There is one place where almost all the systems that matters come together: Our food and the food system—from growing, procuring, distributing, promoting, eating, wasting, to developing policies around food affects our social, economic and natural capital. As a social designer, I am passionate about addressing the root causes of the systematic issues using human-centred design to rethink the traditional modes of social change and support doing good.

As I began my journey into the thesis, my interests in food, public health, and social justice converged to untangle the complexities surrounding the childhood obesity epidemic in America. Over the last 30 years, the rate of childhood obesity has tripled, according to the U.S. Centers for Disease Control and Prevention. Over the last 30 years, the rate of childhood obesity has tripled, according to the U.S. Centers for Disease Control and Prevention. More than a third of children and teens are now overweight or obese.

Growing up in India on a culturally appropriate diet, traditional and seasonal foods made me reflect on my shift in the food culture when I relocated to the United States as a graduate student. I struggled to make nutritious food on a budget. It was easier to find fast food joints selling cheap, empty calories in the neighborhood than a grocery store selling fresh produce. What began as a personal inquiry fueled the need to look at the gaps and injustice in the food systems in America.

The imperative to change the U.S. food system is not new, but in many ways, Covid–19 has boiled over long-simmering problems plaguing America’s food system. Where 1.5 million New Yorkers couldn’t afford food and food pantries became their lifeline. In need of the hour, I decided to support their work. I collaborated with New York Common Pantry Live Healthy Program, a non-profit based in South Bronx. We worked hand in hand to understand the community’s needs and created opportunities using research, design and strategy to educate, persuade and facilitate conversations about sustainable food systems with the community members, build partnerships in the neighborhood with a shared vision to build nutrition security and prevent childhood obesity.

Rooted in joy, care and deep relationships, this book walks you through my year-long journey into finding ‘The Missing Ingredient’. I hope this research gives you a better understanding of a silent and insidious injustice plaguing our food system in America and how each one of us can continue to fight this injustice with one bite at a time!
Hello! I am Nidhi, & I am a Design Strategist from India based in New York using a mix of wit, data and storytelling to explore and transform the voices of communities into visions for positive change. My passion for health equity and sustainable environments intersects with my background in business and design to strengthen the work of local non-profits to fight food deserts and prevent childhood obesity in South Bronx using a participatory, community-centered approach. I believe that every life deserves security, dignity and meaning. With a holistic approach, we can create pathways to change!

Take a look at my thesis journey :)

BACKGROUND
10. Glossary
11. Project Overview
13. Objectives
14. Thesis research journey map
16. The Partnership

RESEARCH
20. The Problem
22. Ecosystem Map
24. Covid Inequities Revealed
26. Why Nutrition Security
27. Personal Reflection
28. Thesis statement
35. Community Assessment

DESIGN
42. Prototyping
43. Cultural Probe
50. Scoping with Stakeholders
53. Intervention - 1
60. Building Capacity
63. Intervention - 2

IMPACT
67. Feedback from the community
70. Theory of Change
72. Metric and Evaluation Plan
77. The Whole Team
78. Thank you
79. References
“People are fed by the food industry, which pays no attention to health, and are healed by the health industry, which pays no attention to food.”

— Wendell Berry

American Novelist, Farmer & Activist
Glossary

Nutritional security - is defined as a situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

Childhood Obesity - condition in which a child is significantly overweight for his or her age and height.

Collective impact - is the commitment of a group of actors from different sectors to a common agenda for solving a specific social problem, using a structured form of collaboration.

Food Deserts - is an area that has limited access to affordable and nutritious food, in contrast with an area with higher access to supermarkets or vegetable shops with fresh foods, which is called a food oasis.

Wholesome promoting health or well-being of mind or spirit. 2 : promoting health of body, mind, and morals.

Community Assessment Community assessment is the process of identifying the strengths, assets, needs and challenges of a specified community. Assets refer to the skills, talents and abilities of individuals as well as the resources that local institutions contribute to the community.

Food insecurity is defined as a lack of consistent access to enough food for every person in a household to live an active, healthy life. This can be a temporary situation for a household or can last a long time.

Wraparound Services is a community based services and supports “wrap around” a child or youth and their family in their home, school, and community in an effort to help meet their needs.

Project Overview

Over the last 30 years, the rate of childhood obesity has tripled, according to the U.S. Centers for Disease Control and Prevention. More than a third of children and teens are now overweight or obese (1) The double burden of malnutrition is characterized by the coexistence of undernutrition along with overweight and obesity, or diet-related diseases. A child by the age of 2 has one in four chance of becoming obese if that child is from New York city and lives in a low-income communities. (2)

Malnutrition is often a direct effect of lack of access to nutritious food. Food insecurity in America is surrounded with structural disparities and it is disproportionately affects African American, hispanics, Native Americans and poor communities which kills them with bad food than anything else. (3)

Not having sufficient well-stocked and affordable supermarkets within reasonable commuting distance for residents described as a “food desert.” South Bronx has one of the highest rates of food insecurity in the country. Numerous studies and research shows that low-income neighborhoods offer greater access to food sources that promote unhealthy eating and are surrounded by low-nutrient, empty calories ubiquitous fast food outlets and convenience stores. These factors contribute to individual’s choices around health. These structural violence in the system makes healthy food a social justice issue and food deserts as food apartheid. Covid-19 also fed on these stark realities and shined the light on this by making it worse for these communities to survive. Parents or caregivers are the primary influence on the development of self-regulation and the internalisation of healthy behaviours in children. It is therefore imperative that parenting practices are targeted as part of an obesity prevention intervention. Local nonprofits work with the city to fight food apartheid, bringing healthy produce to residents in the Bronx.

People are not necessarily the choices they make — but sometimes the choices that they have.

I collaborated with one such non-profit called New York Common Pantry in Bronx to support one of their program called Live Healthy. The program brings fresh, local and seasonal farm share and healthy pantry options for families to support obesity prevention in Bronx.

Alongwith providing accessibility and affordability for fruits and vegetables, my community partner also have experts nutritionists who build right materials and provides strategies about incorporating healthy eating in their diet through workshops on zoom.

However, the challenge for the educators lies in seeing how their information is perceived and is contributing to
behavioral change. In the process of making information accessible, the part of looking at food through celebration and culturally relevant is getting lost. Participants in the program are trained to look at food as carbs and protein than reflect on how it can make them feel. There is a missing element of human to human connection for the participants who are using the Farm Share program. With pandemic, the work for food pantry has increased to meet the need of bridging food insecurity than to create place for community to hold interactions on food culture or celebrate the diversity.

My goal understand the community’s needs and created opportunities using research, design and strategy to educate, persuade and facilitate conversations about sustainable food systems with the community members, build partnerships in the neighborhood with a shared vision to build nutrition security and prevent childhood obesity.

To connect with the community to bring culturally relevant recipes that are healthy and are according to their diet preferences.

Using behavioural design practices, community collaborations and existing resources, we focused on building capacity with experts to bring the community together in facilitating conversations about the sustainable food systems and food cultures which influences healthy living for families in Bronx.

To address this issue, I have developed ecosystem of interventions called ‘The Missing Ingredient’ an online community group which bring people together for shared learning.

We worked together with community to build a channel of communications which are moderated by nutrition educators and a space to hold interactions about food cultures, show and tell stories through food, share and swap recipes, gain knowledge and skills about cooking at home and learn about sustainable food systems—all while staying updated with announcements from food pantry about their new produce or programs.

Along the way, I helped developing an outreach plan by reaching out to New York City Montessori Charter School which is located in the same building to collaborate with food pantry to hold workshops with families to build healthy neighborhood together.

The community will benefit from a shared learning space and create a sense of belongingness.

**OBJECTIVES**

**EDUCATE**

To increase two-way communication between nutrition educators and families about healthy eating through culture appropriate food preferences

To develop community collaboration within neighborhood to develop strong sense of belongingness within the community

**PERSUADE**

To increase engagement for farm share program at food pantry along with nutrition knowledge about sustainable food systems, local and seasonal produce

**FACILITATE**

To work together with community to build a channel of communications which are moderated by nutrition educators and a space to hold interactions about food cultures, show and tell stories through food, share and swap recipes, gain knowledge and skills about cooking at home and learn about sustainable food systems—all while staying updated with announcements from food pantry about their new produce or programs.
THESIS RESEARCH JOURNEY MAP

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>RESEARCH</th>
<th>DESIGN</th>
<th>DELIVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHASE</td>
<td>DISCOVER</td>
<td>DEFINE</td>
<td>DEVELOP</td>
</tr>
<tr>
<td></td>
<td>Understanding the system</td>
<td>Synthesis</td>
<td>Exploring ideas and prototyping</td>
</tr>
</tbody>
</table>

**Abstract**

- Diverging
- History
- System
- Lived Experience

- Why are children malnourished in one of the richest countries in the world?
- How might we create opportunities to support local nonprofits to build nutrition security and fight food deserts to prevent childhood obesity in the Bronx?
- How might I address both the collective challenges of community members alongside strengthening the program through wraparound services to build collective impact?

**Concrete**

- Understanding systematic discrimination and the wicked problem
- Talking with experts, online summits, cultivating relationships
- Communicating with stakeholders and finding the gaps and needs in the service
- Cultural-probe and community assessment
- Aligning the goals with community partner
- Build - Iterate - Prototype

**Timeline**

- Feb 2020
- May 2021

* Community Partner - New York Common Pantry (NYCP), Live Healthy Program
THE PARTNERSHIP

Meet my community partner Andrew Maslowski, a senior Public Nutritionist at New York Common Pantry. We worked together along with his team and community members of Live Healthy program. A year of learning, unlearning and making most out of the uncertainties, Andrew shaped and supported my learnings to build the missing ingredient. His commitment for the people he serves brings life to this project.

NYCP- LIVE HEALTHY PROGRAM

Located in South Bronx, NYC
Bring fresh, local and seasonal produce from local farms of NYC
Provides behaviorally-focused nutrition education and obesity prevention activities for adults and children.
Why are children undernourished in one of the richest countries in the world?
Childhood obesity is a serious U.S. public health problem. New York City has particularly suffered from this epidemic of childhood obesity. Recent studies of NYC children show that 15–19.4% of children are overweight and an additional 22–27% of children are obese. It’s particularly troubling because the extra pounds often start children on the path to health problems that were once considered adult problems — diabetes, high blood pressure and high cholesterol. Childhood obesity can also lead to poor self-esteem and depression.

Studies have shown that food insecurity may increase the odds of child obesity. Poor eating habits, including inadequate intake of vegetables, fruit, and milk, and eating too many high-calorie snacks, along with other social determinants of health plays a role in childhood obesity and is disproportionately affecting the racial/ethnic minority children.

The United States is the world’s largest and most efficient producer of food. American agriculture generates the highest per capita food production in the world and the nation enjoys highly evolved markets and distribution systems to get food to consumers. With these obvious advantages in food production, distribution, and stability of governments and markets, the existence of food insecurity in the United States is perplexing, if not unbelievable. There is, perhaps, no nation on earth better equipped to eliminate the problem of food insecurity among its populace, yet the United States has failed to do so. Understanding and addressing food insecurity in the United States is complicated by the “hidden” nature of the problem and, until recently, the absence of a way to quantify the problem.

Due to the coronavirus pandemic, 42 million people may experience food insecurity in 2021. In many ways, Covid–19 has boiled over long-simmering problems plaguing America’s food system. America faces a hunger and nutrition crisis unlike any this country has seen in generations. Today 14 million children are missing meals on a regular basis—a statistic that’s three times worse than the Great Recession and five times worse than before the Covid–19 pandemic— as parents, who often skip meals themselves in order to prioritize feeding their kids, can no longer protect their children from hunger. It’s even worse for Latino and Black families, who have seen rates of nutrition insecurity spike to 25 percent and 30 percent, respectively. In the wealthiest country in the world, this is simply unconscionable.

Due to entrenched patterns of segregation and pervasive, institutionalized racism that affect housing, employment, and educational opportunities, low-income neighborhoods are often populated by minorities. Often referred to as “Food deserts” where fast food restaurants maintain a strong presence in these low-income communities, the closest grocery store is more than a mile away, and it’s hard to find fresh fruits and vegetables or other healthy food. This contributes to an overwhelmingly disproportionate incidence of food-related death and disease among African Americans and Hispanics compared with whites.

What Paul Farmer from Partners in health has called Structural violence — the social, economic, and political conditions that drive disease. Small wonder that these communities disproportionately patronize fast food restaurants. Statistically, they also tend to have nutritionally deficient diets and suffer disproportionately from diseases and deaths related to the consumption of unhealthy food.

In the United States, the Supplemental Nutrition Assistance Program (SNAP), formerly yet still commonly known as the Food Stamp Program, is a federal program that provides food-purchasing assistance for low- and no-income people. SNAP started as a way to address hunger and malnutrition but not leveraged to improve the nutrition or health of its recipients. The paradox is that people are provided with too many calories and not enough nutrients. These people who are prone to the burden of chronic diseases are overfed and under-nourished.

As Dr Mark Hyman mentions in his book, food fix, this problem embedded in social and political form of discrimination that recognizes that these areas of food disparity are not a natural phenomenon like deserts, but perhaps the better term is “food apartheid”. Food insecure and low-income people can be especially vulnerable to obesity because of the unique challenges they often face in adopting and maintaining healthful behaviors, including:

- Limited resources
- Lack of access to healthy, affordable foods
- Cycles of food deprivation and overeating
- High levels of stress, anxiety, and depression
- Fewer opportunities for physical activity
- Greater exposure to marketing of obesity promoting products
- Limited access to health care

Research
This was redlining – drawing boundaries around neighborhoods based on residents’ race and depriving them of resources and opportunities – effectively racializing poverty in cities across the U.S. This is structural racism: where racism is built into the rules of society. This was government policy from the 1930s illustrates the nature of poverty and racism in our society – and how racism affects health. You can see how the 90 year old policy which was abolished in 1968 is having effects even today.

**Without Change, Chronic Disease exacts an enormous toll on the Bronx**

**General Preventive Medicine, Chronic Disease Management, and Medical Breakthroughs saves lives and lowers costs**

**Disparate Impact of Multiple Chronic Conditions (2019)**

- Caucasian: 40%
- African American: 41%
- Hispanic: 36%
- Other: 39%

**Cost of Chronic Disease**: $103.3 Billion (2019-2028)

- Annual Medical Costs: $6.4 Billion
- Annual Economic Costs: $3.9 Billion

**177,000 People have 3 or more chronic conditions (2019)**

**More people with chronic conditions**

- Reduced Medical Costs: $1.3 Billion
- Reduced Economic Costs: $300 Million

**Overall Economic Gains for Community**

**Believers in the Bronx**

**NYC Boroughs**

**Burden of Chronic Disease on the Bronx**

**Research**

**Ecosystem Map**

Inspired by Socio-ecological rainbow model by Dahlgren and Whitehead (1991)
Inequity in the system revealed

All of this was true before Covid-19, and the pandemic fed on these stark realities the same communities already struggling with nutrition insecurity not coincidentally found themselves at increased risk of severe illness, hospitalization, and death from Covid-19.
In a study conducted by Harvard School of Public Health, they examined diets of SNAP recipients. Overall, they found that SNAP participants are in dire need of nutrition interventions. Through SNAP, we have solved the calorie problem, but now we have a problem of nutrient deficiency. Inadequate nutrition can permanently alter a child’s brain architecture and stunt their intellectual capacity and may never recover from lost potential.

Food insecurity is about providing enough food to those in need. Nutrition insecurity is about providing the right food.

**Why Nutrition Security?**

**Personal Reflection**

For $10 I could get more doughnuts than apples. It was easier to get cheap empty calories within a mile than fresh produce.

**Why Eating Healthy is Expensive in America?**

In United States, only 2 percent of the farmland is used to grow fruits and vegetables, despite the government recommendations that 50 percent of our diet should be fruits and vegetables. Fifty-nine percent of the farmland is used for growing commodity crops (Corn, Wheat, Soy) that get turned into ultra-processed food that are killing more people than anything else. The fresh produce relies on human capital versus the processed food that are made with machines which are more efficient and cheaper in the long run.
How might we create opportunities to support local nonprofits to build nutrition security and fight food deserts to prevent childhood obesity in the Bronx?
THERE ARE NO FOOD DESERTS, BUT ONLY FOOD APARTHEID

HEALTHY AND NUTRITIOUS FOOD IS A BASIC HUMAN RIGHT
The determinants of obesity are complex which requires collective efforts to address and it is important to recognise that no single intervention is likely to prevent childhood obesity. Actions to prevent childhood obesity need to be taken in multiple settings and incorporate a variety of approaches and involve a wide range of stakeholders. As food pantries became lifeline during pandemic, I started looking to build connections to collaborate with a non-profit food pantry where I could use design to support their work.
ABOUT LIVE HEALTHY PROGRAM

New York Common Pantry has a collaboration with Corbinhill Food Project that delivers fresh produce, grown on New York farms, to local pick up locations. The produce share includes 6-8 varieties of seasonal vegetables and fruit, with the option to choose additional items. The share is enough to feed 1-2 people per week.

Sample of produce for November 2020

COMMUNITY ASSESSMENT

On my visit to food pantry, I was amazed at it’s location. It was located in the same building with a montessori school which has more than three quarters of the students from low-income households. On inquiry with my community partner I learned that they have never got a change to collaborate to work on the shared vision. There was an opportunity to build wraparound service to bring collective impact for the communities residing in the neighborhood.
A well-funded NGO, however, faced specific challenges and barriers in building a community with participants. After noticing some saturation in the program engagement, I spoke to some participants and they expressed the challenges they faced to continue learning and leading in healthy choices along with the community. Following which I looked at the resources used both for data collection and communication with the community, most of them lacked to build human connection.

Speaking with some of communities members about their experience and learning from them about the gaps I learned that communication tools lacks the human connection.

“IT’S HARD TO FOLLOW THE ZOOM WORKSHOPS, IT CLASHES WITH MY JOB SCHEDULE”

“This is a great program but I would sign up if I know what I am going to receive in the package”

“I don’t know how to cook turnips”
**Public Health Prevention Stages**

**Primordial Prevention**
- Efforts to influence, in healthy directions, the eating and activity behavior of all children

**Primary Prevention**
- Weight reduction, optimal control of stress and hypertension and strict diet

**Secondary Prevention**
- Early detection of disease, diagnostic and clinical treatment

**Tertiary Prevention**
- Treat established disease to avoid deterioration. Use of surgery, devices or rehab

---

**Food Insecurity in the Neighborhood**

**Long Term Goals**

- **Food as celebration of cultures and tradition**
- **Bring consistent, engaging communication between community and nutritionists**
- **Creating a sense of belongingness with the org**

One of the best strategies to prevent childhood obesity is to improve the eating and exercise habits of the entire family. Treating and preventing childhood obesity helps protect your child's health now and in the future.

https://www.mayoclinic.org/diseases-conditions/childhood-obesity/symptoms-causes/sy-20354627
How might I address both the collective challenges that participants face in addition to the strengthening the program through community collaboration to continue learning and leading in healthy choices for the community?
To prototype this idea of learning from and with each other, along with Andrew, we developed a cultural probe both in English and Spanish, to build a connection between participants and with the nutrition educators. We invited participants with families to participate in our study for a week. As going into the spaces of the community during pandemic was not feasible, the idea of using cultural probe to learn about their food behaviors and built environment felt the most viable option.

To invite people for participation with us to help us test our idea of building community we developed a flyer. We communicated using the flyer for a week to participate in our study and we distributed to 5 participants with household having children. To compensate for their experience and time we gave them a bag of goodies with kitchen supplies and 2-week of farm share complementary.

We used the texting service and a shared google drive to communicate with the members for a week. We reminded them every day to post pictures and ask if they have any queries while using the probe. All the materials were made in English and Spanish.

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The adults have a major influence on the child’s eating habits and so we wanted to learn about their behaviors as well. This is a placemat and on the right is the sample we gave it as a reference.

We gave a variety of placemats for kids to use to keep them engaged in the activity. The black and white placemats have a gratitude questions as well and the back worked as a coloring sheet and can be used as a poster.
We created a shared google drive to receive responses from the participants to share with us and with each other.
Feedback from Cultural probe

One of the participant shared their family favorite too!

“Everyone in my family helps filling up the empanadas, it's a good way to interact with my family”

Feedback from Participant

“What we all bring is different experiences and different ways of doing things, so that's what's good about a group environment”

- Galarza, Participant from Cultural probe

Insight

This was the first time ever that New York Common Pantry was able to communicate directly and consistently for a week with their members. They also saw how are the participants using the farm share produce.
SCOPING WITH STAKEHOLDERS

After the wonderful response from the prototype, we learned that people love to share and everyone has a story to tell through their plates. With that challenges of pandemic, we couldn’t bring any in person activities. So we asked the community again.

In the survey sent out by the NGO in their usual communication, we got a maximum response of bringing a Facebook group to build a community. After compiling all the information from the community, to align goals, I facilitated a workshop in one of the team meetings called “What’s on the radar” — strengths, assets, needs and challenges where Assets refer to the skills, talents and abilities of individuals as well as the resources that NYCP has and needs in order to contribute to the community.

After the discussion, I presented the idea behind “The Missing Ingredient” — human to human connection for the participants and facilitating the group learning process through creation of a space for members to learn with and from one another was born.

FEEDBACK

“This activity allowed for us to get our minds into a space that broke down each aspect of our program and decipher areas with specific challenges and barriers that we face daily in implementing our programming”

- Ora Kemp, Director of Nutrition, NYCP

ALIGNING THE GOALS WITH THE WHOLE TEAM AT NYCP

What’s on the radar?

In order to build an action plan forward, this was the most important step in the process. To address the burnout due to the pandemic, where food pantry employees have to be on the field, this step worked as a space for them to reflect and voice their ideas and opinions. The team came as a whole to bring the idea to life and create a space to learn from and with the community.
**INTERVENTION 1**

*To build communication channels with build capacity within the team to educate, persuade and facilitate conversations about nutrition and local seasonal produce within community*

A Facebook group moderated and facilitated by nutrition educators connecting directly with community members along with their friends and family to learn new skills, stay updated with new recipes, share what they eat, ask questions and build their community. Why Facebook group? Turns out that in one of the recent surveys done by the NGO, most participants are comfortable using Facebook and it’s one of the most used social media platforms by them.

*With that, The Missing Ingredient was born. A communication platform between Currently, with the pandemic, we are bringing this as an online community.*
Welcome to The Missing Ingredient Community Facebook Group Rules

To keep things positive, supportive and encouraging so everyone can exist in harmony together, we have a few rules which we ask everyone to observe.

- Please be respectful in your posts and in your replies to others.
- No soliciting, harassing or derogatory language.
- Discussions should be on the farm share group.
- No selling, advertising or any money making-related posts.

We trust you will always do what is right for your group.

Welcome to the Missing Ingredient Community Facebook Group.

This group is especially created to firstly reach out to our friends and family to spread the love of cooking and learning to grow food.

- No donations, politics, advertising or any money making-related posts or websites.
- Everyone is able to send, to give attention, to respond to a post, to comment on a post, to participate in any discussion, to view or be found.

If you have any questions regarding Farm Share or Growing Options, you can direct message us through messaging or email to missingingredientpantry@gmail.com

Thank you for making this a positive and encouraging group. We look forward to growing, cooking, and feeding good food and opening all the amazing things you can do!

REGLAS DEL GRUPO DE FACEBOOK

Bienvenidos a The Missing Ingredient Community Reglas del grupo de Facebook

Para mantener un ambiente positivo, de apoyo y satisfacción, existen algunas reglas del grupo.

Se permiten el intercambio de cualquier contenido, publicaciones o comunicaciones que promuevan el bienestar de otras personas.

Se requieren los intrusos en las publicaciones como un respeto hacia los demás. Los lenguajes insensibles se prohíben.

Los temas de discusión y las preguntas deben estar relacionados principalmente con el grupo. No existe un procedimiento para el manejo de discusiones fuera del grupo y es importante no compartir ni promover estas fuera de línea.

Se permite el intercambio de varios temas pero deben estar relacionados de manera constructiva y apoyada en el contenido de la comida.

No se permiten los mensajes directos entre miembros de la comunidad y el manejo de discusiones debe ser dirigido a través de comentarios y publicaciones en la página oficial.

Más preguntas o aclaraciones puede encontrar en el Grupo de Facebook de The Missing Ingredient Community.

Si desea saber más, no hesite en escribir y le responderemos de la manera más eficiente que podamos.

A welcome post!

A sample of sending out survey form to ask them about the next farm share preferences
Some of the responses from the participants. People were excited to join. We also had some members who were new to Facebook and were willing to create an account to join the community.

We started engaging with the members by sharing what is coming in the next farm share and where and how they can come to enroll in the live healthy program, educating about new seasonal produce.

Getting small is a big business in America, learning the challenges that community is facing in terms of diet fads. With such information, we can reach out to people to educate in the right direction.
Andrew, started creating the recipes using farm share ingredients to be an example and asking them to share as well.

We started working collaboratively with the team to make the materials accessible and inclusive. All the materials were made in three languages and posted using alt text.
We developed the website through using the existing resources (google site) with the community partner, to bring more independence to edit the content on weekly and monthly bases to create resources to educate the community with seasonal produce and upcoming events.

**Tools used**: Canva and Google Suite

Tools used were canva and google suite which they have been using for creating their communication materials. Though, this was the first time they were using these existing to build different communication materials.

A very important learning during the project was to be a designer to build capacity for the team at NYCP, we worked collaboratively throughout to brainstorm, create resources in different languages—all by using the existing services that they are familiar with. As a designer in the space, I was very mindful of working with them and not for them.

Towards the end, Andrew along with his team could build content from a simple clipart based flyer to a stepwise video on the google site.
When the weather started supporting and after we were vaccinated, we put up the pop-up stall outside the building. We got a chance to show our services and spread the word about collaboration.

We were out in the sun from March to April every Tuesday and we could enroll 5 people each week. We spread the word about season fruits and vegetables talked with community people about their favorite foods.
Remember, the school just beside the food pantry? To develop wrap around services for the community, I took the opportunity to do a cold call at the school's door on a sunny day when were out at the pop-up stall and asked the concerned person if they could spend two mins to visit us at the pop-up stall. Turns out she was the principal of the school. We then discussed the shared vision to bring collective impact to this issue and the wraparound support service idea came to life.
We went live with our first nutrition workshop in collaboration with Dyckman Farmhouse Museum and Garden Kitchen lab using the facebook group.

Feedback from the community

“My children are engaging more in the kitchen and have started indulging in eating healthy after the probe activity. I am really forward to bring my neighbors into this program too”

- Martha Guzman, Participant from Cultural probe
Sustaining the Intervention

To sustain this intervention, I worked with Director of Nutrition at NYCP to correspond with an intern. We have hired the intern who is a graduate professional in Nutrition. The intern is hired by the director. The intern is looking to develop the community for her thesis under the guidance of Andrew and his team at New York Common Pantry. The Missing Ingredient is onward and upward from here!

The Missing Ingredient has the potential to help us communicate more effectively with our participants, and provide more community-informed programming.

Andrew Maslowski
Senior Public Nutritionist, NYCP

Feedback from the NGO

"I am really looking forward to continuing to allow this group to grow, folding in physical activity and continued group learning for future program iterations. The attention to detail and addressing the specific needs of the community for continuing to improve healthy behaviors is both new to our program offerings but also approachable with its human centered design model."

Ora Kemp,
Director of Nutrition, NYCP

Jenny Coraisaca
Thu, Apr 22, 10:03 PM (6 days ago)

Nidi,

On behalf of Live Healthy! Program, I wanted to say THANK YOU! I wanted to let you know how much we appreciate the knowledge, skills, and creativity you brought to our team. You have supported us in our efforts to create a culture of health in the communities we serve through "The Missing Ingredient." We really appreciate everything that you taught us.

Good luck and congratulations on your well-deserved success!

Yelitza Aguilara
Thu, Apr 22, 9:58 AM (10 hours ago)

Nidi -

Thank you for your help. I learned so many tips from witnessing your design process. I love your visuals, as I've told you in the past!

What time is the thesis event? I would like to save the date on my calendar.

Warmly,
Yelitza
My theory of change shows how building relationships through honest conversations leads to change at various stages in my intervention.

From my research, about childhood obesity, I learned that children are prone to develop the habits that they are surrounded with. The environment in which people are not necessarily the choices they make but sometimes the choices that they have. However, there are many local nonprofits who are engaged in fixing this environment. My thesis focuses on supporting their efforts to educate, persuade and facilitate conversation within the community directly from the experts and leverage the power of two-way communication and community collaboration to build healthy communities.

As my theory of change indicates there are set of preconditions which are required to address especially how can we bring curiosity and support system that leads to growth for nutritionists and also for the participants.

Nutritionists needs to understand that to improve diets we need to see what participant’s current food behaviors and build environment looks like. The community of people can sustain themselves if they have a sense of belongingness internally within the community and with nutritionists. I believe that creating a safe space where they can build their community with friends and family builds support.

Due to pandemic, everything is transitioning into an online space. The development of wraparound services within the community along with an online forum for continuing conversations where they can share, ask questions and learn from each other is what I believe will improve communication gap between nutritionists and communities, and strengthen the neighborhood support services to create sense of belongingness and bring curiosity amongst participants to learn about nutrition and sustainable food systems.

Although this Theory of Change is based on extensive research, prototyping and co-creation with stakeholders, there are some important assumptions to acknowledge. We are assuming that due to pandemic, families have started transitioning into online communities and participants are doing a lot of communication for their children with school through Facebook. Most of the NGO participants are using one or the other online tool. For nutritionists, I am assuming are comfortable to facilitate in an online space.
### THE TEAM
- NY Common Pantry (NYCP) Bronx Team
- Andrew Maslowski (Senior Public Nutritionist—NYCP)
- (Community Partner)
- Nidhi Desai (me)

### ADVISORS
- Sloan Lee (Thesis)
- Program Chair

### PARTICIPANTS
- Co-creation participants
- Nutrition educators
- Doctors & Caregivers
- Online communities
- Policy Makers Nutrition Summit
- New York City Montessori Charter School

### TOOLS & SPACE
- Zoom
- Google Suite
- Adobe Suite
- Laptop
- Cellphone
- Keynote
- Slack
- Miro
- Office Supplies (Post-its, paper, writing supplies, internet connection)
- DSI Space
- Home (US & India)
- Facebook
- WhatsApp
- Text Messaging Service

### LOGICAL FRAMEWORK

#### Inputs

<table>
<thead>
<tr>
<th>CO-CREATING &amp; TESTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Co-designing cultural probe with Nutritionists and participants</td>
</tr>
<tr>
<td>- Debriefing session to evaluate insights from probe</td>
</tr>
<tr>
<td>- Testing the probe with team</td>
</tr>
<tr>
<td>- Making five Cultural probe kit</td>
</tr>
<tr>
<td>- Distributing on Farm share day</td>
</tr>
<tr>
<td>- Collecting &amp; Sharing probes through google drive &amp; through text messaging</td>
</tr>
<tr>
<td>- Co-creating necessary materials for the facebook group, website, and other communication Materials with NYCP team</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BUILDING RELATIONSHIPS &amp; CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Volunteering 6 weeks in person to learn about the system, meet the community and support the work at NGO-NYCP</td>
</tr>
<tr>
<td>- Facilitation workshop with Team NYCP to align goals through zoom and miro</td>
</tr>
<tr>
<td>- Using existing resources like canva and google suite to make social media plan and design materials to build capacity for educators</td>
</tr>
<tr>
<td>- Creating promotional materials for inviting participants to join the facebook group</td>
</tr>
</tbody>
</table>

#### Activities

<table>
<thead>
<tr>
<th>PILOTING &amp; LAUNCHING</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Launching Facebook group</td>
</tr>
<tr>
<td>- Pop-up at the NYCP in Bronx every tuesday during farm share distribution day from March - April</td>
</tr>
<tr>
<td>- Promotion through Instagram, Newsletter and flyers</td>
</tr>
<tr>
<td>- Collaborating with New York City Montessori Charter School to conduct workshops and bring community to Facebook and enrollments for farm share</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Feedback during facilitation workshop</td>
</tr>
<tr>
<td>- Follow-up with participants</td>
</tr>
<tr>
<td>- Integrating facebook group with other collaborations</td>
</tr>
<tr>
<td>- Enrollments at Pop-up Stall</td>
</tr>
<tr>
<td>- Participants joining facebook group</td>
</tr>
<tr>
<td>- Follow-up with team for using social media</td>
</tr>
</tbody>
</table>

#### Outputs

<table>
<thead>
<tr>
<th>Wrapperound support within neighborhood school to conduct workshops with Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Community facilitated in three languages on Facebook group, an independent website for collaboration, A Pop-up at NGO every week from March - April, Social Media Channels to share promotional Materials all through existing digital channels familiar to the team at NYCP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intermediate Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>- No. of families attending the after school program</td>
</tr>
<tr>
<td>- No. of participants joining the facebook group</td>
</tr>
<tr>
<td>- Types of discussions during the workshop and on facebook group</td>
</tr>
<tr>
<td>- No. of likes, Comments and posts shared on the group</td>
</tr>
<tr>
<td>- No. of people coming to the pop-up stall at NYCP</td>
</tr>
<tr>
<td>- No. of Questions asked about Nutrition/Healthy living</td>
</tr>
<tr>
<td>- No. of queries received</td>
</tr>
<tr>
<td>- No. of participants their friends and family</td>
</tr>
<tr>
<td>- No. of enrollments signed up through pop-up and website</td>
</tr>
</tbody>
</table>

#### FOR NGO - NY COMMON PANTRY

| - Improving neighborhood ties and collaborations |
| - Improving communication within the NGO with build capacity to support participants |
| - Nutritionists are more equipped to create content according to the needs of participants |
| - Nutritionists have an increased knowledge of their participants food cultures, their needs and challenges when it comes to healthy eating |
| - Nutritionists are able to bring more enrollments in the farm share program |
| - NGO able to reach more families to support nutrition security through outreach plan |

#### Long term Outcomes

| - Improve neighborhood wrap around support service for families |
| - Improve the communication between participants and the nutrition educators |
| - Bring more engagement from nutrition educators for the participants as per their needs and challenges |
| - Familiarize participants with sustainable food systems and upcoming programs along with their friends and family |
| - Create a space for two-way communication |
| - Overall, Improve consistent communication between nutrition educators and participants and Create a sense of belongingness and healthy communities through collaborations and shared vision |

#### FOR FAMILIES

<p>| - Strategies to develop healthy nutrition habits and community group for support |
| - Participants are able to communicate their needs &amp; challenges directly with the nutritionist at food pantry |
| - Participants have an increased understanding of different food cultures and are cooking at home |
| - Participants have an increased knowledge of sustainable food systems |
| - Participants are able to make their friends and family to learn about nutrition, healthy living and sustainable food systems |
| - Participants have sense of belongingness within the community |</p>
<table>
<thead>
<tr>
<th>Indicators</th>
<th>Description</th>
<th>Method</th>
<th>Frequency</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of participants took part in cultural probe</td>
<td>Number of participants who took part in prototyping cultural probe</td>
<td>Individually counted</td>
<td>Before Intervention</td>
<td>Input</td>
</tr>
<tr>
<td>No of families attending the nutrition workshop through school</td>
<td>Number of families from school showed interest in attending nutrition workshop</td>
<td>Recorded through digital platform</td>
<td>During Intervention</td>
<td>Output</td>
</tr>
<tr>
<td>No. of participants joining the Facebook group</td>
<td>Number of participants showed interest in joining the Facebook group</td>
<td>Recorded through digital platform</td>
<td>After Intervention</td>
<td>Output</td>
</tr>
<tr>
<td>Types of discussions on Facebook group</td>
<td>Types of discussions taking place with group admins and within the community</td>
<td>Recorded through digital platform</td>
<td>After Intervention</td>
<td>Output</td>
</tr>
<tr>
<td>No. of likes, comments and posts shared on the group</td>
<td>Number of people showing engagement and interest</td>
<td>Recorded through digital platform</td>
<td>After Intervention</td>
<td>Output</td>
</tr>
<tr>
<td>No of times people approached educators through Facebook group</td>
<td>Two-way communication happening between participants and nutrition educators</td>
<td>Recorded through digital platform</td>
<td>During Intervention</td>
<td>Output</td>
</tr>
<tr>
<td>No. of people coming to the pop-up stall at NYCP</td>
<td>Number of people showing interest and asking about the group</td>
<td>Observation</td>
<td>During Intervention</td>
<td>Output</td>
</tr>
<tr>
<td>No. of questions asked about Nutrition and Healthy living</td>
<td>Number of people showing curiosity and learning about nutrition &amp; healthy living</td>
<td>Observation</td>
<td>During Intervention</td>
<td>Output</td>
</tr>
<tr>
<td>No. of participants their friends and family</td>
<td>Number of people asking their friends and family to join the Facebook group</td>
<td>Recorded through digital platform</td>
<td>During and after Intervention</td>
<td>Output</td>
</tr>
<tr>
<td>No. of enrolments signed up through pop-up and website</td>
<td>Number of people joining the farm share program at pop-up</td>
<td>Recorded in-person</td>
<td>During and after Intervention</td>
<td>Output</td>
</tr>
</tbody>
</table>

**Prototyping Questions**

- How can we look at the current conditions of the food system of our participants?
- What are the current constraints in the organisation to bring people together?
- How we bring different communities together to learn about healthy food?
- What is the current build environment for participants to bring healthy food home?
- What are the main barriers in cooking at home for parents and caregivers?
- How can we strengthen the current communication of the organisation?
- What do participants learn and implement from the nutrition workshops?
- How can we learn from the community about their needs and challenges?
- How can we engage more people to support in the journey of healthy living?
- How can we get the nutrition educators to speak directly with the participants?
- How do we know how farm share participants are using the produce?
- How can we facilitate conversation about nutrition between the community and build curiosity to learn about sustainable food system?

**Monitoring Questions**

- Did they shared more food with each other and had conversations?
- Are nutrition educators able to learn about participant’s current food environment and behaviors?
- Is the collaboration with the school helping families in building support for their children’s nutrition?
- Are participants able to communicate with other members of the group?
- Is the organisation able to reach more people to engage in the farm share program?
- Is the team at NYCP feel more supported with the intervention?
- Is the team feeling equipped to sustain the intervention?
# EVALUATION APPROACH

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Questions</th>
</tr>
</thead>
</table>
| Increase sense of belongingness within the community through wraparound support services | - Are the collaborations with support groups in the neighborhood helps develop the sense of belongingness within the community?  
- Are these collaborations increasing the farm share enrollments?  
- Are the families feeling supported to develop wholesome meals for their families?                                                                                                                                                  |
| Increase communication gap between community members and nutrition educators | - Are the community members able to reach nutritionist directly to speak about their needs and challenges to make wholesome meals?  
- Are nutritionists able to see what people are cooking and eating at home?  
- Is the team at NGO able to understand what are the gaps in their service and feel more equipped to address the gaps?                                                                                                                 |
There are many who helped me along the way on this journey. I want to take a moment to thank them.

First, I wish to thank my community participants and thesis partner. Their contribution has shaped my learning throughout. My thesis advisor Sloan leo for always encouraging to take the brave space and listening to untangle my thoughts. Our DSI Chair Miya Osaki who has always taught us to believe and build healthy relationships. My cohort at DSI for always being the best versions of themselves. DSI Faculties and all the thesis advisors for your words of encouragement and giving constructive feedback.

A special thanks to Fabiola Caceres from Garden Kitchen lab to connect me with Andrew and New York Common Pantry.

This year has been very hard personally and professionally and I want to thank my parents and family who went above and beyond to help me reach my goal. I am forever grateful for their patience and understanding. My friends and sibling: you put up with me being distracted and missing many events. I hope to have time now to reconnect with each of you.

Finally, to husband, Vismay: your love and understanding helped me through the dark times. Without you believing in me, I never would have made it. It is time to celebrate; you earned this degree right along with me.

REFERENCES


(2) New York State Nutrition, Physical Activity, and Obesity Profile. (n.d.).


