A Multicomponent Initiative to Increase Nutrition Outreach in the East End Neighborhood of Richmond, Virginia

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Major Project/ Report submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Online Master of Agricultural and Life Sciences
In
Applied Nutrition and Physical Activity

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Date of Submission: 07/22/2024

Keywords: food access, community nutrition, health equity

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ABSTRACT

Access to healthy food is imperative to support the health of individuals and communities. However, structural inequities have resulted in reduced food access and higher rates of chronic disease in low-income communities. In the East End of Richmond, Virginia, a historically redlined area of the city, residents have reduced healthy food access and experience consequent health disparities. Multiple organizations, food pantries, and urban agriculture initiatives are working to mitigate these food access issues. Bon Secours Community Outreach is aiming to implement nutrition programming in the East End that complements these assets and promotes healthy food access. This project aimed to pilot various nutrition outreach approaches, initiate community engagement, and collect feedback from community members to inform future programming. Nutrition outreach initiatives were adapted to three food access sites including a food pantry, grocery store, and a mobile market to engage with East End residents. Feedback was collected to assess residents' perceptions on healthy eating behaviors and their preferences around nutrition programming. Engagement levels and feedback collection were highest at the grocery store. Participants indicated preferences for receiving nutrition education from media sources, within community-based spaces, and from medical professionals. A pilot nutrition workshop was implemented that included nutrition education and a cooking demonstration. A Bon Secours dietitian and community health worker provided feedback to revise the workshop for future implementation. This project initiated the first step in community engagement and trialing outreach approaches to inform future nutrition programming.

Acknowledgements

I extend my deepest appreciation to Dr. Sarah Misyak, Dr. Emily Myers, and Carol Papillon for their continual guidance and support throughout all aspects of this project. I also want to thank Katelyn Barker, the dietitian at Bon Secours, for playing an integral role in implementing this project.

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Introduction

Background and Statement of the Problem

Consistent access to healthy food is necessary to support the health of individuals. When people have uncertain access to socially acceptable and nutritious food, this is defined as "food insecurity" (*USDA ERS*, n.d.). Food insecurity is prevalent in populations with low income and disproportionately impacts people of color (Odoms-Young, 2018). Food insecurity is associated with higher rates of chronic illness and mortality (Evans et al., 2015). In American urban settings, historical redlining has created food environments without adequate healthy food access (Li & Yuan, 2022). This practice resulted in economic disinvestment in predominantly black communities which led to reduced availability of healthy food. This decreased food access has contributed to higher rates of chronic disease in these communities (Larson et al., 2009). The history of urban food insecurity needs to be acknowledged to understand the current food environment of the target population for this project and to develop an effective nutrition program.

Although food access is imperative to improve health outcomes, many additional factors impact an individual's ability to eat healthfully. Time, cost of food, and an individual's knowledge of how to prepare healthy foods all need to be considered when creating programs to increase food access (Evans et al., 2015). Additionally, food insecurity is a nuanced issue and requires a multisectoral approach to address these different factors (Roggio, 2019). These approaches can differ based on existing assets and the specific circumstances of a community.

Purpose of the Project

Addressing barriers to healthy food access can depend on the local food environment and community assets. This necessitates an individualized intervention that builds on existing

resources. This intervention implemented engagement initiatives at three food access sites including a grocery store, food pantry, and mobile market. In the East End, a neighborhood in Richmond, Virginia, access to healthy foods has been lacking. This area was previously designated as a "food desert" meaning a grocery store was not located within one mile (Dutko et al., n.d.). In 2019, the Market at 25th was opened to address this food access issue (VPM, 2019). Although this area is no longer defined as a food desert, achieving access to healthy food is still a persistent challenge, demonstrating the limitations of grocery stores as a comprehensive solution (Allcott et al., 2019). To further improve food access, a local nonprofit farm sells fresh produce through mobile markets, many of which are in the East End (Shalom Farms, n.d.). Various food pantries also function within the East End and are utilized by residents experiencing food insecurity. Additionally, urban agriculture initiatives are being implemented within public housing communities to develop community gardens (Richmond Food Justice, n.d.). These approaches are being employed to account for the many complex aspects of healthy food access. It is vital that nutrition programming complements these existing resources (Gadhoke et al., 2019).

Bon Secours Community Outreach, a branch of the Bon Secours Mercy Health System, is aiming to implement consistent nutrition programs within the community. Their mission is to build healthier communities by addressing the social determinants of health (SDOH) (*Community Programs in Richmond, Virginia | Bon Secours*, n.d.). The purpose of this project is to inform what a recurring nutrition intervention should include to impact health equity in the East End. The goal is to trial various nutrition outreach approaches and to gather more information about the target population. This exploratory project is aiming to engage community members in the planning process and to tailor an intervention to the existing food resources in

the community. Gathering feedback and evaluating outcomes will provide Bon Secours with background information as they develop a sustained nutrition program.

Literature Review

Interventions to Increase Healthy Food Access

A variety of strategies have been utilized to develop programs that increase healthy food access to urban and/or low-income populations. Cooking-based curricula and cooking demonstrations are common interventions used to provide education on how to prepare healthy food (Caspi et al., 2017; Flynn et al., 2013; Metcalfe et al., n.d.; Pooler et al., 2017). The implementation of these strategies varies widely within the literature and has been shown to be effective in various settings. In a 6-week quasi-experimental study, interactive cooking classes were conducted along with grocery store tours to encourage healthy food preparation among a low-income population (Pooler et al., 2017). In the 3- and 6-month evaluations, participants displayed improved food resource management abilities and felt less worried about having enough food. Cooking classes were utilized as a core component to improve participants' abilities in healthy food preparation. However, diet quality was not an assessed outcome so the intervention's impact on participants' eating behaviors was not determined.

Although cooking demonstrations may improve participants' food utilization skills, it may not directly translate to healthier food consumption. In a cluster-randomized trial, the Market to MyPlate (M2MP) program was implemented to increase fruit and vegetable consumption among low-income individuals (Metcalfe et al., 2022). The researchers divided participants into three groups: nutrition education and cooking classes with food provided, nutrition education and cooking classes only, or the control. Among participants, those that received nutrition education and food allocations displayed increased consumption of vegetables.

The groups receiving only education had similar outcomes to the control group, which displayed no difference in vegetable consumption. These results show how cooking demonstrations and educational interventions that include increasing food availability are necessary to change food consumption habits. It is important to consider which foods are accessible to the population and to center the program around existing food resources.

Food Pantry Interventions

To capitalize on these existing food resources, many food pantries have been utilized as a setting for implementing nutrition education and recruiting participants for nutrition interventions (Caspi et al., 2017; Flynn et al., 2013; Marmash et al., 2021; Martin et al., 2013). Food pantries serve individuals experiencing food insecurity and often distribute shelf stable foods that are of lower nutritional quality (Oldroyd et al., 2022). Additionally, many may lack the storage and space to distribute fresh fruits and vegetables. Food pantries vary in the types of foods they offer, which greatly depends on access and storage capacity. Nutrition programs have been implemented to address these circumstances and to improve healthy food consumption. These individualized interventions are aimed at providing nutrition education that coincides with the food available at the specific pantry. In a pilot intervention, 2-hour classes were conducted at multiple food pantries over 6 weeks (Caspi et al., 2017). These classes included cooking demonstrations and covered nutrition education topics. The classes were offered at food pantries to engage pantry patrons in which they were provided with the necessary ingredients to prepare the meals at home. Outcomes showed improved cooking skills and diet quality following the 6-week program. This intervention highlights the importance of centering the nutrition intervention around food resources that are available to the community. This provides participants with the opportunity to implement the covered nutrition and cooking concepts.

Similarly, in a 6-week intervention, affordable plant-based recipes were prepared through cooking classes aimed at food pantry participants (Flynn et al., 2013). The cooking classes included foods available at the pantry such as canned and frozen vegetables. Participants were also provided with the ingredients to prepare the recipe at home. At the 6-month follow-up, participants prepared more plant-based recipes, purchased more fruits and vegetables, and displayed increased food security. Both studies utilized cooking classes as an essential intervention component to achieve outcomes related to improving food access. These approaches are aimed at improving the skills and knowledge of food insecure participants to facilitate behavior change.

Importance of Location for Nutrition Interventions

To effectively implement a nutrition intervention targeted at a population with low-income, transportation is a significant consideration. To address this, multiple programs aimed at increasing healthy food access have been implemented in accessible locations to reduce barriers for participants. As previously mentioned, many interventions are being implemented at food pantries to reduce the burden on the target population (Caspi et al., 2017; Flynn et al., 2013; Marmash et al., 2021; Martin et al., 2013). This way, individuals can access food and receive nutrition education efficiently. In a systematic review, food pantry interventions in the United States were analyzed and found to be an effective location for providing nutrition services and producing improved nutrition-related outcomes (An et al., 2019). Food pantry clients are often facing other housing and employment constraints making it difficult to retain participants in a program (Marmash et al., 2021). Implementing a program in the setting where food is being accessed mitigates the added transportation barrier.

Another approach to reduce transportation burden is to conduct interventions in public housing communities specifically in urban environments. In a 3-week nutrition intervention aimed at low-income women in Washington DC, two group nutrition education classes were conducted weekly at community kitchens in public housing communities (Shankar et al., 2007). Although fruit and vegetable consumption did not change, average calories and percentage of calories from fat decreased significantly. This intervention utilized space accessible to their target population to provide nutrition education. A similar setting was utilized in a cluster-randomized trial, where mobile markets and coinciding educational materials were provided to urban public housing communities (Gans et al., 2016). This 12-month program, 'Live Well, Viva Bien', increased access to healthy food by bringing mobile markets to communities. They also provided nutrition education resources to show individuals how to use the fruits and vegetables that were provided by the mobile market. The 12-month evaluation showed that fruit and vegetable consumption increased in the groups with access to mobile markets. Additionally, the use of educational materials was associated with higher fruit and vegetable consumption. This displays the benefits of a multicomponent intervention in a location that is accessible to the target population. Many of the interventions were also conducted at community centers central to the target population, which provided participants with multiple site options (Hammons et al., 2019; Metcalfe et al., n.d.; Rustad & Smith, 2013).

Considerations for Program Development

There are many barriers that low-income populations can face such as financial stress, lack of transportation, and housing instability. This can make it difficult to engage and retain participants in a community health program. Many interventions had high attrition rates even with participation incentives and a central location (Oldroyd et al., 2022). To mitigate this, one

short-term intervention conducted three interactive nutrition education sessions over two weeks aimed at low-income participants (Rustad & Smith, 2013). They utilized pre- and post-program surveys at weeks 1 and 6 and allowed for 1 week of implementation during week 5. Additionally, they offered education sessions at a variety of locations including community centers, homeless shelters, and at a university to promote engagement. Outcomes showed improvements in nutrition knowledge and health behaviors. Although these outcomes improved, they cannot be confirmed over the long-term due to a lack of follow-up. However, the priority was to emphasize feasibility and to engage participants, which was achieved.

Conceptual Framework

The program's nutrition outreach initiatives and workshop were built on the Social Ecological Model. This framework is used to explain how varying levels of an individual's environment impact their behavior (CDC, 2022). Different levels of this model need to be considered to address the nuanced reality of food access and health behaviors. All program components will take place at food access locations within the East End neighborhood including a local grocery store, a mobile market, and a food pantry. A significant goal of this pilot program is to understand how Bon Secours can complement community assets to create effective multisectoral approaches towards increasing nutrition programming. The program aims to build community capacity resulting in increased nutrition education access for the target population. Building on the community level is key to changing the local environment to promote healthy food access (Rural Health Promotion and Disease Prevention Toolkit, n.d.). The interpersonal level of the model will also be built on for this program. A group workshop will be implemented that will include five to eight participants. These workshops will provide multiple opportunities

for participants to interact with each other and discuss ways to apply covered nutrition concepts to their eating patterns. A group workshop allows for social connection and builds on the interpersonal level of the Social Ecological Model. The individual level will also be built on through the program components. Nutrition education will be provided to the community to increase nutritional knowledge of residents. Additionally, feedback will be collected on perceptions and beliefs around healthy eating that will assess the individual factors impacting behaviors. To create an effective program aimed at increasing healthy food consumption, multiple levels of the Social Ecological Model need to be built in to encapsulate the complexities of healthy food access within this population.

Project Overview

Research Questions

- How can existing food access locations be used to provide nutrition education to East End residents?
- What are the preferences of East End residents around nutrition programming?
- What are the best ways to engage community members to inform future nutrition programming?

Targeted Population

The target population includes all residents of the East End in Richmond, Virginia. Program implementation sites were chosen to effectively reach residents accessing food in a variety of different ways. Additionally, residents have varying levels of food security and utilize different resources to access food. The program was adapted to multiple locations including a food pantry, local grocery store, and mobile market to effectively reach residents.

Needs Assessment

Bon Secours conducts a community health needs assessment (CHNA) every three years (*Community Health Needs Assessment | Bon Secours*, n.d.). The CHNAs are conducted by engaging community members, leaders, and organizations to identify predominant health needs within the region. One of the primary goals is to prevent and reduce chronic disease within the Richmond area. Bon Secours Community Outreach focuses much of their work on addressing these health disparities.

Residents of the East End experience disproportionately higher rates of chronic disease compared to other Richmond residents (Community Health Data Hub, n.d.). Diagnosed diabetes rates are 21% in the East End, which exceeds the city's average of 12.5% (Community Health Data Hub, n.d.). Additionally, the life expectancy of residents in the East End is 68 years old versus the city average of 75 years old (Community Health Data Hub, n.d.). This displays the need to create a nutrition intervention aimed at mitigating diet-related diseases specifically within this area. Bon Secours Community Outreach does not currently have formal nutrition programming in the East End. As they approach future development, it is vital that they explore effective ways to deliver nutrition education and resources. The purpose of this pilot program is to promote engagement with the target population and to determine feasibility for nutrition programming at various locations. This will help inform future interventions to address the needs of the community.

In their CHNA, Bon Secours gathered information through key informant interviews and surveys to identify their prioritized health needs (*Community Health Needs Assessment | Bon Secours*, n.d.). Although the health-related issues are well-identified in the community, it is important to also understand the perceptions and potential concerns of community members when determining how to address these health-related issues. Formative research on the

preferences of the target population is necessary to identify ways to develop pertinent nutrition programs. This program aims to initiate this research process by engaging with community members and collecting feedback at multiple food access locations. Community members must have autonomy in this process and their perspectives are necessary to inform program implementation. This community involvement ensures that nutrition programs are sustainable and address pertinent issues identified by the target population (Gadhoke et al., 2019).

Program Methodology

This is a multicomponent intervention that includes various levels of nutrition outreach and education at different food access sites. The nutrition curriculum was adapted from Bon Secours' *Produce Rx* curriculum which covered concepts including the benefits of fruits and vegetables (F&V), daily recommendations and serving sizes, and affordable ways to incorporate them into meals. An educational handout was developed to address these topics and distributed during outreach events. The outreach initiatives were adapted to three food access sites in the East End that include a food pantry, grocery store, and a mobile market located at a Bon Secours facility. Engagement activities included tabling events that were conducted at all three sites. One nutrition workshop was conducted at the Bon Secours facility during the mobile market time slot to pilot this curriculum in a more structured setting.

The tabling events were set up with a numbered color wheel where participants could spin the wheel and were asked a question about fruits and vegetables that coincided with the nutrition curriculum. This was used as a conversation starter with shoppers to discuss these nutrition concepts. Different cooking equipment items were available for participants to select after participating with the tabling activities. Additionally, a variety of resources including the educational handout, a food access list, and relevant recipes were provided at each table. A dot

survey was presented to gather information about the abilities, priorities, and preferences of the target population. Engagement was measured by tracking the number of conversations with individuals that visited the tabling events.

Prepared food samples were also provided at some tabling events to demonstrate an affordable way to prepare ingredients that were accessible at the given location. All recipes were selected to reflect heart-healthy eating patterns and were adapted to accommodate the food available at the specific site. However, prepared food samples were not provided in the grocery store setting, due to a restriction that prohibited the distribution of food samples.

In addition to the table events, a nutrition workshop was implemented at the mobile market located at the Bon Secours facility. The intervention included nutrition education covering the *Produce Rx* curriculum and a cooking demonstration. This was a structured workshop with an hour allotted to cover all concepts. The cooking demonstration highlighted produce items sold by the mobile market.

This multicomponent intervention included multiple engagement tabling events and one pilot nutrition workshop. Each site had differing levels of physical space, restraints, and time with participants necessitating individualized adaptations. The tabling events implemented at the grocery store, food pantry, and at the mobile market were used to gather information about the target population for future programming initiatives. Additionally, we attempted to gather information on the impact of the nutrition workshop to inform feasible intervention options in the future. The goal is to promote engagement, gather relevant information from the target population, and evaluate feasibility to inform the direction for future nutrition programming.

Recruitment

At each tabling event, a sign-up sheet was presented for people to provide their contact information if they were interested in learning more about future nutrition programs or events established by Bon Secours Community Outreach. This allowed the organization to directly inform individuals within the community about any new events.

A week prior to the pilot nutrition workshop, recruitment took place at the mobile market tabling event. Flyers were developed to market the event and these were provided to participants. A sign-up sheet was presented and a QR code was located on the flyers for participants to sign up. The initial goal was to recruit five to eight participants for the workshop. If recruitment was unsuccessful, Bon Secours community health workers (CHWs) would attend the workshop and provide feedback.

Data Collection

During tabling events, we collected information on perceptions of healthy eating and preferred modes of nutrition education. These questions were posted on a board and participants filled in their responses with dot stickers and sticky notes. The first two questions utilized Likert scales where participants would place a dot sticker where they most identified. These questions were presented to participants to assess their attitudes towards healthy eating and comfortability with preparing healthy meals. The third question was open-ended and participants contributed their response on a sticky note. This question aimed to capture how and/or where participants would like to receive nutrition education within the community. Although this question was open-ended, four options were provided to stimulate ideas and provide context to participants. These options included "on social media", "from my doctor", "from a dietitian", and "at my church". Participant suggestions were coded by themes of how and/or where they would prefer to receive nutrition education. This information will further contribute to the organization's needs

assessment in determining a direction for future nutrition programming that is consistent with the preferences of the target population.

Questions:

1. How important to you is healthy eating? (Likert scale)
2. How comfortable are you with preparing healthy meals? (Likert scale)
3. How would you like to receive nutrition education? (open-ended)

A nutrition workshop evaluation was developed to gather feedback and assess the impact of the workshop, participants' intention to participate in healthy behaviors, and their likelihood of replicating the recipe at home. This evaluation included six questions that would provide insight into the impact of a pilot nutrition workshop and determine a future route for program development.

Questions:

1. How many portions of fruit and vegetables do you think health experts recommend eating every day? (Please check one box) (Barton et al., 2011)
2. How confident do you feel about being able to cook from basic ingredients? (Likert Scale) (Barton et al., 2011)
3. How accessible is this location? (Likert Scale)
    a. Where would you like to see future workshops?
4. How likely are you to try this recipe at home? (Likert Scale)
5. What nutrition topic would you like to learn about?
6. Is there anything you feel should be improved if this course is run again?

Project Outcomes

Intervention Adaptations and Engagement

Depending on the capacity of each site, different activities were conducted. Table 1 displays the activities conducted and engagement levels at all locations. Participant engagement was highest at the grocery store and lowest at the food pantry. Engagement was not documented during the engagement event at the mobile market. At the grocery store, 60% of participants that visited the tabling event provided feedback to at least one question while 9% of food pantry participants provided feedback. Across all locations, the third question requiring open-ended feedback was answered less than the first two Likert scale questions.

Table 1. Tabling Event Activities and Engagement Results

Location	**Activities Conducted**	**Engagement**	**Responses**
Grocery Store (combined from 2 events)	- Color wheel activity	35 total interactions	1st Question: 21 2nd Question: 20 3rd Question: 14
Mobile Market	- Cooking demonstration - Recruitment for nutrition workshop	Estimated 10-15 interactions	1st Question: 2 2nd Question: 2 3rd Question: 1
Food Pantry	- Color wheel activity - Cooking demonstration	11 total interactions (expected 40-50)	1st Question: 1 2nd Question: 1 3rd Question: 0

Tabling Event Feedback

When asked about the importance of healthy eating, all participants indicated that it was important (n=4, 16.6%) or very important (n=20, 83.3%). Similarly, most participants indicated that they felt very comfortable (n=14, 60.9%) or somewhat comfortable (n=4, 17.4%) with preparing healthy meals. However, some participants felt neutral (n=4, 17.4%) or not very

comfortable (n=1, 4.35%) in their ability to prepare healthy meals. Table 2 shows the Likert scale response options and the number of responses from participants.

Table 2. Combined Community Feedback Results

Question	**Response Options**	**Number of Responses**
1. "How important to you is healthy eating?"	Very Important	20 (83.3%)
	Important	4 (16.6%)
	Neutral	0 (0%)
	Low Importance	0 (0%)
	Not At All	0 (0%)
2. "How comfortable are you with preparing healthy meals?"	Very Comfortable	14 (60.9%)
	Somewhat Comfortable	4 (17.4%)
	Neutral	4 (17.4%)
	Not Very Comfortable	1 (4.35%)
	Not At All	0 (0%)

Table 3 displays participant responses coded into themes. The most prevalent themes reflected preferred modes of nutrition education include from sources of media (n=8, 42.1%), medical professionals (n=5, 26.3%), and within community-based spaces (n=3, 15.7%). Eight participants discussed their preference to receive nutrition education in the form of media. These sources of media include social media, television, websites, and resource texts. Five participants discussed that they wanted to receive nutrition education from medical professionals such as their doctor or a dietitian. Lastly, three participants indicated locations and/or communities that they want to see nutrition education in which included community resource centers or within public housing communities located in the East End.

Table 3. Preferred Modes of Nutrition Education Results

Question	Themes	Responses
3. "How would you like to get nutrition education?"	Medical professional	"From a dietitian" (3) "From my doctor" (2)
	Community-based spaces	"Resource centers" (1) "In communities without access to resources" (1)

		“Outreach in public housing communities” (1)
	Media	“social media” (5) “Websites” (1) “TV” (1) “from a resource text” (1)
	Schools	“Within the school systems” (1)
	Other health professionals	“Fitness coach” (1) “fitness influencers” (1)

Piloted Nutrition Workshop

In addition to the engagement events, a nutrition workshop was developed and piloted. The workshop was conducted at a Bon Secours facility during the mobile market time slot. Recruitment took place at the mobile market tabling event a week prior to the scheduled nutrition workshop. During the event, three participants signed up to attend the workshop. However, none of the participants attended the workshop. Instead, the class was presented to two participants, a Bon Secours dietitian and CHW, to pilot the class. The workshop was planned to be an hour-long class that was equally split between nutrition topics and a cooking demonstration. The class was implemented within the community kitchen at a Bon Secours facility. The nutrition portion included topics such as MyPlate, serving recommendations for fruits and vegetables (F&V), and affordable ways to add F&V to the diet. Participants were then directed to observe a cooking demonstration highlighting a seasonal recipe. The dietitian and CHW provided feedback and completed the nutrition workshop evaluation. The workshop exceeded the allotted hour and the dietitian advised to reduce nutrition content and corresponding learning objectives for future workshops. Additionally, both staff members advised to make the workshop more interactive to engage participants in the class content. Suggestions included integrating breakout activities into the nutrition content and having participants assist in the cooking demonstration.

Discussion and Recommendations

Perceptions around Healthy Eating Behaviors

All participants indicated that healthy eating was of importance. This feedback was useful to assess how community members perceived this topic and to determine if nutrition programming could be relevant. Additionally, most participants felt comfortable with preparing healthy meals with some indicating that they felt neutral or not very comfortable. These responses provided insight into participants' comfortability with preparing healthy meals. During the tabling events, many participants discussed their opinions and/or difficulties with healthy eating behaviors. In the future, open-ended questions should be utilized to capture the complex nature of these perceptions to better understand the realities of community members. Although the open-ended question received fewer responses in this project, future adaptations could be made to increase feedback. Open-ended questions should be utilized without the Likert scale questions to reduce burden on participants. This way, feedback is collected solely on the context around participants' eating behaviors. In a qualitative analysis, the authors interviewed people at risk of food insecurity to understand factors that impact their eating behaviors (van der Velde et al., 2019). Participants reported the role that economic burden, the physical environment, and social factors play in their eating habits. This research sought to acknowledge the context around participants' eating behaviors. Obtaining this information from the target population could help in developing programs that address these other factors and could inform how to partner with community organizations to mitigate additional barriers impacting eating behaviors.

Preferred Modes of Nutrition Education

To effectively deliver nutrition education, it must be adapted to the preferences of the target population. Participants frequently discussed their preference to receive nutrition education through sources of media. Among these, social media was the most preferred way to receive nutrition education. Incorporating nutrition messaging into social media can be a viable option to provide nutrition education while reducing the burden on the target population. Since this information can be accessed without physically attending an in-person program, this option may be more suitable for a low-income population facing additional barriers. In a study by Tripicchio & Anderson (2023), an online meal-planning program was implemented for SNAP and WIC participants (Tripicchio & Anderson, 2023). Social media platforms were utilized to recruit participants and promote utilization of the platform. After using the platform, participants reported an increase in food security and in the diet quality of the meals they prepared for their families. Adapting nutrition education to online platforms can mitigate the barriers of having to attend in-person nutrition programs. Although Bon Secours Community Health does not currently utilize social media, this feedback could provide support to explore this option in the future. Additionally, Bon Secours could potentially partner with community organizations to develop nutrition content for their social media platforms. This could be a supplemental option to provide nutrition education in an accessible way to the target population.

Participant feedback displayed preference for receiving nutrition education from medical professionals such as dietitians and physicians. Dietitians often help implement a variety of community nutrition programs, such as produce prescription programs, that are aimed to increase food security and manage chronic disease states (Veldheer et al., 2021). These programs provide participants with F&V allotments and frequently include nutrition education provided by dietitians. A produce prescription program is currently being implemented by Bon Secours with

the involvement of a dietitian. These types of interventions are an effective option for future programming initiatives.

In addition, physicians are often relied on for nutrition information despite the limited training they receive in nutrition education (Stanford Medicine, n.d.). Culinary medicine (CM) merges nutrition education and culinary science and these courses are emerging in medical school curricula to address this educational gap (Brennan et al., 2023). Culinary medicine training could be offered to physicians within Bon Secours to build competencies in providing client-centered nutritional guidance. This would also address chronic disease and prevention which is indicated as a prioritized health need in Bon Secours' CHNA. More feedback is needed to provide support for this option but could be a future endeavor with enough community support and physician buy-in.

Finally, community members discussed that they would like to see nutrition education within community locations such as resource centers and public housing neighborhoods. There are multiple resource centers located within public housing communities along with others in the East End. These could be potential sites for conducting nutrition programs within the community. Resource centers, specifically within public housing communities, are common locations for implementing nutrition programming (National Center for Health in Public Housing, 2019). Residents in public housing often have reduced access to healthy food which necessitates nutrition programs within these communities.

Resource centers and community spaces could also be suitable locations for engaging community members and collecting feedback around nutrition programming. Bean et al (2016) conducted focus groups within public housing communities to gain insight into the target

population's perceptions around food access, their cultural food practices, and their preferences for nutrition programming (Bean et al., 2016). This provided insight into how residents view nutrition-related topics and informed a future direction for establishing culturally relevant programs. A similar approach could be valuable to engage the target population in the program development process to ensure programming meets the preferences of community members.

Recruitment Strategies

This project highlighted the complications with recruiting participants for a structured nutrition workshop. Recruiting participants for community-based programs is often a challenge and commonly observed within the literature (Carroll et al., 2011). However, research has been conducted to identify techniques to recruit community members in community programming. In a qualitative study, the authors conducted key informant interviews with organizations that implemented physical activity and/or nutrition community programs to understand successful recruitment strategies (McCann et al., 2013). Effective strategies included disseminating information via word of mouth, collaborating with community organizations, and developing printed materials. Although many of these strategies were employed in this project, including collaborating with local organizations and utilizing printed materials, low engagement could have limited the spread of information via word of mouth. Additionally, the workshop was not advertised through the partnering organization's media outlets which could have helped boost engagement. In a systematic review of recruitment strategies used in physical activity programs, the authors also found that partnering with community organizations promoted recruitment (McCann et al., 2013). They identified the importance of program staff being culturally similar to the target population to recruit participants. Bon Secours has a team of CHWs that have established ties to the East End community. Integrating these staff members in nutrition

programming efforts could potentially build rapport with the target population and improve recruitment.

Feasibility of Each Food Access Location

Different nutrition outreach methods were attempted at three food access locations to determine their feasibility with promoting community engagement. With these activities being implemented in a variety of ways, this resulted in different components becoming the focal point. It was observed that when more activities were incorporated, it became more difficult to direct participants to the questions and less feedback was collected.

The local grocery store proved to be an effective location for collecting feedback from the target population. Outreach activities were conducted at the end of the month. Based on participation in this program, future events and programs should be planned for the beginning of the month when SNAP benefits are distributed, and foot traffic is higher. This would provide more opportunities to engage with members of the target population. Additionally, this location has a room designated for community use that could be utilized for conducting future nutrition programming initiatives.

Unforeseen complications at specific locations impacted how and if feedback was collected. At the food pantry, patrons were originally going to be directed to the tabling event prior to receiving food. The pantry managers estimated that there would be 40-50 participants. However, this did not take place and pantry workers attempted to direct patrons to the table after they had received their food, which resulted in decreased participation. The focal point became the cooking demonstration and the color wheel activity rather than prompting participants to provide feedback. This was done to prioritize providing resources to community members.

Although low engagement was observed and minimal feedback was received, food pantries should continue to be explored for future outreach and programming efforts. Food pantries serve vulnerable members of the community that often experience reduced food access. This makes it vital to trial new approaches and collaborate with pantry managers to develop outreach strategies that effectively serve this population. Additionally, it is important that the feedback and preferences of this population are considered while developing nutrition programs. However, survey questions should be low burden and integrated into other outreach activities. In the future, feedback collection should be reduced to one question to facilitate more engagement while still collecting pertinent information from food pantry patrons.

During the event at the mobile market, the recruitment process for the nutrition workshop was prioritized, and participants were not actively directed to the survey questions resulting in low feedback. Additionally, many of the mobile market patrons were Bon Secours staff which made it difficult to recruit participants for the pilot nutrition workshop. This location was beneficial since it was connected to a Bon Secours facility, which made it accessible to pilot a nutrition workshop. However, community engagement and feedback collection were minimal. The tabling event was conducted during the first mobile market of the year, which could have contributed to low engagement. Many residents may have not been aware that the mobile markets began so it could be beneficial to conduct events throughout the year to assess if engagement levels increase.

Lessons Learned

This project provided the opportunity to explore various nutrition outreach methods. The implementation of these different approaches highlighted learning opportunities for the future. Although outreach was conducted at different food access locations, engagement varied

depending on the location and it cannot be assumed that the target population was reached. Effectively engaging with the target population was difficult and recruiting for the nutrition workshop was a significant challenge. In the future, it would be beneficial to get direct feedback from residents of the area. This could be done by implementing outreach initiatives in the public housing communities located in the East End and by collaborating with organizations established by community members. Additionally, CHWs from the East End should be included in outreach efforts to provide feedback on how to engage with the target population

Another learning opportunity was identified through the feedback collection process. The open-ended question received a wide variety of response types. Although the response variety provided insight into participants' preferred modes of nutrition education, this made it difficult to establish a defined direction for future programming. The open-ended question should be refined to gather feedback about specific aspects of programming such as preferred locations for nutrition programs or nutrition topics of interest. This would provide more structure for developing future programs.

Conclusion

The implementation of this project was the first step towards community engagement, collecting information around the preferences of the target population, and trialing different nutrition outreach approaches by Bon Secours Community Outreach. The piloted nutrition outreach and programming efforts provided insight into what is feasible at various food access locations and should be refined to accommodate these locations. Additional formative research should be conducted with the target population to develop more context into their preferences for nutrition programming. Partnerships with a variety of community organizations should be pursued to effectively implement programs and address environment barriers impacting food

access. Future initiatives are imperative to continue community engagement and to develop relevant nutrition programs in the East End.

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