

## E-Learning Nutrition Education Program for Low-Income Adults: Perspectives of Key Stakeholders

### Abstract

Through focus group interviews, we examined the perceptions of Extension peer nutrition educators ( $n = 6$ ) and low-income adults ( $n = 8$ ) regarding the feasibility of an e-learning nutrition education program, titled Food eTalk, tailored to Georgians eligible for Supplemental Nutrition Assistance Program Education (SNAP-Ed). Findings indicated two themes: (a) Participants have regular smartphone-based Internet access, and nutrition education e-learning programs should be designed to match typical smartphone use patterns and (b) recommendations to increase Food eTalk engagement involve carefully selected content and consideration to mandate SNAP-Ed participation. These findings are informing user-centered development of Food eTalk and may be of use to others creating such programs.

**Keywords:** [Supplemental Nutrition Assistance Program Education \(SNAP-Ed\)](#), [nutrition education](#), [e-learning](#), [online learning](#)

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## Introduction

The U.S. Department of Agriculture (USDA) Supplemental Nutrition Assistance Program (SNAP), through its SNAP Education (SNAP-Ed) initiative, provides financial grant support for individual states' nutrition education programs and supports educational programs specifically for individuals who live at  $\leq 185\%$  of the federal poverty level or who are eligible for SNAP through other means-tested public assistance programs. Guidance for grantees suggests that innovative and cost-effective nutrition education approaches be employed and rigorously evaluated. Grantees must aim to help achieve the USDA SNAP-Ed goal of improving the likelihood that persons eligible for SNAP will make healthful choices within a limited budget and choose active lifestyles consistent with the Dietary Guidelines for Americans and My Plate (U.S Department of Agriculture Food and Nutrition Service, 2016). One innovative way to reach the target audience may be via online e-learning (electronic learning) programs. Free WiFi access in many public spaces and affordable mobile devices that can be used to access the Internet have afforded limited-income individuals regular Internet access (Pew Research

Center, 2018). As access to the Internet becomes increasingly available for low-income audiences, more evidence-based nutrition education resources should be offered online.

## Background

Nutrition education involves any combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and nutrition behaviors that are conducive to wellness (Contento, 2010). Online education, in the form of e-learning environments, has the potential to expand outreach and lessen barriers related to attending traditional face-to-face nutrition education classes (Neuenschwander, Abbott, & Mobley, 2012; Swindle, Ward, Whiteside-Mansell, Bokony, & Pettit, 2014).

Researchers already have begun to explore use of the Internet to provide nutrition education to low-income Americans, with promising results (Au, Whaley, Rosen, Meza, & Ritchie, 2016; Lohse, Belue, Smith, Wambolt, & Cunningham-Sabo, 2015; Neuenschwander, Abbott, & Mobley, 2013). Previously, to explore the idea of providing online nutrition education, we conducted a qualitative key-informant needs assessment that included interviews with 10 professional nutrition educators who had extensive experience working with SNAP-Ed-eligible Georgians (Stotz, Lee, Rong, & Murray, 2017). Our findings suggested that neither the need for access to the Internet nor the need for digital literacy would be barriers to the program's success and that content should focus on recipes and step-by-step instructions rather than general advice such as "eat less salt." Interviewees were concerned about participants' motivation to engage in an e-learning program and suggested that "entertaining" features, videos, and external incentives may increase motivation to engage (Stotz et al., 2017). The purpose of the study we report here was to further inform the development of an innovative, evidence-based online nutrition education program tailored to SNAP-Ed-eligible Georgians, titled Food eTalk. Our principle research question was this: What is the feasibility—specific to accessibility, literacy, and content—of an online nutrition education e-learning program for SNAP-Ed-eligible Georgians from the perspectives of University of Georgia (UGA) Extension peer educators and SNAP-Ed-eligible Georgians? A review of the literature helped us construct this question, and the focus on accessibility, literacy, and content mirrored that of similar research projects undertaken during the needs assessment phase of online nutrition education program development (Atkinson, Billing, Desmond, Gold, & Tournas-Hardt, 2007; Case & Cluskey, 2011). Perspectives of the Extension peer educators and program participants we interviewed may be of interest to the wider Extension audience.

## Methods

We employed a single-case study design (Stake, 1995) for our project. Because of its flexibility and rigor, the case study approach is valuable to health science researchers for developing and evaluating programs (Yin, 2003). We defined the unit of analysis (Stake, 1995) as the prototype of the e-learning course Food eTalk. The study was one component of a multiphase case study of the design, development, dissemination, and evaluation of Food eTalk (Stotz & Lee, 2018; Stotz, Lee, & Hall, 2018; Stotz et al., 2017). The prototype content of Food eTalk was adapted from a Georgia-based, validated nutrition education curriculum (Hanula, 2009). Specifically, since 2009, UGA Extension has offered classroom-based nutrition education classes for low-income Georgian families across the state using the validated nutrition education curriculum Food Talk. The six-session Food Talk curriculum is

based on the health belief model (Janz & Becker, 1984) and is intended to help improve the nutrition of low-income families in Georgia (Hanula, 2009). The Food eTalk prototype lesson drew from the Food Talk curriculum, focusing on healthful eating principles and food resource management through interactive e-learning activities and didactic lessons with voiceovers.

## Study Design and Sample

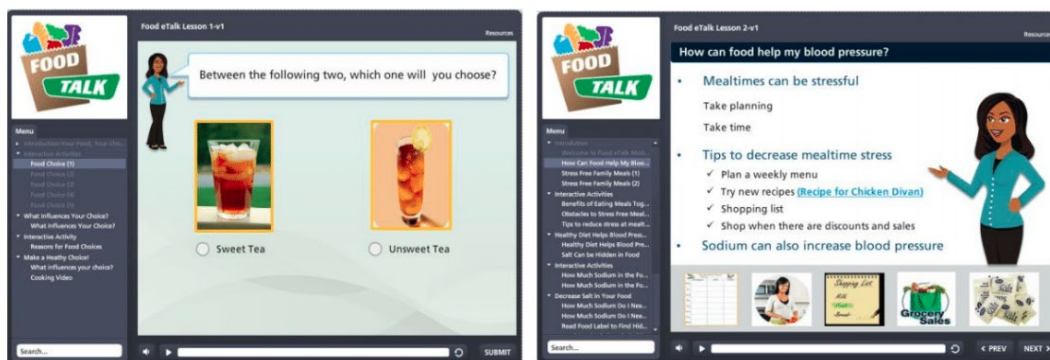
The UGA Institutional Review Board approved our study. We collected data through semistructured focus group interviews with UGA Extension peer nutrition educators and SNAP-Ed-eligible individuals in two urban counties in Georgia ( $N = 14$ , average age  $49.6 \pm 9.7$  years, 93% female, 50% Black). We used a sampling technique involving purposive maximum variation sampling (Maxwell, 2004; Patton, 1980) in order to include participants from diverse backgrounds. Two of our four focus groups comprised UGA Extension-employed peer educators ( $n = 6$ ) whose job responsibilities included teaching the classroom-based Food Talk curriculum to low-income Georgians. The other two focus groups comprised SNAP-Ed-eligible Georgians ( $n = 8$ ) recruited from a Georgia safety-net medical clinic. Participants received no incentive for their participation.

## Data Collection Procedures

Focus group interviews (Harris et al., 2009) served as the data collection method. Focus groups are often used to inform the design and implementation of programs and may be used as part of a larger study (Roulston, 2010). The nature of a focus group, where the participants outnumber the researcher, can deliberately upset the anticipated power dynamic between researcher and participant, and intentional conversation among participants, rather than only between researcher and participants, is encouraged (Roulston, 2010). Our semistructured focus group moderator guide included three sections covering access, literacy, and content. Questions included "Tell me about your access to the Internet," "How do you feel about using the Internet?," and "Help me understand what kind of nutrition-related topics you like to learn more about." Each focus group interview included presentation of the Food eTalk prototype lesson (see Figure 1) to facilitate participant discussion of initial impressions of the prototype.

**Figure 1.**

Prototype Example of Food eTalk Lesson Used to Elicit Conversation During Focus Group Sessions



## Analytical Process

The interviews were digitally recorded and transcribed verbatim. We coded the interview transcriptions by using the constant comparison method (Charmaz, 2014), which facilitated construction of code categories and then identification of common themes across the focus groups. We coded the data by various quotation segments depending on context of the quotation (Saldaña, 2012) and digitalized the process using Atlas.ti (Mac Version 1.0) (Paulus, Lester, & Deptster, 2014).

## Findings

Our findings are organized by two primary themes, constructed from both deductive and inductive analysis. We elaborate on those themes herein, providing sample quotations for associated subthemes in Tables 1 and 2.

### Internet Access

The first theme addressed the aspect of the research question concerning access to the Internet and digital literacy. Our findings suggested that SNAP-Ed-eligible Georgian adults have regular smartphone-based Internet access. No concerns about digital literacy arose during the focus group sessions, so discussion centered more on Internet access and use. Participants said that they, and most of their family members and acquaintances, had reliable access to the Internet, typically through their smartphones. Participants expanded on how they accessed the Internet using their smartphones, emphasizing that they found free WiFi in public spaces such as restaurants, libraries, and schools and typically used their smartphones many times a day for "really short" bouts of time online. Participants indicated that the asynchronous accessibility of smartphone-based learning might mitigate barriers associated with attending traditional classroom-based education opportunities, such as lack of transportation, variable work schedules, and lack of childcare.

**Table 1.**

Participant Quotations Describing Their Internet Access Relative to E-Learning Nutrition Education

Subtheme	Quotation
Breadth of access	The majority of everybody have the smartphones.
Access habits	The cell phone is really quick, personally for me. I just look at it to glance, pull up what I need to pull up really quick, and I am, like, ready to go.
Benefits of smartphone-based access	That would eliminate [the problem of not having] transportation, you know, so having [Food eTalk] on your phone would definitely be a plus for a lot of the women or men.  [Online access] was good because it allowed me to set my own schedule, you know, so that is what I liked about it.

## Recommendations to Increase Program Engagement

The second major theme, which arose from our aim to explore focus group participants' content preferences, related to program engagement. This was an inductive theme, as it emerged from participant-led discussion during the focus group sessions. Essentially, the strongest finding we encountered when exploring preferences of content among the participants was their concern that people may have very little motivation to engage in a voluntary nutrition education e-learning program and that featuring desirable content or mandating the program for SNAP beneficiaries may be key ways to increase engagement.

Participants verbalized concerns that people would not engage in Food eTalk because of limitations on time, lack of interest, "laziness," and low perceived susceptibility to nutrition-related health issues. They suggested tailoring Food eTalk content to the specific interests and needs of the priority audience as the best way to increase program engagement. Suggested subject matter for content included food-related topics that garner media attention as well as nutrition plans for ameliorating diseases such as diabetes, hypertension, and weight loss. Participants also suggested enhancing the learner's sense of potential risk by including scenarios involving actors/images with which learners might identify. Additionally, both groups of SNAP-Ed-eligible interviewees discussed concerns about food safety and food production systems and expressed confusion about these topics.

As another means for mitigating potentially low motivation to engage in e-learning nutrition education, both peer educators and SNAP-Ed-eligible Georgians discussed the idea of establishing government mandates related to nutrition education for SNAP beneficiaries and suggested that taking such action would be a plausible and effective way to ensure engagement in Food eTalk.

**Table 2.**

Participant Quotations Describing Ideas for Increasing E-Learning Nutrition Education Program Engagement

Subtheme	Quotation
Content on "hot topics" featured in the media	What I learned on that [documentary] was that they are feeding—it used to be that our cattle would graze and eat grass back in the day, but now they are just force-feeding them grain. . . . so, you know, we are a grain-fed country now, it looks like, and that is probably where a lot of, where the obesity is coming from.
Risk awareness	Diabetes, because so many of us, when we get the WIC or just anything period, we are not taught that you can get diabetes at a young age.
Scenario-based content	They want it to look like they look, you know, like "someone who has been in the same situation as me."
Content on food safety	Another thing about the farm raised salmon—they said it had too much aluminum and all them steroids and all the stuff that they put into the water, and the mercury too. I worry about the mercury.
Mandate	This is my opinion, but I think that anyone who takes food stamps or has to use those, and I don't see anything in the world wrong with them if you need them, but I think that they should have to look at [the educational materials]. I think it should be mandatory that they watch a nutritional video or something educational. This would have helped me so much. In my younger years—when you are young, you just don't think about it, until you know as much as you do

when you get older. But maybe force the education on some people. That is a mean thing to say, but it would probably help a lot of people, and it might even save lives.

If it's like WIC, where, you know, you have to enroll in a class or education before you can even get your vouchers—because if they know they wasn't going to get their EBT without it, then they wouldn't make up excuses about not doing the education; they'd just do it.

*Note.* WIC = Special Supplemental Nutrition Program for Women, Infants, and Children. EBT = electronic benefits transfer.

## Discussion

There were no noteworthy differences in the findings between peer educators and SNAP-Ed-eligible focus group participants. This lack of variation was generally expected as the model of employing peer educators encourages that these individuals live within the communities of the SNAP-Ed-eligible audiences served.

A pragmatic first step for determining the feasibility of an online e-learning nutrition education program tailored to the needs of SNAP-Ed-eligible Georgians was to understand Internet accessibility from the perspective of the priority audience. Literature has suggested that low-income individuals have increasing access to the Internet (Pew Research Center, 2018; Smith, 2015), and this suggestion is indeed supported by our findings. Though they also were asked about digital literacy, participants in our focus groups had no concerns that lack of digital literacy would be a barrier to participation in e-learning opportunities. Design theory related to online learning, such as e-learning and m-learning (mobile learning), highlights the importance of determining which device is most commonly used among targeted learners (Koole, 2009; Moore et al., 2011). Given that one of the most common devices used by SNAP-Ed-eligible Georgians to access the Internet is a mobile smartphone, m-learning design should support Food eTalk development. M-learning design theory suggests that short educational lessons that are easy to stop and start frequently best serve the audience as this format likely aligns best with the way most people typically use their smartphones (Koole, 2009).

As is the nature of qualitative research, inductive findings often emerge, and in our study the topic of "content" was overshadowed by study participants' concerns about lack of motivation to engage in Food eTalk. Participants thought low motivation to engage in Food eTalk would be a formidable barrier to the program's success, and this concern is supported by the literature (Case & Cluskey, 2011; Stotz et al., 2018; Stotz et al., 2017). Two primary ways to increase motivation arose from the focus group discussions: tailoring content to intentionally pique interest of the intended audience and mandating the program for SNAP beneficiaries.

Typically USDA SNAP-Ed nutrition content emphasizes core USDA messages related to choosing low-fat dairy items and increasing consumption of fruits, vegetables, and whole-grain foods (U.S. Department of Agriculture Food and Nutrition Service, 2016). Our focus group findings indicate that the priority audience desires more in-depth nutrition information, including information on potentially controversial nutrition topics, disease-specific diet education, and "hot topics" in nutrition. Increased access to information through the Internet allows SNAP-Ed-eligible individuals who traditionally may have had limited access to information countless opportunities to access nutrition-related information and

misinformation. The topics related to food safety and food production systems discussed by the SNAP-Ed-eligible participants in our focus groups have large online presences through social media and food-related documentaries. Access to misinformation by this potentially vulnerable audience only strengthens the need for evidence-based online nutrition education resources focused on similar topics. Further, inclusion of audience-driven content of interest may serve to enhance target audience members' motivation to engage in a voluntary e-learning program. It is important for Extension educators and the policy makers Extension personnel may influence to recognize that provision of unbiased, evidence-based nutrition education on controversial topics in which the audience is interested would likely increase program engagement and strengthen the impact of the SNAP-Ed program for its beneficiaries.

A plethora of policy-related concerns arise regarding participants' suggestions to make SNAP-Ed a prerequisite to or mandate for receiving SNAP benefits. Moreover, nutrition education literature and health behavior change theory support the idea that nutrition education is more effective when it intrinsically motivates and inspires learners so that knowledge leads to nutrition-related behavior change (Contento, 2010). Additionally, e-learning theory suggests that an effective way to increase motivation to engage in voluntary e-learning education programs is to ensure that the content provided is of interest to the priority audience (May, Brady, Van Offelen, & Johnson, 2014; Moore et al., 2011).

## Conclusion

Careful consideration of the format of and content in a voluntary e-learning nutrition education program tailored for SNAP-Ed-eligible adults is crucial for increasing the program's potential for success. Findings from our study with the Food eTalk prototype were used to inform further development of the e-learning program. Specifically, we carefully built in external motivating incentives, and we redesigned the entire interface of the program as mobile-first so that the program would be best optimized on a smartphone. Though the sample size in our study was small, our findings are part of a larger case study addressing needs assessment, development, and evaluation aspects of the Food eTalk program (Stotz et al., 2018). Our research may help Extension professionals who have interest in e-learning for limited-income audiences during the preliminary steps of developing an e-learning education program. Next steps include conducting rigorous formative and outcomes evaluation to establish the evidence base for Food eTalk.

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