

Summer 2020

## Examining the Organizational Capacity of Public Libraries That Offer Obesity Prevention Programs

Olivia Whitt

Follow this and additional works at: <https://scholarcommons.sc.edu/etd>



Part of the [Public Health Education and Promotion Commons](#)

---

### Recommended Citation

Whitt, O.(2020). *Examining the Organizational Capacity of Public Libraries That Offer Obesity Prevention Programs*. (Doctoral dissertation). Retrieved from <https://scholarcommons.sc.edu/etd/5991>

This Open Access Dissertation is brought to you by Scholar Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Scholar Commons. For more information, please contact [digres@mailbox.sc.edu](mailto:digres@mailbox.sc.edu).

Examining the Organizational Capacity of Public Libraries That Offer Obesity Prevention Programs

By

Olivia Whitt

Bachelor of Arts & Bachelor of Science  
North Carolina State University, 2013

Master of Public Health  
East Carolina University, 2016

---

Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Philosophy in

Health Promotion, Education, and Behavior

The Norman J. Arnold School of Public Health

University of South Carolina

2020

Accepted by:

Sonya Jones, Major Professor

Daniela Friedman, Committee Member

Kelli Kenison, Committee Member

Vanessa Kitzie, Committee Member

Cheryl L. Addy, Vice Provost and Dean of the Graduate School

## **Abstract**

Supplemental Nutrition Assistance Program Education (SNAP-Ed) is a federally funded grant program that helps SNAP-eligible populations make healthy choices, like those outlined by the *Dietary Guidelines for Americans* and the *Physical Activity Guidelines for Americans*. Together with implementation agencies (IAs) and local sites, SNAP-Ed provides direct nutrition education and facilitates policy, systems, and environmental strategies (PSEs) such as farmers markets and community gardens. This qualitative research investigated two specific aims: 1.) Understand the elements of organization capacity that influence a public library's ability to implement obesity prevention programs and 2.) Evaluate the need for library staff public health knowledge when implementing obesity prevention programs at public libraries.

This study included twenty-one in-depth interviews with librarians or library staff that offer nutrition-related obesity prevention programming at their public library branch or library system. The researcher implemented the constant comparison method to determine emerging themes and phenomena. Themes were coded in all transcripts, narratives that describe the theme content developed, and exemplary vignettes selected.

Aim 1 the researcher found that librarians and library staff were motivated to offer obesity prevention programs, but there are several organizational capacity

challenges that must be addressed to provide these types of programs for users.

Librarians and library staff cited limited funding and reliance on volunteers as program partners as frequent barriers. However, they believed these barriers could be overcome with their organizational capacity strength - internal support for the program.

The researcher also found that many obesity prevention programs at public libraries are organized so that community partners answer most health and nutrition program participant questions. However, librarians and library staff receive health and nutrition questions from users in general. Librarians felt more confident directing users to printed health resources compared to non-printed health resources. Several librarians believed that more educational opportunities about helping users with their health and nutrition questions could help future librarians, especially those that serve low-income areas.

This research can help SNAP-Ed and implementing agencies as they continue to work with public libraries. SNAP-Ed implementers can recognize partnerships as a likely limiting organizational capacity at public libraries and work to develop that capacity when implementing SNAP-ed strategies.

## Table of Contents

Abstract .....	ii
Chapter 1: Introduction.....	1
1.1: Preview.....	4
Chapter 2: Background.....	6
2.1: SNAP and SNAP-Ed History.....	6
2.2: Theoretical Background of SNAP-Ed .....	7
2.3: SNAP-Ed Direct Education .....	8
2.4: PSE Strategies and Implementation .....	9
2.5: Success of SNAP-Ed Direct Education and SNAP-Ed PSE .....	9
2.6: Libraries as SNAP-Ed Sites .....	11
2.7: Public Libraries in the United States .....	12
2.8: Public Libraries as Community Health Partners .....	13
2.9: Health Information at the Library .....	13
2.10: The Gap: Need versus Capacity .....	15
2.11: Conclusion .....	18
2.12: Theoretical Background .....	19
Chapter 3: Methodology .....	23
3.1 Preliminary Studies.....	23

3.2 Study Setting .....	24
3.3 Sample Description and Sample Procedures.....	24
3.4 Data Collection .....	29
3.5 Data Analysis .....	29
Chapter 4: Public Library Organizational Capacity Strengths and Barriers, To Offering Nutrition-Based Obesity Prevention Programs .....	31
4.1: Abstract .....	32
4.2: Introduction .....	33
4.3: Methods .....	36
4.4: Results .....	39
4.5: Discussion.....	55
4.6: References.....	59
Chapter 5: Need for Librarian and Library Staff Health Training at the Public Library.....	63
5.1: Abstract .....	64
5.2: Introduction .....	65
5.3: Methods .....	67
5.4: Results .....	69
5.5: Discussion.....	81
5.6: References.....	85
Chapter 6: Conclusion .....	88

6.1: Summary .....	88
6.2: Connection to Previous Literature .....	91
6.3: Strengths and Limitations of the Studies .....	93
6.4: Recommendations .....	93
References .....	96

## Chapter 1

### Introduction

For the past 40 years, obesity prevalence has increased in the United States (US).<sup>21</sup> This increase, which impacted all ethnicities, ages, and socioeconomic groups, led US health officials to declare obesity as a national epidemic in 1999.<sup>2</sup> Today approximately 40% of US adults and 19% of children have a body mass index that exceeds 30.0 kg/m<sup>2</sup>.<sup>1-5</sup> Obesity is considered an energy imbalance that results from caloric intake exceeding caloric expenditure.<sup>1</sup> Excessive stored energy can increase the risk for several chronic diseases such as heart disease, stroke, type 2 diabetes, non-alcoholic fatty liver disease, and cancer.<sup>1,5</sup> Although obesity and its related chronic diseases impacts all demographic groups, it disproportionately affects low-socioeconomic groups.<sup>6</sup> This disparity is likely attributable to the lack of nutritious, affordable food in low-income communities.<sup>7,8</sup> Approximately 10% of the US population are low-income and live in a food apartheid which represents systematic and intentional disparities to food access.<sup>8,9</sup> Within food apartheds, individuals are often limited to convenience stores as their local food source, which provide an abundance of processed food and beverages high in calories, fat, sugar, and sodium.<sup>10</sup> A diet fueled by processed foods, instead of fruits, vegetables, and whole grains can contribute to excessive energy intake.<sup>8</sup>

To address this public health issue and decrease health disparities among low and high socioeconomic populations, the United States Department of Agriculture modified the federal the Supplemental Nutrition Assistance Program – Education (SNAP-Ed) program to encourage both direct education and changes to the food environment.<sup>11</sup> This included providing training and technical support to nonprofit agencies or sites, such as public libraries, so they can implement obesity prevention programs such as community gardens, farmers markets, wellness pantries or hosting nutrition education courses at their site. The partnership between SNAP-Ed and sites is intended to alleviate common capacity challenges such as dietary or physical activity guideline knowledge or connections to local resources, which limits the sites' ability to implement new health programs. By developing the site's capacity, the site can then implement and sustain evidenced-based programs that can increase healthy food access and consumption.<sup>11</sup>

This research explored the elements of organizational capacity that facilitate or limit the implementation of SNAP-Ed obesity prevention programs within public libraries. Organizational capacity is a term that collectively describes financial, intellectual, physical, human and other resources that help an organization achieve its goals.<sup>12,13</sup> By understanding the organizational capacity at public libraries, SNAP-Ed educators can better support libraries that implement obesity prevention strategies. This may increase the likelihood that the obesity prevention program will be sustained and have an impact on the community surrounding the public library.<sup>14</sup>

This research was guided by two specific aims and accompanying research questions:

Specific Aim 1: Understand the elements of organizational capacity that influence a public library's ability to implement obesity prevention programs.

Research Questions:

1. What obesity prevention programs are being offered at public libraries?
2. What additional capacity is needed to implement obesity prevention programs at public libraries?
3. What do librarians or library staff consider to be the most significant organizational capacity limitation when considering or implementing an obesity prevention program?
4. What do librarians or library staff consider to be the most significant organizational capacity strength when considering or implementing an obesity prevention program?

Specific Aim 2: Evaluate the need for library staff public health knowledge when implementing obesity prevention programs at public libraries.

Research Questions:

1. What health and nutrition related questions do program participants of obesity prevention programs at public libraries ask librarians or library staff?
2. How confident are librarians or library staff in providing answers to program participants' health related questions?
3. Do librarians believe that their formal education has prepared them to support participants of obesity prevention programming at their library?
4. How do librarians or library staff provide answers to a program participant's health related question?

This qualitative research contributes to the field of public health because it considers the relationship between capacity and implementation of programs. Measuring organizational capacity in community systems, such as libraries, have received little emphasis in public health research. This is a detriment to understanding program

outcomes, because there is a significant correlation between available resources and outcome performance.<sup>13,15</sup> In addition, this research will be one of the first of its kind to study nutrition programs within libraries and the capacity needed to support them. This research also contributes to the field of library science. It can help unveil librarian skills used in practice and inform what additional trainings or education could benefit future librarians.

### **1.1: Preview**

In chapter 2, I describe the SNAP-Ed program and the recent federal legislative changes that encourage community partnerships between SNAP-Ed implementors and local public libraries. I also outline some of the organizational capacity elements that are common in implementing obesity prevention programming at public libraries that a SNAP-Ed partnership could possibly address. Finally, I explain the theoretical background for this research and present my conceptual model, specific aims, and research questions.

Chapter 3 explains the methodology for this research. First it provides a description of the preliminary studies conducted by the SC SNAP-Ed evaluation team. It then details the study setting, data collection and data analysis for both specific aim one and two.

Chapter 4 presents manuscript one. It describes the organization capacity of public libraries in general to offer nutrition programs.

Chapter 5 includes the second manuscript which investigates the human resource element of organizational capacity more specifically. It illustrates the capacity

of librarians and library staff to answer user health and nutrition questions. Together the manuscripts demonstrate the experiences of librarians and library staff at public libraries that offer nutrition programs.

Chapter 5 situates the main findings from the two manuscripts in the wider research about public libraries as participants in the greater health care system. I argue that to meet the growing need of users who utilize the public library as a health resource, there should be more librarian education/training opportunities and more partnerships between the library and community resources. SNAP-Ed should partner with public libraries to facilitate a connection between public libraries and local resources.

## Chapter 2

### Background

#### ***2.1: SNAP And SNAP-Ed History***

SNAP-Ed serves to compliment the federal Supplemental Nutrition Assistance Program (SNAP) through nutrition education and obesity prevention interventions. SNAP formerly called Food Stamps Program was initially developed in 1939 and required participants to buy coupons to double their purchasing value of food surpluses.<sup>16</sup> In 1964 through the Food Stamp Act, President Johnson made the Food Stamp Program permanent federal program and removed the food surplus requirement. The act was aimed to reduce hunger and food insecurity in America.<sup>16</sup> The Food and Agricultural Act of 1977 further changed the Food Stamp Program and removed the initial purchase requirement to make it even more accessible to low-income populations.<sup>16</sup> Now SNAP provides benefits to low-income individuals and families (gross monthly income is less than 130 percent of the federal poverty level in states that have not passed laws to increase income eligibility), so they can supplement their dietary budget.<sup>17</sup> Over 45 million Americans currently receive SNAP benefits each month and as a result, SNAP is the largest federal food and nutrition program.<sup>18</sup> SNAP-Ed is a federally funded grant program that seeks to improve the nutrition and physical activity of SNAP-eligible populations through evidence-based direct education and multi-level social ecological

interventions.<sup>19</sup> Initially developed in 1988, SNAP-Ed has grown from being a limited Land-Grant University System program to an expansive federal program supported by the USDA Food and Nutrition Service (FNS), National Institute of Food and Agriculture (NIFA) and USDA's Economic Research Service (ERS). Now, states are provided with a set amount of funding each year to administer, implement, and evaluate the SNAP-Ed Program. The state agency that also administers SNAP, receives the funding allocation and then enters into contracts with agencies that implement the program – referred to as implementing agencies (IAs). Most IAs are non-profit organizations, state departments, local government agencies, and Indian tribal organizations.<sup>20</sup> Prior to 2010, SNAP-Ed primarily focused on providing direct education that helped SNAP eligible populations make healthy food choices with a limited budget.<sup>19,21</sup>

In 2010, Congress passed the Healthy, Hunger-Free Kids Act (HHFKA), which aimed to reduce the growing prevalence of childhood obesity. The newly established Nutrition Education and Obesity Prevention Grant Program within the HHFKA reformed not only SNAP-Ed's funding structure, but also its priorities.<sup>22</sup> The new requirements encouraged SNAP-Ed implementers to provide guidance on policy, systems, and environmental evidence-based strategies in addition to direct education. It also required an additional focus on obesity prevention efforts consistent with the current *Dietary Guidelines for Americans* and the *Physical Activity Guidelines for Americans*.<sup>23</sup>

## **2.2: Theoretical Background of SNAP-Ed**

New SNAP-Ed requirements outlined in the HHFKA are based on the principles of the social ecological model.<sup>21</sup> The model posits that individual health behavior is

influenced by social, environmental, and societal contexts.<sup>24</sup> It is often depicted with five levels (individual, interpersonal, organizational, community, and public policy) and organized to illustrate increasing influence on individual knowledge, skills, and abilities.<sup>27</sup> A key principle of the social ecological theory states that interventions that impact multiple levels of influence have greater impact on behavior change than those intervening on a single level of influence.<sup>24</sup> To produce the greatest influence on obesity prevention, SNAP-Ed is required to provide multi-level interventions. This is often achieved by providing direct education (individual level) and implementing a PSE strategy at community locations where a significant proportion of low-income or SNAP-Ed eligible populations live, work, learn, play, and shop (organizational level).<sup>25</sup>

### **2.3: SNAP-Ed Direct Education**

SNAP-Ed direct education is the most frequently implemented SNAP-Ed nutrition intervention. This can likely be attributed to the fact that direct education was the priority of SNAP-Ed prior to the HHFKA and SNAP-Ed educators feel more confident implementing direct education compared to PSE strategies.<sup>19,26,27</sup> For SNAP-Ed Direct education, either a SNAP-Ed educator or a partner organization in collaboration with SNAP-Ed, provides group or individual instruction to help SNAP-eligible populations make healthy choices outlined by the *Dietary Guidelines for Americans* and the *Physical Activity Guidelines for Americans*.<sup>21</sup> This can be achieved through educational sessions, cooking classes, or web-based materials. One commonly implemented SNAP-Ed Direct education course is Cooking Matters.<sup>28</sup> Cooking Matters is a partnership program that

offers six-week courses to teach individuals how to shop for and cook healthy meals with a limited food budget.<sup>29</sup>

#### **2.4: PSE Strategies and Implementation**

In addition to offering direct nutrition education, SNAP-Ed within each state must also implement SNAP-Ed PSE strategies.<sup>21</sup> SNAP-Ed PSE strategies require coordination between the state administrative agency, IAs, and sites willing to implement and sustain SNAP-Ed PSE strategies. For sites starting SNAP-Ed PSE strategies, IAs provide initial resources such as seeds and soil for community gardens and help connect the site to local partners such as master gardeners. The goal of IAs is to help the site implement PSE strategies that the site will eventually be able to sustain on their own. To implement sustainable PSE strategies, IAs are encouraged to first work with the site to determine the needs of the local SNAP-Ed eligible population, site resources and capacity, and internal support for the strategy. Then IAs and sites select a PSE strategy (or strategies) to implement that will promote healthy eating and physical activity.<sup>25</sup>

#### **2.5: Success of SNAP-Ed Direct education and SNAP-Ed PSE**

SNAP-Ed Direct education focuses on evidenced-based curriculums aimed at not only reducing obesity, but also increasing food resource management skills, and food safety practices.<sup>21</sup> Some of the evidence-based curriculums include *MyPlate for My Family*, *Eat Smart, Live Strong*, *Food Talk: Better U*, *Healthy Choices for Every Body*, and *Cooking Matters*.<sup>25,30-32</sup> These direct education curriculums frequently result in significant behavioral changes for obesity prevention, food resource management, and

food safety, both immediately and long-term after the conclusion of the curriculum.<sup>30–34</sup>

More specifically, adult participants report making more food purchases based on nutrition facts labels, preparing meals at home at least three times a week, washing hands before and during cooking, having enough food to last through the month, increasing their fruit and vegetable consumption, and reducing soda consumption.<sup>30–34</sup>

There are several peer-reviewed publications that illustrate significant obesity prevention behavior change with the use of SNAP-Ed Direct education without the addition of PSE strategies, but research is still limited.<sup>30–35</sup>

Even fewer peer-reviewed articles evaluate the effectiveness of SNAP-Ed PSEs.<sup>36–39</sup>

Those that do investigate PSEs are often part of a multi-level intervention that includes a direct nutrition education component, and researchers often do not determine how much change is from PSEs alone.<sup>36–39</sup> This does not suggest that the projected outcomes of PSE strategies are unknown. All PSE strategies suggested by FNS guidance are evidence-based in supporting obesity prevention.<sup>25</sup> Commonly implemented PSE strategies like edible gardens and farmers markets that were implemented without SNAP-Ed assistance in the past, produced statistically significant changes in obesity prevention knowledge and behaviors.<sup>37,40–43</sup> In systematic reviews about farmers' markets and obesity prevention outcomes, almost all studies reported an increase in vegetable consumption, and the majority of studies also reported an increase in both fruit and vegetable consumption.<sup>40,42</sup> Similarly, systematic reviews about edible gardens reported that community gardens and school gardens increase the consumption of vegetables.<sup>42,43</sup> Many studies also found statistically significant differences in vegetable

consumption between gardeners and non-gardeners.<sup>42,43</sup> It is anticipated that SNAP-Ed PSE strategies will produce similar results and help SNAP eligible populations meet the *Dietary Requirements for Americans*.<sup>25</sup> However, to better understand SNAP-Ed PSE strategies and their impact, more research needs to examine SNAP-Ed PSE inputs, sustainability, and outcomes.

## **2.6: Libraries as SNAP-Ed Sites**

This research investigates public libraries as a potential SNAP-Ed site. The library stands out as an appropriate institution to implement SNAP-Ed strategies, mainly because they serve as an important community resource to low-income or SNAP eligible populations.<sup>44</sup> In addition, public libraries are a widespread non-profit resource, knowledgeable of the needs within their local communities, and are willing to adopt new programs that improve the quality of life for their users.<sup>45,46</sup> Since the 1970s, public libraries have prioritized adapting their resources and offerings to the needs of their community and users.<sup>47</sup> The former American Library Association President, Sari Feldman, proclaimed that “Today libraries are less about what we have than what we can do with and for our users.”<sup>48</sup> As a result, many libraries expanded their programming to help users with prevalent issues such as homelessness, mental illness, substance abuse, immigration challenges, chronic diseases, and childhood or family trauma.<sup>49,50</sup> While most libraries are eager to provide these resources, additional capacity is needed to offer them.<sup>50</sup>

## **2.7: Public Libraries in the United States**

In the United States there are over 9,000 public library systems and 17,000 library branches.<sup>45</sup> The Federal-State Cooperative System defines a public library as an entity that serves a community district, or region and provides the following: 1.) an organized collection of library materials 2.) paid staff 3.) a schedule where services are available to the public 4.) facilities to support staff, library materials, and schedule 5.) is financed in part or in whole with public funds.<sup>51</sup> Public libraries are widespread resource in the United States serving almost 97% of the total population. They are an especially prevalent resource in less populous areas, with 68% of public libraries servicing towns or rural communities.<sup>51</sup> In 2015, there were over 1.39 billion visits to public libraries. Users cited visiting the public library to gain access to collections, technology, community spaces, assistance from professional staff and programs.<sup>51</sup>

Increasingly, public library users are utilizing the public library for its programs, which are any organized event hosted at the library that provides information and meets the needs of the local community. Some common programs address issues such as childhood and adult literacy, job readiness, and support for the elderly.<sup>49</sup> However, as the prevalence of chronic diseases continues to rise, more public libraries are adding additional programs surrounding health and wellness.<sup>49,52</sup> Many public libraries now offer programs that assist users with enrolling in health insurance via the Affordable Care Act, receiving immunization and health screenings, and developing healthy cooking skills.<sup>52,53</sup>

## ***2.8: Public Libraries as Community Health Partners***

More librarians are looking to expand their library's health program offerings because not only do these programs serve the local community, but they can also address health equity.<sup>46,49,54</sup> Health programs offered at public libraries are typically free to patrons, so all patrons, regardless of income, can participate in Zumba classes, walking programs, or even a diabetes education course, which often cost money elsewhere.<sup>55-57</sup> In addition, health programs often result in positive outcomes for both patrons and the public library. In a review of fitness programs at public libraries, common patron outcomes were increased fitness participation and inquiries, reduced stress, and increased mindfulness.<sup>55</sup> Public librarians also see value in offering these programs beyond just meeting the health needs of their community. Librarians believe health programs lead to both increases in patronage from existing library card holders and increases in community members planning to obtain a library card.<sup>58,59</sup> However, despite their popularity from both patrons and public librarians, only about one-quarter of public libraries offer health programs about chronic disease prevention.<sup>52,60</sup>

## ***2.9: Health Information at the Library***

Offering health and wellness programs at the public library is important, because more users are inquiring about their health conditions, and public libraries are considered a trusted source for information for many communities.<sup>52,61</sup> Approximately half of all visits to the public library are to find health information.<sup>62</sup> While some users visit the library to better understand their health symptoms prior to visiting a health professional, others visit the library per the recommendation of their doctor to learn

more about their diagnosis.<sup>63</sup> Though most users use the public library internet resources to learn more about health conditions, they also commonly ask library staff about nutrition, exercise, and social welfare benefits, such as SNAP, Women, Infants and Children Nutrition Program (WIC), and the Affordable Care Act.<sup>52</sup> In a study of Pennsylvania public libraries and how they serve as a local health and social resource, library staff members stated that they frequently assist users with obesity prevention and health-related questions on a monthly basis.<sup>52</sup> Public library users feel comfortable asking librarians about health issues, because they are considered a trusted and reliable source of information among many library visitors.<sup>61</sup> In fact, based on library research in the United Kingdom, researchers found that library users listed the public library as the most trusted sources for health information, second only to doctors.<sup>61</sup> However in the same study, neither library staff members nor library users knew how much health information support the public library should provide.<sup>61</sup> Library staff members expressed nervousness providing direct health advice, as they were not medical professionals, and library users expressed nervousness asking a librarian sensitive health questions.<sup>61,64</sup> Despite this, library users and library staff members still believed the public library serves as an important health information provider, because they can dedicate more time to answering questions. One library staff member in the United Kingdom study illustrated this theme in his statement, “[The public library] has a supporting role [in the health system]... [Librarians] can provide reading around a subject. Things that perhaps doctors don’t have time to go into with patients.”<sup>61</sup> This sentiment is especially representative of rural public library users. They identify the

public library as “a welcoming place where staff members will take the time to assist with health question.”<sup>63</sup> Public libraries are critical in rural areas, because they often are the only health resource besides medical providers. As the need for trusted health information grows in the library, so does the need for reliable health information resources.

### ***2.10: The Gap: Need versus Capacity***

Although the public library does offer some trusted health resources and information, it is unknown what additional capacity, if any, is needed to meet the increasing needs of their users. Programming at libraries may require additional funding, volunteer, and staff support to implement and sustain health programs.<sup>43</sup> Capacity is a significant challenge for libraries as they continue to serve the needs of their community, because funding has decreased 22% since 2008. As a result, several librarians note that they must be creative with the limited resources they do have.<sup>51,52</sup> In addition, many librarians lack the knowledge or self-efficacy to adequately assist users with their health questions.<sup>52,61</sup>

Because of their limited budgets, most public libraries do not have the capacity to provide health programming on their own.<sup>65</sup> To implement a health program, it often requires the library to obtain assistance from outside partners and volunteers to not only lead the program, but also donate any necessary resources or equipment.<sup>55</sup> Libraries that are able to hire staff and purchase equipment are frequently reliant on grants for additional funding.<sup>63</sup> A library manager at a suburban public library in a study in Oklahoma described the common reliance on additional funding in her statement, “if

it weren't for the extra funding [for health programs], which covered instructor and marketing costs, [I] am not sure how [I] would have implemented the activity."<sup>63</sup>

Echoing the limitation of public library capacity, another library staff member in a study in Pennsylvania stated that public libraries do not have "enough time, staff [members], or resources to do the things for our users that we would like to do."<sup>52</sup> This suggests that capacity significantly influences whether a public library can offer health programs to meet the needs of their users.

One reason why public libraries are dependent on outside volunteers, partners, and paid staff for health programming is because library staff are not comfortable helping users with health-related topics.<sup>52,65</sup> Although librarians and library staff recognize that public libraries are an important player in the greater health care system, especially when it comes to health information and health literacy, many do not believe their formal education adequately prepares them for user health inquiries.<sup>61</sup> Librarians likely feel unprepared in providing health information, because the American Library Association Accredited Master of Library Science and Master of Library and Information Studies programs do not require health or public health coursework. In addition, only seven accredited programs offer courses about health and health informatics.<sup>66</sup> As a result, librarians are often unfamiliar with up-to-date health resources that can assist their users.<sup>61,65</sup>

Librarians and library staff are more familiar with printed health resources; however, these resources often are not the most appropriate for user needs.<sup>61,63</sup> Due to their training, librarians and library staff are most comfortable guiding users to printed

health resources, despite acknowledging that these resources are often out-of-date or on loan to another user or library collection.<sup>61</sup> To overcome these challenges, some librarians and library staff use the internet to help users obtain specific health information, but many are not familiar with online health resources beyond websites provided by a simple Google search.<sup>61,67</sup> In a study about user expectations of librarian health information, one library staff member stated “My knowledge of online [health] resources? Oh, it is pitiful. Not good... I mean I do not really know any specific websites. Since we have been here we have had no training at all, no training... We do not have the time.”<sup>61</sup> Librarians that are more tech-savvy still reiterate the unfamiliarity of online health resources in the statement: “I am the fastest Googler in the West... I can pull up a load of sites very fast, but my knowledge of online health resources is not as good as it could be.”<sup>61</sup> This lack of online health resource knowledge is a detriment to users, because many health websites are not reviewed for accuracy or published by a health professional.<sup>68</sup>

In addition to the lack of online health resource knowledge, many librarians are unaware of local health resources within their communities. Librarians and library staff acknowledge and appreciate that the public library serves as a common refuge for vulnerable populations.<sup>49,50,52</sup> However, librarians and library staff note that they do not know how to best approach, assist, and refer these users to other valuable resources within the community.<sup>49</sup> A library staff member in Philadelphia commented that the library staff is “glad that [vulnerable] people come to the library and feel comfortable using the space” but regretted that they were not able to “offer more” to users

experiencing addiction, homelessness, mental illness or hunger.<sup>50</sup> While librarians wished there was more the public library could offer, they also expressed frustration that they did not know local social services and programs to refer users to.<sup>52</sup> As a result, Librarians attempt to be “default social workers,” but it can be socially, mentally, and emotionally demanding, especially since librarians often do not have any specific training to help vulnerable populations.<sup>49,52</sup> This suggests that training or partnerships with community resources could benefit both public library staff and users.

### **2.11: Conclusion**

Public libraries are a valuable community resource, especially for vulnerable populations. They provide shelter, education, and assistance for populations that may not be able to find care elsewhere.<sup>65</sup> While the library supports many different populations, and has even refocused its mission to meet the needs of users, they often are limited by organizational capacity.<sup>52,61,63</sup> They often do not have the funding, training, staffing or partnerships to continuously provide programs that meet the needs of these users.<sup>49,52,55,63</sup> Some of these organizational capacity limitations could be addressed through a partnership with SNAP-Ed. SNAP-Ed, especially through PSE strategies, helps sites garner resources and build capacity, so they can offer sustainable programs that assist low-socioeconomic populations and combat obesity.<sup>19</sup> Though this partnership wouldn’t address all the needs of users that visit the public library, it could assist with one of the most common – health that surrounds nutrition and physical activity.<sup>29,32</sup> By understanding the common organizational capacity limitations of public libraries, SNAP-Ed can better assist public libraries and their users.

## **2.12: Theoretical Background**

Public health system performance and organizational readiness frameworks inform the research. Public health system frameworks by Meyers et al. and Handler et al. illustrate the connection between organization mission/vision, organizational capacity, program performance, and population outcomes within a greater macro context.<sup>12,13</sup> They suggest that capacity is imperative in implementing effective, efficient, and equitable programs.<sup>12,13</sup> Meyers et al. and Handler et al. provide a brief synopsis on organizational capacity within public health systems, however Scaccia et al. offers a more thorough explanation of organizational capacity and how it influences implementation readiness.<sup>12,13,69</sup>

Scaccia posits that organizations can assess ability to implement a program by considering the organization's motivation to implement, general capacities, and innovation or program specific capacities.<sup>69</sup> Scaccia defines organizational motivation as incentives or disincentives to use an innovation or program. It is comprised of several factors including compatibility with existing organizational values, perceived difficulty of innovation, and the extent to which the innovation is deemed a priority for the organization.<sup>69</sup> General capacity is described as capacity needs that are not specific to the innovation or program. This can be human resources, supportive leadership, and organizational structure. Innovation or program specific capacity also looks at organizational capacity, however, it examines elements required to successfully implement a particular innovation. This typically encompasses innovation-specific knowledge, skills, and abilities, program champions, and provider-organization

support.<sup>69</sup> Scaccia recommends that organizations assess their readiness throughout the implementation process, so they can build on any capacity or motivational limitations. Organizations that possess high degrees of readiness can positively influence program sustainability.<sup>69</sup>

The Meyers, Handler and Scaccia frameworks, especially when considered together, demonstrate the numerous elements of capacity that influence whether a public health system, like a public library, can implement programs, such as SNAP-Ed. These frameworks also insinuate that there will be difficulties implementing a program if multiple levels of organizational capacity are not sustained.<sup>69</sup> This poses as a continuous predicament for non-profit agencies, like public libraries, where resources often are not consistent year after year.<sup>70</sup> The Meyers, Handler, and Scaccia frameworks inform this research, conceptual model (Figure 2.1), and specific aims.

Specific Aim 1: Understand the elements of organizational capacity that influence a public library's ability to implement obesity prevention programs.

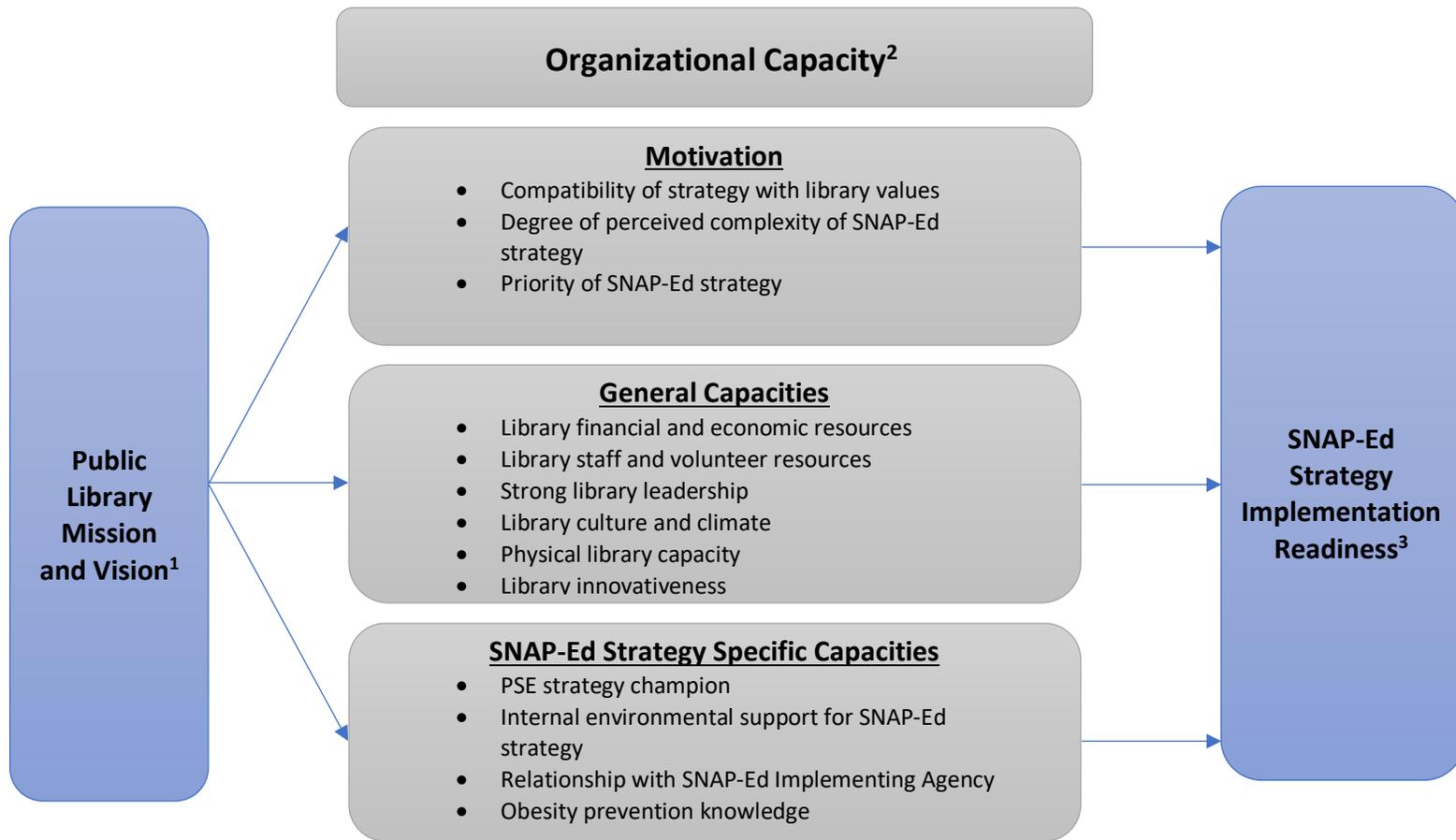
Research Questions:

1. What obesity prevention programs are being offered at public libraries?
2. What additional capacity is needed to implement obesity prevention programs at public libraries?
3. What do librarians or library staff consider to be the most significant organizational capacity limitation when considering or implementing an obesity prevention program?
4. What do librarians or library staff consider to be the most significant organizational capacity strength when considering or implementing an obesity prevention program?

Specific Aim 2: Evaluate the need for library staff public health knowledge when implementing obesity prevention programs at public libraries.

Research Questions:

1. What health and nutrition related questions do program participants of obesity prevention programs at public libraries ask librarians or library staff?
2. How confident are librarians or library staff in providing answers to program participants' health related questions?
3. Do librarians believe that their formal education has prepared them to support participants of obesity prevention programming at their library?
4. How do librarians or library staff provide answers to a program participant's health related question?



<sup>1</sup>Handler et al.

<sup>2</sup>Scaccia et al., Handler et al., Meyer et al.

<sup>3</sup>Scaccia et al.

Figure 2.1 Conceptual Model

## Chapter 3

### Methodology

#### ***3.1: Preliminary Studies***

This research expands on the South Carolina SNAP-Ed Program evaluation studies conducted by the University of South Carolina: Department of Health, Promotion, Education and Behavior. The SNAP-Ed evaluation team, led by Carrie Draper, seeks to evaluate SNAP-Ed implementation and sustainability through interviews with SNAP-Ed sites and Implementation Agencies (IAs) within South Carolina. Some of the SNAP-Ed sites within South Carolina include schools, health clinics, food pantries, juvenile detention centers, and public libraries. This research limited the scope of the SNAP-Ed evaluation research to just public libraries and focused more specifically on how organizational capacity influences SNAP-Ed implementation. This research gathered information about organizational capacity from existing SNAP-Ed SC Plants the Seed in-depth interviews (n=8). SC Plants the Seed is a partnership program between the South Carolina Department of Health and Environmental Control SNAP-Ed program, the South Carolina State Library, and the South Carolina Department of Social Services that aimed to increase nutrition education, access to produce, and childhood literacy. For this program, libraries within low-income communities hosted monthly farmers' markets that offered financial incentives to purchase produce. Users that participated in SC

Plants the Seed could receive a free book for their child. Three South Carolina public libraries participated in the 2017 pilot program.

### ***3.2: Study Setting***

The study setting for this project is thirteen public libraries located within South Carolina. Public libraries included in the study are those that are currently or have previously offered a SNAP-Ed or similar obesity prevention program. The libraries represent the diversity of South Carolina with representation from across the state including each region (Upstate, Midlands, Pee Dee, and Lowcountry) and both urban and rural communities. Urban public libraries within this study represent counties with a median household income over \$50,000 and approximately 15% of people living in poverty.<sup>71</sup> Rural public libraries within this study represent counties with a median household income less than \$40,000 and greater than 25% of people living in poverty.<sup>72</sup>

### ***3.3: Sample Description and Sample Procedures***

Study participants are librarians or library staff members at work at or support libraries with SNAP-Ed or similar obesity prevention programs. This sample selection is based on the purposive sampling frame, which is a non-random sample selection based on participant knowledge or expertise related to the research questions.<sup>73</sup> Librarians or library staff were recruited from public libraries that have partnered with SNAP-Ed, advertised their obesity prevention program on their website, or stated from initial screening that they regularly offered obesity prevention programming at their library.

For specific aims one and two, thirteen additional in-depth interviews were added to the existing SC Plants the Seed interviews (total interviews = 21). The

interviews are with the library's director, reference coordinator, reference librarian or program and outreach coordinator depending on the job responsibilities of that specific library or library system. Three in-depth interviews are follow-up interviews with SC Plants the Seed public libraries. The remaining ten additional in-depth interviews are with librarians or library staff of public libraries that offered other obesity prevention programs. These additional interviews are more comprehensive than the follow-up interviews, because there are no prior evaluation interviews to illustrate the library's organizational capacity when implementing SNAP-Ed or similar programs. Interview questions were based on the Meyers, Handler, and Scaccia frameworks and investigated the library's mission, motivation capacity, general capacity, and innovation specific capacity in Table 3.1 and Table 3.2.

Table 3.1 Specific Aim 1 and Interview Questions

Specific Aim 1	Existing SC Plants the Seed Interview Questions	Proposed Research Interview Questions	Anticipated Themes
<p>Understand the elements of organizational capacity that influences a public library's ability to implement obesity prevention programs.</p>	<ul style="list-style-type: none"> <li>• What are the reasons your library wanted to participate in SC Plants the Seed?</li> <li>• What were some of the challenges you faced with the [SC Plants the Seed] program? How could you overcome these challenges?</li> <li>• How much library staff time and resources went into the [SC Plants the Seed] program during the summer months?</li> <li>• Would you change anything about the location or set up of the [SC Plants the Seed] program?</li> <li>• What elements of SC Plants the Seed program worked well for your library?</li> <li>• What would be your recommendation to other libraries that would like to participate in SC Plants the Seed?</li> </ul>	<p style="text-align: center;"><b>Motivation</b></p> <ul style="list-style-type: none"> <li>• How does providing a SNAP-Ed PSE strategy help the library achieve its mission?</li> <li>• How did librarians, staff and volunteers view the SNAP-Ed Program? Did they believe it would be difficult to implement?</li> </ul>	<p style="text-align: center;"><b>Motivation</b></p> <ul style="list-style-type: none"> <li>• Participating in SNAP-Ed programs aligns with the public library's mission</li> <li>• The library staff believes SNAP-Ed programs are not as complex as they may seem</li> <li>• SNAP-Ed programs are priority programs at the library</li> </ul>
		<p style="text-align: center;"><b>General Capacity</b></p> <ul style="list-style-type: none"> <li>• What economic resources are available to implement programs at your library?</li> <li>• Are new library programs a priority for library leadership?</li> <li>• What other programs or adaptations has the library made in the last five years?</li> </ul>	<p style="text-align: center;"><b>General Capacity</b></p> <ul style="list-style-type: none"> <li>• More financial and human resources allow public libraries to offer more for their users</li> <li>• Physical constraints of libraries make program implementation more difficult</li> <li>• More innovative libraries are more likely to be supportive of new programs</li> <li>• Supportive leadership dedicates more resources to library programs</li> </ul>

		<p><b>Strategy Specific Capacity</b></p> <ul style="list-style-type: none"> <li>• What was your relationship like with DHEC and DSS or the SNAP-Ed Implementing Agency?</li> <li>• How did library staff and volunteers show support for the SNAP-Ed program?</li> </ul>	<p><b>Strategy Specific Capacity</b></p> <ul style="list-style-type: none"> <li>• Strong relationships with SNAP-Ed partners help address resource limitations</li> <li>• There is internal support for SNAP-Ed programs at public libraries</li> </ul>
--	--	--	---

Table 3.2 Specific Aim 1 and Interview Questions

Specific Aim 2	Proposed Research Interview Questions	Anticipated Themes
<p>Evaluate the need for librarian/library staff public health knowledge when implementing obesity prevention programs at public libraries.</p>	<p style="text-align: center;"><b>General Capacity</b></p> <ul style="list-style-type: none"> <li>• What health resources are available to public library users?</li> <li>• What are the needs of the typical user at your library? What health programs or resources could your library add to meet the needs of your users?</li> <li>• Who teaches or provides each of the health programs offered at your library?</li> </ul>	<p style="text-align: center;"><b>General Capacity</b></p> <ul style="list-style-type: none"> <li>• There are limited up-to-date print resources, but the public library offers computers with internet access</li> <li>• The public library can offer more nutrition, chronic disease, and social service programs</li> <li>• Programs are led by partners or volunteers with an experienced background</li> </ul>
	<p style="text-align: center;"><b>Strategy Specific Capacity</b></p> <ul style="list-style-type: none"> <li>• Think of a time in the last six months when a user asked you for information about obesity prevention. Describe that time. What did you do?</li> <li>• How would you help a library user find obesity prevention information on the internet?</li> <li>• Did you take any public health, health literacy, or health research classes in college? If so, can you describe your course(s)?</li> <li>• Do you think it would be beneficial for future librarians to take a public health, health literacy, or health research class?</li> </ul>	<p style="text-align: center;"><b>Strategy Specific Capacity</b></p> <ul style="list-style-type: none"> <li>• Librarians are more likely to guide users to print resources</li> <li>• Librarians can help a user with a basic Google search, but are unable to direct users to reliable health resources on the internet</li> <li>• Librarians did not take a health-related course in college</li> <li>• Librarians think that public health or health research knowledge could better prepare future librarians</li> </ul>

### **3.4: Data Collection**

Data for this research includes transcriptions of recorded in-depth interviews with librarians or library staff at public libraries that implemented SNAP-Education or similar programs. The interviews consist of semi-structured questions that focus on the participants perceived organizational capacity strengths and barriers in implementing SNAP-Education or similar programs at their library and their self-efficacy in assisting users that participant in these programs. A semi-structured qualitative design was selected for this research because it can specifically answer research questions, but also unveil new phenomena that is unknown to the researcher.<sup>74</sup> There is limited existing literature on the capacity of public libraries that implement obesity prevention programs, so a flexible interview protocol would be better at unveiling possible new themes and phenomena that are not already captured in the literature. Interviews were conducted over the phone and lasted between 20 minutes (SC Plants the Seed follow-up) to 80 minutes. Most interviews were approximately 45-60 minutes long. The interview included an audio recording of the interview and field notes in Microsoft Word. All interview recordings were transcribed verbatim.

### **3.5: Data Analysis**

The interviews were analyzed using Nvivo (version 12.6, QSR International, Victoria, Australia, 2019). Consensus coding was initially used to develop a codebook from three interviews.<sup>75</sup> Qualitative coding was organized by research questions. Then through open coding, general categories, themes and phenomenon were coded. After open coding the transcripts and field notes, the researcher implemented axial coding,

which found relationships between the open codes. Finally, the researcher utilized selective coding using the open and axial coding to determine overall themes and relationships.<sup>76</sup> After writing the manuscripts, the researcher presenting the findings to the research participants to confirm research findings.<sup>77</sup> Librarians confirmed that the research represented their experiences and provided insight into the experiences of other libraries in the state.

## Chapter 4

# Public Library Organizational Capacity Strengths and Barriers to Offering Nutrition-Based Obesity Prevention Programs<sup>1</sup>

---

O. Whitt, S. Jones, D. Friedman, K. Kenison, and V. Kitzie. To be submitted to  
*Journal of Nutrition Education and Behavior*

#### **4.1: Abstract**

The Healthy, Hunger-Free Kids Act (HHFKA) recently modified Supplemental Nutrition Assistant Program Education (SNAP-Ed) requirements so there is more focus on addressing food apartheid through policy, systems, and environmental strategies (PSEs). SNAP-Ed PSEs help build site capacity, which empowers communities to improve their food access and nutrition. This research investigated public libraries as a SNAP-Ed site. Twenty-one in-depth interviews with librarians and library staff from across South Carolina illustrated some of the organizational capacity strengths and barriers to implementing PSEs at public libraries (n=13). The librarians and library staff interviewed represent thirteen public libraries that offered evidenced-based PSEs such as farmers markets, seed libraries, and cooking classes with or without the assistance of SNAP-Ed. Librarians and library staff were excited to offer these types of programs and often served as the program champion. Though the libraries were diverse, having a program champion was consistently the greatest organizational capacity strength when offering PSE programming. The most significant organizational capacity barrier, however, varied between more urban and rural libraries. In this study there were eight libraries or library systems in more urban areas and five libraries or library systems in more rural areas. More rural libraries had to overcome funding, staffing, and sometimes physical space barriers to provide nutrition/obesity programs. More urban libraries did not experience the same challenges. Though both rural and urban libraries were reliant on community partners for their knowledge or resources when offering the program. These organizational capacity strengths and barriers suggests that a SNAP-Ed focus on

community partnerships could help public libraries implement and sustain PSEs in food apartheid.

#### **4.2: Introduction**

Most Americans in the United States are not eating in accordance with the *Dietary Guidelines for Americans*.<sup>1</sup> When compared to the guidelines, the typical American overconsumes calories, sodium, fat, and sugars and under-consumes fruits, vegetables, and whole grains.<sup>1</sup> Individuals that are low-income are even less likely than high-income individuals to meet these dietary recommendations.<sup>2</sup> While many factors influence this disparity, one significant factor is the relatively high prevalence of food apartheid in low-income communities.<sup>3,4</sup> Living in a food apartheid makes it more difficult to access, afford, and consume non-processed food like fresh fruits and vegetables, because of structural inequalities.<sup>3,4</sup> Food apartheid frequently are not solved by establishing more chain supermarkets, because supermarkets do not build local economies, enhance community strengths, or develop skills or independence among residents.<sup>5,6</sup>

The Healthy, Hunger-Free Kids Act (HHFKA) passed in 2010 requires an expanded role for the Supplemental Nutrition Assistance Program Education (SNAP-Ed) to directly address the failures in policies, systems, and environments to support a healthy diet for all Americans. Specifically, SNAP-Ed must also implement policy, systems, and environmental (PSE) strategies to increase healthy options in low-income areas, in addition to offering direct nutrition education. Some evidence-based PSE strategies that fulfill the HHFKA requirements include offering vegetable tasting at farmers' markets,

planting a community garden, and reducing barriers to active transportation.<sup>8</sup> SNAP-Ed PSE strategies like these require coordination between the state administrative agency, implementing agencies, and sites willing to implement and sustain SNAP-Ed PSE strategies. Once established as partners, the implementing agency assesses the site's resources and capacity and provides initial support for SNAP-Ed PSE strategy implementation.

SNAP-Ed sites are locations where SNAP-eligible populations eat, learn, live, play, shop and work, which frequently includes farmers markets, schools/daycares, food banks, health clinics, and parks and recreation sites.<sup>9,10</sup> A site that is often underutilized for SNAP-Ed PSE strategies and direct education is the local public library.<sup>7</sup> Although the library is not directly associated with food, nutrition, or physical activity, it frequently serves the SNAP-eligible population.<sup>11</sup> In addition, many public libraries recently have shifted their missions to focus more on the community and bringing the community into the library.<sup>12,13</sup> To align with this mission, libraries have expanded their programming to help users with issues such as employment, immigration challenges, homelessness, and health and wellness.<sup>14,15</sup> While libraries especially want to support health and wellness programming, some studies have found that libraries have limited organizational capacity.<sup>16,17</sup>

Public libraries have identified constrained organizational capacity related to funding, equipment, and information. Public librarians frequently cited budget constraints as their most significant barrier, making it challenging to hire instructors, cover marketing costs, or provide necessary resources or equipment.<sup>17-19</sup> These

barriers are especially prevalent in rural libraries where budgets are smaller due to a smaller local taxes.<sup>20</sup> In a study of library capacity within Pennsylvania a library staff member from a rural library stated, “just about all of our problems can be traced back to a lack of sufficient funding.”<sup>16</sup> To bridge funding gaps, public libraries often relied on partnerships and volunteers to provide these programs for free for their users.<sup>17,21</sup> This is especially true for health programs such as diabetes education, immunization and health screenings, and helping users enroll in insurance via the health marketplace, where a more specialized medical understanding is necessary.<sup>19,22</sup> However, creating these partnerships for health programs presents another issue for the public library, because librarians who participated in studies about organizational capacity for were unaware of local health and social service resources in their community.<sup>14–16</sup>

The objective of this study was to investigate public libraries as potential SNAP-Ed partners and understand the elements of organizational capacity that influence a public library’s ability to implement obesity prevention programs. The research questions explored were:

1. What obesity prevention programs are being offered at public libraries?
2. What additional capacity is needed to implement obesity prevention programs at public libraries?
3. What do librarians or library staff consider to be the most significant capacity limitation when considering or implementing an obesity prevention program?
4. What do librarians or library staff consider to be the most significant capacity strength when considering or implementing an obesity prevention program?

### **4.3: Methods**

#### *Setting*

The study setting for this research was thirteen public libraries located within South Carolina. Public libraries included in the study were those that are currently or have previously offered a SNAP-Ed or similar obesity prevention program. The libraries represent the diversity of South Carolina with representation from across the state including each region (Upstate, Midlands, Pee Dee, and Lowcountry) and both urban and rural communities. Urban public libraries within this study represent counties with a median household income over \$50,000 and approximately 15% of people living in poverty.<sup>23</sup> Rural public libraries within this study represent counties with a median household income less than \$40,000 and greater than 25% of people living in poverty.<sup>24</sup>

#### *Data*

This study examined the capacity of 13 public libraries that offer nutrition programs across South Carolina. This study builds on previous research conducted by South Carolina SNAP-Ed evaluation federal reporting. The South Carolina SNAP-Ed evaluation team evaluates the SNAP-Ed implementation and sustainability of SNAP-Ed strategies at sites through in-depth interviews with sites, implementing agencies, and SNAP-Ed educators. In 2017, the South Carolina SNAP-Ed evaluation team interviewed staff at three public libraries that implemented the SC Plants the Seed pilot program. The SC Plants the Seed program was a partnership between SNAP-Ed, South Carolina Department of Health and Environmental Control (DHEC), the South Carolina State Library, and the South Carolina Department of Social Services. Together they worked to

offer a weekly or monthly farmers market at the three public libraries that accepts Supplemental Nutrition Assistance Program Electronic Benefits Transfer (SNAP-EBT). In addition, attendees of the farmers market would receive a book for their child. To evaluate the program, the researcher and other members of the South Carolina SNAP-Ed evaluation team first developed an interview guide to better understand the development, implementation and perception of SC Plants the Seed from librarians/library staff, SNAP-Ed implementers, and DHEC. Then throughout the duration of the program, the researcher and other members of the South Carolina SNAP-Ed evaluation team interviewed at least one representative from all partners for SC Plants the Seed. In total there were six interviews from library staff at the public libraries that implemented SC Plants the Seed and two interviews with the staff at the State Library that helped develop and organize SC Plants the Seed. Interviews were approximately 25 minutes to one hour long.

Adding to those interviews, ten additional public libraries were contacted to participate in the study. The researcher utilized purposive sampling and contacted libraries that have or had worked with SNAP-Ed, advertised their nutrition programming, or stated from an initial phone call or email screening that they regularly offered a nutrition focused program for their users. Public libraries were selected from across the states and represent all four regions (Pee Dee, Lowcountry, Midlands, and Upstate) and urban and rural communities. 21 librarians or library staff members agreed to interviews. Library staff included reference librarians, library directors, or program and outreach coordinators depending on the library and library system structure. Three

interviews were follow-up interviews with SC Plants the Seed libraries and the remaining interviews were in-depth interviews with libraries that did not participate in SC Plants the Seed but offered other nutrition programs. The interviews were 30 to 80 minutes long and included semi-structured questions about the study participants perceived organizational capacity strengths and barriers in implementing SNAP-Education or similar programs at their library.

### *Theoretical foundations*

The questions for the interview were based on work by Scaccia and colleagues. Scaccia and colleagues provided a heuristic,  $R=MC^2$  to determine an organization's readiness to implement a program by assessing its capacity using three categories: motivation to implement, general capacity, and innovation-specific capacity.<sup>25</sup> Scaccia defines organizational motivation as incentives or disincentives to use an innovation or program. It is comprised of several factors including compatibility with existing organizational values, perceived difficulty of innovation, and the extent to which the innovation is deemed a priority for the organization.<sup>25</sup> General capacity is described as capacity needs that are not specific to the innovation or program. This can be human resources, supportive leadership, and organizational structure. Innovation or program specific capacity also looks at organizational capacity, however, it examines elements required to successfully implement a particular innovation. This typically encompasses innovation-specific knowledge, skills, and abilities, program champions, and provider-organization support.<sup>25</sup> Scaccia recommends that organizations assess their readiness throughout the implementation process, so they can build on any capacity or

motivational limitations. Interview questions were framed around these three categories but provided opportunity for the participant to describe capacities beyond those known to the researcher.

#### *Data management*

Interviews were conducted over the phone and recorded on a separate recorder. Interviews and field notes were saved in encrypted files. The interviews were transcribed verbatim by a transcription service. These were also saved in encrypted files.

#### *Data analysis.*

The interview themes were organized using Nvivo 12 (version 12.6, QSR International, Victoria, Australia, 2019). Consensus coding was initially used to develop a codebook from three interviews.<sup>26</sup> Using a single coder, qualitative coding first was organized by responses to research questions. Within each question, general categories and phenomenon were coded as themes. Finally, the researcher utilized selective coding to determine overall themes and relationships.<sup>27</sup> The relationships were later presented to the research participants to confirm research findings via member checking.<sup>28</sup> The themes were presented to all participants via e-mail and five confirmed the findings.

#### **4.4: Results**

Findings from the interviews show that libraries and library systems represent the organizational capacities outlined by Scaccia and colleagues. Librarians and library staff were motivated to implement nutrition-based obesity prevention programs because it fulfilled the library's mission and it generated positive publicity. Some

libraries experienced lack of motivation to implement programs from library boards and directors, because the program was perceived as unfamiliar or complex, however persistent program champions helped the library overcome that barrier. There were also several general capacities that influenced a libraries ability to implement nutrition programs. The library's budget, staff, or physical space. These capacities varied between more urban and rural libraries, with more urban libraries having more resources. For program specific capacities, all libraries had high internal support for the program from librarians, library staff, and volunteers. All libraries also had a partner to assist with the program, however some libraries had a greater dependence on a singular partner, while others had a variety of partners to offer the program. Although organization capacities varied between the libraries, all libraries utilized capacity strengths to offer nutrition-based obesity prevention programs.

#### *Need for Nutrition Programs at the Library*

The interviews with librarians and library staff revealed that not only are public libraries offering a diversity of nutrition programs, but they are also often offering multiple nutrition programs for their patrons (Table 3.1). Librarians and library staff consistently cited the same reasons for starting and adding on to their nutrition programs. They initially believed that nutrition programs fulfilled a user need in their community, so they added a single nutrition program to gauge interest. Then after the program produced strong community engagement and high user attendance, many librarians and library staff worked to offer other nutrition programs at their library.

One library director at a public library in a rural county described her initial motivation for implementing a farmers’ market program.

“[Our county] has a history of not really excelling in some ways, but we kind of live in a food desert here. There's not a good public transit system, so if you want to have fresh produce in your house, unless you grow it in your back yard, you're going to making several trips to the store throughout the month.”

After offering the [farmers market] program and proclaiming, “We're never going to be able to stop that program. It's way too popular,” the library director worked with community partners to offer two more programs focused on increasing food access in her community and teaching healthy cooking skills.

Table 4.1 Nutrition Programs Offered at South Carolina Public Libraries

<b>Nutrition Programs Offered at South Carolina Public Libraries</b>
<b>Teaching Kitchens</b>
<b>Farmers Market</b>
<b>Nutrition Education</b>
<b>Cooperative Food Buying Club</b>
<b>Gardens</b>
<b>Seed Libraries</b>
<b>Health Fair</b>
<b>Produce and Cooking Tool Giveaway</b>

Librarians and library staff were very knowledgeable about the communities they served and the typical needs of the users at their library. Many expressed that their community’s needs were the driving force behind implementing nutrition programming

at their library, but these needs and reasons differed. Some believed their public library was located in an area that lacked healthy food access and others implemented a nutrition program because their area had high rates of nutrition-related chronic illness. For instance, two public libraries that offered a similar cooking class had differing reasons for doing so. A library coordinator in an urban area stated:

“So we do try to offer a lot of different programs for anybody that is experiencing anything like the high blood pressure and the hypertension. Those are the main concerns for the people in our community.”

Another library program coordinator in charge of organizing nutrition programs for the library system described the food access struggles surrounding one of the more rural branches:

“One of the branches we had [a cooking program] at over the summer is located in an actual food desert. It's intimidating to cook. It's easier to go grab fast food or grab something from the gas station because you don't know where to start.”

Overall, librarians and library staff were excited to offer programs that helped their community, but they acknowledged there are often several capacity elements to consider when implementing nutrition programs.

### *Capacity Strengths and Barriers to Nutrition Program Implementation*

#### *Motivation*

Most librarians and library staff were motivated and eager to offer a nutrition program at their public library. Many believed that the programs, although not directly related to books, literacy, and media resources, still represented a critical part of their

library's mission: to improve lives and learn. Librarians and library staff believed that nutrition programs were an opportunity to teach community members ways to eat healthy, especially if they experienced barriers to consuming nutritious foods such as a limited budget, transportation, time or cooking skills. A librarian at an urban public library described how offering a nutrition education class propelled the library's mission of learning.

"So our model is basically for learning, for leisure, for life, and this one, I think, hit pretty much all of those, all of those things, because it really is something that-- and honestly, just going by the feedback from the people, like, "Oh, wow, these were really quick-- they're really quick, easy tips," that help them in their daily life. And it's something that, you take one of these tips, you apply it to every time you go to the grocery store, and that's a lifelong thing."

Another library coordinator believed that in addition to learning, the cooking class met other aspects of the library's mission.

"We pretty much want our customers to learn, create, and share. And that's something that we definitely do in our kitchen. We learn different techniques. We all come together and create a sense of community."

Librarians and library staff were enthusiastic in describing how nutrition programs achieve their library's goals and provided several justifications for including it in their programming. One of the justifications is that it publicizes the public library on the community, state, and national level. Public libraries in South Carolina have

garnered considerable attention by offering unique nutrition programs. A librarian that incorporated childhood reading at the library's farmers' market program said:

"We have a conference every year in the state somewhere. This year, [a state librarian] submitted a proposal to talk about this [nutrition] program. So, I'm going to present with her... to talk about how the program went and basically what the benefits were... You know, because I think it's a great program. It's got my 100% confidence, and we're definitely going to do whatever we can to make sure that we can do it again next year."

Another library had such a great nutrition program that incorporated the community's agrarian history and several community partners that it was presented at a national conference.

"... [The library's nutrition program partner was] the invited guest [at the conference]. To say, "Hey we want you to come and speak at this conference and talk about your relationship with your local library. And how can that be mimicked in another community nationwide?" So that's kind of a huge-- that speaks volumes. More than just how it's pertained to just us and our patrons, we're part of a bigger picture kind of nationwide.""

Because the programs are so novel, some libraries did experience motivation barriers in terms of perceived complexity. However, the resistance was minimal and were easily overcome by additional training or planning. A librarian at a rural library described perceived complexity barriers with her director. However, this library worked

with SNAP-Ed, so the library did not have to invest many resources to get the seed library started.

“I think my director thought it would be a little bit more difficult than it ended up being. It took a little bit of convincing to get him to let me have that card catalog [for the seed library]. But now, I think he's seeing that we're still getting a lot of use out of it and it's still generating a lot of interest.”

Another librarian at an urban library with a teaching kitchen encountered similar hesitancy, but from staff.

“Well, [the perception of program] been kind of mixed. You have to go through-- of course, the library is no longer traditional. So, it's hard to kind of see these baker spaces and this more creative aspect inside of a library, but the staff here has really gotten used to it.”

These quotes show some of the resistance to expanding outside the libraries' traditional goals of reading and literacy. However, when the library had a strong program champion, the library was able to overcome the initial resistance from directors, staff, and volunteers.

### *General Capacities*

Adding nutrition programming was frequently part of an overall plan to innovate and adapt the public library. Within the last five years, many libraries had either expanded or changed the way that they offered library programs. Librarians and library staff saw this change as a way to not only provide more educational opportunities for their users, but also create equity in their communities. If the librarian or library staff

perceived an inequity in resources either within their communities or between library branches, they changed their programming to provide more resources to those who needed it.

One library system recently created a new department to plan, organize, and distribute program materials so all libraries could offer educational opportunities for their users despite capacity barriers.

“... One of the things we wanted to do was put together a programming kit...

Some [of our libraries] are large, with a large staff who are librarians and are all about programming. And some are small part-time branches with staff that are excited to work in the library and are wonderful in their jobs, but may have less complete programming... So to give them equitable opportunities for programming, we put together programming kits, again, for children, teens, and adults.”

Similarly, when a library director discovered that public-school children in her community were only going to school for four and half days a week, when children in other communities were attending school five days a week, she implemented an art education program at her library.

“We have art classes. One at 11:30 am and one at 3:30, and the children come in and they watch a PowerPoint and they learn about an artist. And then the second half of the class is recreating art in the style that the artist would have used... So that's a really popular program.”

However, increasing programming often comes at a cost for the public library. Even if a public library is able to find a partner or volunteer to teach the program, they still have to use their limited budget to acquire program materials and resources. Although librarians and library staff were grateful for the budget that they had, all said they could offer more programming to meet the needs of their communities if they had a greater budget. In addition, the funding and funding sources greatly varied for each library. Most libraries had Friends of the Library donations and county funds. Some libraries also had grants, and a few had bonds to support library programs. Typically, rural libraries had less funding opportunities for programming and urban libraries had more funding opportunities for programming. One extension librarian in charge of operations and staffing at ten libraries discussed some of the funding differences between the libraries that she manages:

“Typically, yes, since the library doesn't have any, really, [economic] resources with the exception of our larger branches... Most of the smaller branches don't have any funds. So, either we have a couple of active friends' organizations that help and provide funding, or our children services coordinator physically gets grants for some of the other programs.”

A limited budget not only impacts the ability to purchase resources for programs, but it also limits the library's ability to hire additional staff. Although librarians and library staff from larger, more urban public libraries believed they had enough staffing, librarians and library staff from smaller, more rural libraries believed

they struggled with staff resources. Limited staffing typically became a bigger issue during the summer months, when there is an increase in children programming.

One rural library director thought of economic resources and staff resources as an intertwined issue and believed both were a barrier at her library.

“We are definitely understaffed. We went over last year in our budget for overtime and comp because the people that I do have, that are geared toward this kind of work, are doing a lot of it.”

A coordinator at an urban library thought there was enough staff at her library but expressed a different concern when it came to matching staff resources with anticipated program attendance. Sometimes more library users came to programs than anticipated which made it difficult for one or two staff members to manage.

“I think we have enough staff. It's just pretty much trying to guess. [The programs are] all free. So, I'm trying to guess who's going to be there and trying to just prepare in advance. That's a little bit challenging. But we do have enough staff here for that, which is great.”

Similar to the issues about funding and staff resources, there was notable difference in available space between more urban and rural public libraries. Urban public libraries typically had plenty of space for programming and could easily accommodate different attendance sizes. Contrastingly, rural public libraries were smaller and did not have as many options for programming space. Rural librarians thought this capacity issue could limit the number of people who could attend the program or prevent some programming altogether. A library staff member at an urban

library explained how their library space can accommodate many different sized programs.

“But most of these programs are going to be in our large meeting room, and that's also where a lot of people have-- people are able to book those spaces as well. It's just a regular meeting room. For the customer, it holds 30 people, but the room itself can hold 185 people, which is awesome. We have more than enough space.”

A patron training and technology coordinator at a rural public library described the space limitations at his library but stated that this was a common issue for several other rural libraries within the same library system.

“We're getting to a point now where we are starting to run out of-- we're running out of room. Especially when it comes to youth service. I mostly do adult programming. But yeah, we're kind of busting at the seams with attendance for especially the youth services programs and occasionally adult programs.”

The general capacities of public libraries varied greatly between more urban and rural communities. Librarians and library staff though thought overcoming any general capacity barriers were worth it, because programming served as an equitable educational resource for their users and provided a safe space where like-minded users can gather and build relationships. Many librarians and library staff worked extra hours or applied for more grants so they could provide this experience for their community.

#### *Nutrition Program Specific Capacities*

While general capacity strengths and barriers of the public library impacted nutrition programs, nutrition program implementation also presented unique capacity strengths and barriers. The public library's greatest capacity strength when offering nutrition programs was the internal support for the program. Most libraries not only had a staff member that identified as a program champion, but also had support from other library staff, volunteers, directors and national directors. Usually the program champion helped bring the nutrition program to the library and the library staff and volunteers helped sustain its success. For example, a staff member at the State Library worked with several community partners to develop a new nutrition program to that could address both childhood literacy and food access. Even after the programs were offered at public libraries, she still worked to support program.

"I'm kind of like a go-between just to make sure that... we're offering the same resources and that everything is, you know, a high standard of service. That's kind of my goal... I actually... went to [Library 1] last week to kind of just be there, you know, as support for them. I was [at Library 2] yesterday [to show] that I am supporting them in what they're doing. Because obviously, you know, I brought this program to them."

Most interviews were with the nutrition program champion. They were excited and passionate to discuss the program and its successes. Some also described how they adapted the program to make it even more successful. A children's librarian and nutrition program champion described how she adapted her library's nutrition program so more people could participate:

“We also take [the nutrition program] out in the rural area. We set up at a Council of Aging because there a lot of people in this community [do] not have transportation at all because it’s very small and very rural. So, in order to make some of our programs work, we take it to them.”

Other library staff were also supportive of the nutrition program at their library, especially the farmers market programs. Farmers markets at the public library had the most internal support, because the program was helpful for both library staff and library users. Farmers market were implemented at public libraries within food deserts, so this greatly increased healthy food access for all. Library staff frequently bought from the on-site farmer at their library.

“I mean, [the library staff] love it because... even our part-timers have to work, most of them at least four days a week, and it cuts into the time that they can go grocery shopping... It literally can't be easier because they have to come here anyway the same way the patrons do... So, the farmer actually makes quite a bit of money off of the staff here because they just love being in there, especially when they have fresh fruit.”

Although librarians and library staff wanted a nutrition program at their library, they did have to address several barriers to implement it. Nutrition programs are typically outside the traditional scope of the library, and as a result these programs often required additional program specific resources that library did not have. Similar to other programs at public libraries, some libraries experienced funding limitations when implementing nutrition programs. Another barrier was nutrition specific services or

education that the program provided. Most libraries relied on partner agencies to offer nutrition programs at their libraries, because they did not feel like they knew enough to offer credible information on nutrition and obesity prevention. Libraries had different strategies on developing partnerships to help with nutrition programs at their libraries. Some were very reliant on one partner, while others diversified their partnerships. Only one library implemented the nutrition programs without the assistance of an outside partner. While a singular partnership did not create an interruption in service for most libraries, several libraries implied that their partnership was critical for the continued success of the program. Other libraries had multiple partners or multiple staff members that established more confidence that a nutrition program would be implemented or continue to succeed. A children's librarian expressed the need for nutrition program partnerships that was shared with almost every interview participant:

“We will typically have an outside person, a partnership, come in, who is better trained to educate than we are. So just because you recognize there's a need doesn't mean we quite know the best way to educate and to organize.”

One library with a singular partnership describes the library's reliance on that partnership to offer nutrition programs at the library:

“[Our relationship with our partner agency] is really critical. I don't think we could have gotten the seed donations on a consistent basis. And the other part of our partnership is staying connected with local farmers and organizations who can come do classes at that library. And so, I don't think we could've done that without our community partner. It would have been difficult.”

Another library director described the multitude of partnerships she has established to offer a cooperative food buying club at the library. She was very confident that with this many community partners the idea of offering a food cooperative program at the public library can easily turn into a reality.

“... [Community partners and I have] been trying to get a food hub started down here... We're also partnering with DHEC [and] I'm going to be working with some students at South Carolina State to develop some recipes that have like a max of five ingredients... And we're also going to be partnering with...a small business owner here. We're going to be giving out samples of specific side items that are made with vegetables... which we'll also include recipes for.”

Librarians and library staff stressed the importance of having a program partner for health programs like nutrition programs. Librarians and library staff recognize that they are not experts in the field. In addition, they believe that partners can help alleviate budget limitations by providing resources like seeds, EBT machines, ingredients or even manpower. When considering what capacity needs future public libraries need to consider when implementing a nutrition program, librarians and library staff stressed the need for partnerships.

#### *Advice for Future Libraries that Want to Implement a Nutrition Program*

Since there is not much research about public libraries that implement nutrition programs, many librarians and library staff were enthusiastic to share advice from their experiences. Although some libraries experienced more barriers than others, many believed it is still beneficial for other libraries to know of their community resources and

utilize their skills when implementing nutrition programs at the public library.

Overwhelmingly librarians and library staff stated that community partners were the key to their nutrition program's success.

A manager of programming and outreach described how her library system connected with other community players. She believed that other libraries should also be a part of community coalitions, since their goals are often more similar than one may initially think.

“We are a part of [local health coalition]... So it's important to be at the table for these things to not only see how we the library can help, but also to tell them what we're already doing... So it's crucial to not just be in our silo, but to engage with other groups. We're all working towards the same thing. We all want to make peoples' lives better.”

A program coordinator echoed that advice in her statement:

“Know what vendors you have locally... Just try to develop connections with a lot of nutritionists because, most of the time... the vendors, they agree with you and that that library needs it. And they would do their part and possibly offer something for free, which is really awesome. And it's great for our community. It's great for everybody involved.”

Knowing the community, its needs and potential partners allows nutrition programs at the library to be successful despite capacity barriers. Librarians and library staff encourage other public libraries to implement nutrition programs, especially if they are located in food deserts.

#### **4.5: Discussion**

Offering nutrition programs at the public library presents several capacity challenges, but librarians and library staff from the study were willing to overcome those challenges and provide a program that betters the local community. Librarians and library staff recognized that there is need for nutrition programming either because their library is located in a food desert or because there is a high rate of nutrition-related chronic illness in their communities. To help alleviate these issues and address systemic food access problems, public libraries from across South Carolina implemented nutrition programs like farmers markets, collaborative buying clubs, seed libraries, gardens, and nutrition education. Librarians and library staff from this study recognized that offering a program beyond their primary focus of reading and literacy would be more difficult, especially since few libraries offer nutrition-based obesity prevention programs and there is limited research that can help guide libraries as they consider implementation. However, librarians and library staff utilized their greatest capacity strength, their support for the program, to address any challenges that arose. Almost all librarians and library staff were excited and supportive of their nutrition program. Many worked to establish program partners, applied for additional funding for the program, or even utilized the program themselves. Librarians and library staff dedicated time and assistance to the nutrition program's success.

Dedication to the nutrition program was needed, because several public libraries experienced both general and program-specific capacity barriers to implementation. However, the capacity barriers varied between libraries in more urban and rural

communities. Librarians and library staff from public libraries in more urban communities did not think that nutrition programming at their library was significantly limited by funding, partnerships, or physical space. However, librarians and library staff from more rural communities were more reflective of the capacity limitations in previous literature.<sup>16-19</sup> They described being reliant on community partners to offer their knowledge, time, or resources for free because they had a limited library budget.

The reliance on program partners to offer nutrition programs suggests that public libraries could benefit from a SNAP-Ed partnership. The goal of a SNAP-Ed implementing agency partnership is to provide initial resources to a site so it can sustain an evidence-based nutrition or physical activity PSE strategy. Although SNAP-Ed can provide initial resources to help start a program, their primary focus is on building capacity, especially in the form of community partnerships.<sup>9</sup> A SNAP-Ed implementing agency can help connect a site to local master gardeners, farmers, volunteers, or non-profit organizations that can assist with the PSE strategy.<sup>8</sup> More than half of the public libraries in this study did not partner with SNAP-Ed, but were implementing evidenced-based nutrition programs that SNAP-Ed supports. This is likely due to the newness of PSEs and the priority of implementing them in health-based community resource or schools.<sup>9</sup> However, a SNAP-Ed partnership could have benefitted those libraries that implemented nutrition-based obesity prevention programs on their own by finding program partners or increase program partners, so some libraries would not feel dependent on one partner for their nutrition program's success. Based on the experiences of the librarians and library staff interviewed and the goals of SNAP-Ed, a

partnership between SNAP-Ed and public libraries would help both organizations with their goals. More research is needed to better understand a SNAP-Ed and public library partnership.

The main limitation of this study was that most of the interviews were coded by a single coder, which limits reliability. However, three coded interviews were reviewed by a second coder to review the codebook, coding, and any missing codes. In addition, the researcher implemented member checking to improve study validity. While only a few libraries were included in the study sample, the study size is justified.<sup>29</sup> Data saturation was reached for all themes and the sample was representative of libraries in South Carolina. The study included urban and rural libraries and libraries from all four regions within South Carolina. Though the study cannot be generalized, because it focuses narrowly on South Carolina libraries and their experiences, this is typically not considered a limitation for qualitative studies.<sup>30</sup>

### *Implications for Practice*

This study illustrates that public libraries can provide sustainable evidence-based nutrition programs, even though they primarily focus on reading and literacy.<sup>31</sup> This can benefit SNAP-Ed implementers as they consider potential sites in SNAP-eligible communities. Findings from this study can also help SNAP-Ed implementers as they partner with a public library. SNAP-Ed implementers often express that they do not feel competent in assessing site capacity and helping the site select and implement an appropriate PSE strategy.<sup>32</sup> This generalized assessment of public library capacity can increase SNAP-Ed implementers' knowledge of the public library and its needs when

implementing nutrition programs. It can also help libraries as they consider implementing a nutrition-based obesity prevention program. This research can also inform librarians and library staff considering nutrition-based obesity prevention program implementation. This research outlines the typical capacity strengths and barriers and librarians and library staff can determine if they are motivated to overcome program complexities.

### *Implications for Research*

More research about nutrition-based obesity prevention programs is encouraged because few studies investigate the capacity of public libraries that offer PSE strategies.<sup>16,17,19</sup> Even fewer articles specifically look at the public library as place to offer nutrition information and food access programming.<sup>14,33</sup> Future research about nutrition-based obesity prevention programs should investigate user perceptions of the program and their expectations of the program. Research should also look at the sustainability of these programs, since additional capacity is needed to offer nutrition programs.

#### 4.6: References

1. Current Eating Patterns in the United States - 2015-2020 Dietary Guidelines | health.gov. Accessed May 10, 2020. <https://health.gov/our-work/food-nutrition/2015-2020-dietary-guidelines/guidelines/chapter-2/current-eating-patterns-in-the-united-states/>
2. Andreyeva T, Tripp AS, Schwartz MB. Dietary Quality of Americans by Supplemental Nutrition Assistance Program Participation Status: A Systematic Review. *Am J Prev Med.* 2015;49(4):594-604. doi:10.1016/j.amepre.2015.04.035
3. Council (US) NR. *Determining the Extent of Food Deserts.* National Academies Press (US); 2009. Accessed November 8, 2018. <http://www.ncbi.nlm.nih.gov/books/NBK208011/>
4. Ver Ploeg M. Access to Affordable, Nutritious Food Is Limited in “Food Deserts.” United States Department of Agriculture. Published March 1, 2010. Accessed November 8, 2018. <https://www.ers.usda.gov/amber-waves/2010/march/access-to-affordable-nutritious-food-is-limited-in-food-deserts/>
5. Johnson G. Eliminating food deserts may not lead to healthy eating. Penn Today. Accessed May 10, 2020. <https://penntoday.upenn.edu/2015-06-11/research/eliminating-food-deserts-may-not-lead-healthy-eating>
6. Cook C. Covering Food Deserts. Center for Health Journalism. Accessed June 4, 2020. <https://www.centerforhealthjournalism.org/resources/lessons/covering-food-deserts>
7. United States Department of Agriculture. *Supplemental Nutrition Assistance Program Education Plan Guidance FY 2017.*; 2017. Accessed March 3, 2018. [https://snaped.fns.usda.gov/snap/Guidance/FY\\_2017\\_SNAP-Ed\\_Guidance\\_%20508-Compliant.pdf](https://snaped.fns.usda.gov/snap/Guidance/FY_2017_SNAP-Ed_Guidance_%20508-Compliant.pdf)
8. United States Department of Agriculture. Success Stories. SNAP-Ed Connection. Published 2018. Accessed October 15, 2018. [https://snaped.fns.usda.gov/success-stories?keywords=&sort\\_by=created&page=0](https://snaped.fns.usda.gov/success-stories?keywords=&sort_by=created&page=0)
9. United States Department of Agriculture. *FY 2019 SNAP-Ed Plan Guidance.*; 2018. Accessed November 6, 2018. <https://snaped.fns.usda.gov/snap/Guidance/FY2019SNAPEdPlanGuidanceFULL.pdf>
10. Environmental Settings – SNAP-Ed Toolkit. Accessed November 29, 2018. <https://snapedtoolkit.org/framework/index/environmental-settings/>

11. Horrigan JB. Libraries at the Crossroads. Pew Research Center. Published September 15, 2015. Accessed November 8, 2018. <http://www.pewinternet.org/2015/09/15/libraries-at-the-crossroads/>
12. Talja S HJ. Revisiting the user-centred turn in information science research: an intellectual history perspective. Published October 2007. Accessed September 15, 2018. <http://d-scholarship.pitt.edu/25116/2/colis/colis04.html>
13. Lankes RD. *The Atlas of New Librarianship*. The MIT Press; 2011. Accessed July 20, 2020. <https://muse.jhu.edu/book/33647>
14. Morgan AU, Dupuis R, D'Alonzo B, et al. Beyond Books: Public Libraries As Partners For Population Health. *Health Aff (Millwood)*. 2016;35(11):2030-2036. doi:10.1377/hlthaff.2016.0724
15. Morgan AU, D'Alonzo BA, Dupuis R, et al. Public Library Staff as Community Health Partners: Training Program Design and Evaluation. *Health Promot Pract*. Published online October 6, 2017:1524839917735304. doi:10.1177/1524839917735304
16. Whiteman ED. Public Libraries As Partners for Health. *Prev Chronic Dis*. 2018;15. doi:10.5888/pcd15.170392
17. Lenstra N. Let's Move! Fitness Programming in Public Libraries. *Public Libr Q*. 2018;37(1):61-80. doi:10.1080/01616846.2017.1316150
18. Ryder HH, Faloon KJ, Lévesque L, McDonald D. Partnering With Libraries to Promote Walking Among Community-Dwelling Adults: A Kingston Gets Active Pilot Pedometer-Lending Project. *Health Promot Pract*. 2009;10(4):588-596. doi:10.1177/1524839907311049
19. Rubenstein EL. Health Information and Health Literacy: Public Library Practices, Challenges, and Opportunities. *Public Libr Q*. 2016;35(1):49-71. doi:10.1080/01616846.2016.1163974
20. DFREE. Keeping Up With... Small and Rural Libraries. Association of College & Research Libraries (ACRL). Published September 21, 2016. Accessed July 21, 2020. [http://www.ala.org/acrl/publications/keeping\\_up\\_with/srl](http://www.ala.org/acrl/publications/keeping_up_with/srl)
21. Lenstra N. Yoga at the Public Library: An Exploratory Survey of Canadian and American Librarians. *J Libr Adm*. 2017;57(7):758-775. doi:10.1080/01930826.2017.1360121
22. Tanner A, Owens OL, Sisson D, et al. Dodging the Debate and Dealing with the Facts: Using Research and the Public Library to Promote Understanding of the Affordable Care Act. *Libr Q*. 2016;86(2):172-192.

23. U.S. Census Bureau QuickFacts: Richland County, South Carolina. Accessed May 7, 2020.  
<https://www.census.gov/quickfacts/fact/table/charlestoncountysouthcarolina,richlandcountysouthcarolina/PST045219>
24. U.S. Census Bureau QuickFacts: Richland County, South Carolina. Accessed May 7, 2020.  
<https://www.census.gov/quickfacts/fact/table/leecountysouthcarolina,orangeburgcountysouthcarolina,charlestoncountysouthcarolina,richlandcountysouthcarolina/PST045219>
25. Scaccia JP, Cook BS, Lamont A, et al. A practical implementation science heuristic for organizational readiness: R = MC2. *J Community Psychol.* 2015;43(4):484-501. doi:10.1002/jcop.21698
26. Fonteyn ME, Vettese M, Lancaster DR, Bauer-Wu S. Developing a codebook to guide content analysis of expressive writing transcripts. *Appl Nurs Res.* 2008;21(3):165-168. doi:10.1016/j.apnr.2006.08.005
27. Corbin JM, Strauss A. Grounded theory research: Procedures, canons, and evaluative criteria. *Qual Sociol.* 1990;13(1):3-21. doi:10.1007/BF00988593
28. RWJF - Qualitative Research Guidelines Project | Member checking | Member Checks. Accessed May 22, 2020. <http://www.qualres.org/HomeMemb-3696.html>
29. Vasileiou K, Barnett J, Thorpe S, Young T. Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. *BMC Med Res Methodol.* 2018;18(1):148. doi:10.1186/s12874-018-0594-7
30. Leung L. Validity, reliability, and generalizability in qualitative research. *J Fam Med Prim Care.* 2015;4(3):324. doi:10.4103/2249-4863.161306
31. Institute of Museum and Library Services. Public Libraries in the United States Survey: Fiscal Year 2015. Institute of Museum and Library Services. Published July 24, 2018. Accessed September 11, 2018.  
<https://www.ims.gov/publications/public-libraries-united-states-survey-fiscal-year-2015>
32. Pope HC, Draper C, Younginer N, Whitt O, Paget C. Use of Decision Cases for Building SNAP-Ed Implementers' Capacities to Realize Policy, Systems, and Environmental Strategies. *J Nutr Educ Behav.* Published online October 31, 2019. doi:10.1016/j.jneb.2019.09.020

33. Morgan AU, Dupuis R, Whiteman ED, D'Alonzo B, Cannuscio CC. "Our Doors Are Open to Everybody": Public Libraries as Common Ground for Public Health. *J URBAN Health*. 2017;(1):1.

## Chapter 5

### Need for Librarian and Library Staff Health Training at the Public Library<sup>2</sup>

---

<sup>2</sup> O. Whitt, S. Jones, D. Friedman, K. Kenison, V. Kitzie. To be submitted to *Health information and libraries journal*

### **5.1: Abstract**

Some public libraries are offering nutrition and obesity prevention programming to meet the demand of increased user health-related questions. However, little is known whether librarians need additional knowledge or training to support these programs or their users. This research uses 21 in-depth interviews with librarians and library staff to investigate user health and nutrition questions at the public library, degree of confidence answering those questions, and if any additional training could be beneficial in supporting users with health and nutrition questions. Interviews suggest that public libraries are reliant on community partners to offer health and nutrition programs because they are seen as topic expert that can provide professional advice. Program participants sometimes ask librarians and library staff program questions, but librarians often direct them to community partner resources. Librarians and library staff, however, still receive several health and nutrition queries from users in general. All librarians and library staff expressed confidence in their ability to guide users to printed health and nutrition resources, but there were differing levels of confidence when directing users to non-printed resources. Regardless of their confidence with non-print resources, librarians and library staff thought that they had adequate information to sufficiently answer most user health and nutrition questions. Some librarians and library staff believed additional trainings should focus more on local health resources for referrals and communication strategies. While most librarians and library staff are not the ones providing health and nutrition programs at their public library, they could still benefit from additional trainings that help them better assist users.

## **5.2: Introduction**

As the prevalence of chronic disease continues to increase in the United States, more people are utilizing the public library as a resource to better understand their health conditions.<sup>1,2</sup> Approximately half of all public library users now visit the library to find health information.<sup>3</sup> Some public libraries offer chronic disease prevention and management classes led by health professionals to help users with health queries, but demand for these programs often exceeded libraries' offerings.<sup>2,4,5</sup> As a result, the majority of librarians in a Pennsylvania study stated that they frequently assist users with questions about health, especially in regarding diet and exercise.<sup>2</sup> While librarians surveyed in previous studies were eager to help users with their questions and believe the public library is part of the larger health care system, many expressed nervousness about providing health information.<sup>6,7</sup>

Public libraries have transitioned from primarily focusing on literacy and print materials, to becoming a community resource that helps with myriad of user needs including the need for health information.<sup>8,9</sup> However, this shift is not reflected in the curriculum and requirements from the American Library Association Accredited Master of Library Science and Master of Library and Information Studies.<sup>10,11</sup> Librarians expressed a lack of confidence interacting with users about their health questions.<sup>7,11,12</sup> Some stated that they have difficulties understanding user questions due to health information unfamiliarity, pronouncing or spelling medical terms, or helping users that are emotional or embarrassed about their health inquiry.<sup>7</sup> In addition, some librarians believed that in practice it is challenging to establish boundaries between providing

health information, interpretation, and advice.<sup>6</sup> In a qualitative study of United Kingdom librarians, one librarian commented, “I do [have boundaries] but then sometimes end up getting drawn into things... and you try not to.”<sup>6</sup> Librarians in this study realized that they are not medical professionals, but when users were worried or upset about a medical diagnosis it was difficult to only present information.<sup>6</sup>

The type of health information a public librarian provides is also reflective of their educational training and comfort. Few library science programs offer classes in health informatics, so public librarians expressed a greater self-efficacy in guiding users to printed health materials even though they are not the most up-to-date resource.<sup>6,10,11</sup> Some librarians recognized the limitation of printed health resources and helped users find health information online. This can present additional challenges for the public librarian.<sup>6</sup> Many are not familiar with health resources beyond websites provided by a simple Google search.<sup>6</sup> In a prior study about user expectations of librarian health information, one library staff member stated “My knowledge of online [health] resources? Oh, it is pitiful. Not good... I mean I do not really know any specific websites. Since we have been here we have had no training at all, no training... We do not have the time.”<sup>6</sup> This lack of online health resource knowledge is a detriment to users, because many health websites are not reviewed for accuracy or published by a health professional.<sup>13</sup>

The objective of this study was to investigate how public librarians that have nutrition programs at their library assist users with health questions, especially

questions about nutrition-related chronic disease. The research questions explored in the study are:

1. What health and nutrition related questions do program participants of obesity prevention programs at public libraries ask librarians or library staff?
2. How confident are librarians or library staff in providing answers to program participants' health related questions?
3. Do librarians believe that their formal education has prepared them to support participants of obesity prevention programming at their library?
4. How do librarians or library staff provide answers to a program participant's health related question?

### **5.3: Methods**

#### *Setting*

The study setting for this research is thirteen public libraries located across South Carolina. South Carolina is located within the stroke belt, which experiences relatively high rates of heart disease and stroke compared to other parts of the country.<sup>14</sup> In addition, South Carolina also has a higher prevalence of poverty and lower levels of insurance coverage compared to the US as a whole.<sup>15</sup> However, urban communities in South Carolina have significantly lower rates of heart disease and poverty compared to more rural communities.<sup>16,17</sup> The libraries in this study represent both urban and rural communities in South Carolina.

#### *Data*

This study investigated the capacity of librarians and library staff to assist patrons with health-related questions, especially those related to chronic disease prevention and the nutrition program at their library. It utilizes data from in-depth

interviews with librarians and library staff collected from September-November 2019 and interviews with librarians and library staff that implemented SC Plants the Seed collected in 2017. SC Plants the Seed was a pilot program developed from a partnership between SNAP-Ed, South Carolina Department of Health and Environmental Control (DHEC), the South Carolina State Library, and the South Carolina Department of Social Services. Together they worked to offer a weekly or monthly farmers market at the three public libraries in areas with a high SNAP-eligible population. To evaluate the program for federal reporting, the South Carolina SNAP-Ed evaluation team developed an interview guide based on the development and implementation of the program. However, during the interviews librarians and library staff mentioned how the program led to conversations with users about nutrition and healthy behaviors. Interviews lasted approximately 25 minutes to one hour and were conducted by the researcher and other members of the SNAP-Ed evaluation team. In total there were six interviews from library staff at public libraries that implemented SC Plants the Seed and two interviews with the staff at the State Library that helped develop and organize SC Plants the Seed.

In 2019, the researcher re-interviewing the librarians and library staff from the libraries that implemented SC Plants the Seed and interviewed librarians and library staff from ten additional public libraries. Librarians and library staff were asked to participate if their library have or had worked with SNAP-Ed, advertised their nutrition programming, or stated from an initial phone screening that they regularly offered a nutrition program for their users. 21 librarians or library staff consented to interviews either by email or over the phone. Interviews were conducted over the phone and were

30 to 80 minutes long. The interview questions were semi-structured and based on common librarian capacity barriers described in journal articles by Rubenstein, Harris, Morgan, and Whiteman.

#### *Data Management*

Interviews were conducted over the phone and recorded. Interview recordings and field notes were saved on the researcher's computer in encrypted files. Interviews were transcribed verbatim and saved in a separate encrypted file.

#### *Data Analysis*

The research codes and themes were organized using Nvivo (version 12.6, QSR International, Victoria, Australia, 2019). Two researchers used three interviews to develop a codebook using consensus coding. Qualitative coding was initially organized by predicted codes from the previous literature. New codes or categories were added and adapted after reviewing three interviews. After coding the interviews, codes and categories were used to develop themes and relationships.<sup>18</sup> The narrative from those relationships were later presented to the research participants to confirm research findings.<sup>19</sup>

### **5.4: Results**

#### *Motivation to Offer Nutrition Programs at the Library*

Several libraries and library systems in South Carolina are offering nutrition programs such as cooking classes, on-site gardens, seed libraries, farmers markets, and nutrition education to meet the needs of their community. Librarians and library staff that participated in an interview were excited to extend this type of programming,

because they felt it assisted with a need in their communities. They often explained that their communities were in food deserts and community members have difficulty accessing healthy foods. Librarians especially could easily describe healthy food access struggles of people within their county. One librarian at a rural library believed a nutrition program would be beneficial at the library because indicators suggest there is a large SNAP-eligible population.

“...We have student population of 2347. And of those 2347 kids, 75% are on free and reduced lunch. One school has 84% free and reduced and one school has 63% free and reduced. But the average of the four schools is 75%, and that shows that there's going to be a need for SNAP.”

Another librarian in a different county commented that in addition to poverty contributing to food access challenges there is also limited access to healthy foods within the county. She explained:

“You know, [this county] is spread out 1100 square miles and most of the grocery stores in the county are around the city and in the city. Then once you go out, the grocery stores are few and far between, you know. But what you do have are Dollar Tree and Dollar General and the Dollar whatever, and there are just a bunch of stores that aren't going to have fresh food.”

Most librarians and library staff, even if they could not pinpoint the exact need for nutrition programs at their library, believed that the programs benefited their library and community. Many referred to their programs as “great” and even utilized the program themselves.

### *Level of Involvement in Nutrition Programs*

Librarians had differing levels of involvement with nutrition program(s) at their library. Most had a community partner offer the nutrition program with little involvement of librarians. Some worked with the community partners to offer the nutrition program and only one provided the program exclusively by library staff. One librarian described her role when her library offers a nutrition/cooking class. Her explanation is reflective of the typical involvement between librarians and community partners.

“I usually will set up the room in a presentation style. And then I put the tables out, so they do put the bags up on the table. And they have props, so I kind of at least set out a couple tables for them to have all that... Sometimes, I will help them put the bags together because they have coolers for the fruit and some of the other things... That's about it.”

Some librarians were able to have a limited role in their library's nutrition program because the library system program coordinator or other community partners planned, organized, and assisted with the program.

A library that partnered with SNAP-Ed and local farmers detailed how SNAP-Ed helps with finding farmers, obtaining licensing, and setting up. They checked in with farmers during market hours but were more removed from the user interaction aspect of the program.

“So, we really don't see the behind the scenes stuff that happens, which has really just been great for us just to say, "Yeah, we're giving you a space. Once

you guys come in, we'll help you set up," and that's been it. So that's been really great on our part, is to have that partnership.”

Some librarians were more involved with the program, especially if it has a literacy or reading component. Librarians acknowledged that they are not as knowledgeable about food, nutrition, and chronic disease as the community partners that host nutrition programs, but they can help with find reading materials or providing food literacy guided resources. One librarian described how her staff helped families pick out children books about health and nutrition as a part of a farmers’ market program:

“[Our staff asked users] questions... so we could really take the time to get to know them and help them select books that were going to be good for their children... Like if you had a mom that's got a 3-year-old, a 7-year-old, and a 12-year-old, which of these books are you going to suggest to them.”

#### *Health and Nutrition Questions from Program Participants and Users*

Since most librarians interviewed were not as involved with the nutrition program at their library, few could determine whether user health and nutrition related questions were from nutrition program participants. Those that could identify a user from the program typically received questions that expanded on the program offered. For instance, farmers market participants wanted to know how to store and prepare fresh fruits and vegetables. Participants from a home gardening class wanted to know “what type of seed will grow at what time of the year, or how much shade or sunlight a particular seed would need... [and] what certain varieties are because they haven't

heard of that particular plant or vegetable.” These questions were often answered by directing program participants to the community partner’s printed materials. A librarian at a library that offered a farmer’s market described how she helped program participants with their questions when one of the community partners was not at the program:

“We had materials from [a community partner] every week on display, but we didn't [always] have somebody here from [the community partner when we offered the program]. We had to fill in and say, oh, have you seen this. This is the new way that the federal government is -- like the pyramid's gone and now we've got the plate. You know what I'm saying?”

Most librarians, however, assisted users at the reference desk, while community partners fielded program participant questions. Librarians often answered health and nutrition questions from users in general. Users most frequently asked about their current medical conditions. At some libraries, users asked about prevalent chronic nutrition-related health conditions like diabetes and hypertension. However, most librarians stated that could not provide the most asked about health topic, because users have a variety of health concerns and questions. One librarian stated that she receives a plethora of health questions on a variety of topics from users on a weekly basis at her library.

“... We have an aging population, we get lots of diabetes-related stuff, heart disease-related things, preventing Alzheimer's, osteoporosis, osteopenia. We

have a lot of inquiries about attention deficit, depression, mental health, stuff like that.”

In addition to health questions, librarians were frequently asked about diets and cookbooks. Diet questions were reflective of trending or popular weight-loss diets such as keto, Whole30, fasting, juicing, and paleo and were more frequent during certain times of the year. One librarian describes the typical experience regarding user diet questions:

“And there are certain times of the year like, of course, New Year's, we get a lot of questions about those kinds of things and any kind of diet fad that's going on. We have tons of questions about keto.”

Throughout the year users also wanted to know if the library had cookbooks that could help their nutrition/diet related conditions such as irritable bowel syndrome or diabetes. Librarians expressed ease helping users with cookbook questions, because they had a variety of resources. A librarian at a library with a cooking class said:

“We do have a huge cooking collection, cookbook collection. And inside of that collection, we have tons and tons on nutrition.”

Many other librarians also took pride in their cookbook collection and ability to guide users to a cookbook that could help them with their nutrition related questions.

#### *Challenge to Answering Questions: Not Health Professionals*

Helping users with their health and nutrition questions can be a challenge for librarians, because of their professional boundaries. Librarians recognized that they are not health professionals, therefore they can only provide information, not advice. Some

librarians described instances where users wanted the librarian's opinion about a health question, but they had to restrict their help to information only. A librarian provided an example of when she had to define a professional boundary with a user:

"I did have this one guy come in and he was like, "Can you give me some information about prostate medicine?" And I was like, "Okay." I found some articles, but then the thing is, he was like, "Well, which one should I get?" And I was like, "No." Draw the line. Like, "No," Just in general, we don't medical—we don't give advice. We don't tell you you should do this. No, I can give you your information... That's it."

Another librarian experienced a similar situation but helped guide the user to medical professionals.

"People would call and they would describe their ailments to me, and I'm like, "Let's just step back a minute." I can't offer you medical advice, but we do have some resources here. People call us and ask about their medication, we say, "You really need to call the pharmacy. Can I get you that number? Can I call the pharmacy for you? Can I have them call you?" stuff like that. You'd really be surprised the questions that people ask us."

The desire to not provide health advice is so important that one library even nixed a potential cooking class. The librarian explained:

"[The library administration] said that because we're not health professionals, we can't give programs saying, "This is the best diet for you." For instance, one of

my coworkers wanted to do an Instant Pot program with recipes and how the Instant Pot works, and we were told that they can't do that.”

This is a main reason why most libraries rely on community partners for nutrition programming. The community partner can provide advice and recommendations, but librarians cannot.

#### *Guiding Users to Health Resources: Print vs Non-print*

When helping users find health and nutrition information, librarians tend to guide users to print resources. They felt more confident in their ability to find print resources versus non-print resources. To them, it was easier to find a reputable book in their integrated library system than to help the user find information on medical databases or wade through Google search results. Librarians also believed that users preferred print material. A couple librarians would even print out non-print material if the user's health and nutrition questions could not be answered by a book in the library's collection.

Many librarians stated that they would first start with the library's printed collection when helping users with health and nutrition questions.

“Well, let's see. Bring up my search. I would do, first, a good, old-fashioned ILS (integrated library system) search. And I would try to find a print resource for them just based on the keyword.”

A librarian explained she started with print materials because she is more knowledgeable of the printed health and nutrition materials her library offers.

“I start with printed just because I know that collection a little bit more. And then we would move to electronic resources.”

Other librarians started with printed materials because they believed that was their users’ preference. They believed users found books to be more reputable or that the users preferred something physical to look at. One library believed that the more serious a health condition was the more likely a user would prefer printed materials.

“Because even though people rely on the internet for a majority of their information, if it's about something really serious and they know that they need the most accurate information possible, they want to see it in a book. Can we always give it to them in a book? No, we can't. Is there going to always be an entire book written about it? No. But there are books here that have certain chapters on certain diagnoses and situations like that.”

Another librarian described how her library’s user population just prefers printed resources regardless of their health question.

“Yeah, which might be different from many other libraries that, yes, our patrons just prefer print. Many of them are proud Luddites.”

When librarians cannot answer a user’s health and nutrition questions with a printed resource, or if they think the printed resource is out-of-date, they move to non-printed resources. Librarians had varying degrees of comfort finding non-print health and nutrition materials. Most were very knowledgeable of not only the available health and nutrition databases, but also how to navigate them. Some were not as aware of the credible health and nutrition non-print resources available at their library and utilized a

Google search. Almost all librarians though could usually list multiple online resources they used to help users find health and nutrition information.

“So one thing we just added in the last few months is Merck Manuals... [it is] basically like WebMD but more quality... In addition, we have something called SC DISCUS, which is administered through the South Carolina State Library... We offer ReferenceUSA, which has a health directory, a physician directory in there, and where people look up doctors in their area... So yeah, pretty much depending on what a person's looking for, I'll kind of start looking through what we have. We do have a lot of different things.”

Another librarian detailed the databases she uses to help users with their health and nutrition questions:

“Yeah. So with health, I hardly ever just send to Google. I'll point people to Google for many things, but health is not one of them... I would take them to something like - I don't know - maybe Consumer Health Complete. So a lot of our patrons... have never ever, ever used our databases before, ever... [I] Show them how they can read which database might be best for their need. And I'll write instructions for them as I'm going. So yeah. Probably Consumer Health is one I would point people to mostly. And then maybe Gale Health and Wellness, they're pretty good, I think.”

Other librarians utilized Google search but are not confident that the information they are providing is as reputable as printed materials. One librarian explained how she finds health and nutrition resources using Google.

“To be honest, I usually look for things [on Google] that I recognize. Like Johns Hopkins, the more famous ones, or if it's put out by the government. If I don't recognize it, then I-- if it were something more obscure and I only see one or two sources and I don't recognize them, then I would say, "Here's some information but take this with a grain of salt because we don't exactly know.””

Another library echoed the same challenges when utilizing Google for health and nutrition questions.

“We don't like to overwhelm people depending on [their computer skills]. I mean, we try to tell them to scroll down to the very bottom and see-- when we look at an article, how you vet it, how do you know that it's accurate information. So I mean, it's a challenge. Depending on what ailment the person is researching, it's a challenge.”

### *Librarians' Perceptions of Education and Training*

Most librarians believed they received enough training in school to help users with their health and nutrition related questions. However, only two librarians took a Library and Information Science class that taught health and medical reference. These librarians thought that this education, while more common in the medical librarian curriculum, still helped them confidently navigate health databases and help users with their health questions.

One librarian in the process of receiving her master's in library science stated that she took a basic reference course, but the professor often used health references as examples. She was grateful for the experience because:

“[Health] questions are so much tougher than what I mostly get in the real day-to-day stuff because they're using... their specialized vocabularies and stuff like that. You have to really know how to work a database and work Boolean search in order to get those types of things down... I feel those are really helpful. And I did use some of those skills to help people like I mentioned earlier.”

Other librarians felt like their education was enough to help users with health questions, but many also believed more training or education could only help future public librarians. A library director with a library science degree and hospitality background thought her experiences helped her with users' sometimes surprising health questions. She and other librarians thought a class about how to answer health questions in professional and private matter without giving advice could be helpful.

“I absolutely think [future librarians] they should [take a public health or health research class]. I absolutely think that they should because if there are any notions or conceptions for public librarians in terms of what they feel is going to be off limits as a topic, they're wrong... You never know what's going to walk in the door... We have intimate conversations in here to protect people's anonymity, sometimes their privacy. So, I feel like that's something that should be considered also. But yeah, I think it's important.”

Other librarians believed that users with health questions were often distressed, so communication skills that were professional, but also empathetic to the user's concerns could allow the librarian to better assist the user.

Several librarians thought a class, seminar, or training on this would be helpful, especially for librarians that serve lower income communities. They thought training could increase a librarian's knowledge of resources in the community. One librarian that was currently in school for her Master of Library Science stated:

“I think it would be perfect just because that's mainly-- you would have the knowledge to help your customers, especially since a lot of branches are in these low-income areas. And they're in a place where people don't have a lot of access to healthy food. So having the knowledge and directing them to something that would benefit them would be good.”

### **5.5: Discussion**

This research builds on the existing research about librarians as consumer health providers.<sup>6,7,12,20,21</sup> Although the libraries included in this study offered nutrition programs focusing on chronic disease and obesity prevention, the librarians still had similar experiences helping users with their health and nutrition questions.<sup>6,7,12</sup> Findings from this study support claims from previous research that librarians are aware they are not health and nutrition experts, but they are confident in their ability to guide users to printed health material.<sup>6,7,12</sup> When users asked about how to cook, store, or grow fruits and vegetables, the librarians interviewed often provided them with community partners resources like pamphlets, recipe cards, or flyers. When users asked about health concerns such as diabetes, weight-loss, or other conditions, librarians would initially search the ILS for medical encyclopedias or other non-fiction books like cookbooks. Many librarians believed that cookbooks were their most expansive printed

health and nutrition resource at their library. Although the majority of user health and nutrition questions could be answered with these printed materials, sometimes specific questions needed to be answered via non-print resources.

The librarians interviewed had various skills and degrees of confidence in their ability to help users find online health and nutrition information. Similar to research about librarian confidence navigating health material, some librarians could easily list and navigate reputable health databases, while others utilized Google search.<sup>6,21</sup> The librarians that utilized Google search realized that many search results were not trustworthy, so they tried to teach users how to locate accurate and credible resources. This included guiding them to sources like Johns Hopkins, those that end in .org or .gov, or looking for citations within the webpage. While these websites may appear to be more credible than other health information websites, they do not always provide accurate health information.<sup>22</sup> In addition, librarians and library staff believed that assessing the site's credibility made finding health information online more challenging, especially if users did not know how to conduct a website credibility assessment themselves.

Despite this challenge, librarians felt like their education and training was enough to find health and nutrition information for their users. Some did not believe that searching for health and nutrition information was much different than searching for other information. However, other librarians thought that there are other challenges with helping users with health and nutrition information that could be helpful. For instance, many thought more information about health and nutrition community

resources, user privacy, and communication strategies could help user-librarian interaction. Other public library research also recognize these topics as common gaps between public librarian education and practice.<sup>20,23,24</sup> This can be addressed by offering librarian on-the-job training or offering graduate courses on health/health informatics, communication, and basic social work skills.<sup>11,20,24</sup> Almost all librarians that participated in these educational opportunities, including those interviewed for this study, found the experience valuable because they used what they learned to confidently help users with their health information needs.<sup>11,20</sup> As the public library continues to establish itself as a resource for health and nutrition information and programming, more of these educational opportunities should be available.

### *Limitations*

A limitation of this study is that interviews were coded by a single coder. However, three coded interviews and the codebook were reviewed by another researcher to create consensus coding. To improve validity of the findings, the researcher also implemented member check where five of the twenty-one participants confirmed the research findings. While the small sample size can be perceived as a limitation, all illustrated themes had data saturation and the data is representative of South Carolina libraries.<sup>25</sup> The libraries selected represent urban and rural communities and all four regions of South Carolina. And while this study narrowly focuses on a few South Carolina libraries, generalizability is typically not considered a limitation for qualitative studies.<sup>26</sup>

### *Implications for Research and Practice*

This study shows how librarians at public libraries that offer nutrition programming help users with health and nutrition questions. Results indicate that while nutrition program community partners primarily help program participants with their health and nutrition questions, librarians still frequently receive health and nutrition queries from users. Librarians and library staff have varying degrees of confidence helping users with these questions; therefore, it could be beneficial to provide additional training and education on topics such as health informatics, communication, and resource referral. Some professional trainings are offered through partnerships between universities, medical libraries, and public libraries.<sup>11,20,24</sup> These partnership programs should be more widely available to help public librarians. Future research should investigate user expectations for public library nutrition programs, community partners, and librarian health information. Research should also investigate the library user perspective to determine their expectations of librarians regarding health knowledge and information.

## 5.6: References

1. CDC. Adult Obesity Facts. Published August 29, 2017. Accessed December 17, 2017. <https://www.cdc.gov/obesity/data/adult.html>
2. Whiteman ED. Public Libraries As Partners for Health. *Prev Chronic Dis*. 2018;15. doi:10.5888/pcd15.170392
3. Zickuhr K, Rainie L, Purcell K. Library Services in the Digital Age. Pew Internet Libraries. Published January 22, 2013. Accessed September 11, 2018. <http://libraries.pewinternet.org/2013/01/22/library-services/>
4. Lenstra N. Let's Move! Fitness Programming in Public Libraries. *Public Libr Q*. 2018;37(1):61-80. doi:10.1080/01616846.2017.1316150
5. Magee M, Bowling A, Copeland J, Fokar A, Pasquale P, Youssef G. The ABCs of diabetes: diabetes self-management education program for African Americans affects A1C, lipid-lowering agent prescriptions, and emergency department visits. *Diabetes Educ*. 2011;37(1):95-103. doi:10.1177/0145721710392246
6. Harris R, Henwood F, Marshall A, Burdett S. "I'm Not Sure If That's What Their Job Is" Consumer Health Information and Emerging "Healthwork" Roles in the Public Library. *Ref User Serv Q*. 2010;49(3):239-252.
7. Rubenstein EL. Health Information and Health Literacy: Public Library Practices, Challenges, and Opportunities. *Public Libr Q*. 2016;35(1):49-71. doi:10.1080/01616846.2016.1163974
8. Talja S HJ. Revisiting the user-centred turn in information science research: an intellectual history perspective. Published October 2007. Accessed September 15, 2018. <http://d-scholarship.pitt.edu/25116/2/colis/colis04.html>
9. American Library Association. State of America's Libraries Report 2017. Published April 2, 2017. Accessed September 11, 2018. <http://www.ala.org/news/state-americas-libraries-report-2017>
10. Maceli M. Creating Tomorrow's Technologists: Contrasting Information Technology Curriculum in North American Library and Information Science Graduate Programs against Code4lib Job Listings. *J Educ Libr Inf Sci*. 2015;56(3):198-212. doi:10.12783/issn.2328-2967/56/3/3
11. Rubenstein EL. "I Didn't Learn That in Library School"—Experiential Learning in Consumer Health for Future Public Librarians. *Libr Trends*. 2017;66(1):37-51. doi:10.1353/lib.2017.0027

12. Luo L, Park VT. Preparing public librarians for consumer health information service: A nationwide study. *Libr Inf Sci Res.* 2013;35(4):310-317. doi:10.1016/j.lisr.2013.06.002
13. Keane E. Evaluating Consumer Health Information: What Fails to Harm Us Makes Us Smarter. *Ref Libr.* 2009;50(2):178-192. doi:10.1080/02763870902755916
14. Bathala L. A visit to the stroke belt of the United States. *J Neurosci Rural Pract.* 2012;3(3):426-428. doi:10.4103/0976-3147.102653
15. Feb 10 P, 2016. Key Data on Health and Health Coverage in South Carolina. KFF. Published February 10, 2016. Accessed May 22, 2020. <https://www.kff.org/disparities-policy/fact-sheet/key-data-on-health-and-health-coverage-in-south-carolina/>
16. U.S. Census Bureau QuickFacts: Richland County, South Carolina. Accessed May 7, 2020. <https://www.census.gov/quickfacts/richlandcountysouthcarolina>
17. SC Statistics and Reports -Heart Disease, Stroke | SCDHEC. Accessed May 22, 2020. <https://www.scdhec.gov/health/diseases-conditions/heart-disease-stroke/sc-statistics-reports-heart-disease-stroke>
18. Corbin JM, Strauss A. Grounded theory research: Procedures, canons, and evaluative criteria. *Qual Sociol.* 1990;13(1):3-21. doi:10.1007/BF00988593
19. RWJF - Qualitative Research Guidelines Project | Member checking | Member Checks. Accessed May 22, 2020. <http://www.qualres.org/HomeMemb-3696.html>
20. Morgan AU, D'Alonzo BA, Dupuis R, et al. Public Library Staff as Community Health Partners: Training Program Design and Evaluation. *Health Promot Pract.* Published online October 6, 2017:1524839917735304. doi:10.1177/1524839917735304
21. Danhouno G, Whistance-Smith D, Lemoine D, Konkin J. Provision of consumer health information in Alberta's Rural Public Libraries. *Health Inf Libr J.* 2019;36(1):41-59. doi:10.1111/hir.12248
22. Kunst H, Groot D, Latthe PM, Latthe M, Khan KS. Accuracy of information on apparently credible websites: survey of five common health topics. *BMJ.* 2002;324(7337):581-582. doi:10.1136/bmj.324.7337.581
23. Carter NJ, Wallace RL. Collaborating with Public Libraries, Public Health Departments, and Rural Hospitals to Provide Consumer Health Information Services. *J Consum Health Internet.* 2007;11(4):1-14. doi:10.1300/J381v11n04\_01

24. Clifton S, Jo P, Longo JM, Malone T. Cultivating a community of practice: the evolution of a health information specialists program for public librarians. *J Med Libr Assoc JMLA*. 2017;105(3):254-261. doi:10.5195/jmla.2017.83
25. Vasileiou K, Barnett J, Thorpe S, Young T. Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. *BMC Med Res Methodol*. 2018;18(1):148. doi:10.1186/s12874-018-0594-7
26. Leung L. Validity, reliability, and generalizability in qualitative research. *J Fam Med Prim Care*. 2015;4(3):324. doi:10.4103/2249-4863.161306

## Chapter 6

### Conclusion

#### **6.1: Summary**

The purpose of this study was to identify the organization capacity elements that influence a public library's ability to provide nutrition-related obesity prevention programs for their users. To achieve this objective, the researcher interviewed librarians and library staff to better understand the level of engagement between library staff and program participants, perceived strengths and barriers to offering the program, and alignment of the program with the library's mission. Two specific aims and corresponding research questions guided this research and interview questions.

Specific Aim 1: Understand the elements of organizational capacity that influence a public library's ability to implement obesity prevention programs.

Research Questions:

1. What obesity prevention programs are being offered at public libraries?
2. What additional capacity is needed to implement obesity prevention programs at public libraries?
3. What do librarians or library staff consider to be the most significant organizational capacity limitation when considering or implementing an obesity prevention program?
4. What do librarians or library staff consider to be the most significant organizational capacity strength when considering or implementing an obesity prevention program?

Specific Aim 2: Evaluate the need for library staff public health knowledge when implementing obesity prevention programs at public libraries.

Research Questions:

1. What health and nutrition related questions do program participants of obesity prevention programs at public libraries ask librarians or library staff?
2. How confident are librarians or library staff in providing answers to program participants' health related questions?
3. Do librarians believe that their formal education has prepared them to support participants of obesity prevention programming at their library?
4. How do librarians or library staff provide answers to a program participant's health related question?

To address specific aim 1 and 2, The researcher interviewed librarians and library staff at libraries that offered nutrition-related obesity prevention programs, and the researcher utilized South Carolina SNAP-Ed evaluation interviews with libraries that participated in SC Plants the Seed. SC Plants the Seed interviews were conducted in 2017 for the purpose of federal SNAP-Ed reporting. In 2019, the researcher re-interviewed the librarians and library staff that helped implement SC Plants the Seed at their library and conducted interviews with ten additional libraries that implemented similar obesity prevention programs. In total twenty-one librarians and library staff members participated in interviews about nutrition-related obesity prevention program(s) at their library or at their library system's branches.

#### *Findings for specific aim 1*

Findings from this study suggest that librarians and library staff are working to offer several nutrition-related obesity prevention programs at their public library

because they address users' food access needs and they are typically well attended. Libraries offered programs such as farmers markets, gardens, and cooking-based nutrition classes. Librarians are excited to offer this type of programming despite it being outside the traditional scope of reading and literacy, because it aligns with a major part of the libraries mission "to learn" based on participant perceptions. However, some public libraries have more organizational capacity to offer nutrition-related obesity prevention programs than others. Librarians and library staff that served more urban communities did not feel as though they were limited by funding, staff-members, or physical space to offer the program(s), while many librarians and library staff in more rural communities did. Though librarians from both urban and rural communities both believed that a community partnership is critical to offer programs about health and nutrition. This presents an opportunity for SNAP-Ed because they help facilitate partnerships between sites willing to offer PSE strategies and community partners.<sup>25</sup>

#### *Findings for specific aim 2*

Findings from this study suggest that most librarians do not need a public health background to offer nutrition-related obesity prevention programs at their public library but could benefit from additional health training to better serve their users. A health background is often not need to offer obesity prevention programs at the public library because community partners frequently host the program and assist program participants. Many librarians helped community partners set up for the program, but primarily assisted users with their health and nutrition questions at the reference desk. Some librarians and library staff, however, believed that more health education or

training could be helpful with assisting users at the reference desk. They felt confident guiding users to printed materials about a health or nutrition issue but insinuated future public librarians could benefit from more information about local social service/health resources, user privacy, and communication strategies to better help users with their health and nutrition questions. These skills can be addressed with additional job training or could be included in library science curriculums.<sup>65,6625</sup>

### *Overall Findings*

Findings from both studies illustrate the organizational capacity strengths and barriers of public libraries that offer nutrition-related obesity prevention programs. One of the greatest organizational capacity strengths at the library are librarians and library staff. Though they often do not lead the obesity prevention programs at their library, they are the program champions. Librarians and library staff promote the program, utilize the program and most importantly work to overcome any organizational capacity barriers for the program. Increasing their confidence in building relationships with community partners and communicating with users about health and nutrition questions could make it easier to implement PSE strategies and assist program participants at the public library.

### **6.2: Connection to Previous Literature**

Results from the two studies support previous public library research. Although previous research has not investigated the organizational strengths and barriers when offering nutrition-related obesity prevention programs at the public library, other research that looks at physical activity programming concludes that public libraries

encounter several capacity challenges when offering this type of programming.<sup>58,78</sup>

Similar to the results of this project, public libraries are often reliant on community partners to donate their time, resources, or expertise for health programs, because the library has a limited budget or skill set.<sup>55</sup> These challenges are even more prevalent in rural or low-income communities.<sup>63,79</sup> However, librarians and library staff, like those interviewed for this project, are willing to overcome those challenges because health programs serve a need in the local community.<sup>46,63</sup>

Library users are increasingly using the public library as a health resource, resulting in more health and nutrition reference queries.<sup>52,67</sup> South Carolina librarians and library staff, like those in Alberta, Canada, and Great Britain, can experience challenges when helping users with health information.<sup>61,67</sup> Librarians and library staff have confidence in finding printed health material, but are sometimes less confident utilizing non-print health material, which is typically more up-to-date.<sup>63,67</sup> Similar to the results by Danhoudo et al., there was a range in librarian confidence navigating non-print material. Some librarians and librarian staff interviewed were very familiar with health databases, while others utilized Google search. Regardless of how librarians and library staff found health information, they were confident in their ability to answer most user health questions. This level of confidence is often not shared by other librarians and library staff.<sup>52,61</sup> Other librarians and library staff believe that additional training or education opportunities on health informatics, communication, and referrals could improve their self-efficacy in helping users with their health questions, while interviewed librarians and library staff just prioritized training in health communication

and referrals.<sup>52,65,79</sup> Like other librarians, results from the study suggest that librarians are willing to participate in additional training to better help users with their health questions.<sup>65,80</sup>

### ***6.3: Strengths and Limitations of the Studies***

This project contains several strengths as well as limitations. One methodological limitation is that the majority of the qualitative coding was conducted by one researcher. A second researcher reviewed the codebook and themes, but reliability could be improved by implementing consensus coding via multiple coders. In an effort to improve the validity of uncovered themes for specific aim 1 and specific aim 2, the researcher implemented member checking. Interview participants had the opportunity to confirm research findings and five confirmed the research findings via e-mail. The number of public libraries represented in the project is also a possible limitation of the study. For specific aim 1 and specific aim 2 only thirteen public library experiences were described by twenty-one librarians and library staff. However, data saturation was met for all reported themes and the data is representative of South Carolina libraries.<sup>81</sup> Libraries represent urban and rural communities and all four regions of South Carolina. And while this study narrowly focuses on a few South Carolina libraries, generalizability is typically not considered a limitation for qualitative studies.<sup>82</sup>

### ***6.4: Recommendations for Research and Practice***

Findings from this study suggest that public libraries are an appropriate site to partner with SNAP-Ed, even though they do not primarily focus on nutrition or physical activity. The public library often serves SNAP-eligible populations and are a trusted

resource in communities.<sup>58</sup> In addition, librarians and library staff are eager to work with community partners to offer SNAP-Ed PSE or similar programs at their library. SNAP-Ed implementers should prioritize a partnership with public libraries, because unlike some sites, most are ready and willing to implement SNAP-Ed programs, especially PSEs.<sup>83</sup> This research can also help SNAP-Ed implementers as they assist public libraries with PSEs, because they sometimes cite difficulty assessing site capacity and assisting with the implementation of PSEs.<sup>83</sup> This research demonstrates to SNAP-Ed implementers that community partnerships are the most significant organizational capacity need at public libraries and significant focus should be directed towards PSEs that develop short term indicator: organizational partnership.<sup>25</sup>

One potential partnership SNAP-Ed implementers should consider when working with a public library is a partnership with universities and medical libraries. Medical libraries and universities have previously hosted trainings regarding health informatics, communication, and resource referral, so librarians and library staff have more confidence helping users with their health and nutrition questions.<sup>50,80,84,85</sup> Although librarians and library staff interviewed for this study believed training and education opportunities should focus more on health communication and resource referral, they did believe more training could be beneficial for librarians. While more health training would not prepare librarians and library staff to lead SNAP-Ed PSE or direct education programs, it can help librarians as they assist program participants and users with their questions.

More research should investigate public libraries and librarians as health resources. Public libraries are increasing their health program offerings and helping more users with their health questions.<sup>49,52,58</sup> Little is known whether public libraries have the capacity to best help users with their health information needs. Future studies should continue investigative research into the type of nutrition programs offered at libraries and their capacity needs. Future research should also evaluate user perception of these programs and program sustainability. Previous studies have conducted these types of studies regarding physical activity and other health programs like immunizations at the library, but none to the researcher's knowledge looks specifically at nutrition programs at the library.<sup>53,58,78</sup> There are several opportunities to help the public library develop as a community health resource.

## References

1. Mitchell N, Catenacci V, Wyatt HR, Hill JO. OBESITY: OVERVIEW OF AN EPIDEMIC. *Psychiatr Clin North Am.* 2011;34(4):717-732. doi:10.1016/j.psc.2011.08.005
2. Obesity Declared an Epidemic in the United States. *J Natl Med Assoc.* 1999;91(12):645.
3. Center for Disease Control and Prevention. Defining Adult Overweight and Obesity. Accessed November 6, 2018. <https://www.cdc.gov/obesity/adult/defining.html>
4. Center for Disease Control and Prevention. Childhood Obesity Facts. Published August 14, 2018. Accessed November 6, 2018. <https://www.cdc.gov/obesity/data/childhood.html>
5. Center for Disease Control and Prevention. Adult Obesity Facts. Published August 13, 2018. Accessed November 6, 2018. <https://www.cdc.gov/obesity/data/adult.html>
6. Ogden CL. Prevalence of Obesity Among Adults, by Household Income and Education — United States, 2011–2014. *MMWR Morb Mortal Wkly Rep.* 2017;66. doi:10.15585/mmwr.mm6650a1
7. Council (US) NR. *Determining the Extent of Food Deserts.* National Academies Press (US); 2009. Accessed November 8, 2018. <http://www.ncbi.nlm.nih.gov/books/NBK208011/>
8. Ver Ploeg M. Access to Affordable, Nutritious Food Is Limited in “Food Deserts.” United States Department of Agriculture. Published March 1, 2010. Accessed November 8, 2018. <https://www.ers.usda.gov/amber-waves/2010/march/access-to-affordable-nutritious-food-is-limited-in-food-deserts/>
9. Hanna P. What is Food Apartheid? The Green Dandelion. Published February 11, 2019. Accessed June 4, 2020. <https://blogs.rochester.edu/thegreendandelion/2019/02/what-is-food-apartheid/>
10. Hilmers A, Hilmers DC, Dave J. Neighborhood Disparities in Access to Healthy Foods and Their Effects on Environmental Justice. *Am J Public Health.* 2012;102(9):1644-1654. doi:10.2105/AJPH.2012.30086

11. United States Department of Agriculture. *SNAP-Ed Guiding Principles.*; 2014.
12. Handler A, Issel M, Turnock B. Conceptual Framework to Measure Performance of the Public Health System. *Am J Public Health.* 2001;91(8):1235-1239.
13. Meyers DC, Durlak JA, Wandersman A. The Quality Implementation Framework: A Synthesis of Critical Steps in the Implementation Process. *Am J Community Psychol.* 2012;50(3):462-480. doi:10.1007/s10464-012-9522-x
14. Pluye P, Potvin L, Denis J-L. Making public health programs last: conceptualizing sustainability. *Eval Program Plann.* 2004;27(2):121-133. doi:10.1016/j.evalprogplan.2004.01.001
15. Mays GP, Smith SA, Ingram RC, Racster LJ, Lamberth CD, Lovely ES. Public Health Delivery Systems: Evidence, Uncertainty, and Emerging Research Needs. *Am J Prev Med.* 2009;36(3):256-265. doi:10.1016/j.amepre.2008.11.008
16. A Short History of SNAP | USDA-FNS. Accessed June 24, 2020. <https://www.fns.usda.gov/snap/short-history-snap#1939>
17. Food and Nutrition Service. Am I Eligible for SNAP? Published 2018. Accessed October 24, 2018. <https://www.fns.usda.gov/snap/eligibility>
18. Executive Office of the President of the United States. *Long-Term Benefits of the Supplemental Nutrition Assistance Program.*; 2015. Accessed October 24, 2018. [https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/SNAP\\_report\\_final\\_nonembargo.pdf](https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/SNAP_report_final_nonembargo.pdf)
19. United States Department of Agriculture. Supplemental Nutrition Education Program - Education (SNAP-Ed). Published 2015. Accessed March 3, 2018. <https://nifa.usda.gov/program/supplemental-nutrition-education-program-education-snap-ed>
20. United States Department of Agriculture. Analysis of Supplemental Nutrition Assistance Program Education (SNAP-Ed) Data for All States. Published August 24, 2018. Accessed November 6, 2018. <https://www.fns.usda.gov/snap/analysis-supplemental-nutrition-assistance-program-education-snap-ed-data-all-states>
21. United States Department of Agriculture. *Supplemental Nutrition Assistance Program Education Plan Guidance FY 2017.*; 2017. Accessed March 3, 2018. [https://snaped.fns.usda.gov/snap/Guidance/FY\\_2017\\_SNAP-Education\\_Guidance\\_%20508-Compliant.pdf](https://snaped.fns.usda.gov/snap/Guidance/FY_2017_SNAP-Education_Guidance_%20508-Compliant.pdf)
22. United States Department of Agriculture. Implementation of the Healthy, Hunger-Free Kids Act of 2010, SNAP Education Provision. Published September 28, 2017.

Accessed October 11, 2018. <https://www.fns.usda.gov/implementation-healthy-hunger-free-kids-act-2010-snap-education-provision>

23. United States Department of Agriculture. Supplemental Nutrition Assistance Program Education (SNAP-Ed) Factsheet. Published August 2016. Accessed March 3, 2018. [https://snaped.fns.usda.gov/snap/SNAP-Ed%20Factsheet%20\\_August%202016.pdf](https://snaped.fns.usda.gov/snap/SNAP-Ed%20Factsheet%20_August%202016.pdf)
24. Glanz K, Rimer BK, Viswanath K. *Health Behavior: Theory, Research, and Practice*. John Wiley & Sons; 2015.
25. United States Department of Agriculture. *FY 2019 SNAP-Ed Plan Guidance.*; 2018. Accessed November 6, 2018. <https://snaped.fns.usda.gov/snap/Guidance/FY2019SNAPEdPlanGuidanceFULL.pdf>
26. Franck K. *Delphi Study Summary: Barriers, Facilitators, and Training Needs for Successful PSE Implementation in SNAP-Ed and EFNEP.*; 2016. <https://snapedpse.org/wp-content/uploads/2017/08/RNECE-PSE-Delphi-summary-2016.pdf>
27. Barnidge EK, Radvanyi C, Duggan K, et al. Understanding and Addressing Barriers to Implementation of Environmental and Policy Interventions to Support Physical Activity and Healthy Eating in Rural Communities. *J Rural Health*. 2013;29(1):97-105. doi:10.1111/j.1748-0361.2012.00431.x
28. USDA SNAP-Ed | Cooking Matters. Accessed April 23, 2020. <https://ma.cookingmatters.org/snap-ed>
29. About Us | Cooking Matters. Accessed April 23, 2020. <http://ma.cookingmatters.org/about>
30. Lee JS, Cotto-Rivera E, Sanville L, Akin J, Bhargava V. P56 Changes in Healthy Eating and Physical Activity Behaviors of Low-Income Adult Georgians Participating in Supplemental Nutrition Assistance Program Education (SNAP-Ed). *J Nutr Educ Behav*. 2019;51(7, Supplement):S57-S58. doi:10.1016/j.jneb.2019.05.432
31. Pooler JA, Morgan RE, Wong K, Wilkin MK, Blitstein JL. Cooking Matters for Adults Improves Food Resource Management Skills and Self-confidence Among Low-Income Participants. *J Nutr Educ Behav*. 2017;49(7):545-553.e1. doi:10.1016/j.jneb.2017.04.008
32. Adedokun OA, Plonski P, Jenkins-Howard B, Cotterill DB, Vail A. Healthy Choices for Every Body Adult Curriculum Improves Participants' Food Resource Management Skills and Food Safety Practices. *J Nutr Educ Behav*. 2018;50(6):638-644. doi:10.1016/j.jneb.2018.02.005

33. Savoie MR, Mispireta M, Rankin LL, Neill K, LeBlanc H, Christofferson D. Intention to Change Nutrition-Related Behaviors in Adult Participants of a Supplemental Nutrition Assistance Program–Education. *J Nutr Educ Behav.* 2015;47(1):81-85. doi:10.1016/j.jneb.2014.08.009
34. Swain M, Almond C, Austin S, Diehl D, Shelnett K. P160 Does the Cooking Matters Curriculum Improve Participant Food Security? *J Nutr Educ Behav.* 2019;51(7, Supplement):S104-S105. doi:10.1016/j.jneb.2019.05.536
35. Rivera RL, Maulding MK, Eicher-Miller HA. Effect of Supplemental Nutrition Assistance Program–Education (SNAP-Ed) on food security and dietary outcomes. *Nutr Rev.* 2019;77(12):903-921. doi:10.1093/nutrit/nuz013
36. Walkinshaw LP, Quinn EL, Rocha A, Johnson DB. An Evaluation of Washington State SNAP-Ed Farmers’ Market Initiatives and SNAP Participant Behaviors. *J Nutr Educ Behav.* 2018;50(6):536-546. doi:10.1016/j.jneb.2018.01.003
37. Castro DC, Samuels M, Harman AE. Growing healthy kids: a community garden-based obesity prevention program. *Am J Prev Med.* 2013;44(3 Suppl 3):S193-199. doi:10.1016/j.amepre.2012.11.024
38. Dannefer R, Abrami A, Rapoport R, Sriphanlop P, Sacks R, Johns M. Research Article: A Mixed-Methods Evaluation of a SNAP-Ed Farmers’ Market–Based Nutrition Education Program. *J Nutr Educ Behav.* 2015;47:516-525.e1. doi:10.1016/j.jneb.2015.08.021
39. Morgera C, Balestracci K, Raymond J, Amin S, Greene G. Evaluation of a PSE School-Based Fruit and Vegetable Intervention (P04-166-19). *Curr Dev Nutr.* 2019;3(Supplement\_1). doi:10.1093/cdn/nzz051.P04-166-19
40. Woodruff RC, Raskind IG, Harris DM, et al. The dietary impact of introducing new retailers of fruits and vegetables into a community: results from a systematic review. *Public Health Nutr.* 2018;21(5):981-991. doi:10.1017/S1368980017003226
41. Olsho LE, Payne GH, Walker DK, Baronberg S, Jernigan J, Abrami A. Impacts of a farmers’ market incentive programme on fruit and vegetable access, purchase and consumption. *Public Health Nutr.* 2015;18(15):2712-2721. doi:10.1017/S1368980015001056
42. McCormack LA, Laska MN, Larson NI, Story M. Review of the nutritional implications of farmers’ markets and community gardens: a call for evaluation and research efforts. *J Am Diet Assoc.* 2010;110(3):399-408. doi:10.1016/j.jada.2009.11.023
43. Langellotto GA, Gupta A. Gardening Increases Vegetable Consumption in School-aged Children: A Meta-analytical Synthesis. *HortTechnology.* 2012;22(4):430-445.

44. Horrigan JB. Libraries at the Crossroads. Pew Research Center. Published September 15, 2015. Accessed November 8, 2018. <http://www.pewinternet.org/2015/09/15/libraries-at-the-crossroads/>
45. Garmer A. *Rising to the Challenge Re-Envisioning Public Libraries*. Aspen Institute; 2014.
46. Morgan AU, Dupuis R, Whiteman ED, D'Alonzo B, Cannuscio CC. "Our Doors Are Open to Everybody": Public Libraries as Common Ground for Public Health. *J URBAN Health*. 2017;(1):1.
47. Talja S HJ. Revisiting the user-centred turn in information science research: an intellectual history perspective. Published October 2007. Accessed September 15, 2018. <http://d-scholarship.pitt.edu/25116/2/colis/colis04.html>
48. American Library Association. New research highlights libraries' expanded roles. News and Press Center. doi:<http://www.ala.org/news/press-releases/2015/10/new-research-highlights-libraries-expanded-roles>
49. Morgan AU, Dupuis R, D'Alonzo B, et al. Beyond Books: Public Libraries As Partners For Population Health. *Health Aff (Millwood)*. 2016;35(11):2030-2036. doi:10.1377/hlthaff.2016.0724
50. Morgan AU, D'Alonzo BA, Dupuis R, et al. Public Library Staff as Community Health Partners: Training Program Design and Evaluation. *Health Promot Pract*. Published online October 6, 2017:1524839917735304. doi:10.1177/1524839917735304
51. Institute of Museum and Library Services. Public Libraries in the United States Survey: Fiscal Year 2015. Institute of Museum and Library Services. Published July 24, 2018. Accessed September 11, 2018. <https://www.imls.gov/publications/public-libraries-united-states-survey-fiscal-year-2015>
52. Whiteman ED. Public Libraries As Partners for Health. *Prev Chronic Dis*. 2018;15. doi:10.5888/pcd15.170392
53. Tanner A, Owens OL, Sisson D, et al. Dodging the Debate and Dealing with the Facts: Using Research and the Public Library to Promote Understanding of the Affordable Care Act. *Libr Q*. 2016;86(2):172-192.
54. Philbin MM 1 mp3243@cumccolumbia.edu, Parker CM 1, Flaherty MG, Hirsch JS 1. Public Libraries: A Community-Level Resource to Advance Population Health. *J Community Health*. 2019;44(1):192-199. doi:10.1007/s10900-018-0547-4
55. Lenstra N. Let's Move! Fitness Programming in Public Libraries. *Public Libr Q*. 2018;37(1):61-80. doi:10.1080/01616846.2017.1316150

56. Ryder HH, Faloon KJ, Lévesque L, McDonald D. Partnering With Libraries to Promote Walking Among Community-Dwelling Adults: A Kingston Gets Active Pilot Pedometer-Lending Project. *Health Promot Pract.* 2009;10(4):588-596. doi:10.1177/1524839907311049
57. Magee M, Bowling A, Copeland J, Fokar A, Pasquale P, Youssef G. The ABCs of diabetes: diabetes self-management education program for African Americans affects A1C, lipid-lowering agent prescriptions, and emergency department visits. *Diabetes Educ.* 2011;37(1):95-103. doi:10.1177/0145721710392246
58. Lenstra N lenstra@uncg.edu. Movement-Based Programs in U.S. and Canadian Public Libraries: Evidence of Impacts from an Exploratory Survey. *Evid Based Libr Inf Pract.* 2017;12(4):214-232.
59. Henderson M. A Library's Partnership Experience with University Extension to Provide Program Content. *J Libr Adm.* 2019;59(4):409-421. doi:10.1080/01930826.2019.1593715
60. Bertot JC, Real B, Lee J, McDermott AJ, Jaegar P. *2014 Digital Inclusion Survey: Survey Findings and Results.* University of Maryland, College Park: Information Policy & Access Center (iPAC)
61. Harris R, Henwood F, Marshall A, Burdett S. "I'm Not Sure If That's What Their Job Is" Consumer Health Information and Emerging "Healthwork" Roles in the Public Library. *Ref User Serv Q.* 2010;49(3):239-252.
62. Zickuhr K, Rainie L, Purcell K. Library Services in the Digital Age. Pew Internet Libraries. Published January 22, 2013. Accessed September 11, 2018. <http://libraries.pewinternet.org/2013/01/22/library-services/>
63. Rubenstein EL. Health Information and Health Literacy: Public Library Practices, Challenges, and Opportunities. *Public Libr Q.* 2016;35(1):49-71. doi:10.1080/01616846.2016.1163974
64. Thompson S. I Wouldn't Normally Ask This ...: Or, Sensitive Questions and Why People Seem More Willing to Ask Them at a Virtual Reference Desk. *Ref Libr.* 2010;51(2):171-174. doi:10.1080/02763870903579869
65. Morgan AU, D'Alonzo BA, Dupuis R, et al. Public Library Staff as Community Health Partners: Training Program Design and Evaluation. *Health Promot Pract.* Published online October 1, 2017:1524839917735304-1524839917735304. doi:10.1177/1524839917735304
66. Maceli M. Creating Tomorrow's Technologists: Contrasting Information Technology Curriculum in North American Library and Information Science Graduate Programs

against Code4lib Job Listings. *J Educ Libr Inf Sci*. 2015;56(3):198-212.  
doi:10.12783/issn.2328-2967/56/3/3

67. Danhoundo G, Whistance-Smith D, Lemoine D, Konkin J. Provision of consumer health information in Alberta's Rural Public Libraries. *Health Inf Libr J*. 2019;36(1):41-59. doi:10.1111/hir.12248
68. Keane E. Evaluating Consumer Health Information: What Fails to Harm Us Makes Us Smarter. *Ref Libr*. 2009;50(2):178-192. doi:10.1080/02763870902755916
69. Scaccia JP, Cook BS, Lamont A, et al. A practical implementation science heuristic for organizational readiness: R = MC2. *J Community Psychol*. 2015;43(4):484-501. doi:10.1002/jcop.21698
70. Buschman J. *Dismantling the Public Sphere: Situating and Sustaining Librarianship in the Age of the New Public Philosophy*. Libraries Unlimited; 2003.
71. U.S. Census Bureau QuickFacts: Richland County, South Carolina. Accessed May 7, 2020.  
<https://www.census.gov/quickfacts/fact/table/charlestoncountysouthcarolina,richlandcountysouthcarolina/PST045219>
72. U.S. Census Bureau QuickFacts: Richland County, South Carolina. Accessed May 7, 2020.  
<https://www.census.gov/quickfacts/fact/table/leecountysouthcarolina,orangeburgcountysouthcarolina,charlestoncountysouthcarolina,richlandcountysouthcarolina/PST045219>
73. Patton MQ. *Qualitative Research & Evaluation Methods: Integrating Theory and Practice*. SAGE Publications; 2014.
74. Galletta A. *Mastering the Semi-Structured Interview and Beyond: From Research Design to Analysis and Publication*. NYU Press; 2013.
75. Fonteyn ME, Vettese M, Lancaster DR, Bauer-Wu S. Developing a codebook to guide content analysis of expressive writing transcripts. *Appl Nurs Res*. 2008;21(3):165-168. doi:10.1016/j.apnr.2006.08.005
76. Corbin JM, Strauss A. Grounded theory research: Procedures, canons, and evaluative criteria. *Qual Sociol*. 1990;13(1):3-21. doi:10.1007/BF00988593
77. RWJF - Qualitative Research Guidelines Project | Member checking | Member Checks. Accessed May 22, 2020. <http://www.qualres.org/HomeMemb-3696.html>

78. Lenstra N. Yoga at the Public Library: An Exploratory Survey of Canadian and American Librarians. *J Libr Adm.* 2017;57(7):758-775. doi:10.1080/01930826.2017.1360121
79. Flaherty MG, Miller D. Rural Public Libraries as Community Change Agents: Opportunities for Health Promotion. *J Educ Libr Inf Sci.* 2016;57(2):143-150.
80. Carter NJ, Wallace RL. Collaborating with Public Libraries, Public Health Departments, and Rural Hospitals to Provide Consumer Health Information Services. *J Consum Health Internet.* 2007;11(4):1-14. doi:10.1300/J381v11n04\_01
81. Vasileiou K, Barnett J, Thorpe S, Young T. Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. *BMC Med Res Methodol.* 2018;18(1):148. doi:10.1186/s12874-018-0594-7
82. Leung L. Validity, reliability, and generalizability in qualitative research. *J Fam Med Prim Care.* 2015;4(3):324. doi:10.4103/2249-4863.161306
83. Pope HC, Draper C, Younginer N, Whitt O, Paget C. Use of Decision Cases for Building SNAP-Ed Implementers' Capacities to Realize Policy, Systems, and Environmental Strategies. *J Nutr Educ Behav.* Published online October 31, 2019. doi:10.1016/j.jneb.2019.09.020
84. Rubenstein EL. "I Didn't Learn That in Library School"—Experiential Learning in Consumer Health for Future Public Librarians. *Libr Trends.* 2017;66(1):37-51. doi:10.1353/lib.2017.0027
85. Clifton S, Jo P, Longo JM, Malone T. Cultivating a community of practice: the evolution of a health information specialists program for public librarians. *J Med Libr Assoc JMLA.* 2017;105(3):254-261. doi:10.5195/jmla.2017.83