2055</td>
<td>7,109</td>
<td>13,431</td>
</tr>
<tr>
<td>Lunch</td>
<td>1,282,19 8</td>
<td>1,406,99 6</td>
<td>1,409,82 1</td>
<td>1,339,92 8</td>
<td>1,431,29</td>
<td>1,444,17 4</td>
</tr>
<tr>
<td>PM snack</td>
<td>87,704</td>
<td>107,544</td>
<td>101,317</td>
<td>87,509</td>
<td>92,135</td>
<td>86,680</td>
</tr>
<tr>
<td>Supper</td>
<td>70,862</td>
<td>96,554</td>
<td>88,734</td>
<td>115,596</td>
<td>98,693</td>
<td>93,591</td>
</tr>
<tr>
<td><strong>School district sponsors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average sponsor ADP</td>
<td>102.29</td>
<td>104.92</td>
<td>95.86</td>
<td>84.56</td>
<td>89.64</td>
<td>81.78</td>
</tr>
<tr>
<td><strong>Sponsors with activities at one or more site</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>104 (83.9%)</td>
<td>114 (90.5%)</td>
<td>115 (89.8%)</td>
<td>115 (86.5%)</td>
<td>120 (87.7%)</td>
<td>120 (85.7%)</td>
<td></td>
</tr>
<tr>
<td><strong>Site-Level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural sites</td>
<td>715 (100.0%)</td>
<td>727 (95.5%)</td>
<td>742 (94.0%)</td>
<td>770 (94.9%)</td>
<td>820 (94.5%)</td>
<td>721 (83.2%)</td>
</tr>
<tr>
<td>Open enrollment sites</td>
<td>659 (92.2%)</td>
<td>705 (92.6%)</td>
<td>726 (92.0%)</td>
<td>751 (92.6%)</td>
<td>812 (93.5%)</td>
<td>817 (94.5%)</td>
</tr>
<tr>
<td>Sites with activities</td>
<td>486 (68.0%)</td>
<td>521 (68.5%)</td>
<td>534 (67.7%)</td>
<td>540 (66.6%)</td>
<td>568 (65.4%)</td>
<td>542 (62.5%)</td>
</tr>
</tbody>
</table>

Abbreviations: SFSP, Summer Food Service Program; ADP, Average Daily Participation; AM Snack, Morning Snack; PM Snack, Afternoon Snack
The Base Model showed that year was a significant predictor of sponsor ADP (Table 2), with a decrease of 3.8 percentage points per year, on average ($P < .001$). Each additional site included within a sponsor and each additional day added to a sponsor’s average operating days were found to be associated with a decrease in ADP of 2.5 percentage points ($P < .001$) and 0.8 percentage points ($P < .001$), respectively. Alternatively, a one unit increase in the average number of meal service types offered (e.g., breakfast, lunch, etc.) within the sponsor was associated with 50.6 more meals being served by that sponsor per day ($P < .001$).

**Table 2. Associations between sponsor level factors and sponsor ADP**

<table>
<thead>
<tr>
<th>Model and Covariates</th>
<th>Coefficient</th>
<th>95% Confident Interval</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base Model^</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor Level Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year</td>
<td>-3.81</td>
<td>-5.64, -1.98</td>
<td>&lt;0.0001*</td>
</tr>
<tr>
<td>Number of Sites</td>
<td>-2.49</td>
<td>-3.51, -1.47</td>
<td>&lt;0.0001*</td>
</tr>
<tr>
<td>Average Meal Service Types</td>
<td>50.59</td>
<td>40.21, 60.97</td>
<td>&lt;0.0001*</td>
</tr>
<tr>
<td>Sponsor’s Average Operating Days</td>
<td>-0.82</td>
<td>-1.21, -0.44</td>
<td>&lt;0.0001*</td>
</tr>
<tr>
<td><strong>Model 1^</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor Rurality</td>
<td>-13.79</td>
<td>-29.56, 1.99</td>
<td>0.0866</td>
</tr>
<tr>
<td><strong>Model 2^</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School District</td>
<td>28.30</td>
<td>3.75, 52.85</td>
<td>0.0239*</td>
</tr>
<tr>
<td><strong>Model 3^</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sponsor Activities</td>
<td>20.46</td>
<td>6.10, 34.82</td>
<td>0.0053*</td>
</tr>
</tbody>
</table>

Abbreviations: ADP, Average Daily Participation  
^Adjusted for: year, number of sites within a sponsor, average operating days, and average number of meal types served  
* p<0.05

The proportion of sites that offered activities had a significant impact on sponsor ADP ($P = .01$) (Model 3). Sponsors with activities at all sites had an ADP that was 20.5 percentage points higher than sponsors without any activities. Though not shown, when controlling for types of meals served, activities was no longer significantly associated with sponsor ADP ($P = .09$), implying that the proportion of activity participation and average number of meals served are collinear; that is, the impact they have on ADP overlaps. Lastly, significant differences were found between school district and non-school district sponsors (school district sponsors had an ADP of 28.3 percentage points higher ($P = .02$)) (Model 2).

**Qualitative**

Three themes emerged describing influential factors to summer meal participation: 1) organizational characteristics; 2) site characteristics; and 3) meal logistics. Within each of the three major themes, several sub-themes are presented.
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Organizational Characteristics

Staffing. Maintaining enough staff was described as a challenge to SFSP operation; however, not all interviewees perceived it as a major barrier, as some said they still serve the same number of meals regardless of their staffing. Interviewees described that staff characteristics were important, and noted the benefit of hiring engaging and relatable staff and volunteers. One participant described, “We have teenagers in our system that really could use the job experience… I know that kids are drawn to teenagers.” Another described strong staff engagement created a welcoming environment, “A lot of my staff know every child's name.”

Funding. Interviewees described USDA funding as inadequate for SFSP operation. Sponsors that prepared meals off-site and delivered them to sites experienced high gas costs and encountered additional vehicle maintenance costs; these challenges are exacerbated in rural areas with longer distances to drive. One participant described challenges in meeting USDA requirements in order to get meal reimbursements, stating, “We need to serve a certain number of kids in order to get the reimbursement... The rural program is really somewhat on the edge of survival, because we only serve maybe 20 kids at each of those sites on that 140-mile route.” The majority of interviewees described having to apply for additional funding to support their program.

Site Expansion. Interviewees described increasing program reach by expanding the number of sites. A large number of smaller sites in contrast to fewer centralized sites was described as improving accessibility, especially when transportation is a barrier for the target audience, as is often the case in rural areas. One participant noted, “Part of the reason why we have so many sites is because that really seems to be the only way to get the kids is if you go to them rather than have them come to you.”

Site Characteristics

Facility. Interviewees described that indoor facilities (e.g. schools) benefit from having kitchens, tables, serving stations, dumpsters, shelter from weather conditions, and site custodial staff. Such attributes reduce extra equipment and staffing costs. Yet, some interviewees perceived indoor facilities as restricting environments. Outdoor facilities (e.g. parks) were described as providing a natural environment for activities. One participant described, “Kids love to come [to the parks], and we always made it a rule that they had to come through and eat first and then play.” However, these facilities had their own set of obstacles, such as limited access to restrooms, dumpsters, and protection from weather conditions.

Activities. Interviewees overwhelmingly agreed that the presence of activities promoted participation. One participant noted, “If you do not provide something they do not come.” However, activities were frequently geared towards younger children, despite the fact that programs aimed to engage children and adolescents. Interviewees generally described adolescents as difficult to reach and hypothesized that age-appropriate or more inclusive activities may improve participation. The built environment of sites (e.g. playgrounds) as well as community partnerships influenced activities offered. One participant described, “When I’m able to get fire trucks in... get something big going on, then yes. They [participants] definitely increase.”

Social Environment. Interviewees stressed that SFSP was more than just serving meals. Creating a welcoming and respectful environment could result in increased and consistent participation. One participant stated, “It's all about family, you know? All the children here and their families they're my family as well.” Another participant described that it is important for staff...
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...and volunteers to get to know children and adolescents attending the SFSP. One participant described hiring relatable volunteers; “We had a college student from the university nearby who volunteered... who actually grew up in that low-income apartment area and now she's getting ready to graduate from college.”

Parent Engagement. Some programs utilized a parent volunteer model to improve participation, in which parents that brought their children could volunteer at the site and earn free meals. For example, “I found that more children come when their parents bring them... What I started doing was offering the parents a meal to help... our counts went up.”

Site Accessibility. Interviewees described that it was critical to understand the community context in selecting accessible site locations. Both geographical and social accessibility were important, such as determining not only where the target audience lives, but also where they spend time during the day. Constant vigilance of participation numbers, as well as willingness to be flexible with site location, was described as key to avoiding stagnant participation. One participant described, “We are always evaluating our site performance... A block or two away we’ve got no kids. A block or two in some direction, all of a sudden we’ve got 20 kids.” In rural areas, site accessibility was described as a major barrier to reaching children.

Meal Logistics

Preparation & Delivery. Interviewees described using either centralized or non-centralized kitchens. Sites in schools typically used a non-centralized kitchen model, as described by one participant, “Each school has a full kitchen and staff so everything is made onsite at each school.” On-site kitchens reduced meal transportation barriers and allowed for flexible menu planning. Other sites used centralized kitchens and delivered meals to sites. This model was advantageous for reaching a larger number of sites, rural sites, and sites without kitchen access. However, food preparation and delivery was described as complex and expensive. For example, “After the sandwiches are made, they go in the refrigerators... there’s another crew that comes in and they put them all – everything into the bags and then put the bags in the coolers. And then they leave. And then about, oh, 10:30, quarter to 11:00, I have probably four or five drivers that will come in and they will pick up the coolers and take them to the sites.”

Meal Type. Lunch was the most commonly served meal, with the highest participation across all sites interviewed. The second most commonly served meal, breakfast, was described as difficult to achieve high participation. Interviewees conveyed trying to promote participation through extending the time window for breakfast or offering breakfast later. One participant stated, “We've tried to make the breakfasts a little bit later even, and offered them, but it's summertime and it's really hard to get the kids out before noon.” Ultimately, interviewees described not knowing how to promote participation for breakfast.

Menu flexibility. Interviewees expressed a desire to serve foods that the kids liked. “It's really important for us as a food bank to make sure that those meals are as healthy as possible. But we also have to realize, too, that kids aren't going to eat food just because it's placed in front of them. It has to be familiar food.” One participant mentioned including surveys with springtime flyers to identify what children ate. Others worked with school chefs and kitchen staff to cater their menu.
DISCUSSION

The current study explored factors associated with SFSP participation across the state of Oregon. Over the six-year study period, an increase in the total number of meals served, and number of sponsors and sites in the Oregon SFSP was observed. However, when considering sponsor ADP, data demonstrated a significant decrease in sponsor ADP over the study period. One might expect these findings to parallel the increase in the total number of meals served; however, ADP considers operational days and the number of sites within a sponsor, and in our study, both, were negatively associated with sponsor ADP. Additionally, sponsors that offered more meal types, offered more activities, and were school districts versus non-school districts, had a higher ADP. Lastly, interviews with site coordinators revealed intricacies of operating a sustainable SFSP, as well as efforts to strengthen and promote participation within their SFSP.

Quantitative findings showed an increase in the number of sites in the Oregon SFSP over the study period. Interviewees described expanding the number of sites in an effort to improve accessibility and reach, yet quantitative findings demonstrated an inverse relationship between number of sites within a sponsor and ADP. The complexities of operating multiple sites described by interviewees, such as meal transportation, facility characteristics, staffing, and funding, may explain these findings, and are broadly consistent with existing qualitative research. Overhead costs, insufficient staff, inadequate facilities, weather, transportation issues, and population density were cited as barriers to maintaining sites (Wauchope & Stracuzzi, 2010; Molaison & Carr, 2006; Gordon et al., 2003).

Quantitative data also suggested that the more meal types served by a sponsor, the greater the sponsor ADP. However, there is likelihood that this relationship would plateau and should be interpreted with caution, as some sponsors may not have the capacity to expand meal services. Qualitative data suggested that offering a meal does not necessarily mean that participants will come to a site. Interviewees said that offering activities, creating a welcoming environment, and engaging parents helped to promote participation. On the other hand, interviewees described unsuccessful attempts to achieve high participation for breakfast despite using some of the previously mentioned strategies. Research on what SFSP participants think about the SFSP and the sites they attend is scant and may elucidate factors that promote or hinder their participation.

School district sponsors tended to have a higher ADP than non-school district sponsors, perhaps due to existing capacity. Interviewees from school districts described that kitchen staff work at sites throughout the summer, and that schools have infrastructure for food preparation and clean-up (e.g., kitchens, dumpsters) as well as hosting activities (e.g., gyms and playgrounds). School districts in Oregon also have the option to participate in the Seamless Summer Option, which is a streamlined option for providing summer meals (USDA, 2017b). Seamless Summer Option participation was not measured by the secondary data source; however, it may reduce operational barriers and potentially impact ADP, warranting additional research. On the other hand, exploring ways to host sites at facilities with similar resources may improve sponsors’ capacity to maintain sites. Additionally, existing sites may be more operationally sustainable if they seek partnerships with organizations for things like activities, cross-promotion, and community reach (FRAC, 2017).
One probable conclusion from our findings is that sponsors expanded the number of sites in effort to reach more children, though doing so may strain resources. Strengthening existing sites by ensuring sites are geographically accessible, food and beverages served as well as activities are culturally sensitive for local communities, offering quality meals, hosting activities geared toward various age groups, and hiring staff and volunteers familiar to the population of interest, such as teenagers, parents, and gatekeepers, may increase SFSP participation (FRAC, 2017; Bruce, De La Cruz, Moreno, & Chamberlain, 2017). Expanding the number of sites within a sponsor may also lead to increased participation (Miller, 2016); however, careful planning with regard to the financial and operational logistics prior to expanding sites is crucial. Helping sponsors find additional funding may improve their ability to expand sites (Molaison & Carr, 2006). This may be especially important for sites that serve rural communities, as there are fewer children available to meet the minimum standards of service in order to receive meal reimbursements from the USDA (FRAC, 2016). A key recommendation that comes from the current study is to explore opportunities for sponsors to share resources with other organizations, such as locally owned grocery stores, in order to mutually support activities, promotion, and community reach.

Although the SFSP reduces seasonal food insecurity among children (Bartfeld & Dunifon, 2006), our findings suggest the current model is not operationally sustainable for all communities. Strategizing ways to tailor the SFSP model to smaller communities is needed to ensure sponsors continue to have the resources available to reach children. If singular data points are considered without the context of analysis and qualitative description, it may appear that a rural site serves a lower ADP. However, it should be considered that rural communities may be more in need of the SFSP. For future program growth, the model may be modified to consider tailoring to the nuances of communities with existing and planned sites, with a particular focus on small, rural communities. Different federal guidelines for establishing and maintaining sites in smaller or rural communities may reduce operational barriers. Further exploration into programs that fill gaps in the SFSP reach, such as the USDA Summer Electronic Benefits Transfer for Children (SEBTC) pilot program, may reduce seasonal food insecurity among children (Hopkins et al., 2017).

This study has limitations to report. The reciprocity in this relationship was not measured, so it is unknown whether programs had higher participation because of these factors, or if these factors exist in programs with higher participation. This study was not a randomized controlled trial, so we cannot determine causation. Qualitative data were not representative and results should be generalized with caution. Additionally, due to the scope of the study, each transcript was coded by one researcher, introducing potential bias. Despite this, findings demonstrate ways to potentially increase meals served within the Oregon SFSP and more broadly, across other states.

CONCLUSION

Though NSLP participation is high, the percentage of eligible children participating in SFSP is relatively low (COCP, 2015; USDA, 2017b). Findings from the current study suggest that strengthening existing sites may have the greatest impact on increasing average daily participation. Tailored variations of the current model may allow successful expansion of the program to new sites into areas with smaller populations, by taking into consideration logistical factors such as funding, geographic and social acceptability, access to kitchen, transportation, and access to shelter and equipment for serving. Lastly, policymakers may wish to consider ways to improve
operational sustainability of the SFSP for all communities. Ensuring children have access to the SFSP is one strategy among many that may reduce food insecurity among children in the US.

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