

# Food Culture, Nutrition Education, Food Systems and Urban Food Sovereignty

Brooklyn College  
Student and Faculty  
Collaborative Research Posters  
Fall 2020

# Exploring ethnic restaurants as site for nutrition interventions: A qualitative study with Hispanic Caribbean restaurants in New York City

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## BACKGROUND

- Hispanic Caribbean (HC) communities (Cubans, Dominicans and Puerto Ricans) have a high prevalence cardiovascular risk factors linked to eating behaviors.<sup>1,2</sup>
- HC diets unhealthy aspects include the salience of fried foods, the overreliance on simple starches, and large portion sizes.<sup>3</sup>
- Food environments influence individual eating behaviors.<sup>4</sup> Restaurants are an increasingly important source of food, particularly for Hispanic communities.<sup>5,6</sup>
- Research Gap:** Public health intervention focus on large-chain restaurants. Ethnic community restaurants are a largely untapped area of research.<sup>7-9</sup>

## Objectives:

- Examine HC restaurant cooks/chefs' and owners' attitudes concerning the healthfulness of the HC diet, diet-related health disparities in the HC community, and their perceived role in tackling these issues
- Document factors potentially influencing their participation in future food environment improvement interventions.

## METHODS

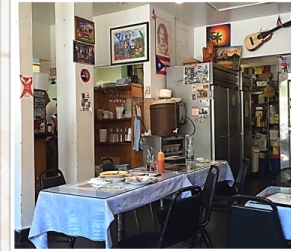
- Qualitative study: Semi-structured Key Informant (KI) interviews with owners, managers and cooks serving HC food in New York City (n=19).
- Recruitment: Snowball approach, starting with community networks in HC-dense NYC neighborhoods, focusing on HC communities in NYC.
- Iterative content analysis, including Atlas.ti

## RESULTS

### Sample Description

**Table 1. Sample Characteristics (n=19)**

Restaurant Characteristics:		Participant Characteristics:	
Type of restaurant		Gender (% male)	13 (68%)
• Waiter service/sit-down	12 (63%)	Age (mean, min-max)	44.3 (24-80)
• Counter-style/take-out	5 (26%)	% with culinary training	3 (16%)
• Other (food stand / catering)	2 (10.5%)	Yrs. of experience (mean, min-max)	17.9 (3-42)
Cuisine:		Role in Restaurant:	
• Dominican	13 (68%)	• Owner	4 (21%)
• Puerto Rican	5 (26%)	• Chef/cook & owner	5 (26%)
• Cuban	1 (5%)	• Manager	5 (26%)
		• Chef/cook & manager	1 (5%)
		• Cook/chef	4 (21.0%)



### Describing HC Foods

First of all, **it's just the culture**, a lot of people prefer not to eat a salad instead of all the rice. It's always the carbs [...] It's easier and it's cheaper to make a bowl of rice, beans, and a meat to just buy a salad because it's so expensive. [...] Everything is getting more expensive [...] It's harder just to eat healthy these days.



I mean, **I don't think it's healthy at all**. We have a lot of carbs, A LOT. Everything like fried stuff. I don't think it's healthy because to be honest we never grew up so much with vegetables and salad. It's mostly rice, beans, meat, *pernil*, you know, a lot of good food, but honestly, it's not healthy.

### Role in community health

- Mixed responses, re: perceived role in community health

**We're a business so we have to make happy our clients** whatever they want to eat. [...] We have options for everybody. Instead of frying things we'll have steamed. We have brown rice too. We have salad because we know that a lot of people, you know, it'll help [health] issues. So [if] they have high [blood] pressure, high cholesterol, **we'll have options**.

- KI identified healthful practices they could do to improve food offerings.

- Salads and non-starchy vegetable offerings
- Steamed and grilled dishes
- Fried foods and salt use



Barriers for change:

- Perceived customer preferences
- Notion that HC cuisine is inherently unhealthy
- Environmental constraints (kitchen space)

I would add a salad bar, natural juices, and smoothies. **But people don't come for that**. People come looking for what we offer. [...] In this neighborhood there are options and if someone wants [healthy] options, they go next door [...] It is not in our food. **Our food is not the healthiest**. [...] We try to lower the salt, but if eliminated completely, [clients will complain]. It's like taking hot sauce from a Mexican – they will complain.

## CONCLUSION

- There is a potential disconnect between interventions and restaurants: KIs identified several improvements to food offerings, but omitted those usually encouraged in interventions (portion control, promotion of healthier options, provision of nutrition information).
- Engaging ethnic restaurants in the design of interventions can lead to sustainable changes, that will improve nutritional outcomes.

### Future directions:

- Quantitative assessments of HC restaurant nutrition environments
- Community engaged research engaging customers and wait staff

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## ACKNOWLEDGEMENTS

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# Taxing Sugar-Sweetened Beverages in Latin America: A qualitative examination of the Mexican and Chilean experience

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## INTRODUCTION

- The World Health Organization has recommended fiscal policies (taxes and subsidies) as a tool to motivate healthy eating, particularly to address sugar-sweetened beverage (SSB) consumption.<sup>(1)</sup>
- Study Objectives: Using Mexico and Chile as case studies, this qualitative research aimed to (1) Trace and compare the SSB tax policy process, and (2) examine the role and perspectives of outside government stakeholders in the process (Industry, civil society, and researchers).
- The study contributes to past research examining the Chilean and Mexican taxes, individually and mostly through quantitative approaches.

## Background

Relevant, pre-tax indicators:

	Mexico	Chile
Obesity prevalence (adult)	32.4% <sup>(2)</sup>	25.1% <sup>(3)</sup>
Type 2 Diabetes	14% <sup>(4)</sup>	9.4% <sup>(3)</sup>
SSB consumption (L/per capita)	160 <sup>(1)</sup>	116 <sup>(3)</sup>

## MATERIALS & METHODS

- Qualitative, cross-sectional study design.
- Data collection: Key informant (KI) interviews via telephone/Skype (Feb-Aug 2018) with 24 KIs involved in the SSB tax policy process:

	Mexico	Chile	Global
Researchers (n=16)	5	5	6
Civil Society (n=5)	3	2	0
Food & Beverage Industry (n=3)	1	0	2

- Analysis: Two independent coders analyzed the transcripts, using emergent and a priori codes, using Dedoose. The results were triangulated and complemented with a document review, including research and newspaper articles, and reports covering the pre- and post-tax periods.

## RESULTS

Roles in the policy change process:

### Researchers

Greater participation in early stages (evidence building) and later stages (Evaluation).  
Produce evidence for or against, used by industry and civil society coalitions to frame issue to policymakers and the public.

### Civil society

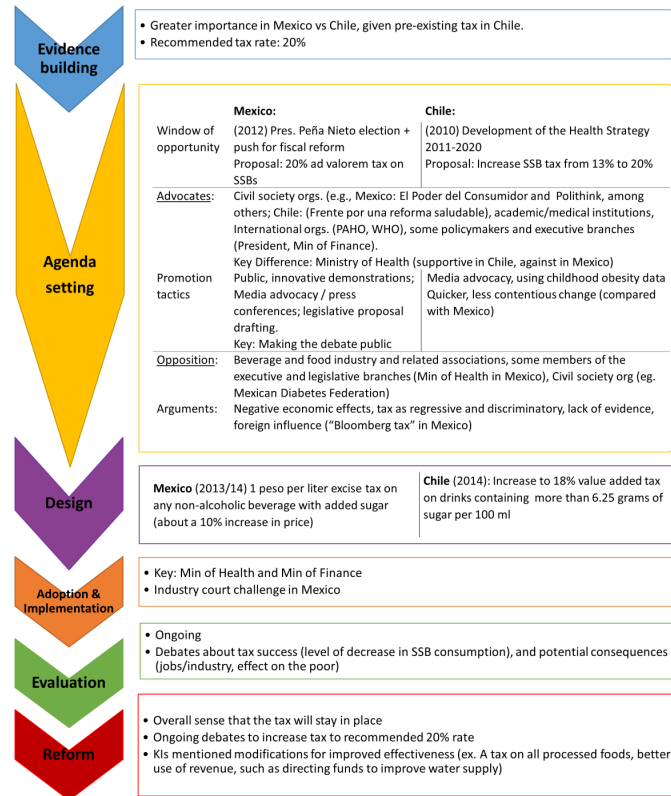
Knowledge-brokers in early stages, using research findings as a tool to interact and advocate for particular policy solutions with policymakers.  
Key in organizing efforts in Mexico, counteracting industry tactics

### Food and Beverage Industry (F&BI)

Prevalent and controversial influence  
Want to be seen as “part of the solution” to public health problems, even if their ultimate goal is perceived to be profit.

What is usually perceived about industries is that their sole objective is to sell, when actually our objective is to create products that can fulfill the buyer's necessities in the short and in the long term. – F&BI (Mexico)

## The policy change process



During the process, we [compiled] all the evidence that was available at that time. This is 2014, so [there] wasn't that huge amount of real practical evidence from different countries. – Civil Society (Chile)

Big industries always work with agreements under the table. We put it on the table all the discussion. [...] We [also] set the terms of the debate [as] “Tax 10% or tax 20%.” [...] It is no longer in doubt whether or not there will be a tax, what is in doubt is how much will be the amount. – Civil Society (Mexico)

During the process, we [compiled] all the evidence that was available at that time. This is 2014, so [there] wasn't that huge amount of real practical evidence from different countries. [...] Chile was among the first in Latin America. We worked a very extensive on a national policy brief that we gave up to different policy makers, both in the ministries and also in the different chambers of the parliament. – Civil Society (Chile)

In many countries of Latin America, also in Chile, where industry continues to be part of its circles of power and decision-making, [this] sometimes limits power, not only designing and promoting public policy that affects their interests, but also monitoring and the evaluation of it. – Civil Society (Mexico)

Sin taxes are a simple policy lever you can pull. – Researcher (Global)

Since the first year, there have been changes and there has been a decrease in consumption, and that, of course, works, especially because people start to understand that [drinking SSBs] is a bad thing. And that, of course, that will be reflected more and more. Children already say, “No, not soda, because it's bad”. – Civil Society (Mexico)

The use of the resources collected by the tax [need to be] destined for programs for the prevention of obesity, which is something that has not been achieved, [such as] access to potable water. – Civil Society (Mexico)

The tax [is] probably less effective one than [it] could be. [...] If we want to move to an [obesity prevention] framework, sin taxes that are more comprehensive and not product specific, [for example] a very good comprehensive tax for all the ultra-processed foods, for example. – Researcher (Chile)



“Share the Diabetes”  
Public demonstration example (El Poder del Consumidor, Mexico)<sup>(5)</sup>

## CONCLUSIONS

- While SSB taxes are promoted to reduce diet-related conditions, KIs described the tax as a source of revenue, with needed improvements to better address the health outcomes.
- SSB taxes are one part of a larger nutrition policy toolbox.
- Further research to address factors influencing the dissemination of “sin tax” policies, and contrasting perspectives regarding the evidence on the tax effectiveness. Other venues for research include examining unsuccessful cases, and cross-regional comparisons.

## ACKNOWLEDGEMENTS

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## Brooklyn College Nutrition Clinic: Nutrition Outreach and Education

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### Abstract

The Brooklyn College Nutrition Clinic provides nutrition counseling to undergraduate and graduate students. The nutrition clinic seeks to: improve the nutrition status of the BC student body by providing nutritional counseling; educate students in making healthful food choices to reduce risk for chronic diseases by encouraging dietary behavior change; educate students on menu planning, food selection and preparation techniques; help students to incorporate new eating behaviors into their lifestyle; and provide ongoing support to guide them to self-sufficiency. The clinic provides individual and group counseling for modified diets, computerized nutritional analysis, and education in the prevention of obesity, diabetes, hypertension, and hypercholesterolemia.

Additionally, the Nutrition Clinic provides training for BC dietetic interns and nutrition students. The interns work under the supervision of the Registered Dietitian and provide direct patient care and counseling. In accordance with our learning outcomes, this training has afforded students with experiential activities that foster knowledge of cultural diversity and promote interaction with culturally diverse clients and professionals. The clinic satisfies a portion of the 250 independent practice hours requirement of the dietetic internship program.

### Nutrition Clinic Mission Statement

The Brooklyn College Nutrition Clinic seeks to improve the health and nutrition status of the BC student body by providing nutritional counseling, education and support to reduce the risk for chronic disease. The clinic provides students with access to effective intervention strategies for the promotion of healthy eating and lifestyle behaviors.

## FREE Brooklyn College NUTRITION CLINIC

Brooklyn College nutrition clinic offers FREE nutrition consultations with a registered dietitian!

We will analyze your diet, provide you with nutrition recommendations and develop a plan to help you achieve your goals.

#### WHY VISIT US?

- Nutrition Counseling
- Weight Management
- Medical Nutrition Therapy
- Prenatal Nutrition
- Disease Prevention
- Sports Nutrition
- Vegetarianism/Veganism
- Healthy eating and more!

- Body Composition Assessment
- Diet Analysis

**WHERE:** Room 326NE  
**WHEN:** Monday by appointment only  
Tuesday 11am-3pm  
Wednesday 10am-2pm  
Thursday 12-5pm

Walk-ins welcome or to schedule an appointment please email: [nutritionclinic@brooklyn.cuny.edu](mailto:nutritionclinic@brooklyn.cuny.edu)

Nutrition services are provided by the BC Health Clinic, DCHA, and provided in collaboration with the Department of Health and Nutrition Sciences. All visits are confidential.

### Nutrition Clinic Services

#### Individualized Nutrition Counseling

The Nutrition Clinic has provided individualized counseling sessions to more than 300 students since 2013. Initial consultations provide one hour of personalized assessment and counseling with follow up visits of 15 to 30 minutes depending on client needs. In addition to dietary analysis and body composition calculations, the clinic provides personalized nutrition counseling for the following conditions:

- Weight Loss/Weight gain
- Sports Nutrition
- Diabetes/ Prediabetes
- Hashimoto's Thyroiditis
- PCOS
- Anemia
- Vegetarian/vegan diet
- Disease prevention (cancer, diabetes, hypertension, hypercholesterolemia)
- Healthy eating on the go
- Healthy eating on a budget
- IBS
- Prenatal nutrition

#### Nutrition Education and Cooking Series

The Brooklyn College Nutrition Clinic has a monthly cooking series for students. Workshops focus on budget friendly, easy meal preparation, and easy and nutritious breakfast recipes that can be prepared in advance and in less than five minutes. Participants are given hands on training on how to create nutritious meals and how to adapt recipes for different dietary needs.

#### VANILLA WALNUT OVERNIGHT OATS

Makes 2 servings

- 1 cup old fashioned rolled oats
- 1 tablespoon olive oil
- 1/4 cup vanilla hazelnut
- 1/4 cup plain Greek yogurt
- 1/2 cup milk (dairy or non-dairy)
- 1/2 teaspoon vanilla extract

**Directions:** Visual ingredients together until thoroughly combined. Refrigerate in sealed container for at least 10 hours, or overnight. Eat cold and top with your choice of fruit and nuts.

**Substitute notes:** Walnuts can be substituted for any other nut or omit if prefer to have a nut free variety. Greek yogurt can be substituted with any kind of milk. Coconut powder for chocolate hazelnut.



#### EGG MUFFINS

Makes 10 servings

- 1/2 cup oil (olive, canola)
- 1/2 cup onion (diced)
- 1/2 cup bell pepper (diced)
- 1/2 cup carrot (diced)
- 1/2 cup mushroom (diced)
- 1/2 cup spinach (chopped)
- 1/2 cup cheese (shredded)
- 1/2 cup milk (dairy or non-dairy)
- 1/2 cup egg whites (beaten)

**Directions:** Preheat the oven to 350 degrees. Coat a 12-cup muffin pan with oil and spray with non-stick cooking spray. In a large mixing bowl, whisk together the eggs, egg whites and milk. Add the onion, bell pepper, carrot, mushroom, spinach, and cheese. Stir in the egg whites and milk. Pour the mixture into the muffin pan. Bake for 12-15 minutes. Let cool for 5 minutes. Serve with optional hot sauce.

### Building a Healthy Plate Workshop

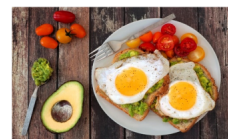
In our healthy plate workshops the Registered Dietitian provides nutrition education about food groups, portion sizes, how to build a healthy plate as well as simple swaps to make over your plate to maximize nutrition. The workshop provides tips and tricks to make simple swaps with healthier ingredients for meals and snacks. Simple swaps can lead to calorie reduction while also boosting nutritional value. We also introduced ways to incorporate fruit, vegetables and fiber to meals while reducing the consumption of processed foods and added sugars.

#### Simple Swaps



#### EGGS, BACON, PANCAKES & TOAST

Calories: 806 kcal



#### TOAST, AVOCADO, EGGS & TOMATOES

Calories: 424 kcal



#### GENERAL TSO CHICKEN

Calories: 1180kcal



#### GINGER CHICKEN & BROCCOLI

Calories: 300 kcal

### Nutrition Workshops

**BROOKLYN COLLEGE COOKING & NUTRITION WORKSHOP SERIES**

Join us for a cooking demonstration led by the Brooklyn College Nutrition Clinic.

- Explore nutritious, easy to make breakfast recipes.
- Discuss ingredients and their health benefits.
- Learn how to incorporate healthy food preparation & how to use ingredient nutrition labels.
- Taste your creations.

**Tuesday, April 25th**  
12:30-2:00  
Brooklyn College Campus  
Room 326NE or [Klein@brooklyn.cuny.edu](mailto:Klein@brooklyn.cuny.edu)

**BROOKLYN COLLEGE COOKING & NUTRITION WORKSHOP SERIES**

Join us for a cooking demonstration led by the Brooklyn College Nutrition Clinic.

- Explore nutritious, easy to make meals on a budget.
- Discuss meal preparation tips and tricks.
- Taste your creations.

**Tuesday, May 9th**  
12:30-2:00  
Brooklyn College Campus  
Room 326NE or [Klein@brooklyn.cuny.edu](mailto:Klein@brooklyn.cuny.edu)

### Early Childhood Center Training and Workshops

The Nutrition Clinic partnered with the Early Childhood Center (ECC) to provide a training to staff. Staff received a two day, 4.5 hour, training that covered nutrition topics for toddlers and early years. We trained:

- Food groups & nutrient needs at different ages and stages
- How to build a healthy plate
- Choking hazards
- Portion sizes
- Fussy eating
- Nutrition Myth Busters

#### PORTION SIZES FOR KIDS

	2-3 YEARS	4-8 YEARS
VEGETABLES	1 cup	1.5 cups
FRUIT	1 cup	1.5 cups
GRAINS	3 oz equivalent*	5 oz equivalent*
PROTEIN	2 oz equivalent*	4 oz equivalent*
DAIRY/CALCIUM	2 cups	2.5 cups
OILS	2 teaspoons	4 teaspoons

From USDA Choose My Plate

\*Serving sizes above are the daily recommended intake.

### Student Interns and Volunteers

#### Brooklyn College Dietetic Internship Independent Practice Rotation

Dietetic Interns gain supervised practice experience by providing nutrition counseling, taking anthropometric measurements, developing nutrition education materials and facilitating workshops for our culturally diverse student population.

More than 820 hours of clinical supervision have been provided through the Nutrition Clinic since 2012.

#### Nutrition Student Clinic Volunteers

Brooklyn College Nutrition Students are provided the opportunity to gain nutrition experience in the clinic. Students have assisted with marketing, social media campaigns, recruiting, data collection, taking anthropometric measurements, creating resources, data analysis, nutrition education resource development, as well as workshop facilitation and observation of counseling sessions.

More than 500 hours of volunteer opportunities have been provided through the Nutrition Clinic since 2014.



## Brooklyn College Nutrition Clinic: 2013-2018

Roseanne Schnoll, PhD, RDN, CDN, Susan Jakuboski MS, RDN, CDN  
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### Abstract

The nutrition clinic was established in 2012 to address the health and nutrition needs of Brooklyn College students identified in the Freshman Health Initiative Study that was conducted in 2009 and 2010. Data were collected based on the Spring 2013-Spring 2018 participants. A total of 353 students were served (250 females, 103 males), average age 25y. Data analyses revealed that 47% of students were overweight or obese based on BMI scales, 36% of students were overweight or obese based on body fat percentages and 37% had a moderate or high risk of chronic disease based on an elevated waist to hip ratio. In addition, 29% were prehypertensive and 11% had high blood pressure. Seventy two percent of students consumed 2 servings or less of fruits per day and 64% of students consumed 2 servings or less of vegetables a day. Fifty-three percent of students reported having moderately high or extremely high stress and 65% of students did not wake feeling rested. The results of this study suggest that the BC student population is at an increased risk for chronic diseases. These findings underscore the need for nutrition intervention and lifestyle modification for the Brooklyn College community.

### Introduction

Undergraduate students at Brooklyn College, like many urban commuter colleges, have poor eating habits and unhealthy lifestyles, as they report increased stress, decreased sleep, and not enough time to meet nutritional and physical activity recommendations. The eating habits and lifestyles of college students contribute to chronic disease including metabolic syndrome and cardiovascular disease. The goals of the clinic are twofold:

- To provide much needed nutrition counseling to undergraduate and graduate students at Brooklyn College
- To serve as a platform for training BC dietetic interns enrolled in our Dietetic Internship Program (part of the MS in Nutrition)

### Methods

#### Anthropometric Data

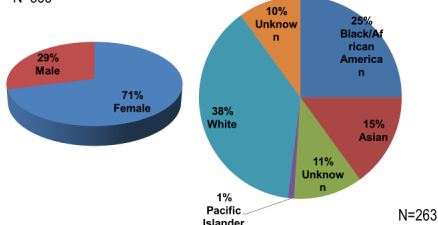
- Height
- Weight
- Body Mass Index (BMI)
- Body Fat Percentage
- Waist circumference
- Hip Circumference
- Waist to hip ratio (WHR)

#### Vital Signs

- Blood Pressure
- #### Diet and Lifestyle Questionnaire
- Intake forms
  - Survey

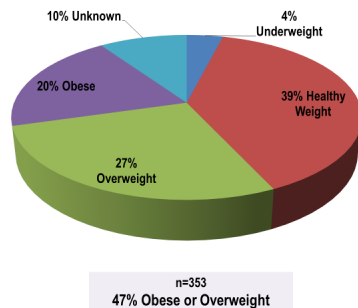
### Demographics

N=353

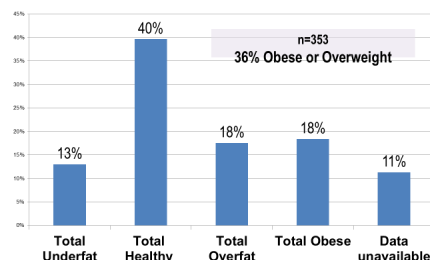


N=263

### ANTHROPOMETRICS Body Mass Index



### Body Fat Percentage



### Waist hip ratio

WHR	Male (n=85)	WHR	Female (n=213)	Total (n=298)	Percentage
0.95 or below Low Risk	73	0.80 or below Low Risk	115	188	63%
0.96 to 1.0 Moderate Risk	8	0.81 to 0.85 Moderate Risk	52	60	20%
1.0+ High Risk	4	0.85+ High Risk	46	50	17%

### Summary data

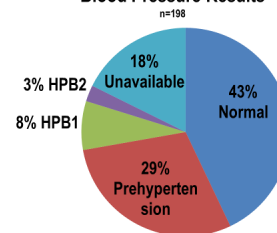
- BMI: 47% of students had a BMI > 25kg/m<sup>2</sup>
- Body Fat: 36% of students had % of body fat in the overfat or obese range
- Waist-Hip Ratio: 37% of students had a moderate or high risk ratio

### Stages of High Blood Pressure in Adults

### Blood Pressure Categories

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120 - 129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130 - 139	or	80 - 89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

### Blood Pressure Results



### Diet

- Fruit intake: 72% of students consume 2 servings or less of fruits per day.
- Vegetable intake: 64% of students consume 2 servings or less of vegetables a day.

### Activity

- 28% describe their activity level as being fairly inactive or very inactive (n=191)
- 61% do not engage in vigorous exercise for at least 20 minutes, or moderate exercise for 30 minutes or more 3x per week (n=192)
- 44% do not engage in any strength training exercises at all (n=187)

### Stress

- 53% of students report having moderately high or extremely high stress levels (n=195)

### Sleep

- 67% of students report sleeping less than 7-8 hours a night (n=240)
- 34% of students report sleeping less than 5 hours a night (n=240)
- 65% of students do not wake feeling rested (n=195)

### Brooklyn College Dietetic Internship Independent Practice Rotation

Dietetic Interns gain experience providing nutrition counseling services to a culturally diverse student population.

- Since 2012 over 1060 hours of clinical supervision

### New Initiatives 2017-2018

#### GET FRUVED

The USDA funded Get Fruved project, named for "FRuits" and "Vegetables," is about all health-related aspects of campus and student life with an ultimate goal of helping freshmen students achieve a healthy and successful first year of college. The three pillars of the project are healthy eating, physical activity, and stress management. The program hosts health promotion events, serves to assist campus wellness organizations collaborate and communicate, advocates for systems/policy changes on campus and utilizes social marketing to promote healthy behavior.

During the 2017-2018 academic year, Brooklyn College in its role as control site, gathered data from students on campus and assessed the health of our campus, its dining facilities, vending machines, recreation facilities and off campus eateries.

#### Brooklyn College Food Pantry

In spring of 2018, the Dietitian-Nutritionist co-located in the food pantry one day a week to provide nutrition counseling and food selection assistance to the on-campus food pantry users.

#### Farm to Campus CSA

In spring of 2018, the Nutrition Clinic partnered with the campus sustainability team to pilot a six week Farm to Campus CSA. Brooklyn College is working with Corbin Hill Food Project to bring farm fresh, sustainable produce to campus. Weekly, 6 to 8 items including a fruit, leafy greens and other local vegetables are delivered to the on-campus Nutrition Clinic for set up and distribution on Wednesdays. Members are able to sign up for additional items such as eggs, flour, and additional fruit.

Corbin Hill Food Project offers a more flexible model than traditional CSA's with a weekly opt in or out and a low price point of \$10 per share for the pilot phase. We have well over 100 campus members enrolled. Any items left at the end of distribution are then taken to the Brooklyn College Food Pantry. We hope to expand the initiative in the fall.



#### Future Goals

- Continue collaboration with the BC Health Clinic
- Provide more comprehensive care - including compliance/ follow up visits
- Expand services to include stress management techniques
- Develop and evaluate effective prevention and intervention strategies to promote campus health and wellness
- Expand Farm to Campus CSA
- Expand the Nutrition Clinic into a Wellness Center that will serve students, faculty and staff and serve as a model for other campuses within CUNY

## Brooklyn College Nutrition Clinic: How Healthy Are Our Students?

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Brooklyn College of CUNY, Brooklyn, NY 11210

### Abstract

The nutrition clinic was established in 2012 to address the health and nutrition needs of Brooklyn College students identified in the Freshman Health Initiative Study that was conducted in 2009 and 2010. Data were collected based on the Spring 2013-Spring 2017 participants. A total of 306 students were served (212 females, 94 males), average age 25y. Data analyses revealed that 47% of students were overweight or obese based on BMI scales, 35% of students were overfat or obese based on body fat percentages and 34% had a moderate or high risk of chronic disease based on an elevated waist to hip ratio. In addition, 38% were prehypertensive and 12% had high blood pressure. Seventy percent of students consumed 2 servings or less of fruits per day and 63% of students consumed 2 servings or less of vegetables a day. Fifty-three percent of students reported having moderately high or extremely high stress and 65% of students did not wake feeling rested. The results of this study suggest that the BC student population is at an increased risk for chronic diseases. These findings underscore the need for nutrition intervention and lifestyle modification for the Brooklyn College community.

### Introduction

Undergraduate students at Brooklyn College, like many urban commuter colleges, have poor eating habits and unhealthy lifestyles, as they report increased stress, decreased sleep, and not enough time to meet nutritional and physical activity recommendations. The eating habits and lifestyles of college students contribute to chronic disease including metabolic syndrome and cardiovascular disease.

The goals of the clinic are twofold:

- To provide much needed nutrition counseling to undergraduate and graduate students at Brooklyn College
- To serve as a platform for training BC dietetic interns enrolled in our Dietetic Internship Program (part of the MS in Nutrition)

### Methods

#### Anthropometric Data

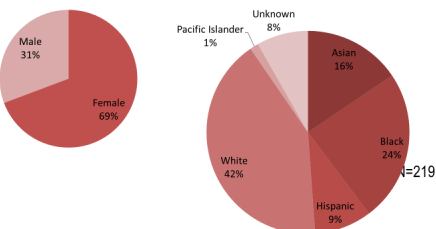
- Height
- Weight
- Body Mass Index (BMI)
- Body Fat Percentage
- Waist circumference
- Hip Circumference
- Waist to hip ratio (WHR)

#### Vital Signs

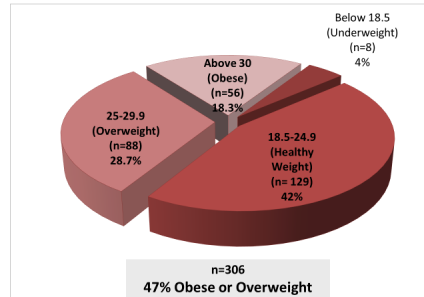
- Blood Pressure
- #### Diet and Lifestyle Questionnaire
- Intake forms and survey
  - Survey Monkey (student surveys)

### Demographics

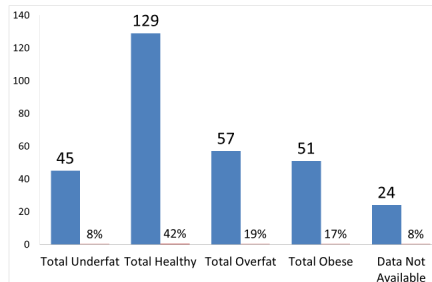
N=306



### ANTHROPOMETRICS Body Mass Index



### Body Fat Percentage



### Waist hip ratio

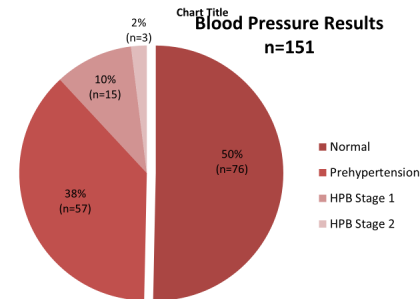
WHR	Male (n=78)	WHR	Female (n=192)	Total (n=270)	Percentage
0.95 or below Low Risk	66	0.80 or below Low Risk	103	169	63%
0.96 to 1.0 Moderate Risk	8	0.81 to 0.85 Moderate Risk	47	55	20%
1.0+ High Risk	4	0.85+ High Risk	42	46	17%

### Summary data

- BMI: 47% of students had a BMI > 25kg/m<sup>2</sup>
- Body Fat: 35% of students had % of body fat in the overfat or obese range
- Waist-Hip Ratio: 34% of students had a moderate or high risk ratio

### Stages of High Blood Pressure in Adults

Stages	Systolic (top number)	or	Diastolic (bottom number)
Prehypertension	120-139	or	80-89
High blood pressure Stage 1	140-159	or	90-99
High blood pressure Stage 2	160 or higher	or	100 or higher

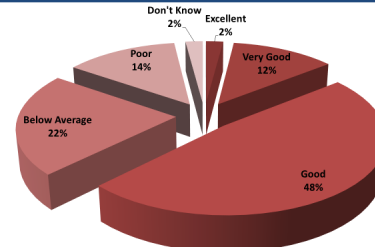


### Diet

- 35% describe their eating habits as below average or poor
- 67% do not feel they are meeting their nutritional requirements
- 41% are taking a nutrition supplements which include multivitamin, calcium and iron

**Fruit intake:** 70% of students consume 2 servings or less of fruits per day.  
**Vegetable intake:** 63% of students consume 2 servings or less of vegetables a day.

### Eating Habits



35% of students report consuming a below average to poor diet

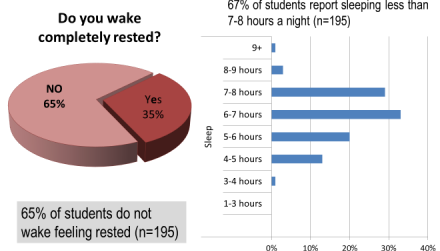
### Activity

- 28% describe their activity level as being fairly inactive or very inactive (n=191)
- 61% do not engage in vigorous exercise for at least 20 minutes, or moderate exercise for 30 minutes or more 3x per week (n=192)
- 44% do not engage in any strength training exercises at all (n=187)

### Stress

- 53% of students report having moderately high or extremely high stress levels (n=195)

### Sleep



### Brooklyn College Dietetic Internship Independent Practice Rotation

Dietetic Interns gain experience providing nutrition counseling services to a culturally diverse student population.

- Since 2012 over 820 hours of clinical supervision

### Nutrition Counseling Services

Weight Loss/Weight gain  
Diabetes/ Prediabetes  
Hashimoto's Thyroiditis  
PCOS  
Anemia  
Vegetarian and vegan diet  
Sports Nutrition

Disease prevention (cancer, diabetes, hypertension)  
Healthy eating on the go  
Healthy eating on a budget  
IBS  
Disordered eating  
Prenatal

### Future Goals

- Create a permanent space for the clinic
- Secure permanent funding
- Continue collaboration with the BC Health Clinic
- Provide more comprehensive care - including compliance/ follow up visits
- Expand services to include stress management techniques
- Develop and evaluate effective prevention and intervention strategies to promote campus health and wellness
- Create a partnership with Athletics
- Launch a weight loss support group
- Expand the Nutrition Clinic into a Wellness Center that will serve students, faculty and staff and serve as a model for other campuses within CUNY





Students, mentors and instructor (background) co-facilitating a group activity

#### Abstract

This presentation represents ongoing EE research conducted in the "hybrid" (formal/informal) learning environment of an urban, gardening program offered on a public university campus for public high school students. Facilitated within a liberatory framework, both program and research component engage educators, high school and college students, and community members in critical, participatory inquiry connecting environmental and social justice issues with participants' lived experience and promote personal and collective action. The current focus of this research is to better understand how youth experience and cultivate identities as leaders and co-teachers in such hybrid spaces, highlighting ways that critical, transdisciplinary eco-pedagogy can facilitate meaningful youth environmental agency.

#### Conceptual Framework

The course and research emanating from it are informed by continuously evolving, interconnected assumptions about teaching, learning and inquiry, particularly:

**Ecojustice-** A conceptualization of EE that foregrounds participants' communities and lived experiences, connecting them to global themes and issues such as food sovereignty, colonization, gentrification and critical consumption and additionally emphasizing the relationship between knowledge and action.

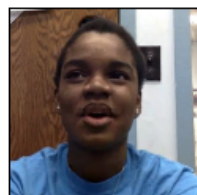
**Liberatory-** Approaches to pedagogy that disrupt the traditional teacher-student binary that casts teacher as authority and student as consumer of knowledge, instead challenging participants to co-construct meaning in a contingent, negotiated process.

**Participatory-** In both pedagogy and research, all stakeholders are encouraged to contribute to and assume responsibility for teaching and learning. Research, in particular, is conceived, conducted, interpreted and presented with, not about, students.

**Transdisciplinary-** EE is understood to partake of the discourses, lenses and methodologies of multiple fields.



"I never pictured/ envisioned myself as [a leader]." writes participant Okina "I now consider myself to have the potential of being one."



Above, Okina during a service project at her high school and right during a Skype interview for the current research project.

## REDEFINING "LOCALLY GROWN:" THE EVOLUTION OF STUDENTS INTO MENTORS AND CO-TEACHERS IN AN URBAN GARDENING PROGRAM

Atasi Das, Cynthia Ha, , Cecilia Poon, Alyssa Gardner Vazquez, Pieranna Pieroni, Eleasha Semple, Okina VanPutten  
Urban Environmental Studies Research Group  
The Graduate Center and Brooklyn College  
The City University of New York

#### Data collection and analysis

The primary purpose of the current research is to highlight and reflect together on the experiences of young people who participated in the program as students and who emerged as leaders, taking on roles as mentors, co-teachers, and co-researchers. Additionally, the intent has been to engage youth and adult participants in a research process that would offer practical experience exploring the rationales for, conducting first-hand and assessing the usefulness of various modes of research inquiry. Artefacts that might later be used, with students' consent, for research purposes were collected starting with the students' first contact with the program and included application essays, pre-/ post- surveys blog posts, journal entries, photos and course projects as well as instructor field notes. For those students who consented to engage in the research component after the conclusion of the program's course component, structured interviews, conversations, focus groups and shared reading responses were then co-designed and administered by instructors and students. The research process has been participatory and iterative, with collective review of artefacts, identification of emergent themes and design of additional tools for inquiry (including follow-up surveys and shared readings) based on these themes.



"I had some experiences that allowed me to really grow and build on becoming a real leader." Mentor Alyssa (above) teaching a middle school student about hydroponics in her job as school-based site manager and instructor for the not-for-profit, "Teens for Food Justice."



Mentor Eleasha preparing a healthy meal to share with the group in her self-selected role as "food intern." "Before coming to [the program], I could never see myself as a leader...[it] did change...how I saw myself...I had to share my knowledge...and...I realized I had a great responsibility and I could change...people's lives. That made me feel like a leader and it made me a person who isn't afraid to step up to the task."

#### Emergent Themes

Sense of belonging

Increased/expanding self-understanding and self-acceptance (identity)

Safety expressing, sharing and evaluating ideas

Supported encountering of new experiences and challenges/sense of personal transformation

Learning with purpose, relevance, intrinsic importance, meaning

Dialogic relationship between learning and lived experience

Sense of responsibility /excitement to share (with family, friends, other young people), to teach and empower

Enhanced self-confidence/agency/capacity to lead

Life and career trajectories or possibilities changed, opened



"This is my community because the interns were like my family and it was so nice. They made me feel at home and the connection was so strong I came back next year. - Mentor Cynthia (left) teaching a group of summer high school participants about sub-irrigated planters and right, leading high school "eco-interns" in a fall garden maintenance activity.



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Mentor Cecilia (above) demonstrating to a team of high school students how to identify a tomato plant and (below) as she chose to represent herself for an autobiographical assignment, using a photograph taken of her on a class kayak trip.



#### Next Steps

Presentation at AERA 2017 will afford co-researchers feedback on possible ways to build on the current, preliminary study and youth participants, in particular, a new experience engaging as experts in their development as leaders.

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## Abstract:

Multidisciplinary inquiry around the impacts of human activity on the Earth's ecosystems has highlighted threats to the habitability of many environments and to the security of resources essential to life, with disproportionate effects on the most vulnerable communities. Yet public school curricula offer few opportunities for youth to experience and understand the natural world, to connect their studies to their lives in local or global contexts, and to develop consciousness, agency and skills to address environmental and social justice issues. The focus of this poster is a seven week, garden-based summer program emphasizing place-centered, critical transdisciplinary inquiry around food systems, resource access, consumer culture, and community that is intended to address the need for such experiences. Its approach to teaching, learning and research, combining experiential, liberatory and ecological justice frameworks, aims to encourage co-creation with students of a learning environment supporting "conscientization" (Freire, 1972) and action-experience of participants around environmental issues relevant to them.



## Course Overview and Framework

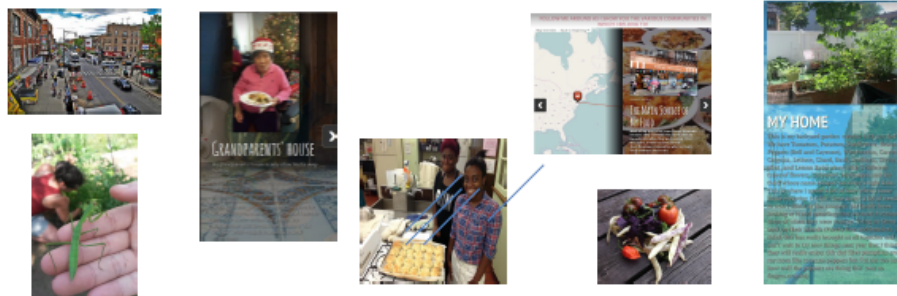
In July and August 2016, seventeen 15-17 year-old New York City public high school students enrolled in a voluntary seven-week pre-college gardening program at Brooklyn College. The course was co-taught by Pieranna Pieroni and Marissa Bellino, doctoral students in urban education with experience teaching environmental studies from critical perspectives. Four former participants, one enrolled in college and the others in high school, participated as mentors, co-creating course plans and leading many daily activities. Participants stewarded areas of two nearby urban school and community gardens, and explored other instances of the "natural" and built environments of New York, during trips in which they engaged with individuals working in those spaces. Activities were linked to collective classroom inquiry, using multiple lenses and media, into a series of interrelated topics (food-systems, public space, consumer culture, etc.) related to the concept of "sustainability." Conversations and activities were initially pre-structured, but were increasingly allowed to take shape based on the emerging interests and leadership of students. From the outset, students were introduced to liberatory pedagogical perspectives, ecological justice frameworks, and participatory research methods that they were encouraged to use in exploring their own lives and communities. As a capstone experience, they were tasked with operationalizing what they had learned by choosing topics of personal interest, related to themes that emerged in the course, and designing action-research projects around them. Supported by instructors, mentors and peers, each student planned an individual or paired action-research plan and presented it during a two-day forum in the program's final week. It is important to note that the course itself was framed from the outset as a participatory research project, with the co-instructors and a colleague as principal researchers and the students as participant-researchers.

## ROOTS, RESEARCH, RESISTANCE: CO-CONSTRUCTING KNOWLEDGE AND AGENCY IN AN URBAN GARDENING PROGRAM

PIERANNA PIERONI  
Urban Environmental Studies Research Group  
The Graduate Center and Brooklyn College, City University of New York

## Data collection:

Conceived as a participatory research project, the summer program was designed to produce several kinds of data reflecting multiple stakeholder perspectives. Student participants were asked to complete pre- and post-surveys that included Likert scale, short-answer and open-ended items. They additionally contributed to a website they co-designed with instructors for the program, documenting each day's activities in photographs, comments and reflections. Further, each individual created a personal page on the website, over time adding photo-essays, maps, videos and links. These artifacts document some of the student's (and instructors') ideas about the physical, social, cultural and other kinds of communities to which they feel they belong, the environments they inhabit or move through, their perceptions of various kinds of spaces, the place of food in their families, cultures and imaginations, and other topics. A separate web page is devoted to their action research projects. In addition to contributing to the web site, instructors kept field notes during the planning and teaching phases of the program and frequently made audio and video recordings of class discussions and final projects.

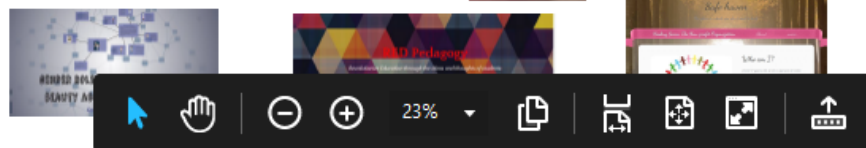


## Initial Data Analysis

A small group that included youth participants, peer mentors, instructors and researchers conducted preliminary reviews of the artifacts generated, to understand how participants relate to, connect and extend concepts and content introduced in the program to produce questions, ideas and plans relevant to them, their families and their communities. While the summer program yielded substantial and varied kinds of data, collection and analysis will be iterative and ongoing, using a grounded theory approach (Charmaz 2011) by youth and adult researchers to identify themes related to students' lived experience and communities. Some initial themes include the prevalence of intergenerational transmission, exchange and tensions around food traditions; the excitement of sharing information generated in the program with various audiences, including friends and family; the recognition of intersectional connections between seemingly separate topics, such as food, race, gender, advertising media and politics; and interest in ways that youth voices can better inform civic conversation, address systemic inequities and influence public policy.

## Participatory Budgeting for NYC

David Kim



## Next Steps:

A research team that will include the course instructors and colleagues will review all of the artifacts gathered thus far, seeking to identify patterns and themes that a. relate the ways in which students work represents their lived experiences and immediate environmental concerns and b. reflects their senses of themselves as researchers, educators and change-agents. This review will be followed by 2-3 focus group sessions in which former participants and mentors are invited to revisit the artifacts and to comment on them in relation to the themes identified. Additionally, all 2016 participants will be invited to contribute written or video-taped reflections on their experiences during the summer program and, where applicable, during their participation as co-researchers. Analysis of these artifacts connects and expands the literature on 1. Youth Participatory Action Research (YPAR), which privileges youth voice and develops youth agency, and 2. Public scholarship, which fosters dialogue between researchers/institutions and communities to co-produce relevant knowledge—as they inform the discussion on environmental education

My name is Cecilia Pironi and I'm 16 years old.  
I'm a Dominican American studying in Brooklyn.  
I'm an upcoming senior at Midwood High School.  
I enjoy listening to music, watching dramas and caring for plants.  
I prefer staying at home rather than going out.  
I want to go into an environmental major for college.  
I consider myself a feminist.



## Selected References:

- Cammarota, J., & Fine, M. (Eds.). (2010). Revolutionizing education: Youth participatory action research in motion. Routledge.
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## Acknowledgments:

Thanks to all the summer 2016 participants: students, mentors, co-teachers, co-researchers and collaborators for bringing your intelligence, creativity, spirit and energy to this project.

# MY GRANDMOTHER'S POT CARIBBEAN IMMIGRANT COOKING SKILLS AND DIETARY ACCULTURATION

Margrethe Frost Horlyck-Romanovsky, MPH<sup>1,2</sup>, Kate Russell, BS<sup>3</sup>, Ming-Chin Yeh, PhD<sup>4</sup>.

<sup>1</sup>CUNY Graduate School of Public Health and Health Policy, <sup>2</sup>The Graduate Center, <sup>3</sup>Department of Health and Nutrition Sciences, Brooklyn College, <sup>4</sup>Nutrition Program, Hunter College; City University of New York, New York, NY

## ABSTRACT

**Background:** Immigrant children who grow up in New York City often express strong connection to the cultural food practices associated with their own, their parents' or grandparents' country or culture of origin yet often lament that they are unable to cook the signature dishes of their childhood and youth that are part of their cultural identity. The Caribbean Immigrant Cooking Skills and Acculturation Project seeks to understand the process of dietary acculturation as it relates specifically to behaviors and decisions around cooking/cooking skills, shopping, and eating, and how these might be associated with health outcomes in adult Black Caribbean immigrants from English speaking countries and their children and/or grandchildren living in New York City. Black Caribbean immigrants are less likely than other immigrant groups to experience negative effects of dietary acculturation such as obesity, diabetes and hypertension, however, their children and grandchildren do not benefit from this protective effect. **Methods:** One to two-hour in-depth interviews were conducted with 11 female and 3 male participants ages 18-60+ to understand the underlying mechanisms, social behaviors, norms and decision processes of the dietary acculturation in this population. **Results:** The initial phase of the study has shown that Black Caribbean immigrant families, focus on work and formal education over life skills transfer, however, equally significant were a number of factors including: mothers who accommodated acculturation and fathers who maintained stronger loyalties to cultural heritage; the fear of injury and government interference in the US means that adults retain control over cooking activities and prevent skills transfer; smaller family size; and the younger immigrants' desire to become enculturated in the US. **Conclusion:** Dietary acculturation is a desired process in younger immigrant generations, a process which deteriorates their diet and jeopardizes future health, and a process which appears to be accelerating. Retention of culture of origin is desired by adult immigrants, especially fathers; however, given the changes in family dynamics, the rupture of social roles and social support associated with migration, as well as the fact that skills, knowledge and social norms from the country of origin are not passed down to younger generations, further exacerbate the effects of acculturation. Recommendations include community based participatory program development facilitating intergenerational cultural skills and knowledge exchange, e.g. communal cooking classes and oral history projects exploring and validating the immigrant experience. These could facilitate amelioration of some of the challenges faced by immigrants and their families. This project was supported by a grant from the Doctoral Student Research Grant program at the Graduate Center of the City University of New York.

## BACKGROUND

- Dietary acculturation means diets richer in meats, refined sugars and fats, and poorer in micronutrients, fiber and plant foods.
- Black Caribbean immigrants are less likely than other immigrant groups to experience negative effects of dietary acculturation such as obesity, diabetes and hypertension.
- Black Caribbean immigrant youth often express a strong connection to parents'/grandparents' culture of origin, however, many in the US never learn the specific foodways.
- 1.5 and 2<sup>nd</sup> generation children and grandchildren do not benefit from this protective effect.

## OBJECTIVES

- Identify the mechanisms that contribute to whether, how and why cooking skills are taught to youth or not.
- Explore how cooking skills are associated with acculturation in both immigrants, their children and grandchildren.

## METHODS

- Purposeful sampling of Black Caribbeans in Brooklyn, New York City.
- Adult Black immigrants from English speaking Caribbean countries living in or around New York City, who may have children and/or grandchildren living in the US, or who were themselves children of Black Caribbean immigrants.
- We conducted one to two-hour in-depth, semi-structured interviews with 8 female and 3 male adults, ages 20 to 60+.
- Participants were compensated \$20 for an interview.
- Interviews were audio-taped, transcribed and analyzed.
- Dedoose version 6.2.21. used for analysis.
- Research protocol was approved by the City University of New York, Hunter College Human Research Protection Program.

## FINDINGS

"...because I've always lived in basically Caribbean neighborhoods, I have not had that great American impact on my dietary – you know – life."

Solomon, 61, Trinidadian, Male, 1<sup>st</sup> generation

Access to culturally specific foods in the cultural enclaves in Brooklyn, NYC, makes it easy to maintain Caribbean foodways.

"He's not as liberal as my Mom. [...] So, he does not like outside food."

Joseph, Male, Grenadian, 1.5 generation

Fathers insist on maintaining Caribbean cooking and eating practices, where mothers are more likely to accommodate children's American food preferences, thereby facilitating dietary acculturation.

"No, you can't go by the stove, what if you burn yourself, and then they'll come knocking on my door?"

Tanisha, 20, Female, Jamaican 1.5 generation

Adult fear of injury and US authorities prevent children from being in the kitchen and learning to cook.

Children growing up in the US identify as Caribbean yet seek greater food variety.

"Although I identify very Caribbean, I guess my food is more diverse, more cultured. I don't like sticking to the same routine time and time again."

Sheryl, Female, Jamaican, 1.5 generation

"...when coming here in her early twenties, a teenager, [...] and you mix with other cultures and things like that, it's easy for you to be more flexible."

Sheryl, Female, Jamaican, 1.5 generation

Age at arrival of both children and adults affects degree of acculturation.

## CONCLUSION

- Access to culturally specific foods is not a barrier to maintaining healthy Caribbean foodways when living in cultural enclaves.
- Retention of culture of origin is desired by most adult immigrants, particularly men and those who grew up in rural settings.
- Fathers maintain Caribbean cooking and eating practices, where mothers accommodate children's "American" food preferences, thereby facilitating dietary acculturation.
- Busy schedules of single parents, working parents and school children mean fewer opportunities to cook and eat together, affecting acculturation in generations 1.5 and 2.
- The fear of injury and government interference in the US means that adults retain control over cooking activities and prevent skills transfer.
- Changing family dynamics, the rupture of social support associated with migration, and the age of arrival of both youth and adults affect level of acculturation.
- Youth identify as Caribbean and love the food, yet they eat more processed, take-out and convenience foods because of convenience, variety and desirability.
- Recommended interventions: cultural skills and knowledge exchange, e.g. inter-generational cooking classes and oral history projects validating the Black Caribbean immigrant experience, while facilitating enculturation in cultures of origin and skills transfer.
- Funding: 2015/2016 Doctoral Student Research Grant Program, The Graduate Center, City University of New York.

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The City University of New York



# Diet and Acculturation in Black Ghanaian and Jamaican Immigrants: Dietary, Health and Sociodemographic Profiles of Participants in a Mixed Methods Research Study

Patricia J. Pauyo BS<sup>1</sup>, Tashanne Distin BS, Naudia Jones<sup>1</sup>, Shanaz Hosein<sup>1</sup>, Margrethe Horlyck-Romanovsky MPH, DrPH<sup>1,2</sup>,  
<sup>1</sup>Department of Health and Nutrition Sciences, Brooklyn College, <sup>2</sup>CUNY Graduate School of Public Health and Health Policy

## BACKGROUND

- Black immigrants from the Caribbean and Africa constitute 23% of all immigrants living in New York City.
- Obesity prevalence is significantly lower for Caribbean (28.7%) and African (20.9%) foreign born Blacks (FBBs) compared to 36.4% for US born Blacks (USBBs).
- Type 2 diabetes prevalence is similar among Caribbean FBBs (14%), African FBBs (13%) and USBBs (13%).
- FBBs are often categorized as African Americans in public health research without adjusting for socioeconomic, demographic, acculturation, and ethnicity.
- The purpose of this study was to understand how cultural practices and acculturation experiences influence dietary patterns and risk of obesity and diabetes of Ghanaian and Jamaican immigrants families across generations.

## ACKNOWLEDGMENTS

We thank the following:

- Jamaican and Ghanaian New Yorkers who dedicated time to our study.
- Gaskia African Market, Gala Gala Restaurant, Yankasa Masjid, Accra Restaurant, Brooklyn Public Library and Brooklyn College for space to conduct interviews and focus groups.
- Community organizer Ramatu Ahmed for her dedication and personal outreach in the Ghanaian community.
- Research associates Faye Lewin Neil, Keshia Okorie, Essohe Guobadia and Kate Russell.
- Faculty advisors Terry Huang, Sandra Echeverria, Katarzyna Wyka, May May Leung and Melissa Fuster Rivera.
- Funding for this project was provided by CUNY Graduate School of Public Health and Health Policy Dean's Dissertation Award and The Louis Stokes Alliances for Minority Participation (LSAMP) Program.
- IRB Protocol #2016-1201 was approved by the City University of New York, Human Research Protection Program.

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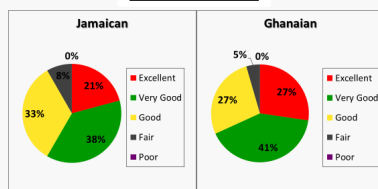
## OBJECTIVE

Describe the sociodemographic profile, diet, health behaviors and health outcomes of youth, parents and grandparents of Jamaican and Ghanaian immigrant families.

## METHODS

- Participants completed a print or online survey about socio-demographics, diet, health behavior, and health outcomes.
- Questions were selected from the Community Health Survey instrument to mirror the quantitative results in the larger study.
- Intake data was dichotomized or categorized for further analysis.
- Data collection was completed with SurveyMonkey; data cleaning, and processing was done in Microsoft Excel. Statistical analysis was completed with Statistical Package for the Social Sciences (SPSS) version 23.

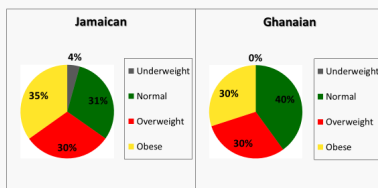
### Self Rated Health



### Sample questions

- "How often do you drink sugar sweetened beverages?"
- "On average, how many times per week do you eat meals that were prepared in a restaurant?"
- "Thinking about nutrition...how many total servings of fruit and/vegetables did you eat yesterday?"
- "Have you ever been told by a doctor, nurse or other health professional that you have diabetes?"

### BODY MASS INDEX



## RESULTS

- Jamaicans (78.3%) and Ghanaians (66.7%) reported at least 30 minutes of exercise per month.
- 4.3% of Jamaicans reported eating no fruit or vegetables daily compared to 33.3% of Ghanaians, whereas 52.0% Jamaicans said they ate 2+ servings of fruit or vegetables per day compared to 20.0% of Ghanaians.
- Jamaicans report drinking higher amounts of sugar sweetened beverages a day compared to Ghanaians.
- 82.6% of Jamaicans report eating restaurant meals compared to 55.0% of Ghanaians, where 36.8% of Jamaicans eat 3+ restaurant meals weekly in contrast to 15% of Ghanaians.
- Jamaicans were more likely to be obese 34.8% compared to 30.0% of Ghanaians.
- Jamaicans had higher prevalence of diabetes, 12.5% versus 8.0% of Ghanaians.

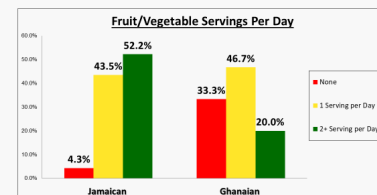
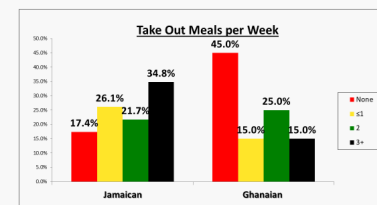
Table 1. Characteristics of Black Jamaican and Ghanaian Immigrants\*\*

	Jamaican	Ghanaian	p-value
Population	n = 24	n = 25	
Age (Mean)	43.1	36.9	
Family Generation			
Youth	41.7%	52.0%	0.720
Parents	25.0%	24.0%	
Grandparents	33.3%	24.0%	
Sex			
Female	50.0%	76.0%	0.059
Male	50.0%	24.0%	
Education			
High School or less	20.8%	68.0%	0.002
Some college or more	75.0%	24.0%	
Other	4.2%	8.0%	
Income			
0 - 39,999	20.8%	52.0%	0.001
≥ 40k	62.5%	12.0%	
Do not know/Prefer not to answer	16.7%	36.0%	
Marital Status			
Married/Living with partner	45.0%	42.9%	
Widowed/Divorced/Separated/ Never Married	55.0%	57.1%	
Age at Arrival			
<5	0.0%	0.0%	0.834
5-18	31.8%	40.0%	
18+	59.1%	50.0%	
Did not immigrate	9.1%	10.0%	
Health Behaviors			
Exercise			
Yes	78.3%	66.7%	0.374
No	21.7%	33.3%	
Fruit/Vegetable Servings/Day			
None	4.3%	33.3%	0.027
1 Serving per day	43.5%	46.7%	
≥ 2 Servings per day	52.2%	20.0%	
Sugar Sweetened Beverage/Day			
None	0.0%	11.8%	0.270
<1	38.1%	35.3%	
≥1	61.9%	52.9%	
Take Out Meals/Week			
None	17.4%	45.0%	0.171
≤1	26.1%	15.0%	
2	21.7%	25.0%	
≥3	34.8%	15.0%	
Self-Rated Health			
Excellent	20.8%	27.3%	0.891
Very Good	37.5%	40.9%	
Good	33.3%	27.3%	
Fair	8.3%	4.5%	
Poor	0.0%	0.0%	
BMI			
Mean BMI	27.6	26.0	
Underweight	4.3%	0.0%	0.747
Normal weight	30.4%	60.0%	
Overweight	30.4%	30.0%	
Obese	34.8%	30.0%	
Diabetes (Ever told by a doctor)			
Yes	12.5%	8.0%	0.603
No	87.5%	92.0%	

\*Data reflects actual responses. Missing data is not included.  
 \*\*Column total may not equal 100% due to rounding.

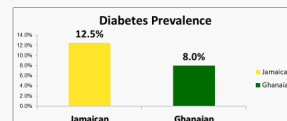
## DISCUSSION

- Participants in both groups were more likely to be youth. Ghanaians were more likely to be female, whereas Jamaicans were equally likely to be male or female.
- Consumption of fruits and vegetables were similar to national averages of 2.7 times per day.
- There were no significant difference between the Jamaican and Ghanaian participants.
- Prevalence of diabetes reflects that of New York City Black Caribbean and African immigrant prevalence (findings forthcoming)



## STRENGTHS AND LIMITATIONS

- Participants for this qualitative study were recruited base on their ability to inform the study.
- Characteristics of Jamaican and Ghanaian participants resemble those of foreign-born Black populations from the Caribbean and Africa.
- People who chose to participate may be different from the general Black Jamaican and Ghanaian populations.
- Recruitment flyers had terms such as "nutrition", "health" and "diet" which may have influenced responses.
- Understanding of what it means to "Grow up" in a place may differ between the US, Jamaica and Ghana.
- Height, weight, T2D and dietary behaviors were self-reported. Underreporting of weight may vary between cultural groups.







# Diet and Acculturation in Black Ghanaian and Jamaican Immigrants: Recruitment for a Mixed Methods Research Study

## BACKGROUND

- Between 1980-2013, 365% increase in Black immigration.
- US Census predicts by 2060, 16.5% of all Blacks in US will be foreign born.
- National Health Interview Survey showed that compared to US-born Blacks
  - Obesity
    - Caribbean foreign born Blacks, 49% lower risk of Obesity
    - African foreign born Blacks, 59% lower risk of Obesity
  - Diabetes
    - 8.9% of Foreign born Black population have diabetes
    - 11.8% US-born Black population have diabetes
- Ghanaians are the largest Black West African immigrant group in NYC.
- Jamaicans are the largest Black Caribbean immigrant group in NYC.

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We thank the following:

- Jamaican and Ghanaian New Yorkers who dedicated time to our study.
- Gaskia African Market, Gala Gala Restaurant, Yankasa Masjid, Accra Restaurant, Brooklyn Public Library and Brooklyn College for space to conduct interviews and focus groups.
- Community organizer Ramatu Ahmed for her dedication and personal outreach in the Ghanaian community.
- Research associates Faye Lewin Neil, Keshia Okorie, Esono Guobadia and Kate Russell.
- Faculty advisors Terry Huang, Sandra Echeverria, Katarzyna Wyka, May May Leung and Melissa Fuster Rivera.
- Funding for this project was provided by CUNY Graduate School of Public Health and Health Policy Dean's Dissertation Award and The Louis Stokes Alliances for Minority Participation (LSAMP) Program.
- IRB Protocol #2016-1201 was approved by the City University of New York, Human Research Protection Program.

## PURPOSE

- The purpose of the Caribbean and African food and culture study is to:
- Explore how Jamaicans and Ghanaians differ in risk of diabetes and obesity.
- Identify protective cultural, contextual and family factors.
- Understand the ways and extent to which cultural practices and acculturation experiences differ between generations.
- Inform nutrition and public health programs and policies for foreign born Blacks in New York City and nationally.

## METHODS

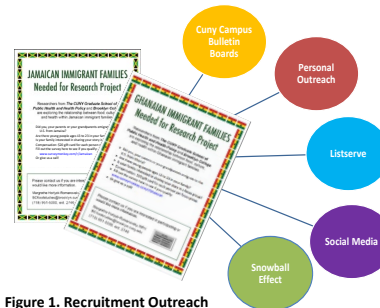


Figure 1. Recruitment Outreach

## DISCUSSION

- Participants completed a survey with questions: socio-demographics, diet, health behavior, and health outcomes.
- Questions were selected from the Community Health Survey.
- We sought to speak to three generations within the same family to capture the inter-generational experience.
- Participants in both groups were more likely to be youth.
- Ghanaians were more likely to be female, whereas Jamaicans were equally likely to be male or female.



Figure 2. Recruitment Strategy

## RESULTS

Table 1. Characteristics of Black Jamaican and Ghanaian Immigrants<sup>a</sup>

	Jamaican	Ghanaian	p-value
<b>Population</b>	n = 24	n = 25	
<b>Age (Mean)</b>	<b>43.1</b>	<b>36.9</b>	
<b>Family Generation</b>			
Youth	41.7%	52.0%	0.720
Parents	25.0%	24.0%	
Grandparents	33.3%	24.0%	
<b>Sex</b>			0.059
Female	50.0%	76.0%	
Male	50.0%	24.0%	
<b>Education</b>			0.002
High School or less	20.8%	68.0%	
Some college or more	75.0%	24.0%	
Other	4.2%	8.0%	
<b>Income</b>			0.001
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<b>Marital Status</b>			
Married/Living with partner	45.0%	42.9%	
Widowed/Divorced/Separated/ Never Married	55.0%	57.1%	
<b>Age at Arrival</b>			0.834
<5	0.0%	0.0%	
5-18	31.8%	40.0%	
18+	59.1%	50.0%	
Did not immigrate	9.1%	10.0%	

<sup>a</sup>Data reflects actual responses. Missing data is not included.

<sup>a</sup>Column total may not equal 100% due to rounding.

- The final sample included : 25 Ghanaians and 24 Jamaicans.
- Generations within Ghanaians included: 6 grandparents, 6 parents and 13 youth.
- Generations within Jamaicans included :8 grandparents, 6 parents and 10 youth.
- The distribution of youth, parents, and grandparents was similar in the two populations.
- Ghanaians more likely to be female: 76.0% vs. 50.8% among Jamaicans.
- Almost 50% of Ghanaians had household income <40K compared to 20.8% of Jamaicans .
- More than half of Jamaicans arrived in the US as adults compared to 50% of Ghanaians.
- 55.0% of Jamaicans were married/living with a partner versus only 57.1% Ghanaians.

## LIMITATIONS

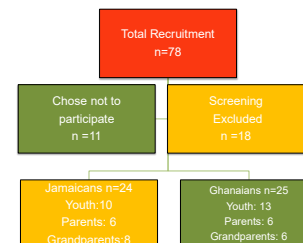
- Recruiting different generations within the same family was difficult, because members live in different states and countries.
- Foreign born Black Jamaicans and Ghanaians do not represent all Black immigrants.
- Due to the qualitative research methodology used purposeful sampling, participants do not necessarily represent the communities.
- People who chose not to participate noted that they had limited time and/or the \$20 incentive was too small.

## NEXT STEPS

- Recordings: Transcription and De-Identification
- Coding : Generation of code and codebook using Dedoose Software
- Data Analysis: Generation of themes and hypothesis.



Figure 3. Enrollment Flowchart



# The Differential Protective Effect of Cultural Enclaves on Ghanaian Immigrant Youth and Adults

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## INTRODUCTION

- In New York City, the fastest growing group of foreign-born residents is West Africans (76,710), with a population growth of 60% since 2000.
- Ghanaians (27,400) represent a third of West African FBBs in NYC, and 87% live in West African cultural enclaves in the Bronx.
- Little is known about how cultural enclaves and acculturation affect diet and health of Ghanaian immigrant families.
- Cultural enclaves are: Areas with a high concentration of residents from a particular ethnic group. Characterized by ethnic stores and restaurants which carry culturally specific merchandise and food; enclaves are often found in low-income neighborhoods, with fast food places and few supermarkets.

## OBJECTIVE

- To understand how food environments, cultural practices and the acculturation experience influence dietary patterns and health of Ghanaian immigrant youth, parents and grandparents.

## METHODS

- We conducted a qualitative study with Ghanaian youth (N=12), parents (N=6) and grandparents (N=6) who are members of a Ghanaian Muslim community in the Bronx.
- Interviews and focus groups used open-ended questions, were digitally recorded and lasted between 45 and 90 minutes.
- Intake survey collected information about socio-demographics, health behaviors and health outcomes.
- Statistical analysis was completed with Statistical Package for the Social Sciences (SPSS) version 23.
- Recordings were transcribed, and transcripts analyzed using Dedoose 7.0.

## RESULTS

- Youth did not see the need for specific stores to cook cultural foods and felt that ingredients were readily available in regular supermarkets. (Figure 1)
- African restaurants in the enclave were not considered important by youth.
- Youth highlighted US mainstream fast food as desirable, affordable and representing variety.
- Parents and grandparents did not eat fast food and discouraged youth from eating it.
- Living in the cultural enclave meant that adults saw safe sources of both authentic ingredients and prepared foods, and would shy away from fast food. (Figure 2)
- Eating out for special occasions would constitute eating something other than Ghanaian food.
- Adults mostly considered eating out an unnecessary expense, instead having food at home.
- Buying food from a Ghanaian restaurant was not seen as eating out or fast food.
- Parents and grandparents would be more likely to buy African food than anything else on days where they did not have time to cook.
- "Chinese fried rice" available from local American Chinese restaurants, was consumed as a snack food by youth and adults, but with different frequency.

## CONCLUSION

- The cultural enclave protects youth and adults differently from the effects of dietary acculturation.
- Youth seek mainstream variety of fast food over African food for meals outside the home.
- Youth find that African markets are not crucial to maintaining cultural diets and that Ghanaian foods can be prepared with ingredients available in regular supermarkets.
- Parents and grandparents seek out the cultural food sources, which allow them to cook and eat authentic Ghanaian food both at home and outside the home.

## IMPLICATIONS

- The access to and utilization of mainstream food options may accelerate dietary acculturation and increase risk of diet-related disease in youth.
- Adults may experience better diet-related health because enclaves allow retention of cultural food practices.
- Future public health initiatives should foster greater appreciation for Ghanaian food and food practices in both youth and adults.
- Food policy initiatives should enhance healthy food access in inner city neighborhoods to expand food options in immigrant communities



Figure 1. Ghanaian youth's view of the cultural enclave



Figure 2. Ghanaian adults' view of the cultural enclave

### Acknowledgements

- The authors wish to thank the following: The Ghanaian New Yorkers who dedicated time to our study; African community businesses and NYC institutions: Gaskia African Market, Gala Gala Restaurant, Yankasa Masjid, Accra Restaurant, Brooklyn Public Library and Brooklyn College for allowing us to use space to conduct interviews and focus groups; dissertation advisors Terry T.K. Huang, Melissa Fuster, May May Leung, Sandra E. Echeverria and Katarzyna Wyka; research associate Kale Russell; and Jo Ann Brown for poster design.
- Funding for this project was provided by the CUNY Graduate School of Public Health and Health Policy Dean's Dissertation Award and The Louis Stokes Alliances for Minority Participation (LSAMP) Program.
- Study procedures were approved by the City University of New York Human Research Protection Program, Protocol #2016-1201.

# Generational Differences in Food Perception and the Risk of Chronic Disease among Jamaican Immigrant Families Living in New York City.

PATRICIA J. PAUYO AND MARGRETHE HORLYCK-ROMANOVSKY, BROOKLYN COLLEGE, BROOKLYN, NY,



## INTRODUCTION

- Black Caribbean immigrants are healthier and have lower risk of obesity, diabetes, and hypertension than US-born Blacks.
- Approx. 18% of all black immigrants to the US are Jamaica (682,000)
- Immigrants benefit from retaining cultural and traditional foods for better health
- Previous study identified food perceptions as protective among immigrants of Caribbean descent living in NYC
- Food perception is affected by diverse factors (Fig 1).
- Limited understanding of factors that influence food perception which in turn affects diet and acculturation and the risk of chronic disease among Jamaican immigrants of different ages.

## OBJECTIVE

- Aim 1: Identify how lived experiences in Jamaica and New York City with and about food influence food perception of Jamaicans living in New York City.
- Aim 2: Identify how acculturation, social norms, socioeconomic status, and trans-national movements influence food preferences and diet among Jamaican immigrants living in New York City.
- Aim 3: Understand how food perceptions may contribute to health outcomes in Jamaican immigrants living in New York City

## METHODS

- Intake survey collected participant characteristics.
- Qualitative interviews used open-ended questions, were digitally recorded and lasted between 45 and 90 minutes.
- Secondary data analysis used the Food Perception Framework
- Software: SPSS)version 23 and Dedoose 7.0.

## RESULTS

- 24 Jamaicans participated in in-depth individual interviews or focus groups. (Table 1)
- For all 3 generations, intrinsic factors such as the cleanliness of the produce, the lack of pesticides, and the freshness of the products were fundamental in determining food preferences. (Fig 1)
- Growing methods and freshness of produce were cultural/regional factors.
- Trustworthiness of a vendor was an essential personal factor for participants in all three generations.
- Socioeconomic levels determined where participants shopped for food and what food they chose to stay healthy.
- Nutrition knowledge modified eating habits for all 3 generations.
- Parents and grandparents based food perceptions on cultural and traditional views or ideas.
- Youth were influenced by extrinsic factors such as advertisements, media, peer influences, and education.

	Total	Youth	Parents	Grandparents
Population	24	10	6	8
Mean Age	43.1±20.7	22.0±3.8	45.5±4.8	67.6±6.9
Sex				
Male	12	5	1	6
Female	12	5	5	2
Education				
High School or less	5	1	0	4
Some college or more	18	8	6	4
Other	1	1	0	0
Income				
0 - \$39,999	5	2	1	2
≥ \$40k	15	5	5	5



Figure 1. Food Perception Framework. Adapted from: Khan MA. CRC Critical Reviews in Food Science and Nutrition. CRC Critical reviews in food science and nutrition. 1981;15(2)

### Acknowledgements

- Funding for this project was provided by the CUNY Graduate School of Public Health and Health Policy Dean's Dissertation Award and The Louis Stokes Alliances for Minority Participation (LSAMP) Program.
- Study procedures were approved by the City University of New York Human Research Protection Program, Protocol #2016-1201.

## STRENGTH AND LIMITATION

- Only known study to investigate how food perception and health outcomes are related among Jamaican immigrants living in NYC.
- The complex extended family models in the Jamaican community and the lack of families with three generations living in NYC made it difficult to interview three generations from the same families.
- Due to recall and social desirability biases, findings may not accurately reflect past experiences and present behaviors and do not allow for generalization.

## IMPLICATIONS

- Informs effective intervention methods tailored specifically to Jamaican immigrant families living in New York City.
- New information about how food perceptions may contribute to chronic disease risk among Jamaican immigrants.
- Important insights and details about food beliefs and practices in the Jamaican community which may help to inform future work to prevent diabetes, obesity, and hypertension.
- Further research studies are needed to better understand the food perception of the immigrant population in the US and the concept of clean and fresh foods.
- Quantitative research studies are needed to assess the dietary patterns of Jamaican immigrants to better understand what they actually eat.
- Research efforts are also needed to better understand the effects of global acculturation on the food perception of immigrants and their health outcomes

## CONCLUSION

- Food perceptions and the concept of clean food impelled all 3 generations to consume a healthier diet.
- Among youth, remote acculturation to US culture and global foods made it more acceptable to replace traditional home-cooked foods with processed foods.
- The health advice provided by dietitians and doctors, and other healthcare professionals were well respected and older Jamaicans reported high levels of compliance.