



# Enhancing Health and Nutrition Literacy in the Virtual Environment: Bidirectional Partnership with a Multidisciplinary Community Based Organization

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## Abstract

Our project focuses on addressing the lack of appropriate nutrition education for children with and without developmental disabilities and their families, as well as the disproportionate rates of obesity, cardiovascular disease and diabetes in Washington D.C.'s Wards 7 and 8 through improving health literacy and activating interest and access to healthy foods. Our team has collaborated with the National Children's Center of Ward 8 in order to promote community strengthening and engagement through urban agriculture and a virtual nutritional literacy program to families of children with developmental disabilities.

The Health and Nutrition Initiative is a virtual health education curriculum that provides instruction on the role nutrition plays in maintaining a healthy lifestyle and demonstrates how to create healthy, cost-effective meals. Each month, students from Georgetown University deliver two one-hour virtual sessions on a specific body system or nutrition topic. These sessions consist of both didactic and experiential learning components, which include cooking demonstrations by NCC's chef.

The virtual format of the nutrition sessions has proven to be an effective method of curriculum delivery. When polled with an 85% response rate, 100% of participants "Agreed" or "Strongly Agreed" that their knowledge of nutrition increased as a result of the sessions, and were satisfied with the content of the curriculum. Challenges of the virtual curriculum include lack of a hands-on experiential cooking experience for families to increase learning and engagement. Further directions include including cultural culinary ingredients and further dissemination and community building within the NCC community.

## Introduction

Washington, D.C.'s Wards 7 and 8 have significant health disparities compared with other sectors of the city. The health outcome inequities are related to social determinants including systemic racism, food insecurity and lack of healthy food access. The Georgetown Department of Family Medicine Community Health Division (CHD) partnered with National Children's Center (NCC), a multidisciplinary early childhood education center that provides services to families of children with developmental disabilities and developmental delay, to create a virtual nutritional health literacy program to complement the Center's urban gardening initiative.

Washington, DC's rate of food insecurity was 16% in 2020, with the largest proportion of food insecure households located in Wards 7 and 8. Over 90% of D.C.'s Ward 7 and 8 residents identify as Black or African American. In 2019, non-Hispanic Black households with children were more than twice as likely to experience food insecurity as non-Hispanic White households with children (Jensen et al., 2021). Children with disabilities, such as those that NCC provides services to, are also at a greater risk of experiencing food insecurity than children without disabilities (Karpur et al., 2021). Additionally, Washington, DC's grocery gap contributes to decreased accessibility of fresh food in areas that NCC provides services to. Only one grocery store is available for the 80,000 residents living in Ward 8. In contrast, the wealthiest wards of Washington, D.C. have a grocery store for approximately every 9,000 residents (Jensen et al., 2021).

Partnering with NCC staff and community members, the Health and Nutrition Initiative was developed to educate family members of children with developmental disabilities and delay about the intersection of nutrition and health and the importance of maintaining a healthy diet.

## Methods

A virtual Health and Nutrition curriculum was developed that focuses on the intersection of nutrition and the health of body systems. A pre-development survey was distributed virtually to families receiving services from NCC to identify current eating behaviors, areas of interest, and cultural influences on food choices. Using these data, students developed a curriculum based on the topics of most interest to the family members surveyed.

There are two virtual one-hour sessions each month delivered over Zoom. Each session is advertised to family members virtually and in person by family engagement members of NCC. A student lead is identified to facilitate planning sessions and direct the flow of content. A family member representative is engaged with the student planning group to ensure that sessions focus on topics relevant to families. Parents have provided slide material and personal narratives, as well as brought in additional flexibility in content and its volume presented that was adapted to families.

The first session of the month focuses on:

- Background information about a particular body system including a basic overview of physiology and common pathology
- Development of the system during early childhood
- How nutrition impacts body system development and function throughout the lifespan

The second session of the month provides practical information about how to develop healthy nutrition habits in a manageable way. This session includes:

- Background information on major nutrients that contribute to the development and function of a particular body system
- Identification of foods that contribute to a healthy body and mind
- A cooking demonstration from NCC's chef that illustrates how to cook a quick, healthy meal that promotes the health of each particular body system

## Results

The virtually administered Health and Nutrition Initiative sessions proved to be a viable approach to health education.

The NCC families in attendance were given online polls, standardized by University Centers for Excellence in Developmental Disabilities Education (UCEDD), at the end of each second virtual session. When polled, 100% of participants reported they either agreed or strongly agreed that (1) their knowledge of nutrition and healthy diets had increased and (2) they were satisfied with the Georgetown nutrition sessions with an 85% response rate. Between 9 to 15 families attended the sessions. Participants became more engaged with every session, as demonstrated by increased participation in activities and specificity of questions. Parents report increased awareness of food items when grocery shopping and a more positive outlook on self-efficacy in healthy eating behaviors.

Families who "graduated" from NCC have been able to stay engaged by incorporating their experiences or needs related to specific diets for their children's overall health or chronic conditions.



## Future Directions

1. Develop a collective culinary consciousness and put ingredients and dishes into wider circulation including the development of a Health and Nutrition Initiative recipe book
2. Increase appreciation for families' culinary heritage through different cooking techniques. This focus includes the centrality of African-diasporic people in defining the tastes, and classic dishes of African-American fusion cuisine
3. Increase healthy behaviors by connecting families to their traditions and indigenous dishes
4. Continue to work for food justice through encouragement of collective gardening with NCC spread these ideas to the local and larger community. This will increase access to fresh, safe, and culturally appropriate food.

## Discussion

The virtual format of this nutritional health literacy program has been successful in reaching its audience in an accessible manner. Convenience of online sessions appears to have reduced time and transportation burdens. Families who are unable to attend live are still able to view recordings and learn at their own pace. Fully in-person sessions may not have allowed for this much flexibility. Furthermore, community engagement was not sacrificed despite the online format. The pre-survey helped students prioritize the community's interests when designing curriculum. This led to an understanding that families were most interested in learning about brain, gut, and immune system health, among other systems. Sessions included creative avenues for family engagement such as wellness check-ins and interactive polling. The family member representative was sometimes asked to speak about their experiences and best practices when discussing a particular topic, which helped initiate conversation amongst participants. Working with NCC chefs for cooking demonstrations helped connect the sessions to children's experiences at the Early Learning Center. Cooking demonstrations also featured many ingredients from the NCC garden, an important element of the children's learning experience at NCC and a space where community events have been held. Thus, these sessions have connected with other aspects of the participating families' overall experiences at NCC.

Additionally, students prioritized community feedback while developing curriculum. They consulted with the family representative and NCC staff to ensure that each session's content was relevant and would be meaningful for participants. Through this feedback process, students of the Community Health Division learned to tailor the curriculum to an appropriate language and content. An emphasis was also placed on the particular health needs of audience members. For instance, sessions featured content on child development and relationships of the session topic to developmental disabilities and developmental delay.

While this curriculum has largely proved effective, there are challenges due to the virtual format. Families are unable to directly engage with the experiential learning portion of the curriculum due to public health restrictions. To address this challenge, further goals for this project include the development of a cooking class that adheres to public health guidance for the ongoing COVID-19 pandemic.

Though this partnership is centered in Washington DC, food access and nutrition challenges are a national issue. This program model could potentially be replicated at other institutions to increase health literacy and assist in reducing associated health disparities.

## Conclusions

Due to the documented health disparities faced by those individuals living in Wards 7 and 8 of Washington D.C., the Georgetown University CHD felt the need to partner with NCC to develop a curriculum related to health education for parents of children with and without developmental disabilities and delay. Although these educational sessions have delivered in a purely virtual format, preliminary data indicates that parents have increased their knowledge related to healthy eating and nutrition and are satisfied with the content of sessions thus far. While these results are promising, the CHD hopes to lead greater change within Wards 7 and 8 through interventions such as: a broader healthy-eating recipe book, further integration of cultural dishes and increased engagement with the community at NCC.

## References

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