Strengths and Growth Opportunities of a Grocery Program Serving the Homebound, Low-income, Older Adults of Apex, North Carolina: A Program Evaluation from the Client and Volunteer Perspective

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April 8, 2019

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Abstract

Functionally-disabled older adults in America, and especially those who live alone, are more likely to be food insecure. Although there are a number of nonprofit meal delivery programs across the nation that have been shown to improve the nutritional status and provide other health benefits to the seniors they serve, some gaps in food quality and quantity persist in these programs. Therefore, it is important that regular program evaluations are conducted in order to help ensure satisfaction and identify any unmet needs. The purpose of this exploratory program evaluation is to holistically assess and provide recommendations to a nonprofit home food delivery program located in Apex, North Carolina. Clients (n=6) were interviewed and volunteers (n=6) were surveyed. Overall, clients and volunteers were extremely satisfied with the program, and clients indicated that this program is very helpful in allowing them to obtain the food they need. This program also supports social health, evidenced by clients and volunteers citing the value of friendships formed through social interaction at delivery time. If resources allow, there is room for growth in providing clients with fresher food and vegetables, and the option to call in for extra food supplementation when needed. In addition, volunteers should periodically assess clients’ functional ability to prepare their own meals, and refer them to a Meals on Wheels program if necessary. From the volunteer perspective, room for growth mainly centered on efficiency and training. Program staff and volunteers should continue to meet to identify concerns as they arise.

Keywords: older adult, nonprofit, food program
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Addressing the nutritional needs of the older adult population is an important topic across the United States as food insecurity in the elderly is prevalent. According to the U.S. Department of Agriculture, it was found that food insecurity, which is having inconsistent access to sufficient and nutritious food for an active lifestyle, was experienced by 8.9 percent of households that included a person 65 years of age or older (Chang & Hickman, 2018). Food insecurity in adults 40 and over is most widespread among those in poverty or near poverty (Strickhouser, Wright, & Donley, 2014). The U.S. Census Bureau reported that 4.7 million (9.2%) of senior adults were living in poverty (Cubanski, Koma, Damico, & Neuman, 2018). Alongside poverty, a nationwide study found that in adults over 65 years of age, those who were functionally-disabled were more likely to experience food insecurity and to have a poor quality diet (Chang & Hickman, 2018). This risk increased greatly for older adults who were also living alone (Chang & Hickman, 2018). Therefore, resources should be allocated to ensure access to nutritional food for older adults with functional limitations, especially those living alone (Chang & Hickman, 2018).

Western Wake Crisis Ministry’s (WWCM) Home Food Delivery Program is one of many initiatives across the United States which aims to address the dietary needs of those with difficulty accessing healthy food. Once a month, volunteers bring groceries free of charge to homebound clients, who are low-income and often elderly, functionally-disabled, and living alone. Based on a background review of the literature and program staff recommendations, this evaluation of WWCM’s Home Food Delivery Program aims to explore clients’ overall
satisfaction with the program, including the quality and quantity of food, and its perceived importance to their physical and social health. It also explores volunteers’ overall satisfaction with the program, and its value and meaning within their lives.

**Background**

There are a fair amount of studies published which describe the strengths and weaknesses of existent nonprofit meal delivery programs that serve older adults across the nation. Two large American organizations are Meals on Wheels America and the Food is Medicine Coalition.

Meals on Wheels programs are some of the most well-known and most evaluated meal delivery organizations. Meals on Wheels America is a nonprofit leadership network supporting over 5,000 local Meals on Wheels programs across the United States which aim to meet the nutritional as well as social needs of seniors (Meals on Wheels America, 2018a). Volunteers of local Meals on Wheels programs deliver nutritious meals to their clients’ homes, while also providing social interaction and safety checks (Meals on Wheels America, 2018b). The funding sources for each local Meals on Wheels program varies, but in 2014, the 5,000 community based Meals on Wheels programs received in aggregate 35 percent of their funding from the federal government through the Older Americans Act Nutrition Program, totaling $517 million (Meals on Wheels America, 2017). The other 65 percent included other federal, state, and private funding sources. (Meals on Wheels America, 2017).

The Food is Medicine Coalition (FIMC) is an association of nonprofit meal delivery programs across the United States. It differs from Meals on Wheels in that member programs medically tailor their meals, specifically serving clients with critical and/or chronic illnesses. Agencies which belong to the FIMC receive most of their funding through private sources (Food is Medicine Coalition, n.d.-a). The FIMC also prioritizes promoting research on its local
programs (FIMC, n.d.-b). In publishing evidence that local medically tailored food services result in better health outcomes and lower the cost of medical care, it hopes public policy may be advanced to include its programs as a reimbursable healthcare service (FIMC, n.d.-b).

The current literature has identified multiple issues currently impacting meal delivery programs. Firstly, the quantity of food provided by Meals on Wheels programs doesn’t allow all its clients to consume the recommended caloric intake each day (Frongillo, Isaacman, Horan, Wethington, & Pillemer, 2010; Gualtieri, Donley, Wright, & Vega, 2018). However, increasing the amount of food provided to match clients’ caloric needs would require significant additional funds, and a number of local Meals on Wheels programs already do not have enough funding to feed everyone in need, such as in rural communities where costs to feed clients are higher due to having to drive long distances (Gualtieri et al., 2018). Secondly, the quality of food provided by Meals on Wheels programs isn’t always optimal for their clients. Some local programs do not provide special meals for clients with medical conditions (Gualtieri et al., 2018). Lee et al. (2008) found that only approximately half of surveyed Meals on Wheels programs offered individualized meals for clients with medically-related needs. This could result in compromised health status in those who have a medical condition which requires close nutritional management. There is evidence that medically tailored food delivery programs may better meet the needs of disabled and more chronically ill participants (Berkowitz et al., 2018). However, the availability of medically tailored food programs is limited. Even for clients who do not require medically tailored food, some meal programs may not be able to ensure all of their clients eat a high quality diet. The results of a survey conducted on participants of Citymeals on Wheels showed clients still had a generally low consumption rate of fruits, vegetables, and milk (Frongillo et al., 2010).
Despite the challenges, the current research on meal delivery programs supports the notion that they are very beneficial to the older adult population. Meal delivery programs have high satisfaction rates (Frongillo et al., 2010; Gualtieri et al., 2018). Meal delivery programs also generally improve nutritional status, and allow the majority of their clients to eat healthier meals than they would be eating otherwise (Gualtieri et al., 2018). Meal program clients are less likely to visit the emergency department (Berkowitz et al., 2018; Cho, Thorud, Marishak-Simon, Hammack, & Stevens, 2018), experience fewer inpatient hospitalizations (Berkowitz et al., 2018; Cho et al., 2018), and have lower medical spending than their counterparts (Berkowitz et al., 2018). Additional benefits include the ability of meal delivery programs to allow older adults to live more independently at home rather than in an institution, reduce falls risk, increase social interaction, and improve overall health status and quality of life (Gualtieri et al., 2018).

The current literature on nonprofit grocery delivery (rather than meal delivery) programs in the United States is very limited. However, these programs exist, and like the meal delivery programs, also aim to meet the needs of functionally-disabled, elderly persons.

The Senior Services of Alexandria, based in Alexandria, Virginia, is a nonprofit organization which offers a number of programs that aim to support the independence of their local senior citizens, including Meals on Wheels (Senior Services of Alexandria, 2018a). Another program which they offer, called Groceries to Go, dispatches volunteers to deliver groceries every other week throughout the year to seniors with limited mobility (Senior Services of Alexandria, 2018b). Clients do not pay a delivery fee, but must pay for their groceries with a debit, credit, or EBT card (Senior Services of Alexandria, 2018b). This program has not published any program evaluations, but regularly sends out client satisfaction surveys, and according to Sandy Freedman, the Groceries to Go program manager, the results of these surveys
have been very positive, with the general client consensus being the program makes their lives easier (S. Freedman, personal communication, November 28, 2018).

Western Wake Crisis Ministry (WWCM) is another organization that offers a grocery delivery program, and their program is the subject of this evaluation. WWCM was founded in 1983 by Antoinette Clark in the basement of a Baptist church in Apex, North Carolina with support from other local churches in the area (Western Wake Crisis Ministry [WWCM], 2018b). Since then, it has grown from providing assistance to seven families a week to more than 200 families a month, with support from local churches, community groups, civic organizations, volunteers, businesses, schools, and neighborhoods (WWCM, 2018b; WWCM, 2018d).

WWCM’s mission is to partner with local people in crisis, and to help them gain stability through assistance with necessities, including food, clothing, finances, housing, and education (WWCM, 2018c). Their vision is “A brighter future for all by cultivating a healthy, hunger-free and housing-stable community” (WWCM, 2018c, para. 1).

The Home Food Delivery Program is one program offered by WWCM. It aims to contribute to the mission and vision of the organization by providing a supplement of nutritious groceries free of charge to people in the community with most difficulty accessing healthy food. The Home Food Delivery Program delivers to clients in zip codes 27502, 27523, and 27539 in Apex, and 27562 in New Hill (WWCM, 2018a). The program began in 2017 when WWCM staff noticed that some of their clients were having trouble finding transportation to the food bank. Staff identified a need for a program which brings pantry groceries to the doorstep of low-income clients unable to access the on-site pantry due to old age and/or a medical condition or disability and lack of transportation assistance. Volunteers of the program “shop” for clients’ groceries from the pantry located on-site of WWCM, coordinate a delivery time with clients via
telephone, deliver groceries to clients’ homes with their personal vehicle, help clients bring their groceries inside (if invited), and often chat with clients. This process occurs monthly unless the Commodity Supplemental Food Program (CSFP) Senior Box is not ready for distribution at delivery time, in which case a second trip will be made. The CSFP Senior Box is a supplemental food box provided to low-income persons at least 60 years of age by the United States Department of Agriculture Food and Nutrition Service (USDA) (United States Department of Agriculture Food and Nutrition Service [USDA], 2019). Although separate from the Home Food Delivery Program, program volunteers distribute the CSFP box to qualified WWCM clients. WWCM currently has 12 volunteers which serve the 19 Home Food Delivery Program clients. Through a series of questions answered by the pantry manager, it was identified that WWCM executes their program process while following a number of food safety regulations. The program is in the implementation stage of development, and has not been formally evaluated in the past. WWCM staff saw the value in an evaluation which could identify the strengths and growth potential of this fairly new program.

**Methods**

This evaluation was carried out by following the Center for Disease Control’s (CDC) Framework for Program Evaluation in Public Health (U.S. Department of Health and Human Services Centers for Disease Control and Prevention [CDC], 2011). The CDC’s framework influenced the chosen evaluation design, sample, measures, data collection, and procedure.

**Design**

A non-experimental exploratory study design was utilized to understand client and volunteer perspectives of the program, and assist in formulating program improvement recommendations.
Sample

**Clients.** There were 19 clients enrolled in WWCM’s Home Food Delivery Program at the start of this evaluation. Six client participants consented to participate, all of whom met the inclusion criteria: (a) had been enrolled in the home grocery delivery program longer than three months, (b) had the ability to communicate over the phone in spoken English, (c) had a working phone number on file with program staff, and (d) had the desire to participate in this program evaluation.

**Volunteers.** There were 12 volunteers contributing their time to WWCM’s Home Food Delivery Program at the start of this evaluation. Six volunteer participants consented to participate, all of whom met the eligibility criteria: (a) had the ability to communicate in written English and (b) had the desire to participate in this program evaluation.

Measures

**Clients.** A client interview guide was created to assess the clients’ overall satisfaction with WWCM’s Home Food Delivery Program, including with the quality and quantity of food, and its importance to their physical and social health. The interview guide consisted of 36 questions (See Appendix A). Twenty-two of the questions were closed ended, 10 were open ended, and four were Likert scale response questions. The prompts “tell me more about that” or “why or why not?” often followed a closed ended or scaled question to gain a deeper understanding of the client’s response. The interview guide was developed by adapting a survey which Meals on Wheels of Wake County distributed to their clients in 2018 (S. Lawson, personal communication, September 20, 2019), through a background research of the literature, and by taking into account suggestions by WWCM staff. The first six questions (four closed ended, one open ended, one scaled response) were aimed at assessing the clients’ perspectives of how the
program has impacted their social health. The next three questions (two closed ended, one open ended) assessed clients’ perceptions of the food quality. Following that were four questions (two closed ended, one open ended, one scaled response) which assessed the clients’ view of the quantity of food provided. Then eight questions (five closed ended, two open ended, one scaled response) focused on the self-reported effect of the program on physical health. Ten questions (7 closed ended, 3 open ended) covered life circumstances, and the final five questions (2 closed ended, 2 open ended, 1 scaled) assessed overall satisfaction.

**Volunteers.** The volunteer survey was created to assess the volunteers’ overall satisfaction with WWCM’s Home Food Delivery Program. The survey consisted of 18 questions (See Appendix B). The volunteer survey was developed by adapting a survey utilized by a Meals on Wheels program in Bloomington, Indiana (Bloomington Meals on Wheels, 2016), as well as through a background search of the literature. Thirteen of the questions were on a five point Likert scale, from strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, to strongly agree. N/A was also a viable response. These questions assessed volunteers’ overall satisfaction with the program. The final five were open ended/free response questions aimed at understanding their volunteer-client relationships, skills gained (if any), things enjoyed the most and the least, and program improvement suggestions.

**Data Collection**

**Clients.** Prior to conducting this evaluation, approval was given by The University of North Carolina’s Institutional Review Board. Clients received a hard copy of the informed consent, delivered to them at the time their volunteer came to deliver their groceries for the month of December 2018. In the consent document, clients were informed of the evaluation’s purpose and method, that their responses would remain confidential, and that there would be no
consequences in refusing to participate or in not completing the study. Clients who consented were called sometime in January or February of 2019 and interviewed using the above mentioned interview guide. Five of the six clients interviewed completed their interview in one phone call, and one of the six clients completed half of their interview in the first call and half in the second. The average interview time elapsed was 35 minutes, ranging from 29 minutes to 44 minutes. During the interview, a recording device captured the clients’ responses, and their responses were transcribed on a secure hard drive.

**Volunteers.** Volunteers received a hard copy of their informed consent as well as their pen and paper satisfaction survey through a handoff to the pantry manager. In the consent document, volunteers were informed of the evaluation’s purpose and method, that their responses would remain confidential, and that there would be no consequences in refusing to participate or in not completing the study. Volunteers who consented signed the form and proceeded to fill out the survey, which was stapled to the consent form. Volunteers returned their responses to a folder, and responses were only reviewed by the project investigator.

**Procedure**

Based on the CDC’s Framework for Program Evaluation in Public Health, the evaluation consisted of six steps: (a) engage stakeholders, (b) describe the program, (c) focus the evaluation design, (d) gather credible evidence, (e) justify conclusions, and (f) ensure use and share lessons learned (CDC, 2011).

**Engage Stakeholders.** Program stakeholders include those involved in operations, those that will utilize evaluation results, and those affected (CDC, 2011). Engaging stakeholders was a vital aspect of this program evaluation, as it increased the likelihood that the evaluation results would make an impact and not be ignored or resisted (CDC, 2011). A phone conference was
held in September 2018 with program staff to introduce the team, understand more about the functioning of WWCM’s Home Food Delivery Program, and to identify the goals WWCM staff had for this program evaluation. Throughout the entire evaluation process, close contact with WWCM staff was maintained, especially with the pantry manager. This collaboration with staff made it possible to gain a holistic perspective of program operations (including safety, training and logistics), receive client contact information, solidify staff approval of the interview and survey questions, and distribute and recollect consent forms and volunteer surveys.

Describe the Program. Describing the program was an essential step as it clarified all aspects of the functioning and intended outcomes of the program, therefore allowing the most important questions to be identified to focus the evaluation (CDC, 2011). A professional relationship with WWCM staff was established and the organization’s website was reviewed. The understanding gathered from these sources was described in the background section to include the comprehension of seven components: needs, targets, outcomes, activities, outputs, stage of development, and context of the program.

Focus the Evaluation Design. The most important questions were identified and a non-experimental exploratory study design was selected as the most effective and feasible evaluation design to answer these questions within the time constraints.

Gather Credible Evidence. Credible evidence was gathered through the process described in the data collection section. In selecting data collection methods, both the context and content of the questions were considered.

Client participants were presented with a hardcopy of the consent form by their regular grocery delivery volunteers. This was done to increase client participants’ confidence in the credibility of the evaluation and ultimately increase the number of consenting clients. Interviews
were then conducted over the phone rather than in person. This strategy was appropriate for the context in which the evaluation was taking place. It saved time, as the researcher and participants resided in different cities and interviewing face-to-face would delay the results. It was also an appropriate method for the content, as many of the questions required elaboration and the phone interview method allowed for prompting.

Volunteer participants were presented with a hard copy of the consent forms stapled to the survey by WWCM staff. These were to be completed if desired and at their convenience, and returned to a secure folder where responses would not be read by anyone but the researcher. This strategy was suitable for the context in which the evaluation was taking place. It saved time, as the researcher and participants did not have to meet face-to-face or interview one on one. It was also an appropriate method for the content, as the questions presented to volunteer participants did not require the same level of elaboration as those presented to the clients.

Justify Conclusions. After data from client interviews and volunteer surveys was gathered, the results were coded and analyzed to identify what clients and volunteers perceived as strengths and weaknesses of the program. These perceived strengths and weaknesses were then contextualized within the goals and resources of the program to formulate positive feedback points and improvement recommendations.

Ensure Use and Share Lessons Learned. The demonstrated effectiveness and improvement recommendations of the program were shared with program staff through a written program evaluation. A phone conference was scheduled to discuss evaluation findings and brainstorm methods to implement the new recommendations.
Results

Clients

Six clients consented to participate in the program evaluation. All client participants were English speaking. The majority of the client sample were female (83.3%), lived alone (83.3%), prepared their own meals (83.3%), and ate meals alone (66.7%). Fifty percent had visited the on-site pantry prior to becoming clients of this program. Client participants ranged in age from 62 to 89 years old. All clients interviewed described living with at least one serious chronic illness, fifty percent described having functional challenges at home, fifty percent said they had fallen within the last six months, and two clients said they had visited the emergency room within the last six months. None of the clients surveyed were veterans. Results are mostly organized by sections of the interview guide, in order from the perceived impact of the program on social health, to the quality then quantity of food consumed by participants, impact on physical health, and lastly to the overall satisfaction of the program. However, some responses are presented in different sections than were originally assigned in the interview guide, and the category from the interview guide titled “life circumstances” is not given its own results section but rather integrated throughout.

Perceived Impact of Program on Social Health. Client responses indicated that clients perceived this program as beneficial to their social health. One-hundred percent of clients surveyed described their volunteers as friendly and courteous, and 100% described valuing interaction with the volunteer as highly as the food itself. Half of the total clients surveyed and sixty percent of clients surveyed who lived alone indicated feeling less lonely through being a part of this program. Five out of six clients said they regularly invited their volunteer inside their home. Two out of six clients said it has made them feel safer knowing a volunteer is coming to
deliver their groceries. The five clients who lived alone described their relationships with their volunteers as a friendship. Below are a few examples:

“Excellent... basically I have the same person that comes... and we have developed a good bond and relationship, such that I wish we could spend more time, but we can’t. And let me clarify, I’ll talk someone’s socks off... so that’s why I have a phone, I can call people.”

“Like I said, we got a good relationship. [The volunteer] is just a lovely person. You don’t meet people like [my volunteer] all the time. I water my plants and look at my plants and stuff, I don’t go nowhere but when somebody come I am glad to see [him/her].”

The client who lived with a spouse described his/her relationship with the volunteer very positively as well, but more in a business-like fashion, primarily noting his/her appreciation for the volunteer’s help bringing in the groceries:

“[The volunteer] comes inside and brings groceries in for me, [my volunteer] seems to be very nice, [he/she] does that and [he/she] is gone... It is a help that [my volunteer] helps us get it in the house... when [he/she] brings it in that’s a blessing, because I can’t bring it inside”

Perceived Quality of Food Consumed. Client responses indicated that all six clients were generally satisfied with the overall quality of food consumed, and all six clients felt the program was receptive to feedback on food preferences:

“Yah, if I don’t like something, I don’t get them. The only beans I like are white beans, pinto beans.”

“[The volunteer] asks me what I like, don’t like, and that is what [he/she] brings.”
Some clients also identified some areas in which the quality of food could be improved. Four out of six clients felt the food provided was adequate to meet their medical nutritional needs, but the remaining two clients were unsure, and stated, “Some of it, they give me nutritional stuff pretty much, but...” and did not complete the thought, and “That is kind of hard to say...hmm.” Half of the clients surveyed described issues with the freshness of food; one client described wishing he/she received more fresh vegetables during the wintertime, and two clients noted some issues in the past with the delivered groceries being moldy or not very fresh:

“Some times of the year you don’t get as much fresh vegetables, but it is good still. This occurs in the wintertime. It is still a wonderful help to me.”

“It is much better now because [my volunteer] checks the dates on stuff, because I have gotten some bread in the past that was moldy and I ate it, so we limit the bread that I get, and [my volunteer] checks it so I don’t get anything too far out of date.”

**Perceived Quantity of Food Consumed.** Client participant responses indicated that this program has been a valuable supplement to clients’ monthly quantity and quality of food, as five of six client participants expressed that if they were to stop receiving this grocery service it would negatively impact the quality and/or quantity of food they ate.
Number of Additional Food Sources Utilized:

*Figure 1.* Demonstrates the number of additional food sources utilized by WWCM client participants.
Types of Additional Food Sources Utilized:

![Bar chart showing types of food sources utilized by WWCM client participants.]

**Figure 2.** Demonstrates the types of food sources utilized by WWCM client participants.

As demonstrated in Figure 1, all client participants regularly utilized at least one additional food source in addition to the Home Food Delivery Program, and fifty percent of clients utilized three or more additional food sources. As evidenced by Figure 2, more than half of clients interviewed utilized the CSFP senior boxes, more than half self-purchased groceries, and half received food stamps through the Supplemental Nutrition Assistance Program (SNAP).

The majority of clients interviewed (66.7%) said that they ate regularly scheduled meals all of the time, and 33.3% of clients interviewed said that they ate regularly scheduled meals most of the time. The two clients that said they ate regularly scheduled meals most of the time were responsible for preparing their own meals, were not receiving Meals on Wheels, and cited functional challenges to preparing their own meals. However, these clients felt that these functional barriers had not affected how much or how healthy they ate:
“I’ll get three meals in throughout the day, but a lot of the time I can’t eat three scheduled meals because after getting back from [a medical procedure] I have to rest two or three hours to do anything... usually I can supplement something like a salad, sandwich, or can of fruit.”

“Well I get up and sit down and do it. I get it done.”

Out of the four clients that said that he/she ate regularly scheduled meals all of the time, one client described not always having enough food for breakfast. This client also received SNAP, the CSFP senior box, and stated that he/she sometimes purchased groceries out of pocket. This client, all though stating “I don’t really worry about having enough food” earlier in the interview, later described not being able to eat enough breakfast or meat once consuming all of his/her home delivered groceries for the month, stating “I have to stretch my money, it is not going to be enough breakfast, not enough meat, that type of thing.” Another one of the four clients who said that he/she ate regularly scheduled meals all of the time described sometimes worrying about not having enough food, stating “I worry a little bit sometimes, but my [family member] will bring me plate.” This client’s only additional source of food was from a family member.

**Perceived Impact of Program on Physical Health.** All six client participants described having at least one chronic health condition. Fifty percent said they had diabetes, 50% said they had a respiratory disease (describing dyspnea, emphysema, and COPD), 33.3% said they had a heart condition, and 33.3% said they had hypertension. Other chronic conditions reported included renal failure, osteoarthritis, bulging disc, knee pain, multiple sclerosis, and fibromyalgia. Fifty percent of client participants said they had fallen in the last six months. Two
of the participants expanded on how they fell, both citing medical reasons. Two client participants said they had visited the emergency room within the last six months.

Five out of six clients indicated that this service has been helpful in supporting them living independently in their home, and four out of six respondents identified that this program has made a positive impact on their health, half citing decreased stress over food:

“I don’t worry so much. I worry less about not having enough to eat.”

“I ain’t gotta worry about food or nothing, she always comes same time she tells me, and she makes me smile when she gets here.”

Five out of six client participants said this program has added to their quality of life; the three clients that elaborated cited decreased stress over food and the positive effects of interacting with the volunteer:

“It provides a supplement to my grocery budget, it [also] allows interaction with the volunteer who comes in, [allowing] for a positive life.”

“It takes away from the stress on making sure I have enough food.”

“I have more food and I don’t have to worry about it as much.”

**Overall Satisfaction.** Client participants were very satisfied with WWCM’s Home Food Delivery Program. On a scale from zero to 10, the average satisfaction score clients gave this program was a 9.8. Three of the six clients interviewed described their favorite aspect of this service was having the groceries delivered to their home.

“It helps us out a lot. One thing is we don’t have to go to the store... it has been a blessing.”

Two of the six clients interviewed described their favorite aspect of this service was interacting with the volunteers:
“They are just good people, I like people that act like they care about people. It is just the people care about me. Whereas like I said I don’t live around people like that. That is the reason I stay to myself because the people I live around don’t care about nothing, they are young. So I just stay to myself on my porch. It is good to a smiling face.”

One of the six clients described, “I dunno, I just like it all together.”

All six client participants said they had the main contact number for WWCM and their volunteer. Four out of the six client participants had contacted WWCM directly, with three out of the four having contacted WWCM for a request, and one out of the four contacting WWCM for a logistical question. The requests described by clients included flowers, chocolate milk, an electric heater, and financial assistance. Clients described WWCM as being very receptive to these requests, fulfilling them when resources allowed:

“Yes. I wanted an electric heater, and they were able to get one.”

“Yes. And another time I needed some financial assistance, and I knew how to do that. There was a time they were able to [assist me] and a time they were not able to, but I have been assisted in the past.”
Volunteers

**Likert Scale Responses.**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am satisfied with the training I received before beginning my volunteer work.</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>WWCM adequately prepared me for my assigned duties.</td>
<td>2</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>I feel that I am improving the lives of WWCM home food delivery program clients through my work.</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>I find the WWCM staff receptive to any suggestions I may have.</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>I feel safe while volunteering.</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>I feel that my responsibilities are appropriate for my role as a volunteer.</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>If I have a problem while volunteering, there is someone I can turn to for help.</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>I would recommend this volunteering opportunity to a friend.</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>I enjoy volunteering with the WWCM home food delivery program.</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>I find this volunteer experience rewarding.</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>I feel valued by the WWCM home food delivery program clients.</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>I feel valued by the WWCM staff.</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>I understand the duties expected of me.</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 3.* Displays the Likert scale survey responses of volunteer participants.

Based on Likert scale survey responses described in Figure 3., the six volunteers surveyed were very satisfied with the program overall, but slightly less satisfied with program training and preparation compared to the other areas.

**Open Ended Responses.** Based on open-ended survey responses, the six volunteer participants surveyed greatly valued interacting with their clients. Fifty percent of volunteers surveyed described working with the client when asked what the most enjoyable part of
volunteering was. Volunteer participants described their relationships with their clients affectionately:

“"Yes, I adore [my client], we have developed a great bond.""

“"[I look] forward to seeing [my] client and [making] sure she is doing well.""

Volunteer participants also described their relationships with their clients as a friendship built over time:

“"Delivering food to our client... has evolved into a friendship. This experience has been rewarding. We can easily tell our client looks forward to our visits with the time we spend with [him/her].""

“"I see two clients every month and spend time visiting with them as well as delivering the groceries. I feel we are friends, not just client/business. We talk about family, etc. and each time [I] get to know them better.""

The other fifty percent of volunteers surveyed described a number of other positive aspects of the program when asked what the most enjoyable part of volunteering was, including working with program staff, a sense of personal fulfillment, and work variation:

“"The staff is friendly and interested in keeping me informed. However, I can pack foods for my client on my own time with their complete trust. The flexibility of my timing is fantastic.""

“"[I enjoy] that there are multiple facets, including paperwork, dealing with several types of WWCM volunteers, the shopping/packing/delivering, and face-to-face with clients.""

Four out of six volunteers surveyed described logistical issues as things they enjoy least about the program, and improvement suggestions mainly centered on efficiency. Two respondents described logistical miscommunication between the volunteer “shopper” and
deliverer on the time for the grocery boxes to be ready for delivery. This occurred when, rather than having the same volunteer both “shop” and deliver to their client(s), one volunteer was responsible for “shopping” and a different volunteer was responsible for delivering. Because of this, a respondent wrote that it would be an improvement to ensure that eventually all volunteers “shop” for the client which they deliver for. This would eliminate the challenge of making sure the boxes prepared by another volunteer are ready for pickup in time. Another logistical issue described was that of having to make two deliveries in the same week to the same address. This occurred when the CSFP senior boxes were not ready for delivery at the same time as the groceries supplied through the pantry. A volunteer participant suggested that in the future, the program should ensure that volunteers only have to make one trip a month. A third suggestion was to provide the volunteers with a grocery transportation cooler to keep with them rather than having to pick up a new one every month. A fourth respondent suggested improving the training that volunteer participants receive, which would in turn increase efficiency:

“Even volunteers who do not do their own shopping should be slowly and carefully walked around the pantry and all aspects of shopping discussed. Signing out of senior boxes and food with front office should be explained, as well as the pros and cons of shopping at various times.”

A volunteer participant described his/her volunteer work as a two person job due to having multiple clients, lifting groceries, and completing paperwork, and felt it may be better for him/her if his/her work load was lessened.

**Discussion**

The results of this evaluation found that WWCM’s Home Food Delivery Program has high client and volunteer satisfaction overall, is beneficial to the physical and social health of its
clients, provides clients with improved quality and quantity of food, and allows for meaningful relationships to form between the client and volunteer. These program benefits are especially meaningful within the context of a demographic which underscores clients’ vulnerability to food insecurity. Areas for growth center on improving the quality and quantity of food clients have access to, and convening regular staff/volunteer meetings to ensure continued volunteer satisfaction.

Results indicated that this program addressed food insecurity in homebound, low-income, functionally-disabled older adults by reportedly improving the quality and quantity of food consumed by most clients. Clients were generally satisfied with the quality and quantity of the food provided by WWCM, and very satisfied with the consideration volunteers gave to their food preferences. However, half of clients surveyed recognized room for improvement in the freshness of groceries, such as volunteers ensuring the bread delivered is not moldy, and providing more fresh vegetables especially during the winter. WWCM already partners with grocery stores, local farmers, and community gardens to supply its clients with fresh produce. This model has been utilized at food pantries across the nation to great success (U. S. Environmental Protection Agency, n.d.). However, WWCM only partners with the latter two during the summer months, and therefore WWCM should inquire whether farms and gardens would be open to donating winter produce, as well as inquire whether additional grocery stores would be willing to partner during the winter months. This would increase program clients’ access to healthy food, especially fresh fruits and vegetables year round, and with all clients surveyed describing at least one chronic illness, such as diabetes, heart failure, and hypertension, nutritious food would be an especially important component of their diet. The Dietary Approaches to Stop Hypertension (DASH) dietary pattern, which emphasizes fresh fruits and
vegetables along with low-fat dairy, whole grains, nuts, and legumes, is recommended for its many health benefits by international diabetes and heart association guidelines (Chiavaroli et al., 2019). For example, a high consumption of fresh fruits and vegetables as a component of the DASH eating pattern is associated with reduced cardiovascular incidence and mortality (Chiavaroli et al., 2019). WWCM may already improve the health of its clients by increasing their access to fresh fruits and vegetables, supporting clients living independently at home, and decreasing stress over food, but providing clients with an abundance of fresh produce year round would likely result in greater health benefits.

Results of the interviews indicate that this program is being utilized as a supplement to clients’ food intake, which is how this program is intended. All clients surveyed received food from at least one other source, and half of clients surveyed utilized at least three other food sources, with the most popular sources being the CSFP Senior box, self-purchased groceries, and SNAP benefits (See Figure 1. and Figure 2.). However, two clients described either not always having enough food for a meal, or worrying about not having enough food. To minimize this, WWCM should consider the option of encouraging Home Food Delivery Program clients to call WWCM directly if they feel they need additional groceries before the next regular monthly delivery. Interview results indicate that WWCM is already very receptive to fulfilling client requests when resources allow, and after partnering with additional food sources, it would be a matter of recruiting additional volunteers to distribute the workload of making additional monthly trips. Volunteers should also keep an eye on clients’ ability to make their own meals, especially since some clients described functional issues to doing so. Although the clients interviewed did not feel their functional limitations affected how much or how healthy they ate, these limitations have the ability to worsen. If through talking with or observing his/her client a
volunteer suspects some functional barriers to food intake, the volunteer should refer the client to the local Meals on Wheels program, as Meals on Wheels provides meals that do not require strenuous cooking.

The aspects of the program which clients described as enjoying the most were having the groceries delivered to their homes and being able to interact with their volunteers. Every client interviewed indicated that they valued interacting with their volunteer as highly as they valued the food itself. Clients described greatly valuing friendship-level connections built overtime with their volunteers. Research has shown that positive social interactions have a strong correlation to improved overall health in older adults (U.S. Department of Health and Human Services National Institute on Aging [NIH], n.d.). In addition, sixty percent of clients surveyed who lived alone indicated that in being a part of this program they felt less lonely. Social isolation and loneliness have been shown to cause a number of negative health conditions, and a decrease in social isolation has been shown to result in an increase in self-rated health (Meyer & Schuyler, 2011). Therefore, the social health benefit is an enormous strength of this program. The only client who did not describe his/her relationship with the volunteer as a friendship was the client who lived with their spouse; this client still described his/her relationship with the volunteer positively, citing the “blessing” it was for the volunteer to carry the groceries into his/her home.

Likewise, volunteer participants described their relationships with their clients as meaningful, and described enjoying building friendships with their clients through consistent monthly visits. Therefore, for the benefit of both client and volunteer, the option for consistent volunteer visitation and assistance in carrying groceries should be guarded as vital aspects of this program.
Volunteers were generally well satisfied with the program, and improvement suggestions centered on training and logistical improvements. The most common logistical issue described by volunteers came about when volunteers did not “shop” for the same client they delivered to, and therefore WWCM should consider training volunteers to deliver to the clients they “shop” for. WWCM should also consider regularly convening and keeping a record of meetings with volunteers which aim to address current concerns and collaborate on finding solutions. This is important because when volunteers feel listened to, they are typically more satisfied and are therefore more likely to continue volunteering (Garner & Garner, 2011). Current improvement suggestions brought up by volunteers included: (a) providing more thorough volunteer training for all volunteers (which would include a tour of the pantry, guidance on shopping at various times, and an explanation of all aspects of “shopping” and signing out of CSFP senior boxes), (b) ensuring volunteers only have to make one delivery trip per month, (c) providing volunteers with a grocery transportation cooler to keep with them, and (d) ensuring no volunteer feels as if they have an overburdening workload. Each of these suggestions was offered by a different volunteer, so one should not make the claim that these suggestions would be agreed upon by the majority of volunteers. Rather, these suggestions should be discussed at the next staff/volunteer meeting.

The current literature supports the notion that nonprofit meal delivery programs deserve continued private and public funding, as there is evidence to support they result in positive nutritional, social, and functional outcomes (Gualtieri et al., 2018). Similarly, results of this evaluation support the claim that WWCM’s Home Food Delivery Program deserves continued support by the Apex community as it addresses food insecurity and provides a number of other health benefits for its clients. Improvement recommendations established during this evaluation
require support specifically from food vendors such as local grocery stores, farms, and gardens, as well as from community members who are willing to volunteer their time. Members of the Apex community should be made aware of the impact this program has and encouraged to contribute to its mission. At the national level, ensuring continued support of nonprofit food delivery programs is more important than ever as America’s demographics continue to shift towards an influx of older adults (Gualtieri et al., 2018). Therefore, food delivery programs across the United States should publish evaluations which describe their impact on vulnerable older adults, and likewise encourage the public to support these programs. The United States government should also play a role, and ensure that greater funding goes towards the Older Americans Act. This would allow for more robust food delivery programs that are able to meet the caloric needs of vulnerable older adults (Gualtieri et al., 2018).

**Limitations**

The greatest limitations of this study included the small sample size, self-reported data, and non-experimental study design. The resulting positives and negatives of WWCM’s Home Food Delivery Program were based on the perceptions of clients and volunteers and thus contained several potential sources of bias. In order for the health benefits of this program to be confirmed and expanded upon, future researchers would need to implement a randomized controlled trial which assigned a larger sample of WWCM Home Food Delivery Program clients to the experimental group and gathered data on markers of their social and physical health over time.

**Acknowledgements**

I would like to sincerely thank my advisor, Marianne Cockroft, PhD, RN, for her guidance, wisdom, and continuous support from the beginning of this project to its submission.
And to the rest of the nursing faculty, including Diane Berry, PhD, ANP-BC, Claudia Christy, MSN, RN, and Kathleen Knafl, PhD, FAAN, for sharing their expertise.

I would also like to extend my gratitude to the staff at Western Wake Crisis Ministry for their collaborative efforts on this project. Their consistent and timely responses to my numerous emails made this work possible.

I would to like to thank my family for their love and encouragement, and especially Chaitanya for being with me every step of the way.
References


Appendix A

WWWCM Home Food Delivery Program Client Interview Guide

Impact on Social Health
1. Are the volunteers friendly and courteous?
2. Has knowing a volunteer is coming to deliver your groceries affected your sense of safety at home?
3. Because I am a part of WWWCM home food delivery program, I feel less lonely:
   a) Strongly disagree
   b) Somewhat disagree
   c) Somewhat agree
   d) Strongly disagree
   Please explain your answer.
4. Do you typically invite your volunteer inside?
5. How would you describe your relationship with your home food delivery volunteer?
6. Do you value interaction with the volunteer? Do you value this social interaction as highly as the food itself?

Quality of Food
7. Are you satisfied with the food delivered?
8. How would you describe the quality of groceries you have been receiving?
9. Do you feel the program is receptive to the feedback you give on your food preferences?

Quantity of food
10. Since receiving groceries from WWWCM do you...
    a) Worry more than before about having enough food
    b) Worry the same as before about having enough food
    c) Worry less than before about having enough food
    d) No longer worry about having enough food
Meals on Wheels of Wake County 2018
11. How long do the groceries from WWWCM last your household?
12. Once consumed, do you feel you have enough food for the month?
13. What other ways do you receive food for the month? For example, do you receive food or meals from family, friends, caregivers, Meals on Wheels, SNAP, church, another grocery service, purchasing groceries?

Impact on Physical Health
14. Because I am a part of WWWCM home food delivery program, I am eating regularly scheduled meals:
    a) all of the time
    b) most of the time
    c) some of the time
    d) a little of the time
    e) none of the time
15. Has this service allowed you to live independently in your home longer than expected?
16. Have you fallen in the last six months?
17. Do you have a medical condition? If so, what is your medical condition?
18. If you have a medical condition, do you feel the food provided is adequate to meet your medical nutritional needs?
19. Have you gone to the emergency room in the last six months?
20. How would you describe the effect participating in this program has had on your health?
21. Has this home food delivery service through WWCM added to your quality of life? If so, how?

Life Circumstances
22. Who normally prepares meals for you and those in your household?
23. Do you have trouble preparing your own meals, and if so, do you feel your ability to prepare your food limits how much or how healthy you eat?
24. What would happen to you if you did not receive this home delivered grocery service?
25. How long have you been receiving groceries through this service?
26. Why did you start receiving groceries? Because of…
   a) a medical condition
   b) a Physical disability
   c) Advancing age that prevents you from accessing the food pantry
   Please describe
27. Are you a US Veteran?
28. Do you live alone or with other family members?
29. Do you typically eat meals alone?
30. What are some challenges of living at home?
31. How did you become a client of WWCM Home food delivery program?

Overall Satisfaction
32. What are some aspects of this service which you like the most?
33. What are some aspects of the service which you feel could be improved?
34. On a scale of 0 to 10, 0 being not helpful at all and 10 being extremely helpful, how helpful is this food delivery program to you?
35. Do you know how to contact Western Wake Crisis Ministry directly?
36. In the past, have you contacted Western Wake Crisis Ministry directly?
Appendix B

**WWCM Home Food Delivery Program Volunteer Satisfaction Survey**

*Questions 1-13 to be answered on a scale of: Strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, strongly agree, or not applicable. If you answer N/A, please explain why it does not apply.*

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<tr>
<th></th>
<th>Strongly disagree</th>
<th>Somewhat disagree</th>
<th>Neither agree nor disagree</th>
<th>Somewhat agree</th>
<th>Strongly agree</th>
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<td>I am satisfied with the training I received before beginning my volunteer work.</td>
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<td>I understand the duties expected of me.</td>
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<td>WWCM adequately prepared me for my assigned duties.</td>
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<td>I feel that my responsibilities are appropriate for my role as a volunteer.</td>
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<td>If I have a problem while volunteering, there is someone I can turn to for help.</td>
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<td>I feel safe while volunteering.</td>
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<td>I find the WWCM staff receptive to any suggestions I may have.</td>
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<td>I feel valued by the WWCM staff.</td>
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<td>I feel valued by the WWCM home food delivery program clients.</td>
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<td>I find this volunteer experience rewarding.</td>
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<td>I feel that I am improving the lives of WWCM home food delivery program clients through my work.</td>
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<td>I enjoy volunteering with the WWCM home food delivery program.</td>
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<td>I would recommend this volunteering opportunity to a friend.</td>
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Free response questions

1. In a few sentences, please describe your volunteer-client relationships with your clients. Do you feel these relationships have added value to the experience? If so, please describe.

2. What skills do you feel you have gained, if any, through volunteering with the WWCM home food delivery program?

3. What are things you enjoy most about working with the WWCM home food delivery program?

4. What are things you enjoy least about working with the WWCM home food delivery program?

5. What are ways the WWCM home food delivery program leaders could improve your experience?