

**Food4Thought New Haven: A medical trainee-led, community-based program providing nutritional education to young adults with serious mental illness in the Greater New Haven area**

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Faculty Advisor Title/Role: Associate Professor of Psychiatry, Yale School of Medicine  
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**Section 1: Eligibility**

[x] We confirm that we are currently enrolled at either the Frank H. Neter MD School of Medicine at Quinnipiac University or the Yale School of Medicine.

[x] We understand that grant recipients will be required to present the final results of their project at the annual NHCMA winter meeting in 2025 (date TBA).

**Section 2: Introduction and Purpose**

1. What is the specific public health issue or challenge your project/research aims to address in the Greater New Haven area?

Serious mental illness (SMI) is defined as “a mental illness that interferes with a person’s life and ability to function,” with common examples including bipolar disorder, major depressive disorder, and schizophrenia spectrum disorders.<sup>1</sup> Individuals with SMI die 10-25 years earlier than the general population, largely due to higher risk of cardiovascular disease (CVD).<sup>2-4</sup> CVD is associated with lifestyle factors, including substance use, diet, and physical activity. Notably, nutrition quality is gaining more attention as emerging research highlights the gut-brain axis in linking food decisions to mental health.<sup>5,6</sup> Due to socioeconomic disparities, individuals with SMI exhibit low levels of health literacy and have limited access to transportation, affordable housing, and healthy foods, all of which contribute to poor diet.<sup>4,7</sup> These socioeconomic disparities are prevalent in the city of New Haven, where 25% of the general population lives in poverty according to Data Haven’s 2023 Community Wellbeing Index. Poverty disproportionately affects younger individuals, with 42% of Greater New Haven householders under 25 living in poverty. A high number of individuals in the area also lack adequate access to transportation and affordable housing and experience food insecurity.<sup>8</sup> In addition, New Haven is known to be a food desert, or area with limited access to retail sources of healthy food.<sup>9</sup> To address barriers to nutrition security, we have co-developed “Food4Thought New Haven”, a medical-trainee-led program that teaches nutrition and cooking skills to people with SMI to improve cardiovascular outcomes in the Greater New Haven area.

2.How does your project align with the mission of the NHCMA Foundation: to promote health and well-being in Greater New Haven area?

Food4Thought New Haven advances the mission of the NHCMA Foundation by promoting nutrition and healthy eating habits among individuals with SMI. We have chosen to work with community members who reside in group homes which provide a structured environment to engage in groups, hone daily living skills, and promote social connectedness as they work toward transitioning to independent living. Our project strives to provide nutrition knowledge not only to group home residents but also to the staff that support them. Furthermore, medical trainees, group home residents, and staff collaborate to create the curriculum and select recipes to cook together, which empowers residents to adopt healthier eating habits while building a sense of community. All recipes are carefully selected to ensure group home residents can access affordable ingredients at the grocery stores they frequent. Lastly, Yale medical trainees, including medical students and residents, gain hands-on experience with community outreach and nutrition education while deepening our understanding of the lived experiences of individuals with SMI. This experience equips trainees with valuable insights that they can apply to provide patient-centered care and enhanced nutrition education to patients in the Greater New Haven area.

3.How will your project directly benefit the residents of the Greater New Haven area?

Food4Thought New Haven seeks to promote healthy eating in individuals with SMI residing in the Greater New Haven area, with the goal of improving cardiovascular health in this population. Young adults living with SMI, and particularly those residing in group homes, are a vulnerable group of community members who have experienced significant hardships at a young age. By reframing relationships around food during this important period in life when people explore their nutrition preferences, knowledge, and practices, we strive to facilitate a greater appreciation of healthy eating. Our hope is that the skills they learn in the program can boost their confidence in and understanding of nutrition. Additionally, these group homes are part of large non-profit mental health organizations in the Greater New Haven area. Based on feedback from executive leadership at one such organization (Continuum of Care), there is a gap in nutrition programming among their group home residents that our program seeks to fill.

The program also directly benefits Yale medical trainees residing in the Greater New Haven area by providing hands-on experience teaching lifestyle skills directly in the community. This community outreach in group homes serves as a unique opportunity in medical education to better understand the social and structural determinants of mental health that young adults with SMI experience. Moreover, medical trainees benefit from learning nutrition knowledge and skills which can be practiced in our own lives and effectively discussed with our patients.

## **Section 3: Proposal**

### **I. Background**

The average life expectancy of individuals with serious mental illness (SMI) is one to two decades shorter than that of the general population.<sup>2,10,11</sup> While SMI can directly contribute to early mortality, much of the excess mortality is attributable to preventable cardiovascular diseases (CVD), including diabetes, hyperlipidemia, hypertension, and obesity, which occur in this population at higher rates.<sup>3,4</sup>

Increased risk of CVD is primarily linked with lifestyle factors such as smoking, diet, and physical activity. Individuals with SMI face unique barriers to addressing their health needs, including negative symptoms, socioeconomic disparities, medication side effects, low levels of health literacy, and high prevalence of trauma.<sup>4,7,12</sup> As interest in the connection between the gut and the brain grows, the field of nutritional psychiatry has emerged to more directly examine how diet affects mental health.<sup>13</sup>

Research suggests that group-based lifestyle interventions can improve cardiovascular health in individuals with SMI.<sup>14-17</sup> For individuals with SMI, lack of transportation and high cost of healthy foods are important barriers to adopting healthier lifestyles, while social support from family and friends can help promote healthier lifestyles.<sup>18</sup> As a result, we co-developed Food4Thought New Haven, a community-based, medical trainee-led nutrition program designed to enhance the nutrition knowledge and cooking skills of individuals with SMI and the staff who support them. The educational content and hands-on learning serve to motivate people with SMI to address their dietary health needs.<sup>19</sup> Moreover, increasing the number of program facilitators, including support staff at group homes, can promote more mindful intentions and decisions around healthy food choices. Our group partnered with Continuum of Care, a large non-profit organization overseeing group homes in Connecticut, to successfully run a pilot program in a group home in New Haven during the summer of 2024.

In the upcoming year, we aim to expand Food4Thought New Haven for young adults with SMI living in group homes. Early delivery of lifestyle education has the potential to provide young adults with lifelong cardiovascular benefits. Despite the importance of early interventions, young adults with SMI are underrepresented in studies on lifestyle interventions.<sup>20,21</sup> We hope to address this gap in services by bringing Food4Thought New Haven to the young adult population and offering training sessions to those caring for them directly in the community.

## **II. Objectives**

- Overall Goal: To promote healthy eating habits and increase nutrition literacy in individuals with SMI through a medical trainee-led, community-based nutrition education program.
- Specific Objectives:
  1. To expand Food4Thought New Haven to two group homes specifically serving the young adult population.
  2. To adapt the Food4Thought New Haven curriculum based on feedback from former participants in the program and the specific needs of the young adult population.
  3. To train group home staff and caregivers to facilitate program objectives and teach lifestyle nutrition to the young adult population.
  4. To teach medical students about nutrition education and the value and practice of community collaboration and engagement.
  5. To evaluate the effectiveness of the Food4Thought New Haven curriculum in increasing nutrition knowledge and promoting healthy eating habits among participants through program feedback.

## **III. Program Design and Methodology**

## **Food4Thought New Haven Overview**

Food4Thought New Haven is a flexible nutrition education program designed collaboratively between group home residents and staff and medical trainees. Specifically, Food4Thought New Haven leverages community-based participatory research to develop a personalized curriculum tailored to the needs of the participants. The program's design was inspired by the results of focus groups conducted in clubhouses (community mental health rehabilitation programs) and group homes.<sup>18</sup> The program consists of an initial informational and listening session, several modules on selected nutritional topics with accompanying cooking sessions, and a final feedback session.

## **Food4Thought New Haven Stakeholders**

Our group partners with Continuum of Care, a large non-profit organization in Connecticut that supports people with SMI throughout Connecticut and manages numerous group homes as well as outpatient services in the Greater New Haven area. We will work with Continuum of Care to identify group homes where the program can be implemented.

Stakeholders involved in Food4Thought New Haven:

1. Community partners – Continuum of Care (letter of support available on request)
2. Collaborators – A clinical psychologist, the director of the Yale Teaching Kitchen, and a clinical dietitian, who advise our team on program content and nutrition-related resources
3. Facilitators – Yale School of Medicine medical students and psychiatry residents
4. Participants – Young adults with SMI who reside in group homes and the group home staff that support them

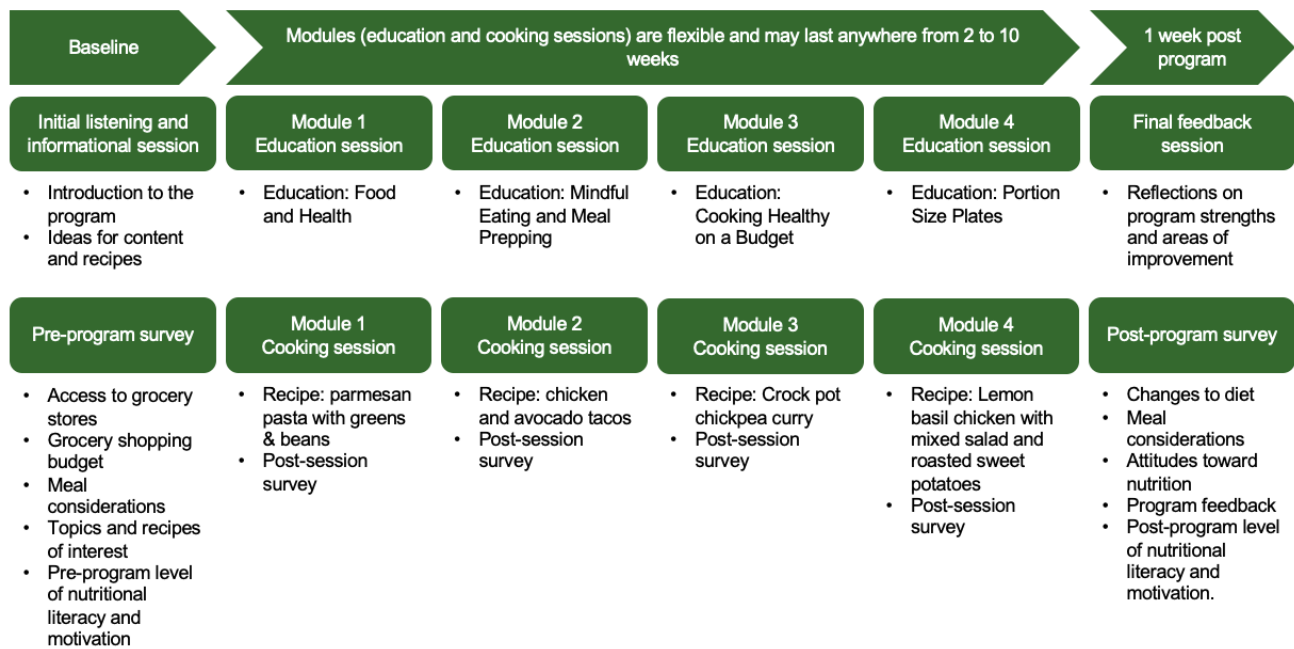
## **Food4Thought New Haven Methods & Protocol**

During the initial listening session, facilitators introduce the program, and group home participants and staff express their perspectives on healthy eating and nutrition and their interests in specific topics and recipes. With the help of a clinical dietitian, facilitators then design modules to align with the priorities and preferences of the participants. Each module, which includes one educational session and one cooking session, focuses on a specific topic, such as mindful eating or the connection between diet and chronic physical health conditions (e.g., obesity, diabetes, hyperlipidemia). The 1-hour-long educational sessions incorporate information from the American College of Lifestyle Medicine, American Diabetes Association, and the American Heart Association to engage participants in interactive activities surrounding the selected nutrition topic, with accompanying physical handouts. The cooking sessions, which last 1.5-2 hours, offer hands-on experience in preparing a healthy meal of interest. The recipes for each meal are adapted from Health Meets Food.<sup>22</sup> When facilitators select recipes, the preferences and dietary restrictions of participants, the cooking equipment in the group home, and the availability and affordability of the ingredients in stores where the participants shop are all considered. During the cooking sessions, facilitators help divide tasks among participants and provide assistance when needed. All the preparation and cooking are participant driven. The educational and cooking sessions for one module occur during consecutive weeks to ensure continuity of content. After each module, facilitators gather immediate feedback through short surveys with Likert scales and written responses for quantitative and qualitative data collection, respectively. At the end of the program, facilitators run a final feedback session as an

opportunity for both facilitators and participants to reflect on the experience and discuss the program’s strengths and areas for improvement (See **Figure 1 for Example Curriculum**).

The program is conducted over the course of several weeks, but the exact length of the program can vary between 4 and 12 weeks based on the number of modules conducted (ranging from 2 to 4) and the time between modules (ranging from 1 to 4 weeks). This approach provides flexibility to accommodate the preferences and availability of both facilitators and participants.

**Figure 1.** Example Food4Thought New Haven Curriculum Schedule



**Food4Thought New Haven Pilot Program (April-August 2024)**

Medical trainee facilitators, including Yale medical students and psychiatry residents, successfully conducted a pilot program of Food4Thought New Haven in one group home in New Haven serving a wide age range of individuals between April and August 2024. The topics of the two modules, which were selected based on participant preference, were 1) Food and Health and 2) Mindful Eating and Eating Smart. Accompanying recipes included parmesan pasta with greens and beans and chicken avocado sandwiches. Of the 12 residents in the group home, at least 64% of residents participated in the program, and 55% attended all 6 sessions. 83.3% of clients who attended were likely or very likely to participate in the program again. Based on written feedback, group home participants voiced that the program taught them to limit “junk food” and soda and how to look at food labels. Participants also expressed enjoying the teamwork involved in cooking a meal together and the ability to learn to cook. Group home staff reported that the program motivated residents and encouraged residents to speak up and participate. For future programs, participants highlighted their desire to learn from a registered dietitian, prepare culturally varied meals and healthy snacks, and take a field trip to a teaching kitchen or farmer’s market.

In September 2024, our team presented the results of the pilot program to the executive leadership of Continuum of Care. Continuum of Care is now collaborating with our team to identify the next group homes, specifically ones where young adults reside, to deliver the program.

**IV. Expected Outcomes**

For this proposal, we aim to conduct Food4Thought New Haven in at least two additional group homes specifically serving young adults in the Greater New Haven area. Expected outcomes for participants and staff include: 1) increased knowledge about nutrition and healthy eating; 2) enhanced meal preparation and cooking skills; and 3) increased motivation and confidence to adopt healthy eating habits. Expected outcomes for facilitators include: 1) increased awareness about the experiences of individuals with SMI and the socioeconomic barriers to healthy eating; 2) better understanding of effective nutritional education; and 3) improved ability to design and implement community outreach and public health initiatives.

**V. Budget**

Item	Explanation	Cost
Cooking kits	Ingredients involved in cooking meals for the respective modules due to limited group home budgets. Additionally, more emphasis on culturally varied recipes and healthy snacks will be prioritized, which may require the purchase of new pantry staples and kitchenware that can be used beyond the duration of the program.	\$700
Printing services	Color handouts and posters during the educational session and recipes during the cooking session	\$300
Portion size plates	Plates based on MyPlate.gov to motivate participation in the program and encourage healthy eating	\$100
Clinical dietitian consultant	Certified dietitian to provide in-person counseling to participants on lifestyle nutrition and healthy eating habits during the program	\$450
Kitchen supplies	Meal prep containers, slow cookers, and durable kitchen supplies to support meal planning and storage in the group home	\$350
Indoor Herb Garden	Small indoor herb garden potentially growing basil, mint, rosemary, and/or cilantro based on group home residents' preferences to teach about gardening and encourage use of fresh, sodium-free seasonings	\$200
Module prizes; health promotion items	Small prizes such as food care packages to promote participation in activities and application of skills and knowledge taught; health promotion items such as water bottles, resistance bands, and workout mats	\$400
Total		\$2,500

This program has no other sources of funding.

**VI. Timeline**

The 12-month timeline (**Table 1**) allots time for identification and initial contact with each group homes (with the assistance of Continuum of Care executive leadership), up to 3 months of curriculum delivery in two group homes, and collection and presentation of results to leadership of both the group homes and Continuum of Care. During the initial contact with each group home, staff will receive training from our team about the objectives and structure of the curriculum. They are also encouraged to attend the program and facilitate based on their comfort level. Depending on group home staff interest, larger “Train the Trainer” training sessions can also be held for group home staff at a variety of group homes under the Continuum of Care umbrella.

**Table 1.** 12-month timeline of Food4Thought New Haven program activities in two group homes.

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
<b>Project planning</b>	[Yellow bar]											
Select 2 group homes to deliver Food4Thought	[Yellow bar]											
<b>Implementation</b>	[Green bar]											
Training session for group home staff		#1					#2					
Delivery of Food4Thought curriculum			Group home #1					Group home #2				
<b>Project review</b>	[Orange bar]											
Disseminate results to group home leadership						#1					#2	
Disseminate results to Continuum of Care leadership												

## VII. Evaluation of Public Health Impact

To evaluate the public health impact of the Food4Thought New Haven curriculum, we will collect anonymous qualitative and quantitative data through semi-structured feedback sessions and surveys at various timepoints throughout the curriculum.

### Data Collection Timepoints:

1. Initial Listening and Informational Session – Facilitators will collect information about participants’ grocery shopping and budgets, past nutrition education, and nutrition topics and recipes of interest through discussion with participants and survey responses. A pre-program survey will be administered to evaluate motivation and confidence to eat healthier and current level of nutrition literacy, with questions derived from validated surveys.<sup>23,24</sup>
2. Modules – Participants will complete brief surveys at the end of each module to assess their motivation and confidence to eat healthier as well as interest in program content and the meals prepared through Likert scales.
3. Final Feedback Session – Facilitators will provide participants with a space to share feedback on what they learned from the program and areas of improvement in the future. A post-program survey with the same questions as the pre-program survey will be administered to evaluate changes in motivation to eat healthier and level of nutritional literacy. Participants will also rate their overall satisfaction with the program using Likert scales.

The main quantitative measures of interest to evaluate the program’s public health impact will be the percentage of group home residents attending the sessions (goal is >50%), overall satisfaction with

the program, and changes in nutrition literacy and motivation to eat healthier (as measured by the pre- and post-survey responses). Qualitative feedback from the final feedback session will also be of importance to assess the impact of our program. Importantly, Food4Thought New Haven is intended to be a quality improvement project rather than a rigorous research study and does not collect any personal health information. Based on conversations with our department's Human Research Protection Program analyst, IRB approval is not necessary, and the program is currently under review for IRB exemption.



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