



A Qualitative Exploration of Approaches Applied by Nutrition Educators Within Nutrition Incentive Programs

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ABSTRACT

Objective: To explore the approaches applied by nutrition educators who work with the US Department of Agriculture *Gus Schumacher Nutrition Incentive Program* (GusNIP), *Nutrition Incentive* (NI), and *Produce Prescription* (PPR) programs.

Methods: Multiple data collection methods, including descriptive survey (n = 41), individual interviews (n = 25), and 1 focus group (n = 5). Interviewees were educators who deliver nutrition education as a component of GusNIP NI/PPR programs. Descriptive statistics were calculated from survey responses. Transcripts were coded using thematic qualitative analysis methods.

Results: Four overarching themes emerged. First, educators have many roles and responsibilities beyond providing curriculum-based nutrition education. Second, interviewees emphasized participant-centered nutrition education and support. Third, partnerships with collaborating cross-sector organizations are essential. Fourth, there are common challenges to providing nutrition education within GusNIP NI/PPR programs, and educators proposed solutions to mitigate these challenges.

Conclusions: Nutrition educators promote multilevel solutions to improve dietary intake, and it is recommended they be included in conversations to improve GusNIP NI/PPR programs.

Key Words: nutrition incentive, produce prescription, nutrition education, qualitative methods (*J Nutr Educ Behav.* 2023;55:224–234.)

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INTRODUCTION

Nutrition education involves any combination of educational strategies accompanied by environmental supports designed to facilitate the voluntary adoption of food choices and nutrition behaviors conducive to wellness.¹ Research suggests nutrition education specific to people who experience limited income can improve the intake of healthful foods.^{2,3}

Nutrition education interventions tailored to learners with limited finances and limited access to healthful foods, which employ participant-centered pedagogy, effectively empower individuals to make healthful food choices.^{4,5} However, it is well established that individual-level nutrition education is only 1 layer of the solution to improving dietary behaviors. Addressing food insecurity, a lack of consistent access to enough food for

an active, healthy life,⁶ in conjunction with nutrition education, is an approach that is supported by the policy, systems, and environment framework for nutrition interventions^{7,8} and the socioecological model.⁹ Food insecurity is well-known as a social determinant of health, and addressing it through community-based, equitable approaches is prudent for national nutrition promotion.¹⁰ These frameworks suggest the importance of the relationship between health behaviors and individual, interpersonal, organizational, community, and social systems. The socioecological model effectively links the complexities of health determinants and environmental influences on health.¹¹ The 2020–2025 Dietary Guidelines for Americans draw on the socioecological model and suggest considering multiple levels, including community/environment, interpersonal/household, and individual factors, in addressing access to resources.¹² Together, these frameworks aim to address health

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disparities and promote equity-based, multilevel solutions to improving nutrition.¹³

One example of a multilevel intervention is the *Gus Schumacher Nutrition Incentive Program* (GusNIP), which provides funding opportunities for organizations across the US to improve fruit and vegetable (FV) access for consumers with a low income and support local economies.¹⁴ GusNIP began in 2019 and is a 4-year effort funded by the US Department of Agriculture (USDA) National Institute of Food and Agriculture through the 2018 Farm Bill; GusNIP was predated by the *Food Insecurity Nutrition Incentive Program* from 2014–2018.¹⁴

There are 2 types of programs under the GusNIP funding mechanism: *Nutrition Incentive* (NI) and *Produce Prescription* (PPR).¹⁴ The GusNIP NI program provides consumers participating in the *Supplemental Nutrition Assistance Program* (SNAP), the largest federal food assistance program in the US, with financial incentives for FVs at the point of sale. Broadly, GusNIP NI's goals focus on (1) increasing the purchase and consumption of FVs and (2) reducing individual and household food insecurity. The GusNIP PPR program has an additional goal to prevent and treat nutrition-related diseases (eg, diabetes, cardiovascular disease).¹⁴

Key aspects of GusNIP NI and PPR programs are severalfold. First, qualifying FVs for NI programs include any variety of fresh, canned, dried, or frozen whole or cut FVs without added sugars, fats or oils, and salt (although this varies by individual program). Qualifying FVs for PPR programs are limited to fresh produce. Second, incentives are redeemed at the point of sale, including in farm direct settings (eg, farmers' markets, mobile markets, community-supported agriculture) and brick-and-mortar settings (eg, supermarkets, grocery stores, corner stores). The GusNIP NI/PPR programs can be administered using various program designs. For example, for one NI program, a participant can spend \$1 with SNAP on any food and earn \$1 for qualifying FVs at participating grocery stores via an electronic discount using a store loyalty card. Another NI program model allows a

participant to spend \$1 with SNAP on FVs and earn \$0.50 for qualifying FVs at participating farmers' markets with a token. For PPR programs, participants are prescribed their FV by a health care provider at a collaborating health care organization, and to qualify, the participant must both experience food insecurity and have, or be at risk for, a nutrition-related chronic disease (eg, diabetes, hypertension). Collaborating health care organizations include federally qualified organizations, large medical hospitals, and other community-based centers.

Nutrition education and/or auxiliary services (eg, transportation services) are commonly added to assist program participants in more effectively engaging in NI and PPR programs.¹⁴ The GusNIP request for proposal (eg, grant guidance) recommends that nutrition education opportunities are available for all PPR participants and encourages nutrition education opportunities to be available for NI participants. The guidance allows each grantee to determine what type of nutrition education (if any, in the case of NI programs) to offer. Thus, nutrition education is operationalized in different ways across GusNIP. Some programs provide low-touch nutrition education such as recipe cards or newsletters, whereas others employ a more robust model, including a series of nutrition education classes, consultations with a registered dietitian nutritionist (RDN), and/or cooking classes. Little is known about the rationale for applying various approaches when implementing NI or PPR programs and how these approaches facilitate participant success.

This paper aims to understand the approaches nutrition educators who collaborate with GusNIP NI and PPR programs apply to facilitate participant success. We explore these approaches by focusing on experienced barriers and facilitators to nutrition education program implementation with GusNIP-funded NI/PPR programs. The results of this study provide the basis for recommendations that nutrition educators can tailor and implement for NI, PPR programs, or other multilevel interventions.

METHODS

Study Design

The project team conducted a basic qualitative research¹⁵ multiple methods study to understand the perspectives and experiences of nutrition educators who collaborate with GusNIP NI and PPR programs. This study included a short survey, subsequent individual semistructured interviews, and 1 focus group.

Conceptual Framework

This study is framed by a constructivist epistemological approach, which allows researchers to engage with interviewees to understand the realities and experiences of any given topic from the unique and nuanced perspective of the interviewee.¹⁶ Constructivists do not believe there is a single truth and this theoretical framework is especially beneficial when trying to understand complex phenomena from the perspective of the people most impacted by these issues.¹⁶

Data Collection

This study was led by researchers at the GusNIP National Training, Technical Assistance, Evaluation, and Information Center (NTAE), which is funded by the USDA to provide reporting, evaluation, and technical assistance support to grantees and the wider fields of NI and PPR.

Nutrition educators were recruited via email invitation by their assigned GusNIP NTAE reporting and evaluation program advisor and wider GusNIP networks (eg, GusNIP nutrition education community of practice) for surveys and interviews. We employed both maximum variation and snowball sampling methods.^{17,18} Maximum variation sampling was employed to ensure a variety of types of nutrition educators (eg, RDN, *Supplemental Nutrition Assistance Program-Education* [SNAP-Ed] educators, *Cooking Matters* educators) and national representation. Snowball sampling involved study participants recommending and sending recruitment materials to additional nutrition educators who they thought would provide insight into the dataset.¹⁷

In scripted recruitment emails, all participants were asked to complete a short survey via Qualtrics. The survey questions asked about demographics (eg, race/ethnicity) and work experience (eg, years working as a nutrition educator, type of nutrition education training). The sole purpose of this survey was to describe the participants. At the end of the survey, participants could opt in to complete a subsequent individual semistructured interview. One trained qualitative researcher, an RDN herself, used a semistructured moderator guide with probes to facilitate the interviews. The semistructured moderator guide questions can be found in Table 1 and were developed on the basis of the literature and in collaboration with RDNs who are

nutrition educators and coauthors of this manuscript.

Following the interviews, the same qualitative researcher moderated the focus group and a trained notetaker (also an RDN). The focus group followed the same moderator guide as the individual interviews and was held during a regularly scheduled nutrition educators' community of practice meeting as a means to capitalize on this existing formed group and respect the busy schedules of the educators. Educators were told ahead of time that this particular community of practice meeting would be repurposed as a focus group to collect data for this study, and therefore if they were not interested in participating, they could skip the meeting.

We reached saturation at 25 individual interviews and 1 focus group (n = 5) as supported by qualitative sampling literature, which suggests ~20-30 participants to reach saturation and redundancy.¹⁹⁻²¹ We conducted all interviews and the focus group remotely using Zoom technology for the convenience of the interviewees and to adhere to coronavirus disease 2019 (COVID-19) social distancing precautions for all parties involved. We followed guidance from the literature to conduct reliable and valid remote-access interviews and focus groups.^{22,23} All interviews and the focus group were recorded using Zoom and transcribed verbatim by a professional transcription service. Before analysis, each

Table 1. Semistructured Moderator Guide Used for Nutrition Educator Interviewees

Question	Probes
Tell me about your role within the nutrition incentive or produce prescription project at (name of site/organization).	Probes: type of educator, duration of time in the role, recruiter, management, coordinator, full-time, part-time
Tell me about nutrition education framed within the context of your nutrition incentive or produce prescription project.	Probes: type of education, who provides, aligned with the original proposal, curriculum, COVID-19 changes
Tell me about your plans for nutrition education for your nutrition incentive or produce prescription project in the upcoming year.	Probes: type of education, who provides, partners, recruitment, logistics, curriculum, existing resources
What sorts of resources or support would help improve nutrition education within the context of your project?	Probes: funding, time, experts, space, partnerships, transportation
I am going to share a definition with you. "GusNIP funds projects with the intention for nutrition incentive or produce prescription projects to increase the purchase of fruits and vegetables among low-income consumers." Tell me about your nutrition education resources in terms of this definition.	Probes: room for improvement, benefits, synergy, tailoring of education for produce, challenges, best practices
If a new organization was interested in incorporating nutrition education into their nutrition incentive or produce prescription project, what advice would you give them?	Probes: best practices, what not to do, resources to request, collaborators
What makes it harder to incorporate nutrition education into nutrition incentive or produce prescription projects?	Probes: funding, engagement, recruitment, time, collaborators
Tell me about your experience with evaluation around nutrition education programming.	Probes: reporting, surveys, pre/post, participant satisfaction external evaluator, study design, rigor, barriers, challenges
Tell me about your experiences with adapting nutrition education for different cultures and groups of people.	Probes: materials, language, educator model, challenges, resources needed
Is there anything related to your experience with nutrition education for nutrition incentives, produce prescription projects, or other related programs that you'd like to share with me?	

COVID-19 indicates coronavirus disease 2019; GusNIP, *Gus Schumacher Nutrition Incentive Program*.

transcript document was verified against the audio-file for accuracy by the lead qualitative researcher. All transcripts were deidentified by replacing identifying information such as the interviewee's name, place of employment, or NI/PPR program name with a pseudonym. The University of Nebraska Institutional Review Board approved the study protocol before human subjects research commenced (Institutional Review Board no. 829-20-EX). The protocol was determined to be exempt, so no written informed consent documentation was required.

Analysis

Three researchers independently triple-coded 30% of the transcripts, and all transcripts were coded by 1 researcher.²⁴ Of note, 2 of the coders are RDNs. The 3 coders reached > 90% concordance in their independent coding on triple-coded transcripts and met (via Zoom) bimonthly to discuss codes, categories, representative quotations, and overarching themes using the thematic qualitative analysis strategies.²⁵ Coders used a multistage coding and analysis process using both inductive and deductive coding. First, coders independently read one transcript and applied inductive codes (ie, those that arise directly from the transcripts) to the data. Next, coders worked together to draft a codebook delineating each code name and definition. This codebook included deductive codes (ie, predetermined or *a priori* codes or based on the study research questions, the moderator guide, and relevant literature) and inductive codes. Using the thematic coding method, data were coded in various quotation increments depending on the context of the quotation, as line-by-line coding does not support the constructivist epistemology of the approach.²⁴ Coders then independently coded 5 more transcripts, meeting biweekly between each transcript to calibrate and discuss new codes. If new codes were added, 1 analyst reviewed previously coded transcripts to apply the new codes as needed. With this coding strategy, codes were next grouped into a hierarchical code system,

which led to the development of categories and subsequent overarching themes. All qualitative data management and analysis were conducted using Atlas.ti (version 8.1.1) to digitize the process.²⁶ The analysis and findings followed Consolidated Criteria for Reporting Qualitative Research guidelines, a 32-item checklist that guides rigorous and systematic reporting of qualitative research.²⁷

Researchers used Microsoft Excel (version 16.6) to process survey responses from Qualtrics XM. Responses were cleaned, coded, and corrected before analysis. Descriptive statistics were calculated for each survey question, including the response counts, percentages, and/or means.

RESULTS

Survey Results

Forty-one participants completed the survey. Participants were predominantly female (93%) and White (80%). Most (90%) held a bachelor's degree or higher. Participants reported an average of 7.8 ± 8.0 years of experience providing nutrition education. Most described their training as SNAP-Ed or nutrition educators (64%), whereas nearly a quarter (24%) identified as RDNs. See [Table 2](#) for all reported survey results.

Qualitative Findings

Four key overarching themes were generated across these interviews. First, nutrition educators collaborating with NI/PPR programs have many roles and responsibilities beyond providing traditional, curriculum-based nutrition education. Second, nutrition educators use various practices and efforts to focus on participant-centered nutrition education and support. Third, partnerships with collaborating cross-sector organizations are essential for the success of NI/PPR and nutrition education programs. Fourth, there are common challenges to providing nutrition education and NI/PPR programs, and educators proposed solutions to mitigate these challenges. Next, we describe these 4 themes in more detail and provide

exemplifying quotations for each theme.

Nutrition educators collaborating with NI and PPR programs have many roles and responsibilities beyond providing traditional, curriculum-based nutrition education. All participants provided curriculum-based nutrition education, such as reading food labels, increasing FV intake (eg, following MyPlate guidance), decreasing sugar, fat, and sodium, and cooking with fresh fruits and vegetables. In addition, nutrition educators who work with NI and PPR programs carry out roles and responsibilities beyond direct nutrition education about food behaviors and skills. Above all, nutrition educators discussed their role in promoting NI/PPR programs to their participants, as exemplified by one SNAP-Ed/Cooking Matters educator:

And then we'd never teach a class where we don't tell people about these promotions [NI]. It's just a really big part of what happens in a series of classes. We have slides with this information, we email it out, we social media it, however we can get the word out – that's a huge part of my job – to get people to know about these market incentives.

Interviewees discussed their nutrition education efforts as a broad set of activities, such as grocery store tours, farmers' market tours, education on how to use incentives, cooking education, food preservation, food resource management, and connecting participants with local produce and produce suppliers. One SNAP-Ed educator, who uses the *Cooking Matters* curriculum, explained:

One of the things that we do at farmers' markets is instead of being at a grocery store, we'll go to the booth at the farmers' markets and we'll talk to the farmers. And have them tell the participants and the tour, what they have, what is redeemable with their Double Up Food Bucks. (...) And so, I would say at Cooking Matters what we're striving to do is, at these farmers' markets in particular, is to provide the education at

Table 2. Demographics for Nutrition Educators Who Provide Nutrition Education Within GusNIP NI/PPR Programs

Demographics	n (%)
Age, y	
20–30	13 (32)
31–40	10 (24)
41–50	10 (24)
51–60	6 (15)
≥ 60	2 (5)
Self-described gender	
Woman	38 (93)
Man	3 (7)
Other	0 (0)
Ethnicity	
Hispanic, Latino/a, or Spanish origin	6 (15)
Not Hispanic, Latino/a, or Spanish origin	35 (85)
Race	
American Indian or Alaska Native	0 (0)
Asian	4 (10)
Black or African American	3 (7)
Native Hawaiian or Pacific Islander	0 (0)
White	33 (80)
Other race ^a	2 (5)
Don't know/not sure	1 (2)
Prefer not to answer	2 (5)
Education	
Some college, no degree	2 (5)
Associate degree (eg, AA, AS)	2 (5)
Bachelor's degree (eg, BA, BS)	27 (66)
Master's degree or above	10 (24)
Job title	
Educator	12 (31)
Administrator, coordinator, or manager	16 (41)
Registered dietitian nutritionist (RDN)	7 (18)
Consultant	1 (3)
Both educator and coordinator	2 (5)
Both RDN and program manager	1 (3)
Missing	2
Training as a nutrition educator	
Yes	34 (87)
No	5 (13)
Missing	2
Nutrition education training ^b	
SNAP-Ed or nutrition educator	21 (64)
RDN	8 (24)
Nutrition classes at college or school	4 (12)
Missing	1
Years of providing nutrition education	
0	1 (3)
1–5	22 (56)
6–10	6 (15)
11–15	5 (13)
≥ 16	5 (13)
Missing	2 (5)
Mean ± SD	7.8 ± 8.0
Range	0–37
Total	41 (100)

GusNIP indicates Gus Schumacher Nutrition Incentive Program; NI, Nutrition Incentive; PPR, Produce Prescription.

^aOther race was not defined, nor was there an option for a write-in; ^bAmong those who responded yes to training as a nutrition educator.

an access point so that both of those barriers are addressed. So that, participants, can go and not just learn about why it's important to eat healthy, but actually have the food there and utilize a great, government funded program [DUFEB].

Educators shared the importance of promoting local foods to consumers, increasing consumer knowledge of their farmers, and supporting consumer demand for locally sourced products to build community and strengthen the local food environment.

In addition, beyond nutrition education—participants indicated they are also heavily involved in program evaluation, recruitment and retention, marketing NI and PPR programs, connecting their participants to additional social determinants of health-related resources, tracking redemption of incentives, and providing education on how to use the NI and PPR vouchers. One RDN nutrition educator, a program manager, shared:

The nutrition educator would do everything, from, I want to call it outreach, yes. From enrollment to teaching and reminders and all of that, so that all is managed by the educator.

Nutrition educators discussed current practices and efforts to focus on participant-centered nutrition education and support. Educators discussed the importance of flexible nutrition education programming to “meet the participant where they are at” and learn from the participants what they would like to focus on in any given class. For example, one Cooking Matters educator shared:

I think one of the things that Cooking Matters does is we often go back to participants, because we always say participants are the experts of their own lives. And so, what our daily staff members are doing at those tours is asking participants to share and asking them the questions.

Educators also noted that the logistics of providing nutrition education should be participant-centered. For

example, they described providing nutrition education at the point of purchase (eg, grocery store) or point of produce pick-up (eg, farm stand distribution site). This type of nutrition education was provided in short segments to accommodate the busy schedules of many participants. Participant-centered nutrition education should also be interactive and hands-on and be intricately tied to produce distribution as to provide a multilevel approach to increase produce consumption, as discussed by this RDN:

It's like yes, we can tell someone to eat more veggies—but when we can show them at the market, we can show them how they can afford it with the use of double up, we can teach them how to cook it right at the market—and they can taste it. That's powerful empowering capacity building, it's not only education.

Educators discussed the pros and cons of adapting their programs during the COVID-19 pandemic, citing challenges with engagement for online synchronous classes. They also noted the opportunities and highlights of what they learned during COVID-19 to better meet the needs of a wider audience. One nutrition education program manager shared her thoughts on post-COVID-19 lessons learned:

I think it would be a hybrid model where you're able to get the best of both worlds. I think virtual world has brought so many good things about how convenient it is to just take these type of classes from home. They make it so much more accessible and you have technology barriers you're reducing, transportation barriers for security if you're doing the classes at night, depending on where you're doing it, all of those type of things.

Finally, nutrition educators discussed their program strengths and areas for improvement regarding the cultural adaptation of their programs. Largely, they focused on translation and language accommodations, suggesting that having bilingual educators who spoke Spanish, Russian, and other languages are much-needed resources in their

communities. They indicated providing education in the native language of their participants, meeting participants at places in which they already felt comfortable and safe (eg, community center), and escorting them to farmers' markets to learn about the use of incentives in person, are all very powerful learning experiences. Those educators who were members of the community they served (eg, Spanish-speaking) or had community members as collaborators (eg, a Somali nutrition educator to serve Somali immigrants) shared this as a key element of success in working with diverse communities. Educators also discussed culturally relevant foods and adapting curricula to accommodate diverse audiences as described by this RDN program manager who leads a PPR program:

[The] other thing that we're working on with our curriculum is to decolonize our curriculum, because we do serve a variety of different cultures and a variety of different communities. So we want people to not only learn nutrition, but learn nutrition in a very relatable way or a way that people can be like, oh, it doesn't have to be one specific way. I can adapt what I learn to my type of lifestyle or what I have access to. So it's really important for us to understand that everybody has different living conditions or they have different access to things.

Partnerships with collaborating cross-sector organizations are essential for the success of NI/PPR and nutrition education programs. Nutrition educator interviewees stated that the successes of their NI/PPR and nutrition education programming could be attributed to strong partnerships and collaborations with cross-sector organizations. They also shared frustrations when partnerships with other organizations were not as strong as they needed to be and lamented these as missed opportunities. Partnerships with other organizations that serve people who experience limited income, such as departments of health and federally qualified health care centers, were especially important for PPR programs to identify eligible

participants. Partnerships with agencies that serve families with young children and limited income, older adults, and immigrant populations were also noted as important to help recruit and raise awareness of nutrition education, PPR, and NI programs. One school and farmers' market-based nutrition educator shared:

Yeah, because we can't do everything. We're limited in employees, we're limited in hours, and we have a large area that we serve. And so it's like promoting what other great things are available in the community, that we don't have to do it all. We just say, we're doing this, but then there's all these other great things that are happening, and they do the same—for us.

Educators discussed limitations within their organizations and how leveraging existing community-based programs can build collective capacity across all programs that serve limited-income communities. When asked how they reach audiences who are eligible for NI or PPR programs, one *Cooking Matters* educator shared:

*I think one of the nuances about *Cooking Matters* is that we also receive SNAP-Ed funding, federal government funding, to do our work. And so, for us, it was a very natural and easy partnership to form, because we're trying to reach the same audience, and we already have the funding to reach that exact audience.*

Educators also discussed the importance of partnerships with Black, Indigenous, People of Color-serving organizations to reach a broad and diverse audience with their programming. On this topic, one food bank-based SNAP-Ed educator offered:

Our work is really relationship-based, and so it's building those relationships, and we're realizing as a White person, you can't just go in and be like, Hey, we want you involved in our programs to be our token person of color. So we're strategizing and figuring out a

way they can be implemented in a conscious way... We want people to feel included and safe—all people... Right now we got funding, a Farm to Food Pantry grant. So that's going to bring fresh produce into the Food Pantries that we work with. And so we're intentionally seeking out BIPOC farmers, if they exist in our county, and trying to make sure that some of those farms are part of the program, as well as women-run or vet-run, because those are also populations that we want to lift up. And then we try and do advisory councils and stuff, but it is really hard because everybody's trying to get people of color to the table and it can be tokenism a bit. And so it's trying do it consciously and effectively... And also we do have a lot of tribes in our area and they are the separate groups, but they are part of our Northwest culture. And so we try and bring those into our programming.

When participants mentioned missed opportunities or potential partnerships that were not working well, these stories primarily focused on a lack of communication and the desire for organizations to promote nutrition education opportunities. One educator shared frustration with organizations failing to communicate and provide a streamlined approach to promoting nutrition resources:

Within the SNAP work that I do, all of these different resources that are available to people in general feel so disjointed and so just difficult to navigate and that even as an educator, it is really difficult to help lead people through, these are all of the resources available to you. There's WIC over here, and there's SNAP over here, and then you can get your WIC market checks, and you can get your farmers' market SNAP Match and all of the different things. And then there are also all of these different entities, at least in our community, different education organizations that are just not work, it just feels no one's working together... And I know that's just the way that the system is, but we want to work

together, and we try to, it just can be really complicated to figure out how to pull all of these different organizations together to collaborate and cooperate. And we're all always, all of us are being encouraged to collaborate, to cooperate to work together, but it's hard when it feels like the overarching structure is not always collaborating.

Educators also discussed the time it takes to build partnerships, especially collaborating with health care organizations that refer their patients to nutrition education and NI and PPR programs.

There are common challenges to providing nutrition education and NI/PPR programs, and educators proposed solutions to mitigate these challenges. When discussing challenges to conducting nutrition education with NI and PPR beneficiaries, the most common concern was the need to promote programs and market them to reach the priority audience. Nutrition educator interviewees discussed limitations in staff time to recruit and engage their intended audience, and solutions included funding for more staff and professional marketing and program promotion assistance. One SNAP-Ed educator and manager shared:

I mean, one thing I would love to see, and I know that's part of what we are here for is more promotion of Double Up Food Bucks. Being in public health, we don't have very many people in marketing. And so I would love, love, love to see this promoted in more places. I would love more people to know about it.

Another solution to more effectively reaching the priority audience described by interviewees was to improve referrals and synergy between public health organizations. As discussed in the previous theme on partnerships, the nutrition educators who did not feel their organizations had strong partnerships lamented this missed opportunity and indicated that building collective capacity between organizations would strengthen all the various organizations' outcomes. One SNAP-Ed educator shared her struggles with

the lack of partnership between public health and health care organizations:

So a better connection with human services, like referrals. And referrals with a lot of different agencies and organizations, not just human services, hospitals... We spend a ridiculous amount of time trying to recruit people for some great programming and just better connections with... My local WIC is pretty good. They're pretty wonderful for me. But the hospital and human services, there could just be a better connection and better visibility.

Nutrition educators also discussed how helpful monetary or nonmonetary gifts could be to engage and retain their intended audience. Gifts such as cutting boards, vegetable scrubbers, and \$10 farmers' market "bucks" could be very useful in encouraging their audience to return to future nutrition education opportunities.

Finally, nutrition educators recognized that program evaluation, including evaluation of nutrition education and NI/PPR programs, is important but often lacks rigor and should be improved. Nutrition educators suggested the burden on their participants was the key challenge to a more robust evaluation. They suggested that participants often do not comply with evaluation protocols and that time, motivation, and limited understanding of the purpose of evaluation stymie these efforts. In addition, some participants do not feel safe or comfortable sharing demographic information on surveys and feel oversurveyed. When asked about program evaluation, one food bank-based nutrition educator detailed these barriers:

And that would also be another great thing to not have to do. I asked someone, what race are you, and what sex are you, and how many kids do you have, and did you graduate college? And we're required by SNAP-Ed to ask them these questions. And so that turns away a lot of people more so even than mentioning food stamps or Double Up Food Bucks does not turn people away. Asking someone

to fill out a personal information on a demographic form... I think that's a barrier for some people... So I can't speak specifically for people, but as having been a young single mom, myself, and having to fill out those forms, I think, that the demographic questions are more of a turn off. I think that people are happy to answer questions about, "Oh yeah, I love the store or no, I didn't like the store." They're happy to give that feedback.

As mentioned at the end of the previous quote, nutrition educators said that certain types of evaluation are easier, such as process (eg, reach and dose) and program satisfaction. They also cited challenges with lack of time and evaluation expertise as reasons evaluation was not as robust as possible. One RDN educator shared:

I think one of the struggles in the state of [NAME] when it comes to evaluating maybe the Fruit and Vegetable Incentive Program at a local level is that we don't necessarily have the staff that is capable of knowing the nuances of program evaluation. I think the Department of Health does a really good job at trying to make it understandable, but what's challenging is they're also underfunded or they're also... under-resourced. And they're asking us to evaluate programs, but sometimes, even educators or the supervisors don't have the training necessary to deliver, to create an evaluation that can really assess the impact, I guess, of that nutrition education we deliver.

Educators' suggested resources to mitigate these evaluation-related barriers include staff training, expert support, and giveaways for participants to complete evaluation surveys. Nutrition educators also discussed how much easier and more meaningful it is to consider alternative evaluation metrics – such as qualitative storytelling, which often yields evocative narratives about the effect of a nutrition education and NI/PPR program in a participant's life.

DISCUSSION

These results reveal 4 key themes across nutrition educator interviews, findings of which are supported by the theoretical framework and existing literature. Nutrition educators who collaborate with NI and PPR programs serve many roles, focus on participant-centered education, value and rely on cross-sector partnerships, and offer solutions to their challenges in providing nutrition education in conjunction with NI and PPR programs.

As supported by community health workers, peer educators, and promotora nutrition education models,^{28–30} of the educators included in this interview study shared the many roles they play in providing nutrition education beyond curriculum-based individual-level nutrition education alone. Their efforts are supported by the socioecological model³¹ in that direct, individual education is not the only layer of intervention needed to support healthy nutrition-related behavior change. Both community and environmental levels of the socioecological model are positively impacted by nutrition educators' efforts. By promoting nutrition incentives and empowering their participants to patronize local farmers' markets and purchase fresh produce, they are inherently addressing food security-related social determinants of health through the provision of resources to decrease food insecurity and increase FV purchasing and consumption (eg, NI/PPR).

Nutrition educators interviewed in this study strive to provide participant-centered education, as supported by concepts of motivational interviewing for nutrition education and medical nutrition therapy.^{32–34} Again, as supported by a community health worker, peer educator, and promotora models,^{28–30} nutrition educators recognize the importance of "meeting people where they're at" and creating safe, inclusive, culturally responsive spaces for nutrition education opportunities. Furthermore, their hands-on approach to nutrition education, including teaching logistics of how to use incentive tokens at the farmers' market, tours of food retail outlets, cooking demonstrations, and food sampling

opportunities, are all supported by Knowles' Adult Learning Theory³⁵ constructs and foster real-life capacity building for participants to actualize the didactic nutrition education they may receive in a traditional classroom setting. Finally, educators discussed their efforts to culturally adapt their programming to better meet the needs of diverse audiences. Providing programming in participants' native language (eg, Spanish) was the most common form of cultural adaptation. The GusNIP NTAE strives to build resources to ensure considerations of diversity, equity, and inclusion are addressed in program implementation, reporting, evaluation, and technical assistance.^{36,37} If resources were available, educators suggested they would like more diversity among their staff, especially nutrition educators who were members of the communities they intended to serve (eg, Spanish-speaking nutrition educators). Lack of diversity among RDNs has long since been a concern, and efforts by dietetics programs across the US to increase diversity in their dietetics student body are underway.^{38,39} Survey respondents in this study similarly identified as younger, non-Hispanic White women, which mirrors those demographics of RDNs in the US.³⁹ A key solution to increasing diversity among nutrition educators is to expand peer educator and community health worker models and elevate these positions to include competitive salaries to support these essential team members long term.^{40,41}

Nutrition educators cited the importance of cross-sector collaborations, primarily to ease the marketing burden and promote their educational programming and NI/PPR resources to eligible individuals. Educators suggested when these partnerships were strong and effective, they helped in getting the word out about resources available and cross promoting resources to streamline support for eligible individuals. The importance of cross-sector collaborations in public health interventions is well supported in the literature,^{42–44} and the need to collaborate with cross-sector organizations in public health to increase equity and inclusion and address issues of structural racism is clear.^{45,46} When organizations do not cross-promote, collaborate, and

communicate effectively, repercussions include more effort in each organization promoting, 'recruiting,' and marketing their programs and less time delivering their programming. Furthermore, the lack of effective cross-sector collaboration places the burden of finding relevant nutrition-related resources on the individuals who need these resources, many of whom experience competing priorities (eg, housing security, child care)—all of which exacerbate health disparities.

Because nutrition educators have many roles and responsibilities within their organizations, they have unique insight into their challenges and solutions to them. In addition to these challenges, engaging the priority audience in nutrition education and PPR and NI programs can also be difficult when cross-sector partnerships are lacking. Fertig et al⁴⁷ published similar findings from their pilot evaluation of a produce incentive paired with cooking and nutrition education classes and suggested that barriers to attending classes need further investigation. Key solutions to increase engagement include offering monetary or nonmonetary giveaways or enticements to engage in nutrition education. Lessons learned from the COVID-19 pandemic also shed light on additional resources to promote engagement, including offering child care, transportation support, and hybrid (eg, online) learning opportunities.⁴⁸ Knowles' Adult Learning Theory also suggests flexibility of programming (eg, participants can voice what they would like to discuss in any given class) as a key asset to engaging adult learners.³⁵

Finally, nutrition educators shared challenges related to rigorous program evaluation, citing difficulty in engaging participants to complete self-reported demographic and evaluation surveys and their own limited time and capacity in collecting these data. Process (eg, dose, reach) and satisfaction evaluation data are easier to collect than outcomes evaluation, and they suggested qualitative methods (eg, storytelling) as meaningful ways to collect evaluative data and as a method in which participants were more willing to engage. The tension between federal program evaluation

requirements and participants' desire for privacy with socio-demographic data presents an opportunity for future research to examine how quantitative outcomes can be evaluated without being a barrier to participation.

One notable limitation of this study is selection bias (ie, nutrition educators who are more engaged with NI and PPR programs were likely more willing to participate in a voluntary survey and subsequent 1:1 interview).⁴⁹ However, snowball sampling methods¹⁸ may have mitigated this bias, and as is the case with all qualitative research, these findings are not meant to be generalizable to wider audiences.⁵⁰ The key strength of this paper is that it fills a gap in the literature by identifying cross-cutting themes among nutrition educators who work with NI and PPR programs across the US.

IMPLICATIONS FOR RESEARCH AND PRACTICE

Multilevel efforts are needed to adequately address nutrition-related health disparities, and cross-sector collaborations are essential to support multilevel efforts. Nutrition educators play a unique role in offering education and support (individual level), connecting individuals to resources to mitigate food insecurity (community level), and promoting consumer demand to strengthen local food systems and local food producers (community and environment level). Nutrition educators are most effective if they are adequately resourced to perform these key roles, and community health workers, peer-educators, and promotora models for nutrition education and NI/PPR program delivery deserve to be valued (eg, financially supported) as key health care delivery team members.

Findings related to evaluation also present an opportunity to prioritize qualitative methods alongside other forms of data collection to better understand the participants' experiences and nutrition-related behavior change, although this approach takes additional capacity, time, and expertise. Qualitative methods allow researchers to frame their questions with a postpositivist lens (eg, critical

theory, feminist theory) and use methodologies (eg, case study methodology) that allow for multiple data collection methods (eg, interviews, observations, photovoice, surveys), as to tell a complete story of the participants' experiences. These postpositivist epistemological frameworks can also support enhancing diversity, equity, and inclusion in nutrition public health program evaluation.^{51–53}

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