# Adolescents' Experiences of the Hartford-area Food Environment: Focus Group Research with Support from Hartford Public High School Adolescent Citizen Scientists (ACS)

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## Abstract

In 2024, the UConn Rudd Center for Food Policy and Health (Rudd Center) and the Hispanic Health Council (HHC) received a grant to engage Hartford Public High School (HPHS) students as adolescent citizen scientists (ACS). The grant called for students to work with us to conduct community-based participatory research (CBPR) to identify, prioritize, co-design and assess the feasibility of at least one potential systems-level program or policy action to improve the Hartford-area food environment. In September 2024, we recruited five HPHS seniors through ReadyCT for the first ACS intern cohort. From October through December 2024, we trained the ACS cohort in food-related research topics, including nutrition, health equity, food marketing, research and program co-design. From January through May 2025, the ACS assisted us in conducting qualitative research with HPHS students to identify barriers to healthy eating that they experience in their community. The ACS were engaged in study design, implementation and preliminary data analysis.

In total, 39 HPHS students participated in five focus groups, including seven students in one Spanish-language group. The students were primarily female and 12th graders and ethnically and racially diverse. Participants cited many barriers to healthy eating, including limited food options available nearby; high prevalence of unhealthy food marketing in their neighborhoods; widespread and frequent exposure to marketing for almost exclusively unhealthy food and drinks online; frequent consumption of unhealthy foods by peers; and limited nutrition knowledge and education. Most students reported eating school cafeteria

lunches, but overall satisfaction with cafeteria food was low due to perceived poor quality and taste, unpleasant texture, and limited variety, especially at breakfast. Snacking at other times during the school day was also common, including during class. Students had some difficulty identifying specific actions that could be taken to improve their food environment, but participants in all groups described the need for more effective nutrition education. Additional recommendations included increasing access to and reducing the cost of healthy foods and improving school meals (e.g., offering hot breakfast, better quality food, more variety, including more culturally diverse options).

Phase 1 of our project was a success. We trained HPHS students as ACS and they provided valuable assistance in the design and implementation of qualitative research. Our ACS student cohort provided positive evaluations of the training they received and reported learning numerous skills that will help them in future academic and career endeavors. In addition, based on the focus group findings and consultation with our Community Advisory Board, we identified a feasible and potentially impactful program option for Phase 2 of the project. Then, our second group of ACS assisted in co-designing a program to address food insecurity among HPHS families.

## Acknowledgements

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## Introduction

Unhealthy marketing of food, beverages, fast-food and other restaurants (i.e., food marketing) to children and adolescents has created a global crisis of poor diet and diet-related disease (WHO, 2010). In the United States, youth of color who live in low-income communities are disproportionately impacted by unhealthy food marketing due to higher rates of diet-related diseases and less access to affordable healthy food, as well as greater exposure to unhealthy food marketing in their neighborhoods and in commercial media (Rideout, Peebles, Mann & Robb, 2021; Barnhill et al., 2022). Moreover, this harmful impact is exacerbated by food companies' targeted marketing practices (Barnhill et al., 2022). Previous research has documented how food marketing to youth extensively promotes sugary drinks, energy drinks, candy, snacks, and fast food, much of it targeted to Black and Hispanic/Latino youth with messages designed to tap into their culture through music, sports, influencers and other celebrities, and gaming (Rudd Center, 2022). Therefore, policies and programs are needed to address the harmful impact of food marketing on young people's diets and health.

Public health researchers and advocates, including UNICEF and the World Health Organization (Fleming et al., 2020; WHO, 2018), call for engaging youth in the design and

delivery of systems-level program and/or policy change to address their unhealthy food environments (King et al., 2021). Through community-based participatory research (CBPR), researchers, organizations, and community members collaborate on all aspects of a research project (Minkler & Wallerstein, 2011). Research has also confirmed the feasibility of CBPR to engage youth in multiple parts of the research process, including design of study questions and objectives, data collection and interpretation, and design and implementation of actions based on the results (King et al., 2021). Therefore, CBPR provides an opportunity to prioritize the voices of the next generation of community leaders and ensure that the community will benefit as much as possible from research data and the knowledge gained. Research conducted by the UConn Rudd Center for Food Policy & Health (Rudd Center) with Black and Hispanic/Latino teens in Hartford CT also identified a potential opportunity for youth engagement to address targeted marketing in this low-income community (Harris et al., 2019).

In September 2023 the Rudd Center and the Hispanic Health Council (HHC) held a virtual listening session with Latino and Black teens in Hartford to better understand their concerns and priorities related to food and health. Participants expressed many barriers to healthy food consumption, including daily marketing messages "about junk food" via social media; tempting notifications from fast-food apps; billboards and other signs in their communities; and TV advertising. They specifically discussed targeted marketing to youth for snack food, fast food, sugary drink, and energy drink brands. They also expressed frustration when trying to work with school administrators to make changes to improve the school food environment. In addition, they raised the importance of being role models for younger children and expressed a responsibility to help younger children, and the community as a whole, to consume healthier foods. By the end of the session, participants expressed strong interest in a program that would train them to become leaders to improve the food environment in their community.

Informed by these listening sessions, the Rudd Center and HHC received a grant from the Robert Wood Johnson Foundation (RWJF) to conduct CBPR with youth in the Hartford community. The project's objective was to train Hartford-area high school students as adolescent citizen scientists (ACS) and engage them in conducting research to identify opportunities to improve the Hartford-area food environment. The project included two phases:

- Phase 1: Qualitative research with Hartford-area adolescents to identify barriers to healthy eating that they experience in their environment, including unhealthy food marketing.

- Phase 2: Qualitative research with key stakeholders to co-design at least one potential systems-level program or policy action to address an issue identified in Phase 1 in order to improve the Hartford-area food environment.

This report details Phase 1 of the two-phase research project.

## Methods

Phase 1 of the project had two main objectives:

1) Train a cohort of Hartford Public High School (HPHS) students as ACS during the 2024-2025 school year.

2) Conduct focus group research with HPHS students to identify potential systems-level program or policy actions to improve the food environment for teens in Hartford.

The focus group findings would be used to inform the selection of one program or policy that a) addresses a priority identified by Hartford teens and/or other community members, and b) could be feasibly co-designed together with the next ACS cohort during Phase 2 (2025-26 school year).

### ACS training

In September 2024, research personnel recruited five HPHS seniors for the first ACS intern cohort through ReadyCT, an organization that provides high school students with career-connected learning. From October through December 2024, researchers from the Rudd Center, HHC and Yale University (research personnel) trained the ACS cohort in food-related research topics, including nutrition, health equity, food marketing, qualitative research and program co-design.

From January through May 2025, the ACS assisted research personnel in conducting focus group research with HPHS students, including study design, implementation and preliminary data analysis. As part of their training, ACS completed UConn's online human subjects research training program (CITI training). All research procedures were approved by UConn's Institutional Review Board (HR25-0072) and Hartford School District.

### Focus group materials

Research personnel and ACS worked together to develop all focus group materials, including a detailed discussion guide for the group moderator, additional materials to facilitate the group discussions, and a follow-up participant survey. All materials were created in both English and Spanish.

The focus group guide included a semi-structure script (Appendix 1) designed to elicit open and honest discussion about students' experiences of food marketing; other challenges to healthy eating they experience in their environment, including at school; and what they would like to change about their food environment. The guide started with an icebreaker and discussion of rules of engagement for participants to respect each other and encourage participation (speaking one at a time, sharing personal opinions openly, actively listening to others, avoiding side conversations, feeling comfortable sharing even if their views differ from the group, and understanding that there are no "wrong" answers). The guide used open-ended questions designed to engage participants to reflect and share their thoughts on their food environment and how it impacts them and their community.

Questions focused on a number of food-related topics, including perceived barriers to healthy eating in their community (schools, neighborhoods, peers/family); experiences with food marketing (social media, other digital marketing, and marketing in their community); perceptions of the food marketing they experience, including emotional responses, benefits and challenges it presents; nutrition education and understanding of good nutrition; and changes they would like to see in their food environment, in their community and/or food marketing, and why. The food marketing discussion also focused on participants' perceptions of food marketing specifically targeting them (i.e., to teens, youth of color, and/or Hartford residents), including targeted brands/products, how they recognize it, and their attitudes about the brands/companies that target them.

To supplement the general open-ended questions regarding broad topics of interest, the discussion guide included follow-up probes to understand participants' attitudes and experiences regarding specific topics if participants did not bring them up spontaneously. Research personnel and ACS also developed materials to share with participants to facilitate the discussions about nutrition and targeted marketing (Appendix 2), as these topics might not be well-understood by participants. A follow-up survey (Appendix 3) obtained participants' demographic information and general dietary behaviors (adapted from the CDC's Youth Risk Behavior Survey) for descriptive purposes.

In addition to assisting in the development of these materials, ACS participated in practice focus group sessions to understand how focus groups are conducted and test the discussion guide so they could provide recommended modifications to adapt the questions for a HPHS student audience.

### Recruiting participants

Research personnel and ACS also jointly developed procedures and materials to recruit HPHS students to participate in the focus groups. They created a flyer (Appendix 4) to inform students about the study, which was distributed by teachers and sent to students using the school's online portal. ACS also announced the study in some classes and handed out the flyer in classes and the lunchroom. They were trained to follow a script to answer questions and provide information about the study without coercing other students to participate (Appendix 5). In addition, the flyer was enlarged to poster-size and posted on bulletin boards and other HPHS locations. Copies of the flyer and the poster were distributed and/or posted in English and Spanish.

The recruitment flyer included a QR code with a link to an online screening survey for interested participants to complete in either English or Spanish (Appendix 6). The screening survey included a brief description of the study and asked questions that were used to assign participants to a specific focus group, including grade, language preference (Spanish or English), gender, age (under 18 or 18+), available days/times to participate, and contact information. The survey also asked for their student id number so a school representative could request parent or guardian permission (via

the school portal) prior to participation. All interested HPHS students were eligible to participate in the study, but parent permission was required for any student under 18 years old. Based on the information provided in these surveys, research

personnel invited interested students to attend a specific focus group and provided them with details about time and location.

## Focus group procedures

A total of five focus groups were conducted in April and May 2025. One group was conducted in Spanish and one group was conducted with primarily younger students. Focus group sessions were scheduled for 90 minutes during students' lunch time and conducted in a separate small room of the school's main library.

On the day a student was scheduled to attend a focus group, a school representative sent an email to all teachers announcing that the student had permission to attend the group and provided a student pass. Students were instructed to get their lunch and bring it to the library. Refreshments were also provided. Upon arrival at the library, research personnel and ACS greeted participants and provided them with the appropriate consent/assent form, explained the study procedures and purpose and answered questions. Participants who were 18 years or older provided written informed consent. Participants who were under 18 years old provided their own written assent to participate, in addition to their parent's written consent. Before the focus group began, participants were informed that they did not have to participate in the study, and they were free to leave at any time.

All groups were moderated by one of two researchers, including one bilingual (English and Spanish) researcher in her early 20's (closer to the age of the student participants). The moderator followed the same discussion guide script during all groups. She was assisted by at least one senior researcher, who also took notes during the groups. ACS served as greeters, assistants to the moderator, and/or observers during the groups. Greeters welcomed the participants upon their arrival. Assistants distributed, collected and photocopied assent/consent forms. Observers were seated apart from the group during the focus group discussion. The moderator informed participants that the discussion was being audio-recorded and that they could decline to participate if they did not want to be recorded.

Upon completion of the focus group discussion, participants were asked to fill out the follow-up survey. Participants then received a $25 Amazon gift card to compensate for their time, a written debrief to explain the study (Appendix 7), and a copy of their signed consent/assent form and thanked for their time.

## Data analysis

Data collected during this study included students' responses to the screening and follow-up questionnaires and the focus group discussions, including audio tapes of focus group discussions, transcriptions of focus group audio recordings, and English translations of the Spanish-language group. The information that participants provided for the screening

questionnaire information was used only to assign them to specific focus groups and obtain parental consent (for participants under age 18). This information was deleted once all the focus groups were completed. The follow-up questionnaire (with demographic and dietary behavior responses) was anonymous, containing no names or other identifying information about the students.

Research personnel used the focus group transcriptions to conduct thematic analysis of the discussion, collectively identifying, analyzing, and defining key themes in the data (Braun & Clarke, 2006). Researchers first read through the transcripts and independently identified any themes related to the specific research questions, as well as any additional common themes. The research team then met to discuss the themes identified with specific examples (i.e., quotes), discuss discrepancies, and agree on the final themes and sub-themes for analysis.

Following this discussion, research personnel created a coding manual to define the themes and sub-themes for analysis (Appendix 8). The final coding manual included 21 themes organized into five main categories: 1) structural barriers/facilitators to healthy eating (cost, neighborhood food environment, school food – cafeteria, school food – other, nutrition education); 2) social barriers/facilitators to healthy eating (cultural differences, family, and peers); 3) individual barriers/facilitators to healthy eating (food insecurity, motivations for healthy/unhealthy eating, nutrition knowledge, other reasons to follow/not follow nutrition recommendations); 4) food marketing (exposure, types of foods marketed, effects, targeted marketing); and 5) participants' recommendations for improving their food environment (healthy food, marketing, nutrition education, peers, school foods).

Four members of the research team then individually coded one focus group transcript by highlighting all dialogue that referenced each theme/sub-theme listed in the coding manual. They then met again to discuss inconsistencies and points of clarification and agreed upon adjustments to the coding manual. The final coding team included two members of the research team, who then coded a second focus group transcript. The four members of the research team met again to discuss discrepancies between the coders and made further revisions to the coding manual. The two coders then independently coded the remaining three transcripts according to the final revised coding manual.

## Focus group results

In total, 39 HPHS students participated in the five focus groups, including 7 students in the Spanish-speaking group (Group 2) and 6 younger students in a group consisting primarily of underclassmen (Group 5).

### Participants

The majority of participants were female and/or in the 12$^{th}$ grade (Table 1). Approximately one-third were 18 years or older. More than three-quarters also self-reported Latino/Hispanic ethnicity and one-third identified as Black. The 15% of participants who self-identified as White all indicated Latino/Hispanic ethnicity.

Table 1. Participant characteristics

| Value | # | % |
|---|---|---|
| Total participants | 34* | 100% |
| Gender | | |
| - Female | 28 | 82% |
| - Male | 6 | 18% |
| Age | | |
| - 14-17 years | 21 | 62% |
| - 18 years or older | 13 | 38% |
| Grade | | |
| - 9th | 3 | 9% |
| - 10th | 5 | 15% |
| - 11th | 1 | 3% |
| - 12th | 25 | 74% |
| Race/ethnicity | | |
| - Latino/Hispanic** | 27 | 79% |
| - White | 5 | 15% |
| - Black | 12 | 35% |
| - Asian/Other | 3 | 9% |
| Food allergies | 8 | 24% |

*5 of 39 total participants did not complete the questionnaire

**14 participants reported Latino/Hispanic ethnicity but did not report race.

Questions from the CDC's Youth Risk Behavior Survey (YRBS, CDC 2023) were used to assess participants' dietary habits (Table 2). The dietary habits reported by focus group participants were similar or somewhat healthier than national results for the 2023 YRBS survey. For example, 68% of participants reported eating fruit daily, compared to 55% of high school students in the national survey. Among HPHS participants, 24% ate breakfast daily compared to 27% nationally. In addition, 26% of our participants did not drink soda and 59% did not drink sports drinks, compared to 31% and 48% of high school students in the national sample. All HPHS participants reported eating some type of vegetable in the past 7 days, compared to 58% of high school students nationally.

Table 2. Participant dietary habits

| Value | >1 time per day | Every day | 4-6 times | 1-3 times | None |
|---|---|---|---|---|---|
| Healthy food/drinks consumed (past 7 days) | | | | | |
| - Fruit | 56% | 12% | 12% | 20% | 0% |
| - Green salad | 6% | 15% | 12% | 21% | 47% |
| - Potatoes (not fried) | 3% | 21% | 6% | 44% | 26% |
| - Carrots | 3% | 18% | 3% | 24% | 53% |

| | | | | | |
|---|---|---|---|---|---|
| - Other vegetables | 18% | 6% | 18% | 32% | 26% |
| - 100% fruit juice | 9% | 9% | 18% | 56% | 9% |
| - Plain water | 79% | 3% | 15% | 0% | 3% |
| - Milk | 18% | 18% | 3% | 30% | 30% |
| Unhealthy drinks consumed (past 7 days) | | | | | |
| - Soda | 9% | 15% | 9% | 41% | 26% |
| - Sports drink | 6% | 9% | 3% | 24% | 59% |
| - Energy drink | 0% | 12% | 6% | 9% | 73% |
| Eat breakfast (# days) | N/A | 24% | 24% | 33% | 18% |

## Main themes and sub-themes

Appendix 8 also summarizes all mentions of individual themes and sub-themes in each focus group. The following analysis highlights the most prevalent barriers to healthy eating mentioned by focus group participants. Reported facilitators to healthy eating were much less prevalent but are highlighted below when identified.

### *Neighborhood food environment*

All groups discussed the limited food options available in their neighborhoods as a major barrier to healthy eating. Some foods, such as healthier and higher-end fast-food places, were not available locally and/or found only in wealthier areas outside of Hartford. Many noted the availability of culturally familiar foods, although some indicated the need for a greater variety of culturally diverse foods. In contrast, they noted the high prevalence of unhealthy food options, including overwhelming exposure to and readily available fast food, chips, soda, and energy drinks. They also mentioned the large number of corner stores, fast food and other restaurants nearby, while some groups noted the lack of supermarkets.

Groups also discussed the prevalence of unhealthy food marketing in their neighborhoods. They noted that outdoor ads (e.g. billboards; posters in retail, fast food and other restaurants) in Hartford primarily promote junk food or fast food. Students also pointed out that there were almost no visible ads for healthy foods.

### *School food*

All groups also discussed school food as an important contributor to their dietary behaviors. Most participants indicated that they ate cafeteria lunches, although some students (primarily in the Spanish-language group) brought lunch from home. In contrast, few students ate the school-provided breakfast. Many participants also described how other students brought food from local restaurants and retailers or ordered food in, despite school rules prohibiting it.

Despite frequent consumption of cafeteria lunches, students had mixed reviews of the quality of cafeteria foods. Most could name a small number of items they liked, including healthy foods like fruit and yogurt. However, overall evaluations of cafeteria food were

negative, including frequent mentions of poor quality and taste, unpleasant texture, and limited variety, especially at breakfast when only cold options were available.

Snacking by students at other times during the school day was also common, including during class. Participants noted that students frequently brought in unhealthy snacks from home or the store to share with friends, including chips, cookies, crackers, candy and sugary drinks. They also noted that teachers and other school personnel sometimes provided snacks as rewards or upon students' requests.

### *Food marketing*

All groups also identified food marketing as a major barrier to healthy eating. Participants discussed widespread and frequent exposure to digital marketing via social media (TikTok, Instagram, YouTube shorts) and gaming sites, including influencer posts and characters/influencers eating and discussing foods within the videos they watched. All experienced food marketing on social media many times per day. Participants also mentioned exposure to food marketing through food apps for individual restaurants, where they earned points and received notifications of promotions, other food ordering apps (e.g., Uber Eats, DoorDash), traditional ads, and emails.

Nearly all food marketing discussed in the groups promoted brands in unhealthy food categories, including fast food and other restaurants, snacks and candy, and drinks (primarily sugary drinks and energy drinks) (see Table 3). Notably, there was high consistency among groups in specific brands mentioned. Participants in at least four groups discussed marketing for McDonald's, Burger King, Starbucks, and Dunkin in the fast food category, as well as Doritos, Red Bull energy drink, and Crumbl Cookies (which posts different flavors every week via social media). Despite expert recommendations that children under 18 should not consume energy drinks, students in all groups described marketing for at least one energy drink brand (including Red Bull, Monster, Celsius, and Gatorade Kickstart). Students in the Spanish-language group also mentioned exposure to marketing for some snack food and drink brands from Latin countries. Students in all groups, except the Spanish-language group, also mentioned using a number of ordering apps with individually targeted marketing, led by UberEats and DoorDash and including apps from fast food companies.

Table 3. Food brand mentions

| Category | Group 1 | Group 2 (Spanish) | Group 3 | Group 4 | Group 5 |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Fast Food | *McDonald's, Burger King, Starbucks, Domino's* | *McDonald's, Burger King, Starbucks, Dunkin, Taco Bell, KFC* | *McDonald's, Burger King, Starbucks, Dunkin,* Chick-fil-A, Five Guys, Wingstop | *McDonald's, Burger King, Starbucks, Dunkin, Domino's, Wendy's, Taco Bell, KFC, Chipotle,* Raising Cain's, Panera Bread, Dairy Queen, Shake Shack, Popeyes | *McDonald's, Burger King, Starbucks Dunkin, Domino's Wendy's Taco Bell, Chipotle,* In-N-Out, Arby's |

| | | | | | |
|---|---|---|---|---|---|
| Restaurants | Ichiro (sushi) | Parrilla (Colombian) | | Chili's, Olive Garden, Cheesecake Factory, Golden Corral, Carnival | Aurora's, Bon Chan, Perkatory |
| Snacks and candy | *Doritos, Takis, Cheetos, Lay's, Dubai Chocolate* | *Doritos,* M&Ms, Pringles, Ruffles, Arepololi (Colombia), Sambos (Honduras), NatuChips, Gummy Bears | *Doritos, Takis,* Hershey's, Little Debbie, Nerds, Popsicles, | *Chips Ahoy,* Chex Mix, Flipz, P5 | *Doritos, Takis, Cheetos, Lays, Dubai Chocolate, Chips Ahoy*, Ritz Crackers, Goldfish, Oreos, Little Bites, |

| | | | | | |
|---|---|---|---|---|---|
| Drinks | *Red Bull, Coca-Cola, Monster,* Sprite, Pepsi, Dr Pepper, Energy Punch (Dunkin) | *Red Bull, Coca-Cola, Gatorade,* Champagne Cola (El Salvador), Jugos del Valle, Bool | *Red Bull, Coca-Cola, Monster,* Prime | *Red Bull, Monster, Gatorade Kickstart,* Bang, C4, Apple & Eve, Capri Sun | *Gatorade,* Celsius, Arizona |
| Ordering apps | *Uber Eats* | | *DoorDash, McDonald's, HelloFresh* | *Uber Eats, DoorDash, McDonald's, HelloFresh,* Grubhub, Wingstop, GoPuff, Instacart, Dairy Queen | *Uber Eats, DoorDash,* Chipotle, Dunkin, Starbucks, |
| Other | *Crumbl Cookies,* Rice Krispies | *Crumbl Cookies* | *Cinnamon Toast Crunch,* Coffeemate | *Crumbl Cookies, Cinnamon Toast Crunch* | *Crumbl Cookies,* Auntie Anne's |

While discussing the types of marketing they experienced, participants expressed some awareness that marketing can be misleading. For example, many mentioned that they didn't like a food they had seen promoted after trying it, or that marketed products looked much better in ads than in real life. However, most participants agreed that marketing in social media (including influencers), videos and ads were highly effective at getting them to try new foods and drinks. Mentions of other effective marketing techniques included promotional tie-ins, packaging, new items and extreme flavors.

The discussions about targeted marketing revealed more varied attitudes about marketing aimed at adolescents and/or youth of color. Awareness of targeted food marketing to "people like them" was mixed, although most recognized and could name targeted brands. On the positive side, many expressed that targeted marketing made them "feel appreciated" by targeted brands and that promoted foods were convenient, affordable and taste good. On the other hand, many also expressed neutral or ambivalent attitudes about targeted marketing, such as marketing is "just business," or that, even though they like the products, companies shouldn't be encouraging kids to eat unhealthy foods. After viewing the information about targeted marketing provided in the handout, more participants

voiced negative attitudes. A number of students expressed that companies should not promote only cheap, unhealthy foods to teens. A few also viewed targeted marketing as predatory, mentioning that it exploits vulnerable groups, especially low-income neighborhoods, at the same time that healthier options remain expensive and less accessible.

*Nutrition knowledge and education*

Most focus group participants agreed that healthy eating is important for teens, especially for energy and proper growth. They also generally perceived that recommended daily consumption of healthy options (including fruits, vegetables, water, and milk) was achievable. However, there was consensus that most teens don't follow expert recommendations that they rarely or never consume candy, chips, fast food, sugary drinks and energy drinks (cited in the handout). Reasons included that healthy foods are cheaper, more accessible, and strongly preferred for taste and convenience. Some also mentioned that non-recommended foods were offered by the school.

When reviewing the handout on recommendations for healthy eating, participants expressed some misperceptions regarding sugar intake, including beliefs that sugar and foods with added sugar (e.g., cookies, candy) are necessary. Some also believed that consuming caffeine (primarily in energy drinks and coffee) is fine in moderation, with statements such as energy drinks are "not that bad" and they "give you energy to work". Just a small number of individuals (approximately one per group) expressed a deeper understanding of nutrition, for example by explaining that sugar can be provided by eating healthy foods such as fruit.

These discussions also revealed students' limited exposure to nutrition education. Most indicated that they had received some nutrition education in school years earlier (as high school freshmen or in middle or elementary school). However, some students who had recently immigrated to the U.S. reported receiving more comprehensive nutrition education in their home countries.

*Social influences*

Participants cited their peers as a major contributor to unhealthy eating behaviors. Students in all groups discussed frequently eating out with friends, primarily at fast food and ethnic restaurants. In addition, peers introduced each other to new snack foods, and they often bought snacks to share with their friends. Students also described how their peers introduced them to foods they discovered through social media.

Families also play an important role in students' eating habits, both positive and negative. Some students reported that their parents tried to limit their access to unhealthy drinks (including energy drinks), cook healthy family meals, and/or encourage healthy eating in other ways. Students in the Spanish-language focus group more commonly reported these

behaviors compared to the other groups. On the other hand, students also reported that parents and other family members provided unhealthy snacks at home, and eating out on weekends with their family was common, often at places serving primarily unhealthy food (e.g., pizza and buffet restaurants).

Participants in some groups also perceived cultural differences in food preferences and eating habits, although these discussions differed between focus groups. For example, two groups (including the Spanish-language group) described how non-Hispanic people consume more fast food and energy drinks. In another group, students believed that certain groups, including Black and/or native-born U.S. teens, had less healthy dietary habits compared to White or recent immigrant peers.

### Recommendations from the students

Students had difficulty identifying specific actions that could be taken to improve their food environment. However, participants in all groups described the need for more effective nutrition education. Specific recommendations included using social media and videos to promote healthy eating; using more impactful arguments regarding health-related consequences of poor nutrition (e.g., “eating candy causes diabetes”) and benefits from following nutrition recommendations; and teaching nutrition, cooking and hands-on culinary skills in schools.

Participants in three groups also recommended increasing access to and reducing the cost of healthy food, including introducing more supermarkets and better-quality stores and restaurants in Hartford. Improvements in school meals were also recommended by participants in three groups. Specific suggestions included offering hot breakfast options and more culturally diverse options, as well as improving the quality (appearance, taste and texture), variety, and presentation of cafeteria meals.

## Discussion

The results of these focus groups reinforced previous research demonstrating that adolescents and families living in lower-income neighborhoods are surrounded by unhealthy food promotion, including through food retailers, fast food and other restaurants, as well as outdoor signage (e.g., billboards). In contrast, students perceived that promotion of healthy and higher quality food was nearly nonexistent. Moreover, as found in other studies of adolescents across all socioeconomic groups and geographic areas (Rideout et al., 2021; Barnhill et al., 2022), HPHS students reported being inundated with marketing of unhealthy foods on their digital devices. These messages appear daily in their social media feeds and are reinforced by messages their peers receive, resulting in strong desires to try the foods promoted. In addition, many students have multiple food ordering apps on their phones, especially from fast food companies. They regularly use the apps to order food and drinks online and food companies often send them promotional offers through these apps to encourage purchases.

Although students recognized that unhealthy food brands target marketing to teens like them, they expressed highly ambivalent attitudes about targeted marketing as found in previous Rudd Center research (Harris et al., 2019). Many considered it to be unfair that companies only targeted marketing for unhealthy food to them, but they like the food and appreciate that companies want their business. Some participants expressed a desire for healthier and higher quality food options to be available in their neighborhoods. However, most appeared to accept their unhealthy food environment and marketing exposure as inevitable, with little opportunity to reduce their exposure or push back against food companies.

In addition to food marketing, participants were highly engaged in discussing the food environment in HPHS. We purposely did not ask students if they experience food insecurity, and these issues did not come up spontaneously in the discussions. However, it appears that the school serves as an important source of food for many students. Most students eat school lunches and sharing snacks is common during class-time. Participants also mentioned that school personnel provide snacks if students ask for them. Although most do not eat school breakfasts currently, many indicated that they would if breakfast options were more appealing. One of the most frequently cited recommendations was to improve the quality of school lunches and breakfasts.

This highly diverse group of students expressed strong opinions about cultural differences in food preferences and dietary behaviors. Both Latino and non-Latino participants indicated that Latino families tended to eat healthier and that Black and/or White non-Latino students had more unhealthy food preferences and habits. Several groups also identified the need for more culturally relevant foods, in their neighborhoods and the school cafeteria. Some participants from immigrant families perceived that foods from their home countries were available locally, although many wanted more options. Students expressed interest in more culturally diverse options in schools, including from cultures that were not their own, and more variety in school food offerings more generally.

Another common theme found in all groups was misunderstanding about fundamental nutrition principles, with many believing that teens need to consume sugar and/or caffeine for energy. Their understanding of the benefits of good nutrition for teens were vague, focusing primarily on growth and development, with no mentions of disease prevention. Most participants' very limited exposure to nutrition education likely contributes to these misunderstandings. Of note, a small number of students (just one per group on average) did express a more sophisticated understanding of nutrition, and students from other countries appeared to have received more comprehensive nutrition education in their schools. Some participants identified the need for better nutrition education for teens, including use of social media as well as more direct messages about the health consequences of poor nutrition.

## Phase 2 recommendations

Based on these findings, we identified several potential programs or policies that could help address the issues raised in the focus groups:

- Examine cafeteria offerings, such as providing hot breakfasts, improving the quality of breakfast and lunch food, increasing access to fruit and other healthy options for breakfast and lunch.
- Subsidize distribution of healthy snacks at schools (e.g., in the cafeteria, by school staff).
- Develop practical nutrition education curriculum, that includes information on energy drinks, countermarketing (i.e., exposing the motives and manipulative marketing tactics of food and beverage brands), how and why to eat healthy (e.g., explaining harms that result from unhealthy food consumption), and how to prepare quick/easy healthier food at home.
- Offer a peer-led program/club for students interested in nutrition.
- Make nutrition-related programs outside of school accessible to students (e.g., culinary training on how to make healthy and affordable food).
- Develop programs to address food insecurity.

The research team then met with our research Community Advisory Board (see Table 4) to identify a potential project for the second group of ACS to help codesign during the 2025-26 school year. The Board expressed strong interest and need for programs to improve school foods, but that would require additional funding, significant support from many school stakeholders (from cafeteria staff to district administration), and a longer timeframe available for the project. Therefore, the Board agreed that working on issues of food security was the most feasible and potentially impactful program option for the next group of ACS to help codesign.

Table 4. Community Advisory Board Members

| **Member** | **Organization** |
|---|---|
| Dr. Annie Wellington, Teacher | HPHS |
| Rebecca Castagno, Director of Health Initiatives | United Way, Central and Northeastern CT |
| Luis Rodriguez Porter, Director of Volunteer Services | Connecticut Foodshare |
| Ben Dubow, Executive Director | Forge City Works, a Hartford-based non-profit that offers culinary job training programs and conducts a variety of community initiatives. |

## Conclusion

Phase 1 of our RWJF-funded project to engage HPHS students as ACS was a success. Five HPHS students assisted in conducting qualitative research to identify barriers to healthy eating that they experience in their environment. Based on the research findings and consultation with the program's Community Advisory Board, we were able to identify a systems-level program to help improve the Hartford-area food environment in Phase 2 of the project.

In addition, we conducted a survey of the ACS program members at the end of Year 1 (Table 5), which demonstrated that they enjoyed and learned "a lot" from the training program. Highlights of the program for the ACS were the nutrition, food marketing, advocacy, and research modules. In addition, they reported learning numerous skills that will help them in future academic and career endeavors, including active listening, public speaking, working as a team, and critical thinking. Overall satisfaction with the program was 3.5 (on a 4-point scale).

Table 5. ACS Program Evaluation

| **Value** | **Learning*** | **Enjoyment**** |
|---|---|---|
| **Modules** (n=5) | **Mean (range)** | **Mean (range)** |
| Nutrition | 4.0 | 3.4 (3-4) |
| Food marketing | 4.0 | 3.6 (2-4) |
| How advocacy/research support policy change | 3.8 (3-4) | 3.2 (2-4) |
| How to conduct research | 3.6 (3-4) | 2.8 (2-4) |
| Health disparities | 3.4 (3-4) | 2.2 (2-3) |
| Communicating research | 3.2 (3-4) | 3.2 (3-4) |
| How research informs policy | 3.2 (3-4) | 3.0 (2-4) |
| **Activities** (n=5) | | |
| Capstone presentations | | 3.7 (3-4) |
| Advocacy day at the legislature | | 3.5 (3-4) |
| Observing the food marketing environment | | 3.5 (3-4) |
| Visit to Forge City | | 3.0 (2-4) |
| Assisting with focus groups | | 3.0 |
| Presentation by food advocate | | 2.8 (2-3) |
| Recruiting participants | | 2.8 (1-4) |
| **Skills developed (by at least 3 participants)** (n=4) | | |
| Active listening (4) | Public speaking | |
| Asking good questions | Commitment to work | |
| Working as a team | Time management | |
| Observing the food environment | Critical thinking | |

*How much did you learn? Scale of 1 (nothing) to 4 (a lot)
**How much did you enjoy? Scale of 1 (did not like) to 4 (liked a lot)

The high school students in our ACS program were enthusiastic, proved that they could learn the basics of academic research, and provided valuable assistance in the design and implementation of a qualitative research study that met all requirements for academic-level research. We believe that our focus group findings and the success of our ACS training program will provide valuable evidence for future researchers interested in conducting CPBR research with adolescents to help address public health challenges affecting youth living in other less-advantaged communities.

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# APPENDIX 1. Focus Group Discussion Guide

[*Notetaker will sit in circle. The scribe and ACS non participant observer will be at another table near, but apart form group (not staring at group)]*

Hi everyone.

[*When completing consent/assent forms at sign in each participant will write their name on a cardstock to be placed in front of each person in view of the moderator*]

Welcome and thanks for joining us today. My name is [Ashley] and these are [names] who will be helping me out today. [Notetaker, Scribe, ACS non-participant observer]

They are here to take notes and make sure that I stay on track. I'm here to ask questions and guide the discussion, but you all will be doing most of the talking. We invited you because we really want to hear what you have to say.

Today we're going to be talking about food marketing and other things going on in your neighborhood that can make it easier or harder for you to eat healthy.

It's important to know that there are no right, wrong or weird answers. Everyone's experiences and opinions are important to us so we ask you to speak up. I may call on you if I haven't heard from you in a while. Also, you may not agree with what others are saying, but we want to hear what everyone has to say.

To make sure you all get back to class on time, I may have to move us on to different topics, or give someone else time to talk.

We will also record our discussion to make sure that we remember all of the great information you share. But everything you say here will be confidential. If we use your name at any time during our conversation it will be removed from the transcript so while we'll have what was said we will not have who said what. And since we're recording, please speak clearly and only one person at a time. We don't want to miss anything. Also, please do not talk about our discussion when you leave the session. We want the students who join future sessions to hear the questions for the first time when they attend.

XXX will also be taking some notes on these big sheets of paper that we will be using later in our discussion. [*Scribe sitting apart from group will record all brands mentioned on large post-it*.]

Does anyone have questions?

Ok, please put your phones away and let's get started.

I'd like to start by asking you to tell us a few things about you. Some of you may already know each other, but we don't, so please let us know your name, what year you are in school, and your favorite holiday and why. *[Go around the table and have everyone answer]*

Thank you. That was great!

## Food environment discussion

*School*

- Now, I'd like you all to imagine that you just met a new student in your school who has just moved here from outside of Hartford. They seem nice and you're talking with them, and they ask you what do kids do for lunch at school? Where do they get the food from, where do they eat it, what foods do kids like to eat, what foods aren't so good? That sort of thing.

    - Probes: Do they get food from the cafeteria or bring from home, or do they buy it at the corner store or get it delivered; what kinds of things students eat and drink

- What about snacks at school? Can you eat in class or other places at school? What foods and drinks do students usually bring?

    - Probe: If only food is discussed, ask about drinks

- And do kids eat breakfast at school too? Does the school provide the breakfast or do they bring it from home? What's available for breakfast at school?

*After school/weekends*

- What about after school and on weekends with friends? What do people your age like to eat or drink when they are hanging out?

    - Probe: Bring up drinks if not mentioned. Ask about energy drinks

- Do you buy those foods yourselves? Where do you go to buy them?

- Are there places you like to go out to eat with your friends? Why do you like to go there?

- Are there foods or drinks that you can't get around here that you would like to have?

    - Redirect to neighborhood/Hartford if they start talking only about school.

Thanks. That's very interesting!

## Marketing Discussion

*Makes you want to try new food*

- Now, I'd like you to think about the last time you wanted to try a food or drink you never had before – I'm interested in hearing about specific brands, like Hot Cheetos or Crumbl Cookies. What was it?

- Where did you hear about it? Why did you want to try it? If you tried it, what did you think after?

- Probe for examples of food marketing and specific brands. If someone says “ads,” probe.

- Probe for where they saw the ads.

*Social media marketing*

- Some of you mentioned that you tried a new food or drink because you heard about it on social media. [Or] Other teens we’ve talked to have told us that they tried a new food or drink because they heard about it on social media.

- How often do you see something on social media that makes you want to eat or drink something?

    - Probe: Ask “how often” if someone says, “a lot.”

- Can you describe the kinds of messages you see on social media that talk about food and drinks?

- Do you think those messages are effective at getting teens like you to try those products? Why or why not?

- What are some of the best ones you’ve seen?

*Other types of digital marketing*

- Other than social media, are there other ways that you see on your phone or computer where companies try to get teens like you to buy or try new food and drinks?

    - Probe: Ask about the other types of online marketing that did not come up (apps, online games, and email). For example, “Have you ever seen food or beverage marketing in apps on your phone, in video games, or in your email?”

    - If specific food apps do not come up: “Do you have any apps on your phone from food companies, like McDonald’s, Dunkin’?

*Local food environment*

- Take a minute and picture in your mind where you live, go to school and shop. Do you see messages that make you want to buy or try new food and drinks?

    - Probe: Ask about other types of marketing in the local food environment that did not come up, including *marketing in stores, in restaurants, in school, signs in their neighborhood and product packaging*.

- Thinking about all the ways we’ve talked about that companies market food and drinks, what brands have marketing that you really like? Do you think it works to make you want those products? Why or why not?

- What do you like about this marketing?

- Is there anything you don't like about it?

## Nutrition discussion

### *Nutrition education*

- Now I'd like to switch gears a bit.
- Have you ever learned about nutrition?
    - If yes, probe: From whom or where did you get this information? What did you learn about it?
- Do you think healthy eating is important for teens? If yes, why?
- What would be some good ways to help teens learn about nutrition?

### *Nutrition recommendations*

*[Notetaker hands out Recommendations sheet to the group]* These are recommendations from nutrition experts describing what a healthy diet for teens looks like. Let's take a look at it together.

*[Moderator paraphrases when reviewing with the group.]*

- What do you think about these recommendations? Do they make sense to you?
- Do you think a lot of teens you know follow them? Why or why not/
- If a teenager living in Hartford wanted to follow these recommendations, do you think it would be easy or hard to do that? Why/
- Are there some that would be easier to follow? Harder to follow? Why?
    - Probe for responses to specific ones: Not consuming categories of food under "rarely or never." Consuming more of the categories under "consume every day."
- Do you think the marketing you see might be related to teens' food and drink choices?

Please hand back the sheets and we'll move on.

## Targeted Marketing

- When companies are figuring out their marketing plans, they first decide what types of consumers they want to buy their product and then they create marketing that will work for those people. They call this their target audience. A target audience can be a certain age group (like teenagers), people with a certain interest (like gaming, sports), a certain racial or ethnic group, or people living in a certain place.

*[Scribe posts the list of all food and beverage brands mentioned on wall near group so it is visible to participants..]*

- Thinking about the marketing and brands we just talked about [*moderator points to list that gets added to the wall]*, do you think any of these are targeting people like you in their ads or other marketing?
- Which brands? What makes you think it is targeting people like you?
- Are there other food brands that you think are trying to get people like you to like their products?

*[Scribe circles the food and beverage brands that participants say target them and adds targeted brands if they are not already there.]*

- So, you mentioned that these brands *[moderator points to the list on the wall]* are targeted to people like you. How does that make you feel about those brands?
- Are there good things about targeting someone like you with marketing for these brands? Are there bad things about that? (Note: Redirect to consumers if people bring up that it is good for companies.)

*Targeted Food Marketing*

- Let's take a look at something else. This sheet has some findings from researchers who study food marketing targeted to different groups. *[Notetaker hands out Facts About Food Marketing sheet to the group]* Let's read them together.

*[Moderator paraphrases when reviewing with the group.]*

- What do you think about these? Are any of them surprising to you?
- Do you think these things happen in Hartford?
- What do you think about the companies who do this?
- Do you think it's right for them to do this?

Please hand back the sheets. We have just one more thing to go through.

## Final questions

- I'd like to wrap up with a couple of quick questions.
- We talked a lot about the foods that you like to eat and drink, about food marketing, and about what's available in your neighborhood, and what makes it easy or hard to eat healthy. We call this the food environment. If you had a magic wand, what is the one thing you would like to change about the food environment in Hartford?
- Is there anything else you want to tell me that you didn't get a chance to say before?
- If time allows: Out of all that we discussed today what stood out to you the most?

## Survey

We have one last thing for you to do before we tell you about the study and give out the Amazon gift cards. After that you can leave so you can get on with the rest of your day.

[*Notetaker passes out demographic and consumption survey and pens*]

Please fill out this quick survey. It should just take a few minutes and then we can talk about this study and hand out the gift cards.

[*The scribe and ACS non-participant observer will have the gift cards and the spreadsheet. Wait for participants to complete the survey and for the debrief to be complete*.]

## Verbal Debriefing Script

Try to keep eye contact and not read.

- The purpose of the session today was to learn more about your experiences of food marketing and challenges to healthy eating. We asked you questions to learn about the barriers to healthy eating Hartford adolescents experience in their environment and we learned a lot.
- The food that is frequently marketed to teens is unhealthy and research shows that food and beverage companies target young people with the marketing of their unhealthiest products like fast food, unhealthy snacks, candy, and sugary drinks and energy drinks.
- Exposure to unhealthy food marketing when you are young can have long-term effects on the foods you prefer and choose to eat all your life. Unhealthy food consumption is linked to diabetes, unhealthy weight and cancer. In order for people to like and choose healthy food, the environment that surrounds them needs to support healthier food choices.
- We hope what we learned will help us determine a program or a policy to address the issues you raised. We'll be sharing this information with a group of local community leaders to determine ways to improve the food environment in Hartford. Working with them will ensure that the community will benefit as much as possible from the data and knowledge gained from this project.
- You are the voice of the next generation of community members and leaders, please know how important it is that you share your views, thoughts, and opinions today.
- Does anyone have any questions? (*Wait for response*)
- If you think of any later, feel free to contact us for more information.
- After you sign to receive your gift card you are free to go. Thank you again for participating in this study. We really appreciate it!

## Gift card distribution

*[While the focus group is happening the ACS non-participant observer can use the check-in sheet so names and Amazon gift card numbers are on the spreadsheet. Be sure each person receives the correct gift card and signs beside his/her name on the sheet*.]

## Techniques to keep the discussion going

Non-directive prompts:

- Mhmm, that's interesting, tell me more about that.
- When talking about XXXX you said XXXX. Could you talk a bit more about that?

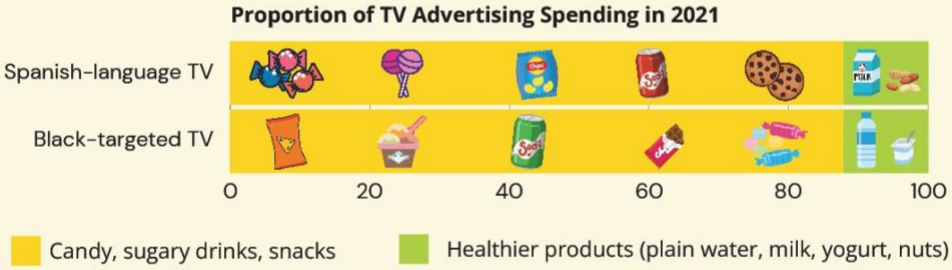
'Parroting' – repeating the last things the participant said with an upward inflection to indicate you are not sure what they mean]

# FACTS ABOUT FOOD MARKETING!

**Lower-income neighborhoods** (compared to higher income) have:

- 2X as many fast food restaurants
- More billboards for unhealthy foods
- Fewer supermarkets
- More small stores with
  - Less fresh food (fruits, vegetables)
  - More unhealthy foods (chips, soda)


Most food ads on Spanish-language and Black-targeted TV channels are for **unhealthy foods and drinks.** No ads for fruits or vegetables!




Food companies use **Black and Latino culture** -- musicians, sports figures and influencers -- to make their products seem cool and appeal to teens.

- Most of them promote unhealthy foods
- Travis Scott made $20 million from his McDonald's meal deal!


# DATOS SOBRE LA ¡PUBLICIDAD DE ALIMENTOS!

**Los vecindarios de bajos ingresos** (en comparación con los de mayores ingresos) tienen:

- 2X más restaurantes de comida rápida
- Más letreros publicitarias para alimentos poco saludables.
- Menos supermercados
- Más tiendas pequeñas
  - Menos alimentos frescos (frutas,
  - verduras, lácteos)
  - Más alimentos poco saludables (papas fritas, refrescos)



La mayoría de los anuncios de alimentos en los canales de televisión en español y dirigidos a la comunidad negra eran para **alimentos y bebidas poco saludables**. No hubo anuncios para frutas y vegetales/verduras

**Proporción del gasto en publicidad en televisión en 2021**


Las empresas de alimentos utilizan la cultura negra y latina – músicos, figuras deportivas e influencers -- para hacer que sus productos parezcan atractivos para los adolescentes.

- La mayoría de ellos promueven alimentos poco saludables
- ¡Travis Scott ganó 20 millones de dólares con su combo de McDonald's!


# NUTRITIONAL ADVICE FOR TEENS


## Foods and drinks you should have every day:

- Water
- Plain milk
- Fruits
- Vegetables
- Whole grains
- Nuts


## Foods or drinks you should rarely or never have:

- Candy
- Chips
- Cookies
- Fast food (burgers, fries, pizza, wings)
- Sugary cereal
- Sugary drinks (soda, sports drinks, iced tea, fruit-flavored and coffee drinks)

## Drinks you should <u>not</u> have:

- Energy Drinks!

# CONSEJOS NUTRICIONALES PARA ADOLESCENTES


## Comidas y bebidas que deberías comer todos los días:

- Agua
- Leche regular
- Frutas
- Verduras/ Vegetales
- Granos enteros
- Nueces/frutas secas


## Comidas o bebidas que deberías comer raramente o nunca:

- Dulces
- Papas fritas
- Galletas
- Comida rápida (hamburguesas, papas fritas, pizza, alitas)
- Cereal azucarado
- Bebidas azucaradas (refrescos, bebidas deportivas, té helado, bebidas con sabor a frutas y café)

## Bebidas que <u>no</u> debes tomar:

- ¡Bebidas energéticas!

## APPENDIX 3: Demographic follow-up survey

**This survey is about you and the food and drink you consumed in the past 7 days. Circle the letter of the best answer to each question.**

1. **How old are you?**
    a. 13 years old
    b. 14 years old
    c. 15 years old
    d. 16 years old
    e. 17 years old
    f. 18 years old
    g. 19 years or older
2. **Gender: How do you identify?**
    a. Woman
    b. Man
    c. Non-Binary
    d. Prefer to self-describe _____
3. **What grade are you in?**
    a. 9th grade (Freshman)
    b. 10th grade. (Sophomore)
    c. 11th grade (Junior)
    d. 12th grade (Senior)
4. **Are you Hispanic or Latino?**
    a. Yes
    b. No
5. **What is your race?** *(Select one or more responses)*
    a. American Indian or Alaska Native
    b. Asian
    c. Black or African American
    d. Native Hawaiian or Other Pacific Islander
    e. White
    f. Other _____

**The next 12 questions ask about food you ate or drank <u>during the PAST 7 DAYS.</u>**

**Think about all the meals and snacks you had from the time you got up until you went to bed. Be sure to include food you ate at home, at school, at restaurants, or anywhere else.**

6. **During the past 7 days, how man times did you drink 100% fruit juices such as orange juice, apple juice, or grape juice?** *(Do NOT count punch, Kool-Aid, sports drinks, or other-fruit-flavored drinks.)*
    a. I did not drink 100% fruit juice during the past 7 days
    b. 1 to 3 times during the past 7 days

c. 4 to 6 times during the past 7 days
d. 1 time per day
e. 2 times per day
f. 3 times per day
g. 4 or more times per day

7. **During the past 7 days, how many times did you eat fruit?** *(Do not count fruit juice.)*
   a. I did not eat fruit during the past 7 days
   b. 1 to 3 times during the past 7 days
   c. 4 to 6 times during the past 7 days
   d. 1 time per day
   e. 2 times per day
   f. 3 times per day
   g. 4 or more times per day
8. **During the past 7 days, how many times did you eat green salad?**
   a. I did not eat green salad during the past 7 days
   b. 1 to 3 times during the past 7 days
   c. 4 to 6 times during the past 7 days
   d. 1 time per day
   e. 2 times per day
   f. 3 times per day
   g. 4 or more times per day
9. **During the past 7 days, how many times did you eat potatoes?** *(Do not count french fries, fried potatoes, or potato chips.)*
   a. I did not eat potatoes during the past 7 days
   b. 1 to 3 times during the past 7 days
   c. 4 to 6 times during the past 7 days
   d. 1 time per day
   e. 2 times per day
   f. 3 times per day
   g. 4 or more times per day
10. **During the past 7 days, how many times did you eat carrots?**
    a. I did not eat carrots during the past 7 days
    b. 1 to 3 times during the past 7 days
    c. 4 to 6 times during the past 7 days
    d. 1 time per day
    e. 2 times per day
    f. 3 times per day
    g. 4 or more times per day
11. **During the past 7 days, how many times did you eat other vegetables?** *(Do not count green salad, potatoes, or carrots.)*
    a. I did not eat other vegetables during the past 7 days
    b. 1 to 3 times during the past 7 days

c. 4 to 6 times during the past 7 days
d. 1 time per day
e. 2 times per day
f. 3 times per day
g. 4 or more times per day

12. **During the past 7 days, how many times did you drink a can, bottle, or glass of soda or pop such as Coke, Pepsi, or Sprite?** *(Do not count diet soda or diet pop.)*
    a. I did not drink soda or pop during the past 7 days
    b. 1 to 3 times during the past 7 days
    c. 4 to 6 times during the past 7 days
    d. 1 time per day
    e. 2 times per day
    f. 3 times per day
    g. 4 or more times per day
13. **During the past 7 days, how many times did you drink a can, bottle, or glass of a sports drink such as Gatorade or PowerAde?** *(Do not count low-calorie sports drinks such as Propel or G2.)*
    a. I did not drink sports drinks during the past 7 days
    b. 1 to 3 times during the past 7 days
    c. 4 to 6 times during the past 7 days
    d. 1 time per day
    e. 2 times per day
    f. 3 times per day
    g. 4 or more times per day
14. **During the past 7 days, how many times did you drink a can or bottle of an energy drink such as Red Bull, Monster, or Celsius?**
    a. I did not drink energy drinks during the past 7 days
    b. 1 to 3 times during the past 7 days
    c. 4 to 6 times during the past 7 days
    d. 1 time per day
    e. 2 times per day
    f. 3 times per day
    g. 4 or more times per day
15. **During the past 7 days, how many times did you drink a bottle or glass of plain water?** *(Count tap, bottled, and unflavored sparkling water.)*
    a. I did not drink water during the past 7 days
    b. 1 to 3 times during the past 7 days
    c. 4 to 6 times during the past 7 days
    d. 1 time per day
    e. 2 times per day
    f. 3 times per day
    g. 4 or more times per day

16. **During the past 7 days, how many glasses of milk did you drink**? *(Count the milk you drank in a glass or cup, from a carton, or with cereal. Count the half pint of milk served at school as equal to one glass.)*
    a. I did not drink milk during the past 7 days
    b. 1 to 3 glasses during the past 7 days
    c. 4 to 6 glasses during the past 7 days
    d. 1 glass per day
    e. 2 glasses per day
    f. 3 glasses per day
    g. 4 or more glasses per day
17. **During the past 7 days, on how many days did you eat breakfast?**
    a. 0 days
    b. 1 day
    c. 2 days
    d. 3 days
    e. 4 days
    f. 5 days
    g. 6 days
    h. 7 days
18. **Are there any foods that you have to avoid because the food could cause an allergic reaction, like skin rashes, swelling, itching, vomiting, coughing, or trouble breathing?**
    a. Yes
    b. No
    c. Not sure

## APPENDIX 4: Recruitment flyers

### Students wanted for Research Study!

Share your experiences with food marketing and challenges to healthy eating

We are conducting small group discussions about food marketing and the food environment in Hartford. We are interested in talking about the food in your community and how it is marketed to you.

**All HPHS students are welcome to participate!**
$25 Amazon gift card for participating

**What do I have to do?** Attend a 90-minute group discussion during your lunch period (11:30-1:00)

**When?** Late-April and early-May

**Where?** Hartford High Library
Sandwiches and snacks will be available!

**For more info and dates, scan the QR code**
For additional information, text:
**Ashley Hernandez - (860-984-4995)**

Hispanic Health Council | UCONN UNIVERSITY OF CONNECTICUT

This research is conducted under the direction of Fran Fleming-Milici, UConn and Sofia Segura-Pérez, Hispanic Health Council.

### ¡Se buscan estudiantes para un estudio de investigación!

Comparte tus experiencias sobre la publicidad de alimentos y los desafíos para comer saludablemente.

Estamos haciendo discusiones en grupos pequeños sobre la publicidad de alimentos y el entorno alimentario en Hartford. Nos interesa hablar sobre la comida en tu comunidad y cómo se te presenta.

**¡Todos los estudiantes de HPHS son bienvenidos a participar!**
$25 tarjeta de regalo de Amazon por participar

**¿Qué tengo que hacer?** Asistir a una discusión en grupo de 90 minutos durante tu hora de almuerzo (11:30-1:00)

**¿Cuándo?** Días seleccionados en los finales de abril, y principios de mayo

**¿Dónde?** Biblioteca de Hartford High
¡Habrá Sándwiches y bocadillos!

**Para más información y fechas, escanea el código QR**
Para obtener información adicional, envíe un mensaje de texto:
**Ashley Hernandez - (860-984-4995)**

Hispanic Health Council | UCONN UNIVERSITY OF CONNECTICUT

Esta investigación se lleva a cabo bajo la dirección de Fran Fleming-Milici, UConn y Sofia Segura-Pérez, Concilio Hispano de la Salud.

# APPENDIX 5: ACS recruitment script

## Script for students to use in class

Good morning,

UConn and the Hispanic Health Council are conducting a study in the library during lunch, and you will receive a $25 Amazon gift card for participating.

The study is being done to understand teenagers' experiences of food marketing and challenges to healthy eating. You'll have the chance to:

- Share your thoughts on the food options available in your community
- Discuss how food is advertised and marketed to young people like you
- Help researchers from the University of Connecticut and the Hispanic Health Council understand your perspectives

The discussions will take place in the library during the lunch period on 5 different days in April and May. Sandwiches and snacks will be provided. You can only attend one time.

To sign up, you can use the QR code on my phone *[or pass around a flyer if you have one available]*. You can also find the QR code on posters placed around the school and in an invitation in your seminar Google classroom. Space is limited so if you are interested sign up as soon as possible.

## Script for students to use in morning announcements

Good morning,

UConn and the Hispanic Health Council are conducting a study in the library during lunch, and you will receive a $25 Amazon gift card for participating.

The study is being done to understand teenagers' experiences of food marketing and challenges to healthy eating. You'll have the chance to:

- Share your thoughts on the food options available in your community
- Discuss how food is advertised and marketed to young people like you
- Help researchers from the University of Connecticut and the Hispanic Health Council understand your perspectives

The discussions will take place in the library during the lunch period on 5 different days in April and May. Sandwiches and snacks will be provided. You can only attend one time.

To sign up use the QR code on posters placed around the school or check your seminar Google classroom for an invitation. Space is limited. Sign up today!

## APPENDIX 6: Online screening survey

Please note you can choose to view this survey in English or Spanish

### Study description

Are you interested in talking about food in your community and how it's marketed to you? We're inviting you to join a small group discussion with other teens at your school!

You'll have the chance to:

- Share your thoughts on the food options available in your community
- Discuss how food is advertised and marketed to young people like you
- Help researchers from the University of Connecticut and the Hispanic Health Council understand your perspective

You will get a $25 Amazon gift card for participating.

This discussion will take place in the school library during the lunch period on May 20.

On the day you attend, Dr Wellington will provide you with a pass to be in library 11:30 to 1:15. You can grab your lunch at 11:15 and bring it with you to join the group or come without your lunch. Sandwiches and snacks will be served. We will be sure you are done in time to get to your 1:15 class (if you have one).

This is a fun and interactive way to have your voice heard and make a difference!

To sign up please fill out a few questions below.

Please note this group discussion will be held in English.

## Survey

1. How old are you?

    ○ 13 years old (1)

    ○ 14 years old (2)

    ○ 15 years old (3)

    ○ 16 years old (4)

    ○ 17 years old (5)

    ○ 18 years old (6)

    ○ 19 years old or older (7)

2. Are you a…

    ○ Woman (1)

    ○ Man (2)

    ○ Non-Binary (3)

    ○ Prefer to self-describe (4)

3. What grade are you in?

    ○ 9th grade (Freshman) (1)

    ○ 10th grade (Sophomore (2)

    ○ 11th grade (Junior) (3)

    ○ 12th grade (Senior (4)

4. Please list your student ID below. If you are under age 18, a teacher at your school will use this ID number to send your parent a permission form by school email. A parent or guardian must sign a permission for students under age 18 to participate in the discussion. If you want to bring home a paper copy of the form, please see XXXX, but we still need your student ID number.
5. Please indicate the language that is best to use for your parent permission form.

    ○ English (1)

    ○ Spanish (2)

6. We will be holding 6 sessions in the library. You can only participate one time. Please click on ALL the days and times you are able to participate. In a few days, you will receive an email telling you what day you have been assigned to come.

    ○ Tuesday, March 18 (1)

    ○ Thursday, March 20 (2)

    ○ Tuesday, March 25 (3)

    ○ Thursday, March 27 (4)

    ○ Tuesday, April 1 (5)

    ○ Thursday, April 3 (6)

7. Some small group discussions will be in English and others in Spanish. Please indicate the language you would prefer to use in the discussion.

    ○ English (1)

    ○ Spanish (2)

8. We'll need to contact you to let you know the day you have been assigned to attend at send reminders. Please let us know the best way to reach you.

    ○ Mobile phone number (1) _____

    ○ Email address (2) _____

Thanks for this information. If you are under age 18 please be sure your parent or guardian signs your permission form. We will contact you by text or email to let you know the date you are assigned to attend.

## APPENDIX 7: Study debrief

1. The purpose of the session today was to learn more about your experiences of food marketing and challenges to healthy eating. We asked you questions to learn about the barriers to healthy eating Hartford adolescents experience in their environment and we learned a lot.
2. The food that is frequently marketed to teens is unhealthy and research shows that food and beverage companies target young people with the marketing of their unhealthiest products like fast food, snacks, candy, and sugary drinks and energy drinks.
3. Exposure to unhealthy food marketing when you are young can have long-term effects on the foods you prefer and choose to eat all your life. Unhealthy food consumption is linked to diabetes, unhealthy weight and cancer. In order for people to like and choose healthy food, the environment that surrounds them needs to support healthier food choices.
4. We hope what we learned will help us determine a program or a policy to address the issues you raised. We'll be sharing this information with a group of local community leaders to determine ways to improve the food environment in Hartford. Working with them will ensure that the community will benefit as much as possible from the data and knowledge gained from this project.
5. You are the voice of the next generation of community members and leaders, please know how important it is that you share your views, thoughts and opinions today.
6. Does anyone have any questions? (*Wait for response*)
7. If you think of any later, feel free to contact us for more information.
8. Thank you again for participating in this study. We really appreciate your involvement.

## APPENDIX 8: Themes and sub-themes – codebook and results

| | Category | Theme | Subtheme | Description | Summary (Group where mentioned) |
|---|---|---|---|---|---|
| 1.1.1 | Structural barriers/ facilitators | Cost | Expensive | Includes high cost of healthy foods, others if mentioned | • Healthy food targeted to white people (4)<br>• Eggs are expensive (1,5)<br>• Healthy food is expensive (1) |
| 1.1.2 | Structural barriers/ facilitators | Cost | Inexpensive | Includes discussions about foods that are cheaper, more affordable | • Fast food is cheapest thing around here (2) |
| 1.2.1 | Structural barriers/ facilitators | Neighborhood food environment | Types of food[1] - available | Includes descriptions of food options available in own neighborhood, near school and near home; also types of establishments (e.g., lots of fast food, cultural foods) | • Ready availability of junk food (chips, candy, soda, energy drinks, fast food) (3,5)<br>• Availability of food from home country/other countries (1,2,3)<br>• Restaurants, fast food, mercados near home (1) |
| 1.2.2 | Structural barriers/ facilitators | Neighborhood food environment | Types of food – not available | Includes culturally appropriate foods, healthy foods, others? | • Food from home country/ other countries not available (1,2,3)<br>• Specific foods (boba tea, chicken tenders, acai bowls, Arizona tea, Crumbl, In-N-Out) (3,4, 5)<br>• Healthy food (4) |
| 1.2.3 | Structural barriers/ facilitators | Neighborhood food environment | Other neighborhood comments | TBD | • Outdoor ads for junk food/no ads for healthy foods (2) |

[1] Food refers to food and beverages throughout

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| | | | | | • Same establishments outside Hartford are nicer, environment in Hartford is "ghetto" (4)<br>• Not enough of some fast food (Dunkin, Domino's, Wendy's) (4)<br>• A lot of corner stores (5) |
| 1.3.1 | Structural barriers/ facilitators | School food – cafeteria[2] | Foods liked | Statements about specific school foods they like or that are good (e.g., fruit, yogurt, pizza) | • Fruit (2, 4) Other healthy (salad, yogurt) (2)<br>• Nachos, pizza, burgers, quesadillas, taco bites, mozzarella sticks (1, 2, 4)<br>• Breakfast options (waffles, pancakes, oatmeal) (2,4) |
| 1.3.2 | Structural barriers/ facilitators | School food – cafeteria[2] | Foods disliked | Statements about schools foods/drinks they don't like (including taste, quality) | • Broccoli, pasta, sausages, meat, hamburger, mozzarella sticks, spicy food (1,2,3)<br>• Breakfast options (oatmeal, cereal) (1,2,3) |
| 1.3.3 | Structural barriers/ facilitators | School food – cafeteria[2] | Food not available | Includes comments about lack of variety, monotony, not enough of something (including culturally specific options) | • Food from home country (2)<br>• Snacks (4)<br>• Not enough breakfast options (only white milk, apples, cereal every day) (4,5)<br>• Always the same food (1) |

[2] Includes all food/drinks provided by schools, including water fountains

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| 1.3.4 | Structural barriers/ facilitators | School food – cafeteria[2] | Taste and quality | General comments about cafeteria food in general (not specific items) | • Not chewable (2) Too much sugar<br>• (2) |

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| | | | | | • Not good (taste, no flavor, spoiled milk, quality, cold, packaged, greasy) (1, 2, 3, 5)<br>• Green water (4)<br>• Only cold breakfast (5)<br>• Positive comments - Always a variety for lunch (2), getting better (3), it's free, no quality issues (5), some looks appetizing (5), all the food groups (1) |
| 1.3.5 | Structural barriers/ facilitators | School food – cafeteria[2] | Frequency of eating/drinking school foods | Includes frequency of eating cafeteria lunch, breakfast and reasons if not included above | • Usually drink the milk and water (1, 2, 5)<br>• A few eat breakfast at school or sometimes eat breakfast at school (1, 2, 5)<br>• Most eat breakfast at home or don't eat breakfast (1, 2, 3, 4)<br>• Most bring lunch from home (2)<br>• Most eat lunch from cafeteria (1, 3, 5)<br>• Most go out for lunch (4)<br>• Buy snacks on the side at lunch (4) |

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| 1.4.1 | Structural barriers/ facilitators | School food – other | Food brought in by students | Includes types of food/drinks that students bring in, frequency, for lunch, snacks, other occasions; includes food sold by students | • Bring snacks from home (chips, crackers, cookies, cakes, candy) (1, 2, 3, 4, 5)<br>• Kids order/bring in lunch from outside (Chick-fil-A, Chinese, DoorDash, McDonald's, Domino's, Dunkin) (3, 4, 5) |
| | | | | | • Kids bring lunch from home (1)<br>• Kids bring drinks from home (soda, juice) (1)<br>• Bring drinks (including energy drinks, coffee) from outside (3,4)<br>• You can eat in class (3,4, 5)<br>• Kids sell snacks (5) |
| 1.4.2 | Structural barriers/ facilitators | School food – other | Shared snacking | Includes types of food shared with a group of students, frequency this happens | • A lot of kids share snacks (1, 3,5)<br>• Kids share drinks sometimes (1,5) |
| 1.4.3 | Structural barriers/ facilitators | School food – other | Food provided by school personnel | Includes mentions of school personnel (e.g., teachers, librarians) providing food in class, to individual students | • Teachers, librarian, vice principal provide snacks (4)<br>• School sells chips, juice on the side (5) |
| 1.4.4 | Structural barriers/ facilitators | School food – other | Food delivery services | Includes mentions of whether it is allowed/not allowed, frequency it occurs | • Ordering food is not common (2) Ordering food is not allowed (1,4,5)<br>• Ordering food is common (5) |

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| 1.5.1 | Structural barriers/ facilitators | Nutrition education | In schools | Any mentions of receiving or not receiving nutrition education in schools, including when and where it occurred | • Nutrition education in home country (2)<br>• Nutrition education when younger (freshman, middle/elementary school) (1,3,5) |
| 1.5.2 | Structural barriers/ facilitators | Nutrition education | Other sources | Any mentions of receiving nutrition education in some other way (e.g., from an influencer, peer, family) | • Watch a lot of "nutrition content" (3) |

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| 2.1 | Social barriers/ facilitators | Cultural differences | NA | Perceptions of different cultural eating/drinking patterns | • Non-Hispanic people eat more fast food (McDonald's, BK, Dunkin) and energy drinks (2, Span-lang group)<br>• Black people eat more unhealthy food, white people buy more healthy food (4)<br>• Different cultures "stick to what they like" (Black people, soul food; Puerto Ricans, rice) (4)<br>• McDonald's is for Black people (4)<br>• Mainly eat halal (1) |
| 2.2 | Social barriers/ facilitators | Family | NA | Includes eating behaviors with family and rules/norms, by parents, siblings, extended family | • Parents don't allow some drinks (energy drinks, Coke) (1,2)<br>• Like to eat out with family (buffets, pizza, Chinese) (2,5)<br>• Family members cook (2,3,4) |

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| | | | | | • Family members introduce new foods, encourage trying new things (1,2,3)<br>• Family encourages healthy eating (2)<br>• Family members buy snacks (1,2.3,5) |

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| 2.3 | Social barriers/ facilitators | Peers | NA | Includes eating behaviors with friends outside of school (e.g., after school, weekends), by self or others when with friends | • Eat out with friends (pizza, fast food, ethnic/ other restaurants, mall) (1,2,3,4,5)<br>• Friends introduce snack foods (2,3)<br>• Friends introduce ethnic foods (1)<br>• Buy snacks and eat with friends (3,5)<br>• Drink soda, energy drinks with friends (1) |
| 3.1 | Individual barriers/ facilitators | Food insecurity | NA | Includes any indication of food insecurity (including implied, e.g., kids have to eat in cafeteria even if they don't like it. Teachers or librarian always have snacks/you can always get snacks) | • Mention school food pantry (1) |
| 3.2.1 | Individual barriers/ facilitators | Motivations to follow/not follow recs. | Convenience, time | Includes being too busy/tired/don't want to cook, foods that are convenient/easy to prepare | • Junk food easier on the go (2,3)<br>Eat fast food because they don't have<br>• time to cook (3,4) |

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| 3.2.2 | Individual barriers/ facilitators | Motivations to follow/not follow recs. | Taste/liking or preferences | Includes discussion of eating what they like, what tastes good and not eating what they don't like, including mentions of specific foods | • Didn't like some foods they tried (Ruffles, onion/pickles on BK hamburger, Panera, healthy boba, plain milk, sushi) ) (1, 2,4)<br>• Like to cook (4)<br>• Foods they like (Cinnamon Toast Crunch, Raising Cane's, Panera, Boba, Flips pretzels, chocolate milk) (4) |
| | | | | | • Like snack foods (5)<br>• Prefer taste of fruit (5)<br>• Like buffets for variety (5) |
| 3.2.3 | Individual barriers/ facilitators | Motivations to follow/not follow recs. | Health | Includes discussions about eating certain foods because they're good for you, beneficial to health | • Tried something because it was healthy, but didn't like it (1, 4)<br>• Tried something because it was healthy and liked it (2) |
| 3.2.4 | Individual barriers/ facilitators | Motivations to follow/not follow recs. | Others | Any other reasons mentioned (e.g., stressful to not eat some foods, habits) | • When you feel appreciated, you like the brand (4)<br>• Some people have food allergies (3)<br>• Fast food is cheap (2)<br>• Teens eat what they want (1) |

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| 3.3.1 | Individual barriers/ facilitators | Nutrition knowledge | Misperceptions | Statements that indicate a misperception about nutrition (e.g., need sugar for energy, teens need energy drinks/caffeine, and why) | • Better to have cavities when you're young (4) Need to eat meat every day<br>• (4)<br>Need sweets, sugar (1,4)<br>•<br>• Energy drinks are ok in moderation (1,5)<br>• Stressful to not eat<br>candy, chips or cookies<br>(1) |
| 3.3.2 | Individual barriers/ facilitators | Nutrition knowledge | Importance of healthy eating | General statements about why it's important to eat healthy (not related to specific eating behaviors), e.g., prevents disease, needed for growth, provides energy | • General agreement that healthy eating is important for teens<br>(1,2,3,4,5)<br>Reasons its important (vary by group):<br>• development/growth, diseases, long life, immune system, energy/ not be tired (1,2,3,4,5) |
| 3.3.3 | Individual barriers/ facilitators | Nutrition knowledge | Understanding of nutrition principles | Mentions in which students expressed a more complete understanding of good nutrition (i.e., more than just healthy eating is important for good health) | • Need water, fruits, vegetables, exercise (1, 2<br>[1 person each]) Need activities,<br>• moderation is key, not too much sugar (1, 3 [1 person in each])<br>• Fruit has sugar (1 [1 person]) |

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| 3.4.1 | Individual barriers/ facilitators | Following nutrition recs. | Hard to follow | General statements about why it's difficult to eat healthy or not eat unhealthy; including statements about eating specific foods | • Hard to not have nonrecommended foods (energy drinks, fast food, sugary cereal) (2,3)<br>• Non-recommended food is cheaper (fast food, candy) (2,3<br>• No reasons for why you should follow recommendations, need to be more personal (3)<br>• Non-recommended foods are addictive (candy, fast food) (3)<br>• Non-recommended food is convenient (chips, fast food) (1,3,4)<br>• They serve nonrecommended foods at school (4)<br>• Some teens have unhealthy mindset, don't want to eat healthy things (1) |

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| 3.4.2 | Individual barriers/ facilitators | Following nutrition recs. | Easy to follow | General statements about why it's easy to eat healthy or to not eat unhealthy; including statements about eating specific foods | • Healthy foods are easier to follow (water, fruit, milk, vegetables, whole grains, nuts) (2, 3, 4, 5)<br>• No sugary cereal is easy (5)<br>• Don't see many kids drinking energy drinks (5) |

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| 3.4.3 | Individual barriers/ facilitators | Following nutrition recs. | Agreement | General statements about whether they agree with the recommendations or not, or whether they both agree and disagree. | • Recommendations are good generally (3) Energy drinks are bad (4) Don't agree<br>• that energy drinks/coffee are bad (5)<br>•<br>• Need some balance (i.e., unhealthy foods sometimes) (1) |
| 4.1.1 | Food marketing | Marketing exposure | Apps | Statements about using food apps (self or others), including food ordering apps (Uber Eats, Door Dash); restaurant/other food brand apps (McDonald's, Dunkin) | |
| 4.1.2 | Food marketing | Marketing exposure | Social media – platforms, types | Statements about seeing food brands or non-branded foods on social media platforms, including videos (TikTok, YouTube), posts on Insta, etc. Including frequency of seeing them. | |
| 4.1.3 | Food marketing | Marketing exposure | Social media – influencers | Statements about food brands or non-branded foods promoted by a specific influencer, or by influencers in general (without specifying platform). Including any | |
| | | | | implicit mention, such as "they or them". | |
| 4.1.4 | Food marketing | Marketing exposure | Other digital media | Statements about seeing food brands or non-branded foods in other online media (not social or apps), including games, streaming, music and email etc. | |

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| 4.1.5 | Food marketing | Marketing exposure | All other marketing that is not digital | Statements about seeing food marketing in other places than digital media including other media (e.g., TV, radio), billboards, signs in restaurants, packaging and marketing that appears in multiple places (e.g., promotions) | |
| 4.2.1 | Food marketing | Types of food marketed | Types of frequently marketed food | Includes mentions of specific food categories marketed a lot (e.g, fast food, energy drinks, candy, not branded foods). | |
| 4.2.2 | Food marketing | Types of food marketed | Characteristics of frequently marketed food | Includes descriptions of frequently marketed foods (not categories), such as unhealthy, expensive, addictive, ethnic foods | |
| 4.2.3 | Food marketing | Types of food marketed | Foods that are not marketed | Any mentions of foods that they rarely/never see marketed, including categories and characteristics | |
| 4.3.1 | Food marketing | Effects | Effective techniques[3] | Mentions of marketing techniques that work for them or other teens (i.e., | • Social media (incl. influencers) (1,2,4,5) |

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| | | | | make them want to buy/eat the foods), including influencers, promotions, etc. | • Marketing tie-ins (e.g., McDonald's Minecraft, Krabby Patty) (2,3,5 )<br>• Visual/packaging (2,4,5)<br>• Advertised foods look appetizing (1,2,4)<br>• Humorous videos (3)<br>• Show teens hanging out in ads (3)<br>• New items/flavors (4,5)<br>• Challenge to eat extreme foods (e.g., really sour) (1)<br>• Show people preparing foods (1) |
| 4.3.2 | Food marketing | Effects | Try new foods | Mentions that food marketing lets them know about new foods and/or want to try them. Any mention of them trying a food in response to food marketing. | • Tried new foods shown on social media (e.g., Dubai chocolate, Crumbl Cookies, boils, birria tacos, sushi) (1,2,3,4,5)<br>• Tried new foods on posters in stores (3) |
| 4.3.3 | Food marketing | Effects | Other outcomes | Any other statements about the effects of food marketing, including general outcomes (e.g., encourages unhealthy choices), triggers craving | • Reasons for not trying a product: not available (2), has vegetables (4), mixed opinions (5), high cost (5) |
| 4.3.4 | Food marketing | Effects | Misleading | Mentions that food marketing makes things look better than they really are, foods don't taste as good as they expect, including times they tried something and were disappointed. Do not include neutral statements ex: ice cream which looks like a fruit. | • Experiences trying items from social media that didn't taste good (1,2,3)<br>• Ads/packaging make foods look better than they really are (e.g., bigger) (1,2,3,4,5)<br>[Lots of examples here] |

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| 4.3.5 | Food marketing | Effects | I'm not affected/ I'm affected | Statements that food marketing does or does not affect them, including mentions that others (but not themselves) are affected | • I'm not affected by food marketing/don't notice it (5)<br>• But, other teens' choices are related to marketing (5)<br>• Mixed beliefs that marketing is related to teens' food choices (1) |
| 4.4.1 | Food marketing | Targeted marketing | Attitudes- positive | Positive statements about targeted marketing, including the foods (taste good, convenient, affordable) and how it makes them feel (e.g., special, noticed) | • Marketing is good because people don't have time to cook (1,3) It's affordable (1) "They put love in that<br>• shit", feel appreciated (4)<br>•<br>• They know what you want/like (1,3,4)<br>• Companies are smart (1) |
| 4.4.2 | Food marketing | Targeted marketing | Attitudes- neutral ( both good and bad) | Includes statements that it's both good and bad, it doesn't matter, companies are just doing what they need to do to make money | • It's inevitable, they need customers, just business, not directly malicious (1,3,4,5) Unsure, or not good or bad (3,4, 5)<br>•<br>• Ambivalence – it's not terrible for you, but it's bad that they're profit from advertising unhealthy food to children (5)<br>• Products taste good, but not healthy (1) |

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| 4.4.3 | Food marketing | Targeted marketing | Attitudes- negative | Statements that it's wrong, promotes unhealthy food, misleading, bad for consumers (excludes predatory) | • Teens should be eating healthier, they're benefiting not us (1,2,4) Makes kids eat more (3)<br>• |
| | | | | | • Too many ads for the same thing (3,4)<br>• Foods are too expensive, we can't pay for it (4)<br>• Companies lie about the foods (1) |
| 4.4.4 | Food marketing | Targeted marketing | Attitudes- predatory | Statements that it takes advantage of vulnerable populations (young people, low income, etc.); its racist; differences between what's in different neighborhoods | • Targeting those more vulnerable (2), less educated about nutrition (5)<br>• They're taking advantage, taking my money (3)<br>• Some restaurants are only in wealthier neighborhoods (4)<br>• Shouldn't target lowerincome neighborhoods (3,5)<br>• It's predatory (5) |
| 4.4.5 | Food marketing | Targeted marketing | Awareness | Statements that they knew or did not know about targeted marketing (after reading handout) | • What was surprising: How much Travis Scott made (2,3); targeting teens (2.3)<br>• Not surprised (4)<br>• Never thought about it (4) |

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| | | | | | • Had heard about more fast food in poor neighborhoods (5)<br>• Everyone knows (1) |
| 5.1.1 | Recommendations | Healthy food | Availability | Any mentions of making healthy or good quality food more available in the community (not in schools) | • Offer healthier foods in Hartford stores/ restaurants (3,4)<br>More supermarkets, corner stores (5) |
| 5.1.2 | Recommendations | Healthy food | Cost | Mentions of making healthy food more affordable | • Reduce the cost of food (not healthy food specifically) (5) |
| 5.2 | Recommendations | Marketing related | NA | Any mentions of changes in food marketing practices, including ads/other marketing for healthy foods, fewer junk food ads, greater transparency/ingredient disclosures, counter marketing | • Label transparency, stop labels that imply unhealthy foods are healthy (3)<br>• Offer more healthy products (3)<br>• Use of actual meat in products (3) |
| 5.3 | Recommendations | Nutrition education | NA | Mentions of how to make nutrition education more effective (e.g., use social media, teach skills such as cooking in schools), consequences of unhealthy eating, why they should eat healthy | • Use social media, videos for nutrition education (1,2,3)<br>• Convey information harshly (e.g., eating candy causes diabetes), warnings for not following (3)<br>• Provide benefits of following nutrition recommendations (3)<br>• Teach nutrition in health class (4), culinary class (5) |

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| 5.4 | Recommendations | Peers/family | NA | Any mentions of including family or peers in healthy eating initiatives | none |
| 5.5 | Recommendations | School foods | NA | Any mentions of improvements to foods in schools (more variety, better quality, etc.) | • What Michell Obama did (4)<br>• Better breakfasts (4,5)<br>• More options (healthy, different types of foods, cultural foods) (1) |