



Using a New Interactive Food Label (Sage.is) to Improve Nutrition Education and Food Label Literacy in New York City Underserved Populations

An Acceptability Study & Pilot Evaluation

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AT HUNTER COLLEGE

HUNTER
The City University of New York

RESCUING
FOOD FOR
NEW YORK'S
HUNGRY
**CITY &
HARVEST**

Sage **itp**
NYU TISCH

The New York City Food Policy Center at Hunter College and City Harvest collaborated to test Sage.is, a digital interactive food label, with an underserved population in New York City.

The project offers lessons learned to support future digital nutrition education and literacy platforms.



Finally, A Smarter Food Label is Here

Sign up for interactive food labels, personalized to what you care about, with beautiful visualizations designed to make food data simple and easy-to-navigate.

Get Started

See Sage's Label for Bananas

Key Themes

- ◇ Underserved populations embrace mobile technology as a learning tool; education, age present no apparent barrier.
- ◇ Frequent mobile text messaging proved effective to sustain engagement.
- ◇ Customizing app content can prioritize the needs of underserved populations, and avoid top-down messaging.

About the Project

The research project, which studied the use of technology to inspire “mindful eating,” represents a unique cross-sector collaboration among Hunter College researchers, an IT development team at the New York University Interactive Telecommunications Program (NYUITP), City Harvest, and its community partner, the Northeast Brooklyn Housing Development Corporation (NEBHDCo). Funded by the NYC Food Policy Center at Hunter College and a CUNY Public Health Practice and Community Engagement faculty grant (IRB approval #2015-

1415), the researchers sought to understand if using a smartphone app could help participants at one of City Harvest’s Healthy Neighborhood cooking workshops (hosted by NEBHDCo) improve mindfulness about food choices. “Mindful eating” can help individuals become attuned to physical and emotional sensations while eating, and can be associated with healthful dietary behaviors¹.

The NYUITP team developed Sage.is, an interactive app that simulated an in-depth and user-friendly version of an on-package nutrition label. Users

set up a profile with Sage.is’ user-designed onboarding process, with their height, weight, activity level, and dietary preferences. The app customizes product information for hundreds of branded food products according to individual needs. It also features novel tools, including “exercise equivalents” to help people understand how much exercise is needed to burn the calories found in a specific food item, and “food origin” information that tells how far foods have traveled from the source to the grocer.

1. Framson C, Kristal AR, Schenk JM, Littman AJ, Zeliadt S, Benitez D. Development and Validation of the Mindful Eating Questionnaire. *J Am Diet Assoc.* 2009; 109(8): 1439-1444.



Healthy Fat



Heart Healthy



Kid Friendly



The Bodybuilder



Vitamin Hero



Low Sodium All-Star

Developers worked side-by-side with the research team to add label information about study participants' favorite foods, creating a custom version of Sage based on user preferences.

Ocean Spray Cranberry Juice Cocktail

Post Honey Bunches of Oats

Kellogg's Raisin Bran

Froot Loops

Odwalla Original Superfood

Cracker Barrel Extra Sharp Cheddar

Tropicana 100% Orange Juice

Yoplait Strawberry Banana Yogurt

Nabisco Nilla Wafers

Cheez-it Original Cheez-Its

Aunt Jemimah Original Syrup

Quaker Maple & Brown Sugar Instant Oatmeal

Entenmann's Rich Frosted Donuts

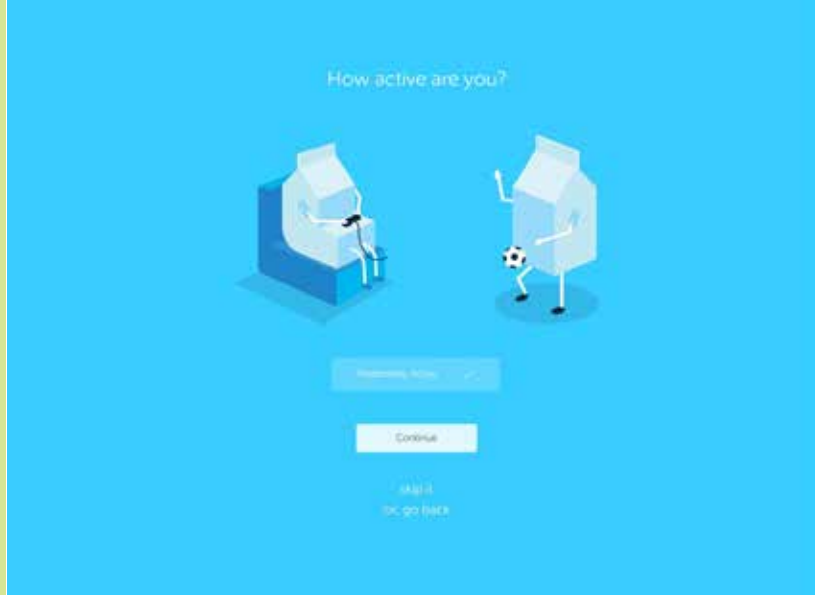
Arnold 100% Whole Wheat Bread

Community Partners

To assist with the recruitment of participants for the Sage study, City Harvest reached out to its partner NEBHDCo, an affordable housing organization with a strong community development effort that promotes culinary and nutrition knowledge sharing. NEBHDCo offers an eight-week culinary workshop called The Team Chef Challenge. This hands-on cooking program is designed to empower adults with a new appreciation for diverse food skills and teach the skills needed to be self-sufficient in the kitchen. The Team Chef Challenge used one of NEBHDCO's community facilities, a two-story building with a full-service demonstration kitchen and teaching space in Brooklyn's Bedford-Stuyvesant neighborhood.

Participants

NEBHDCo created awareness of the Team Chef Challenge by distributing fliers via email to all NEBHDCo and Bedford-Stuyvesant residents who used NEBHDCo's services. Fliers were also placed in local libraries, YMCAs, schools, community centers, and local grocers and health food stores. NEBHDCo then used a competitive application process to choose fifteen adults – all persons of color – across a wide age demographic. Individuals interested in participating had to be over the age of 18 and own a smartphone to join the study. Given this was an acceptability study, the sample size was small. Ten (10) participants were initially recruited and eight (8) completed the study.



User Input to Refine Sage

NEBHDCo instructors shared details about the Sage.is project with participants during the first workshop of the eight-week Team Chef Challenge. The NYC Food Policy Center at Hunter College research team and Sage.is developers attended the second session where they focused on personalizing the Sage.is platform by gathering information on the group's preferred products – a vital step for the project. Although Sage.is already featured hundreds of products, most did not align with the study population's food preferences. The research team led an open-whiteboard session using Sage.is categories as prompts (e.g., meat and fish, dairy, bakery, beverages, pantry)

and participants shared the names of about thirty of their favorite products - e.g., Stouffer's Classic Lasagna, Nabisco Multigrain Wheat Thins, and Campbell's Chicken Noodle Soup. The Sage development team quickly added these products and their nutrient details to the app, and the research team designed survey questions specific to these products, thereby tailoring the user experience. After Sage.is customized its featured products for the Team Chef Challenge participants, the research team used the next workshop to help users install the app on their phones, enroll them in the study, and administer a baseline pre-test. In addition to measuring selected validated

constructs about mindfulness and its role in understanding and modifying dietary behaviors, the survey asked participants to respond to questions related to three of Sage.is' more innovative features: product ingredients, exercise equivalents, and food origins.



Periodic Assessments

Following the Sage.is app installation and the administration of the pre-test, the team turned its attention to sustaining engagement with Sage participants throughout the three-week study period. Every third day, the team sent a text (SMS) message with a prompt to use www.sage.is to respond to two questions which alternately queried participants on ingredients, exercise equivalents, and food origins. A total of six text message surveys or periodic assessments were distributed throughout the three week period.

Incentives

Participants received up to three \$10 Amazon gift cards for completion of the pre-test, post-test, and at least four of the six periodic assessments.

Pilot Result Highlights

Although the small sample did not provide conclusive data that Sage.is improved mindfulness, the study proved a valuable pilot. Key findings worth noting included:

- ◇ After using Sage.is for three weeks, the number of participants who said they would consider serving size when choosing foods for their families increased by 50%.
- ◇ 100% of respondents were able to successfully set up their profile on Sage.is, and use the app to calculate customized results for the amount of exercise needed to burn off the calories in six common packaged foods.
- ◇ 100% reported finding Sage.is “very easy” or “somewhat easy” to use.
- ◇ 100% plan to keep Sage.is on their phone, 75% plan to share the app with a friend, and 75% plan to share with a family member.
- ◇ Study subjects who used the app expressed high enthusiasm for Sage.is. The NEBHDCo in-class instructors reported that participants volunteered anecdotes about using and enjoying the app during classes without any prompting.
- ◇ Although the participants ranged broadly in age, there was no evident resistance to the technology. Everyone seemed comfortable downloading the app to his or her phones and using it during the initial demo and throughout the three-week test.

Lessons Learned

Recruitment. Finding an appropriate setting to recruit and administer the survey was challenging, and many different options were considered, including the weekly NEDBHDCo food pantry and local farmers' markets. After numerous conversations with the project's NEBHDCo contact, the team arrived at an approach that added a lot of value to the project: The Sage.is app was incorporated into the Team Chef Challenge workshops. This proved an effective means of reaching the target community and gaining the trust necessary to recruit motivated participants.

Sustaining Engagement. By maintaining contact with participants every three days, the periodic assessments also proved useful, as they sustained interest and engagement between class sessions. The project used a somewhat cumbersome approach through Google Hangouts to distribute the SMS messages. The process would have been more efficient using a bulk SMS distribution system (e.g., textmarks.com or eztexting.com), but these tools only came to the attention of the team after the periodic assessments were underway.

Cross-sector Collaboration. Having the Sage.is app design and development team working side-by-side with the NYC Food Policy Center, City Harvest, and NEBHDCo teams created a rare and valuable opportunity to revise the app with specific user-defined content by uploading brand-specific products.

User-defined Content. This unique refinement of the content worked to meaningfully engage the app's users and respond to their needs rather than implement top-down messaging.

Acceptability. Participants embraced participating in a health-tech study around food mindfulness using a web based app.





Sage

A Smarter Way to Learn About Food



“ I was mostly surprised at how simple it is to use Sage.is and access my favorite foods. It’s also fun to use! ”

“ Since being introduced to the Sage.is app, I’m always sharing it with friends and co-workers. ”

Future Opportunities

Participants embraced Sage.is as a useful tool, with 100% of participants indicating they planned to maintain Sage.is on their mobile device. Throughout the course of the study, participants actively responded to prompts and scenarios to use the app. Sage.is has the potential to improve engagement in the cooking workshop experience, and other City Harvest nutrition education settings. The small sample size of this acceptability study shows promise to conduct a larger scale study around “mindful eating” and the use of a web-based food label to explore relationships between this health-tech tool and knowledge, attitudes, behavior and behavior intentions.

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