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EFNEP PEER EDUCATOR FACILITATORS AND BARRIERS TO TEACHING
PHYSICAL ACTIVITY TO ADULT PARTICIPANTS

BY LUISA SANTOS

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
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THE UNIVERSITY OF RHODE ISLAND

2024

MASTER OF SCIENCE THESIS

OF

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ABSTRACT

Background: The Expanded Food and Nutrition Education Program (EFNEP) aims to improve the health-related behaviors of limited-resource families. Increasing physical activity (PA) is an EFNEP core priority; however, anecdotal evidence suggests that EFNEP peer educators (PE) are challenged to incorporate PA into adult programming.

Objective: To assess the facilitators and barriers that EFNEP PE face when incorporating PA-related content in adult classes. This preliminary study, conducted in the Northeast region of the US, will inform expansion of this research nationally. **Study Design,**

Settings, and Participants: This qualitative study consisted of virtual semi-structured interviews with EFNEP PE (n=15) in the Northeastern region of the United States. PEs recruited had ≥ 2 years as a PE, ≥ 1 year delivering adult programming, and $\geq 50\%$ of workload targeting adults. **Methods:** Northeastern EFNEP Coordinators identified

eligible PE who completed a screening survey on EFNEP experience, sociodemographics, and personal PA. PE interviews covered implementing PA, participant enjoyment, EFNEP PA environment, facilitators/barriers to delivering PA content, and future programmatic needs. **Measurable Outcomes/Analysis:** Descriptive

statistics were used to analyze survey data. Interview transcripts were coded using Dedoose software. An inductive and deductive thematic analysis was used to identify

preliminary themes. **Results:** Interviewed PEs were primarily Hispanic (60%, n=9) and female (100%, n=15). Preliminary themes were categorized into barriers, facilitators, and programmatic needs. Barriers to PA delivery included: inadequate classroom size space, neighborhood safety concerns, environmental factors, and PE perception of participant barriers to PA. Facilitators included: motivational approaches such as participant

encouragement, PA class discussions, PEs leading by example, and including participant PA interests. Programmatic needs included: PA training for PE, affordable recreational PA options, and PA-relevant educational extenders. **Conclusion:** The results provided insight into potential barriers, facilitators, and programmatic needs for incorporating PA into adult EFNEP lessons. These findings set the groundwork for national research to address EFNEP training and curriculum needs for promoting PA.

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PREFACE

This thesis was prepared according to the University of Rhode Island graduate school Manuscript Thesis Format and follows the author guidelines for *The Journal of Nutrition Education and Behavior*. Upon submitting this thesis to the graduate school, the manuscript may be submitted for publication.

TABLE OF CONTENTS

ABSTRACT.....	ii
ACKNOWLEDGMENTS.....	iv
PREFACE.....	v
TABLE OF CONTENTS.....	vi
LIST OF APPENDICES.....	vii
LIST OF TABLES	viii
CHAPTER 1.....	1
INTRODUCTION.....	2
METHODOLOGY.....	5
RESULTS.....	9
DISCUSSION.....	23
IMPLICATIONS FOR RESEARCH AND PRACTICE.....	29
REFERENCES.....	59

APPENDICES

	PAGE
A. Research Timeline.....	70
B. Qualtrics Survey.....	70
C. Recruitment Email.....	78
D. Peer Educator Recruitment Email.....	79
E. Extended Literature Review.....	80

LIST OF TABLES

TABLE	PAGE
Table 1: Participant Demographics.....	35
Table 2: EFNEP Peer Educators Professional Experience.....	36
Table 3: EFNEP Peer Educator Self-Reported Physical Activity.....	37
Table 4: Themes and Key Quotes from Interviews.....	38

CHAPTER 1
MANUSCRIPT

**“EFNEP Peer Educator Facilitators and Barriers to Teaching Physical Activity to
Adult Participants”**

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INTRODUCTION

Lack of physical activity among the adult population is a concern worldwide. In the United States less than one-third of adults currently meet the Physical Activity Guidelines for Americans (PAG) of 150 minutes of moderate intensity a week.¹ Lack of physical activity and sedentary lifestyle is associated with several chronic diseases including obesity, cardiovascular disease, and type II diabetes.² Research also suggests that minority groups such as Latinos and African Americans are less likely to meet the PAG.³ This evidence further supports and emphasizes the needs for public health interventions to address the racial and economic disparities of different groups.

The Expanded Food and Nutrition Education Program (EFNEP) is a United States Department of Agriculture (USDA) federal nutrition education program that aims to improve nutrition-related behaviors and physical activity of underrepresented low-income populations.⁴ EFNEP is delivered by trained paraprofessionals hired based on their lived experience and understanding of community needs to support four core priority areas: Diet and Physical Activity, Food Resource Management, Food Safety, and Food Security.^{5,6} The peer educator model promotes the success of lifestyle changes because guidance is provided from relatable and approachable individuals who understand the community's needs through lived experiences.⁷ Peer educators provide unique experiences and perspectives that are similar to the challenges and experiences faced by the community they serve.⁷ This allows the peer educators to meet participants where they are and help them set realistic and attainable goals.

Although physical activity is a core priority of EFNEP, it plays a minor role in the curricula compared to the nutrition topics covered during class series.^{8,9} For example,

only one out the nine lessons in the Eating Smart, Being Active curriculum focuses on physical activity, and only three out of the twenty one lessons in Families Eating Smart Moving More focuses on physical activity.^{8,9} Based on national data, participation in EFNEP is associated with improvements in dietary behaviors, including increased fruit and vegetable consumption.^{5,6,9} However, national program impact reports reveal a notable disparity in improvement between dietary behaviors compared physical activity habits. Specifically, based on the 2023 EFNEP national impact report 96% of EFNEP participants reported enhancing their diet quality practices, surpassing the national average of 73% improvement in physical activity practices.^{5,10} Although increasing physical activity is one of the EFNEP objectives, anecdotal evidence suggests that EFNEP peer educators lack the needed training and resources for delivering physical activity content to adult participants. Evidence-based curricula commonly used in EFNEP demonstrate the disproportionate amount of nutrition content that needs to be covered to align with EFNEP core priority areas.^{8,9,11} Previous research examining EFNEP curricula found that even when various curricula cover the same topics, there are differences in the way these classes are taught and the methods peer educators use by peer educators to reinforce learning.¹¹ This information emphasizes the need to understand program implementation and identify areas of improvement to enhance learning for participants. To better understand the role that physical activity has in EFNEP program delivery, it is integral to assess peer educator perceptions of physical activity implementation including facilitators and barriers to help inform federal programming and assess training needs.

The purpose of this study is to assess USDA EFNEP peer educators' perspectives on incorporating physical activity into adult EFNEP classes through a brief survey and

semi-structured interviews. This pilot study focused on the Northeastern region of the United States and set the groundwork to expand the research nationally.

METHODOLOGY

Study Design and Overview

This study is part of a multistate initiative formed by: Arizona, California, Idaho, Maine, Minnesota, New York, Oklahoma, Rhode Island, South Dakota, Texas, Washington State, Connecticut, and New Jersey.¹¹ This multistate group has been conducting research for the past 15 years examining EFNEP's behalf.¹¹ This study included a quantitative survey administered via Qualtrics survey (Appendix B) that assessed participants' level of physical activity, experience working with EFNEP (for the purpose of inclusion criteria), and demographics such as race/ethnicity, level of education, age range, and zip code. A Semi-structured interview guide was developed using the socioecological model (SEM) to explore peer educators perceptions of physical activity. The SEM explains that health is a result of a variety of individual, interpersonal, institutions and organizations, community, and structure, policy, and systemic factors.¹² (1) how physical activity is implemented in EFNEP lessons; (2) peer educator perceptions around participant enjoyment of physical activity; (3) the physical activity environment where EFNEP classes take place; (4) facilitators and barriers to incorporating physical activity into EFNEP lessons; (5) and future needs.

This study was approved by the IRB (protocol # 2042371).

Participants and Recruitment

To facilitate peer educator recruitment, an overview of the research study was sent through the Regional and National EFNEP Coordinator listserv with a request to provide the names and email addresses of peer educators working in their state that met the eligibility criteria (Appendix C). To ensure peer educators participating in the study had

ample experience in delivering EFNEP adult programming, peer educators needed to be 18 years or over, have 2+ years of experience as peer educators, have 1+ year of experience working with adult audiences, and 50% of their workload focused on adult EFNEP audiences.

Once a list of peer educator's email addresses was received from EFNEP Coordinators, participants were recruited via email with an overview of the research study that included an anonymous online recruitment survey (Appendix D).

Data Collection

Recruitment began May 2023 after receiving IRB approval and ended after reaching data saturation in early September of 2023. Participants were asked to fill out a 5-10 minute 13-question Qualtrics survey that included demographic questions, eligibility criteria questions, and individual-level of peer educator's physical activity behaviors were assessed using questions from the EFNEP adult questionnaire (Appendix B).¹³ At the end of the survey, participants were able to click a separate link to provide their name, email address, and availability to schedule the interview. Once the participants agreed to the interview they were contacted via email to schedule a day and time to meet. Interviews were conducted on Zoom and took approximately 45-60 minutes. Before the interview began the consent form was screen-shared with the participants to read, and verbal consent was obtained for participation and for video recording. Participants were compensated with a \$25 Amazon gift card in appreciation for their time for completing both the survey and interview.

The semi-structured interview questions were developed by three members of the research team that include two EFNEP Coordinators. The domains in the interview guide

were developed based on the SEM that describes the multifactorial aspects that affect behaviors and health of individuals.¹² The research team conducted cognitive interviews with EFNEP Rhode Island peer educators to test the wording and appropriateness of the questions. Feedback received was used to revise the interview template accordingly.

This conversation-like interview consist of a flexible dialogue guided by a series of probe questions and comments to help participants provide detailed answers while making them feel comfortable sharing information.¹³ During the interview member checking was implemented for verification purposes as a validity check of participant's responses.¹⁴ After the participant answers each question, the interviewer paraphrased their understanding of the answer while providing the participants an opportunity to agree, disagree, or provide additional information to ensure that interpretations of the data collected were accurate.¹⁴⁻¹⁶ The interviews conducted through Zoom were transcribed using the recording feature in Zoom. Then the recordings were sent to Ubiq to obtain the final transcripts of the interviews.

Data Analysis

The online survey tool, Qualtrics was used to analyze survey responses..¹⁷ Descriptive statistics were used to capture the demographic, experience as peer educators, and physical activity behaviors of the EFNEP peer educators in the form of means and percentages as appropriate.

A codebook was created by two members of the research team using systematic coding to capture themes in the transcribed interviews.¹⁹ Codes were initially constructed inductively based on literature review, and deductively based on participant responses during interviews.¹⁸ A minimum of two coders initially coded each transcript and coding

discussions took place to ensure agreement of codes, identify new emerging codes and refine the codebook.^{18,19} If there was disagreement in coding, a third member of the research team helped reconcile code assignments. After a subset of interviews was coded, interrater reliability was assessed until a Cohen's Kappa value of 0.93 was obtained indicating strong agreement between coders. Then the remaining transcripts were coded independently.^{20,21} Data was coded and analyzed using Dedoose. Themes were developed using a thematic approach by assessing trends in interview responses. The process of coding and identifying themes continued as new information emerged and ended until theoretical saturation was reached.¹⁹

RESULTS

Survey Data

A list of eligible peer educators was obtained from EFNEP Coordinators in the Northeastern region of the United States. Out of the 39 recruited peer educators, 17 completed the survey, and only 15 completed the survey and attended the semi-structured interview (Table 1). All participants (n=15) were female and primarily identified as Hispanic/Latino (n=9) or selected multiple races/ethnicities (n=8). EFNEP Peer Educators professional experience is described in table 2, and their self-reported physical activity is described in table 3.

Themes Generated

The unweighted kappa value was 0.93 indicating strong reliability between coders.^{20,21} After transcribing and coding all interviews, four main themes were identified: (1) Barriers to teaching physical activity to adult participants, (2) Facilitating approaches used during class, (3) Future programmatic needs, (4) Peer educators' experience and training.

Barriers to Teaching Physical Activity to Adult Participants

Peer Educators Perception of Participants Perceived Barriers. Peer educators shared a variety of barriers voiced by participants in class, impeding their involvement in physical activities. These barriers emerged as a significant barrier to teaching physical activity during EFNEP classes. The noted barrier revolved around participants citing health-related issues such as surgeries, pain, or weight management challenges, acting as deterrents to active participation.

"Yeah. You have to break it down. Sometimes you have a person that is overweight and they complain that they have a lot of pain in their knees, and you know that's because of the extra weight. And so, you teach them how to do physical activity sitting down. Movement, if you're sitting down, if you move your legs, you'll be better. The pain will be less if you do the movement. And I have a video with a lady doing physical activity sitting down."-P14

"Some people have trouble with their hands, they cannot carry any stuff or mobility issues, they feel like they're being nauseous, or they have predisposition to do physical activity."-P10

Other concerns included the mental health aspect of physical activity such as the anxiety of exercising in public. P12 identified this as a mental barrier rather than a physical barrier impeding participants from being physically active.

"Doing that with home visits and with groups really has taught me a lot of how to witness how participants are dealing with anxiety and anxiety disorder, or crowd anxieties. That often, in my experience, has been the reason why they want to turn around and go home or they really are resisting going for a 15-minute walk. It's not the walking they're resisting, it's the being out in public, which might be something you could dig into with research someday. It really is more a mental barrier than a physical barrier, in my experience, so just giving them that opportunity to go out with someone they feel safe with in a group and try it, and then talk about how do we make this into a habit, and how do we celebrate accomplishments along the way if we're able to turn this into a habit."-P12

Peer educators shared the culturally different barriers depending on the community, religion, or race/ethnicity of participants. One barrier highlighted was the disparity in social norms imposed on various family members, coupled with distinct expectations placed on each individual, thereby inhibiting their participation in independent physical activities.

"A little culturally in the classes that I've taught, we've had a large influx of Muslim participants. Well, just like everyone else, they do physical activity, it's just a lot of where and with whom they participate, it's a lot of family working or women working together for things. That's not really a barrier, it's just like an occasion to be aware of. Also, their families may not be comfortable with them walking through Home Depot by themselves, which is respected. But take the family — make it a family thing. Other than let's see, the island was a challenge

like I said. We didn't have to take a ferry or anything out to that, that's another CEA did that, there's a bridge."-P11

Other participants perceived barriers including lack of time. Peer educators shared that participants had different responsibilities including jobs, parenting, and household responsibilities that prevent them to prioritize physical activity.

"People are very busy, go to appointments, and can't get people to watch their children. The bus schedule has filed them up and made them late and oh, just ongoing. I tried, I think three times working with this group, so I'm taking a little break because I can't seem to get good attendance and have people, I mean I've waited like 40 minutes for people, and I have to start the class and there's two people."-P15

"I think their time is stressed. My group, my consistent group, are now mothers who are going to school, who are probably working after school, so they're looking at me like, yeah, that's a dream, if I could go work – if I could go to a Zumba class. So that's a challenge. They're overwhelmed with what they have to do daily. And then, of course, the challenge of – some of them are depressed. They're not – you know, not at the place where they're going to get up and go for a walk or what not. Not very healthy. They smoke. They are drinking soda three times a day. So it's just that – they're on the opposite end of what we want them to be, and it's – yeah. Just trying to put them."-P5

Inadequate Classroom Space. Other barriers to including physical activity in adult curricula included the classroom space. Peer educators emphasized the need for access to adequate facilities for physical activity. Some classroom concerns expressed by peer educators included lack of privacy during physical activity lessons, lack of space preventing participants to exercise, noise restraints preventing them from talking loud or playing music, and lack of AC during the summer.

"makes a big difference, the size, sometimes you're limited but you can be resourceful, right. You can do small movements, and especially with COVID, you don't want anyone on top of another person, right. We're still living to COVID, numbers are rising especially in the city now. Being very careful with that, being extra careful that we have ventilation. It's so many things to think about, that we have to be very careful about, especially when we're doing physical activity."-P9

"Well, if I am in an institution where the classroom is next to mine, the noise sometimes, we want to be quiet, we don't want to disturb any other people around. Sometimes that is a huge issue because no matter how quiet you want to do the activity, and then sometimes the music we going to play, the music that we want and stuff like that."-P13

Neighborhood Safety Concerns. Participants also shared other barriers related to the neighborhoods where participants reside. A common concern was the overall lack of safety of certain neighborhoods which interfered with physical activity messages shared during class. Other neighborhood barriers included the lack of sidewalks and lack of transportation in rural areas that prevented participants from accessing recreational facilities. In addition to these barriers, peer educators also shared that some neighborhoods also lack affordable recreational facilities.

"It's not in a really good, safe location for walking, I'll tell you something, they walk in the driveway, the driveway is quite long. But I told the ladies, and they have a transport van that does take them out, I said, right up the road here there's a town walk, they've built in trails to walk. I told them that they've been up there, that the social workers have driven them up there. Yeah, they do take them out for walks, but it's not in a location that's safe, there's two major roads and the house sits right in the middle. Yeah, heavy traffic."-P15

"Some of them, if there's like a public pool, or there's centers where they can go, I kind of like to hand out the information. But again, rural areas, no transportation. A lot of the information I give, like stretching, dancing in place, walking in place is okay."-P6

Weather. The weather also plays a role in the peer educators ability to include and promote physical activity during class. Cold weather during winter months and early winter sunset deters participants from engaging in physical activity.

"Well, I mean I think weather, like when it gets cold, it's snowy or gloomy out, it gets challenging to get people to participate and be actively participating. Like they may initially start, and then it gets challenging to keep them, and that's 'cause of the weather and because of the way New England is. That could be a challenge."-P7

"Yeah. In the winter, no. I mean, especially in nighttime winter classes, everybody's ready to hibernate. I found that lunchtime classes are more apt to want to do a little bit of movement. Sitewise like I said, if I can get the people themselves to buy into it, like I said, we're not going to run around and play tag. But we can do some standing work, some sitting work. Yeah, and the evening classes, they don't want to move at all."-P11

Inadequate Training in Promoting Physical Activity. Participants voiced that their insufficient training in physical activity hindered their confidence in leading and promoting the physical activity segment of the class. Additionally, some peer educators emphasized the necessity of obtaining certification as physical activity instructors to ensure the delivery of classes suitable for participants' safety.

"Yeah. Because, you know, the other thing, I like physical activity, the other thing with us, you know, the majority of us, we're not certified. You know, certified. And because we're not certified we couldn't just – you know, with our program, we could encourage them or, you know, what can you do, you know, in a basic way. Because even with the kids, you know, sometimes I do, "Let's do something like go like this," you know, like just, you know, that's exercise, that's moving around. But just something very basic. But if we want to really go into teaching them, you know, get a and stuff, then right there, because of liability, I have to kind of like, you know, be certified."-P13

"And I'd say the other thing is just not feeling like I have had as much training and support, and I've continued to reiterate that over the years, you know, that I can't do this work if I don't feel trained. And it's, you know, it's hard. Nobody trained me in cooking before I started either, but I did that. So, you know, but I feel obviously a lot more comfortable. I come from more of a cooking background than a physical activity background, so it's more of a comfort area in terms of being actively engaged with other people."-P4

Facilitating Approaches Used During Class

The next theme identified during the interviews included the successful strategies used to promote physical activity in the class and outside the class.

Including Participants' Interests. Peer educators expressed the importance of listening to their audience and including the participants' interests during class. This could be in the form of their preferred music genre or their preferred exercise.

"Right. Right. With Spanish music or maybe we had to bring some – all these for depending on the group, or maybe we can just ask them to bring some music that they maybe are enjoying. And then depending on the group, we adapt to the group, the personality of the group and the people in the place. So we had to be very flexible in that way. But with the videos it's let's say there are so many good videos to do physical activity now. The in line dances are so many different ones. So depending on who's in the audience, we can choose maybe a country music one, or maybe we can do R&B or we can do our children one. When I know that I have children in the audience, especially with so many and I knew that they had their children, I always put something that is related with children and everybody enjoys it. And especially the children, the ones that we want them to be taking part of it"-P8

"I had some people who were into cheerleading. I had a personal trainer. So it was like I listen to what they do already and then I tried to grab them by saying, "oh. I think you'll be good to teach us what you like to do" or things like that, or would you like to show us a cheer?, because I'll hear them talking with their fellow students and I'll grab them, and I'm like, "oh, so today maybe we won't do the Pyramid. But maybe you want to show us a dance." so things like that. so I try to listen to what they are already doing"-P1

Using Motivational Strategies. Peer educators spoke of using motivational approaches. The approaches used included leading by example. 33% (n=5) of peer educators explained that they ensure to share their own experiences with physical activity to set an example for participants to follow.

"So I tell them my bad habits and how I've gotten past it. And I think, again, sharing what we've experienced and what we've done. Say we're human, you know? I'm not sitting up here at a podium talking down to you; I'm telling you this is what I went through, this is what I've done, and I know how hard it is to get used to drinking plain water."-P7

Peer educators exchanged strategies to motivate participants to maintain physical activity while still enjoying their usual activities, like watching TV.

"I say, "On that day, don't watch your telenovela. I don't watch you standing up watching your telenovela. No. You're going to be watching your telenovela and then you're going to sit straight and then you're going to lean to the right, and then you bend it, and then you let it go slowly, and then you're going to do the other one. And you're going to be laughing and listening to the telenovela. By the time the telenovela is over, you've got one hour of physical activity without knowing it.""-P14

Peer educators also use goal setting to increase motivation.

"Yeah. The other thing I suggest to my parents is, you know how we do the menu planning, when you do your menu planning, put one or two days that you're going to do an activity, on your menu plan board. Oh, look, we're having spaghetti on Wednesday, so we're going to go to the park right before dinner, right after dinner and we're going to go walk around. Or you we're going to check out oh, look, there's a fair coming up, we can go walk around the fair on Saturday."-P11

Class Discussions. Peer educators face challenges including a physical activity component in EFNEP lessons, due to a plethora of barriers. Yet, when physical exercise is not feasible, peer educators find class discussions a good alternative. 53% (8) of participants reported that they included a form of discussion surrounding physical activity during class.

"So mostly what I do in my teaching, and I was teaching virtually during the pandemic, is to really talk through people about what they do, about what their opportunities are, about why it matters, and about why I talk about it when I'm talking about food and nutrition, as opposed to getting up and doing a lot of exercises together. Because too often, I found that I was the only one doing them, and I felt really silly."-P4

"I'm not very physically fit, so I'm obese, and 57 years old. So I'm not in top shape at all. So when we are talking about physical activity or giving examples of physical activity, you know, when we have a moment to break, it's very low impact, very accessible to everyone. Like I said before, a lot of stretches, maybe some yoga poses. The only time I ever really do like a run in place or aerobic is when I'm in the classroom with the kids. I don't do it with the adults. We might – we talk about it, the ten minute burst of aerobic activity, and how important it is. But I'm not – I'm not doing it with them. I'm just kind of suggesting that become part of their day."-P5

EFNEP Tools. Peer educators also rely on EFNEP tools to facilitate physical activity during class. Tools mentioned by peer educators included booklets, handouts, Eating Smart Being Active app, Leslie Sansone videos, and the cardio pyramid.

"We use the Leslie Sansone walking videos, one mile, two miles. And we sometimes, depending on the group, they do it on their own after we leave. And if not, we go to the – if the school has a park we just try to go to do the walking on the park. We try to create a group of working parents before the workshops or after the workshop, so if it's feasible we do that." -P8

"I will say presently. a typical class would be: we follow the curriculum where it's actually built in for the adults and it's called the Cardio pyramid. or we have a CD that walks with Leslie Sansone, so it's already built in. so I really just follow that once we get to that portion, I would usually follow it." -P1

Meeting Participants at Their Level. Peer educators also emphasized the importance of meeting participants where they are in their physical activity journey. This includes finding ways to adjust the physical activity included in class to be appropriate and feasible for all participants depending on their bodies ability.

"Even if it's pushups on the wall, right, wall pushups, and I showed them how they can graduate to making it a little harder for themselves where they're building more muscle. Because they can start at the wall, then they can do it at an angle and then eventually the floor and I say yes, ladies, you can do the floor and you don't have to pick up your legs, you can do it just the same way males do it."-P9

"Trying to add skill – more skills into their lives is what I focus on. Like, well, what do you like? Okay, we can walk. Let's talk about walking. Okay. You cannot walk. Let's talk about stretching. So I just try to add a lot of skill-based education into the day, into the class. So one day I will do stretching. Another day – you know, add all of these other skills, and see which they prefer, you know. Like the person that I talked to about losing 45 pounds, she told me, 'you know, when you did all that stretching, I really got into it. And then someone in my – in whatever class three years ago told me about a yoga app, and then I started doing yoga, and now I'm like a yogi.'" -P6

Other examples provided by peer educators included providing participants ideas on how to include physical activity outside of class without completely altering their normal routine.

"I said 'You're going to drop off your baby at school and then you're going to make sure that the baby is in the stroller, you're going to have water or milk or something to entertain them.' I encourage them to talk on the phone so they don't complain. And I say, 'This is your great opportunity to walk for ten minutes on your own. Nobody is waiting for you at the house. And the baby that you care for is with you. They fall asleep. As soon as you're rolling, they're going to fall asleep. So, why don't you take the opportunity in the morning to do that?'"-P14

Contact Outside of Class. Lastly, 26% (4) participants reported that they extend the physical activity component outside of class by maintaining communication with participants and continue to encourage them to stay physically active. The contact outside of class encouraged participants to contact the peer educator to ask follow-up questions on the lessons learned or to find additional resources.

"But that doesn't stop me, or if you'd like me to call me, here is my card. You have questions, you know, you can always call me and if I don't have the answer, you know, I'll call somebody on the other agencies too, so I mean they could probably help you."-P3

Peer educators incorporate follow-up emails into their routine to provide ongoing support for physical activity beyond the class sessions, as well as to distribute additional resources beneficial to participants.

"But yeah, I mean I do follow up emails, after each class. The one that's physical activity email is these are the additional things, and we have the walking videos that you can link into."-P11

Peer educators also mentioned their encouragement for participants to stay connected through Facebook groups initiated by the educators themselves, or by exchanging contact information to sustain mutual motivation and support.

"Yeah, we have a text thread and sometimes I'll send them a five-minute YouTube, usually for people who are having a difficult time. Those people will approach me maybe after class or, it's hard for me, what are your suggestions? I'm like, you can begin five minutes, because they say the only physical activity I get is when I come to your class, and I'm like, oh, no, we're going to work at doing more. A lot of people are excited because they've been wanting to begin something and just don't

know how to begin. Or they need the push, or they need the community to do it. That's something I also really try to have them stay in contact with one another so that they can continue. I say you guys can meet via Zoom and exercise yourselves, you don't need me, you can do it yourselves. That's something else that I tried to engage with them. But I have them reaching out to me one on one, so they don't usually create the circle to do it themselves."-P9

"Yes. Of course. So again, if I feel like the audience wants more, I've done Zumba classes with them. I've done things like go outside and take a walk today. So yeah, we – again, it's like the audience is what really says. Like some of the audience are really trying to lose weight, and really excited about it. So I will add at the end, okay, we can either do it – come early, and we'll do a 25 minute Zumba session, or after the lesson, when it's online, I will say, you know, let's – why don't we just meet at this place and take a walk? I also try to just keep them connected. I do have a Facebook group, so I kind of create a Facebook group with the groups that I teach. And then I try to just send little activities through the Facebook group. And just like support. And then I ask questions like, oh, what physical – what did you guys do today to get active? Or – so that's one of the tools that I use the most. It's really hard to maintain it. So I try to make sure that they are the ones maintaining it. So they continuously share recipes, or they send a picture of a hike they're doing. So I feel like the best tool that I use is peer support. If we connect them to each other, and they're all going through that contemplating phase, but some might be really taking action, then the contemplaters are looking into that action. And so there is a lot of peer support. I think that's the best tool that I have."-P6

Future Programmatic Needs

After sharing a series of barriers and facilitators of including physical activity in adult classes, peer educators were then given the opportunity to share ideas to improve program needs.

Training. The ideas shared included providing training to peer educators on how to facilitate physical activity classes.

"You know, that's what we do. And physical activity. So if that's going to be an equal part of the equation then that has to happen in everything we do, from how we name our programs, how we introduce them to community agencies and participants, and how we get trained as we move into our work. Yeah. And I don't think I'm mentioning anything unique either. You know, time, training, things that are appropriate for a population." -P4

Educational Extenders. Peer educators also emphasized the importance of educational materials for physical activity that could double as class incentives. These extenders boost motivation by offering participants tools they can utilize at home to practice the activities learned in class.

"We don't have a lot of – we don't have that much to offer with physical activity to our parents. We talk about it. And to be honest with you, 'cause I like to – when I do my class I like to talk, but I also like to show visual things or give out something in related to what I'm talking about so they can take home with them or something. And the only thing that we have right now – I'm talking about today – is the rope, it's a jump rope. I've got some here with me. The jump rope. And this jump rope is practically for the kids." "I was talking to my supervisor the other day about it, and I said the same thing, I said, "We need something to give out to adults that want to talk about physical activity. Because I've only been giving them this jump rope." " -P3

Affordable Physical Activity Options. Other ideas also included providing affordable physical activity options such as a list of free sources such as YouTube videos, providing vouchers for physical activity classes in the communities where they live, and free virtual physical activity classes led by a personal trainer.

"So what can people access, like I said, in terms of videos and classes and tips that they're going to find? I would love to have go-to places where I can say "Click on this thing." Because you can't just go search yourself; you'll be there forever, finding the right thing. I am really a stickler for only sharing with people what I know is from an approved site and something that I know is going to be non-commercial, that they can click on and they can get their information without seeing a bunch of wretched pop-up ads. So things that are really safe." -P4

"think vouchers for things like classes, Zumba, bowling, roller skating, ice skating. Yeah. Stuff like that."-P5

"If there's a personal trainer that would like to do a six-week training, and nationally, EFNEP can be like, all right, we're going to have this person and members – we pay for him. Right. And then people can connect, and you can just – you know, have a trainer on a Zoom, and say, you know, this is what we're going to do. Here's what we're – you know? That can be a great way to connect people nationally, but also get them motivated to do it, even though they're – they really are isolated."-P6

Providing Teaching Props. Peer educators also provided a list of additional resources essential for enhancing lesson delivery. These resources included teaching props aimed at optimizing class flow, such as playlists of clean music, weights, or stretching bands.

"So that would be something that may be in the EFNEP programs could be done, like having a list of clean songs. Because you know it just sounds sometimes, the lyric is like, "Oh my, I can't play this one. This is crazy, what they are saying." And especially that we like the tune, but the words are like "No, that's nothing good here. Uh-uh." -P8

"Maybe some of those little hand weights would be good." -P15

Cultural-Relevant Resources. Lastly, participants also expressed the need for cultural resources to increase content inclusivity such as translations that expand beyond Spanish and increasing diversity in EFNEP's materials.

"Well, I'm seeing that we have a lot more Spanish information. And I'm bilingual. We don't have a lot for Portuguese yet, or maybe for Swahili. But maybe as the audiences that we're targeting more, and maybe just having more information that they can relate to from like their culture versus here or something. Just more – because, you know, there's also things that get lost in translation. You know, so maybe just more – if you have a video they could take home that shows it in another language. Or just maybe the links." -P7

"You know, people seeing themselves reflected in the materials that we're using. You know, people seeing themselves reflected in the materials that we're using. Yeah. No, I think those are all very general and I think they're all very surmountable also. You know, I don't think there's anything there – there's nothing that we can't get over those barriers." -P4

Peer Educator Physical Activity Training and Experience

The last theme identified from the interviews captured the overall Experience and training peer educators had surrounding physical activity.

Minimal Training. 60% (9) of participants reported that they received minimal to no training in physical activity through EFNEP.

"And I'd say the other thing is just not feeling like I have had as much training and support, and I've continued to reiterate that over the years, you know, that I can't do this work if I don't feel trained. And it's, you know, it's hard. Nobody trained me in cooking before I started either, but I did that. So, you know, but I feel obviously a lot more comfortable. I come from more of a cooking background than a physical activity background, so it's more of a comfort area in terms of being actively engaged with other people."-P4

"I just had a group maybe last week, two weeks ago or so. I think the age of the audience is of concern. I think the fact that I'm not certified with exercise – I forget what they call it, but certification would probably make me feel a lot better."-P2

Some EFNEP Training. 20% of participants then explained that they received some training through EFNEP, yet the training was not recurrent or in depth.

"And then the other thing I remember is when Cardio Pyramid came about. Some I can't remember exactly when we did it like when it started, but I know it was. It's still fairly first. Maybe 5, 6 years give or take. We actually had to practice. Every educator actually had to do the practice. the whole pyramid and teach us. So we knew they knew how to do each move. And then there's muscle and strength training. exercise to attach to the Cardio Pyramid for each lesson. So we had to practice those 2 to make sure we knew what we were doing. And then later we were. So they actually have video because and as we go along we're not sure we can watch the video. but we actually had to do hands on the actual exercise, every last one of them."-P1

"We really haven't had a lot. We had one supervisor about five years ago, and she did a training on physical activity and what was in our curriculum, our handout. Also, actually you know what, I'm sorry, there was another one of my co-workers, she did a training for us to show a light workout. Yeah, but it really hasn't been talked about a lot."-P15

Personal Physical Activity and Training. Lastly, 93% of participants shared their personal experience or training received prior to becoming a peer educator.

Experiences varied from recreational experience and enjoyment of physical activity, to coaching and personal training experiences.

"On my own of course, and training provided by the office, I don't remember any but as an icebreaker in our training, we do a lot of stuff together, but I never have a training. But on my own yes, I have a book that explain everything about the muscles and the different types of exercise, and I watch videos, I used to be in a gym for years, I have my membership and everything. I know you may be going to ask that later, but I was in Zumba classes, in boxing, all these type of things. I like to read and see what it is before I start any group class."-P13

"A whole nother life, yes. By the time you reach my age, and I'm proud of my age being 64, I've lived a variety of different lives up until now, as everyone does as they progress through their lives. I also worked at a local school running the after-school program. I've coached track, I've taught aerobics, I've had a lot of different things that feed into helping me do this complete job, yeah. I know the importance of the physical activity component especially for adults. I have kids of my own, I have grandkids of my own so I understand the challenges that they have, trying to get that time for themselves or for their families to incorporate that physical component. Yeah, it's all there."-P11

DISCUSSION

This study aimed to evaluate the facilitators and barriers to teaching physical activity in adult EFNEP classes in the Northeastern region of the United States. Peer educators were interviewed about their experience as educators and teaching physical activity to adults through a questionnaire and virtual interview. The analysis revealed four major themes: Barriers to teaching physical activity to adult participants, Facilitating approaches used during class, Future programmatic needs, and Peer educators' experience and training.

During the semi-structured interviews, peer educators shared some of the challenges they experience when trying to teach physical activity in EFNEP classes. These challenges encompassed the peer educators' perceptions of barriers faced by participants in engaging in physical activities. Peer educators often conveyed that participants refrained from participating in the physical activity segment of the class due to health concerns, such as issues related to knee replacements or cardiac conditions. Additionally, peer educators would explain hearing barriers regarding lack of time, financial limitations for a gym membership, apprehension about exercising in a group setting due to anxiety and feeling tired after work. The challenges faced by EFNEP participants highlight the importance of examining different levels of SEM to further understand the multifaceted factors serving as a barrier to physical activity.¹² Participants face individual barriers related to time constraints due to a busy schedule. Then both community and structures, policies, and systems barriers are also highlighted when expressing the need for affordable physical activity recreational facilities in the

community, lastly, interpersonal barriers were also expressed when explaining the participant's hesitation of working out in a group setting.¹²

Community and structures, policies, and systemic barriers were also explained by peer educators when sharing the neighborhood barriers they encounter in the community where EFNEP classes take place.¹² Peer educators explained that a common issue they encounter when making physical activity recommendations to individuals is the lack of sidewalks in the community. One of the common physical activities reported by peer educators included walking. Walking provides an effective way to meet the PAG, improving cardiorespiratory health, body composition and muscle strength, while also promoting physical activity in low-income populations.^{22,23} Yet, due to lack of well-maintained sidewalks both in rural and urban areas, these recommendations are not always appropriate to make by peer educators. Other neighborhood barriers included the lack of affordable community recreational facilities that are especially necessary during the winter months when outdoor exercise is even more difficult. These barriers interfere with both the peer educator's ability to make physical activity recommendations that expand outside of the EFNEP class especially during winter months when being physically active outside is a challenge. Neighborhoods focused on automobility neglect pedestrian and bicyclist infrastructure. This in turn is associated with reduced physical activity in outdoor spaces.²⁴ Another predominant barrier are the safety concerns that prevent peer educators from taking the class outside to engage in an outdoor activity and also interferes with outdoor recreational physical activity recommendations the peer educator makes to the participants. This issue is highlighted in the literature as the crime

rates in low-income neighborhoods interfere with the sense of security of individuals.^{25,26} This then in turn interferes with individuals' willingness to exercise outdoors.^{25,26}

Another important topic discussed as a barrier is inadequate training of peer educators in physical activity. The lack of proper training hinders peer educators from effectively facilitating classes, mainly due to the lack of confidence in the content they are teaching. When peer educators shared their physical activity experience and training, most of them shared their personal experience with physical activity. Their experiences ranged from recreational activities to previous employment, yet over half of them emphasized the absence of EFNEP physical activity training. The predominant barrier, characterized by the improper training emphasizes that it is imperative to address this need among peer educators by meeting their training needs. When peer educators were asked about potential solutions to address EFNEP needs, 67% (10) of participants expressed the need for enhanced physical activity training or access to physical activity certifications. *Making the Healthy Choice the Easy Choice* training program is an example of successful online training programs for peer educators.²⁷ This program included six modules with educational information on how to implement policy, systems, and environmental approaches in their job.²⁷ Upon completion of the training program, 82% of participants reported that the content was just right, compared to 15% of them that reported that the training was too advanced, and 3% reported that it was too basic.²⁷ Similar training approaches could be implemented in EFNEP to provide peer educators with the resources necessary to teach all of EFNEP core areas.

Peer educators actively employ successful facilitating approaches as they explain they often use a myriad of motivational approaches to promote physical activity. The

motivational approaches include leading the class by example. Oftentimes peer educators share their own experiences with physical activity to promote lifestyle changes. This exemplifies the advantages derived from incorporating the peer educator model in EFNEP, as educators can establish meaningful connections with the communities they serve.⁷ Other motivational approaches include goal setting, encouragement, and proving ideas to incorporate physical activity outside of class. These approaches aim to work with the participants at the individual level by increasing self-efficacy among participants. Self-efficacy is the perceived ability to achieve a behavior.²⁸ Research on the topic of self-efficacy has demonstrated that when participants express a high level of self-efficacy prior to the beginning of a physical activity intervention, they are more likely to be successful and maintain the habit of physical activity as compared to other participants with low self-efficacy.²⁹ Another facilitating approach used by peer educators are class discussions on physical activity. Even in instances where a dedicated physical activity session cannot be conducted due to various barriers, these educators ensure the inclusion of conversations highlighting the importance of physical activity. Class discussions are also an effective strategy to increase participants' knowledge and understanding regarding physical activity which could serve as an intrapersonal motivator.³⁰

In addition to engaging participants at the individual level, peer educators also operate at the interpersonal level by promoting social support through the establishment of exercise groups, both in virtual and in-person settings. This is achieved by proactively reaching out to participants outside of class sessions via email communications, and physical activity text-threads. This strategy is backed up by past literature that explains that social support positively influences physical activity in adults.^{31,32}

Lastly, peer educators shared ideas on how to fulfill program needs. These ideas included addressing peer educators' needs by implementing training and certifications as previously discussed, while also providing access to clean music and access to educational props. The recommendations also addressed both community and structures, policies, and systemic factors based on the participants' needs by suggesting the implementation of affordable physical activity options in the community.¹² The ideas provided by peer educators are meant to enhance the peer educators' ability to teach physical activity and promote sustainable lifestyle changes, while also improving the participants' overall experience with the class.

The diverse peer educator barriers exemplify a multifactorial physical activity issue in the community. Therefore, physical activity interventions that use various techniques are needed to increase physical activity levels among community members. This can be achieved through EFNEP with the use of interventions by addressing participant barriers related to the community, interpersonal relationships, and personal factors. The semistructured interviews with peer educators uncovered that peer educators are currently using a variety of techniques to facilitate physical activity classes and discussions with participants, yet there are several barriers faced by peer educators when trying to teach physical activity and make appropriate recommendations to participants. These barriers could be addressed by enhancing the curricula as well as improving physical activity training to improve participant experience and promote the development of sustainable long-term physical activity habits.

Strengths and Limitations

The limitations of this study include the nature of the interview questions, could be perceived as sensitive by peer educators, and social desirability bias may affect the answers provided. To avoid this, the research team piloted the interview to receive feedback from other peer educators before the research began. Another possible limitation is the small sample size, which limits generalizability. This is a pilot research that aims to expand nationally. The data used in this study aims to represent the perspectives of peer educators in the northeastern region, where theme development was easily generated due to the saturation of answers received by peer educators.

One of the strengths of this study is its participation in the multistate initiative with the goal of conducting EFNEP curricula content analysis to propose improvements to have a greater impact on the communities that EFNEP reaches. Another strength of this research is that physical activity adult curricula content analysis has received limited attention in existing research literature and this study provides a unique perspective on the facilitators and barriers faced by peer educators when teaching physical activity to adult audiences. Another strength of this study is that most peer educators (14) had over 5 years of experience working with EFNEP and teaching adult curricula. The extensive experience equips peer educators with the advanced expertise in EFNEP adult curricula and the intricacies of facilitating physical activity with diverse audiences.

IMPLICATIONS FOR RESEARCH AND PRACTICE

The Expanded Food and Nutrition Education Program (EFNEP) is a United States Department of Agriculture (USDA) federal nutrition education program that aims to improve nutrition-related behaviors and physical activity of underrepresented low income populations.⁴ Program fidelity is essential to protect the integrity and quality of the lessons.³³ This research evaluates the overall implementation of one of the core areas of EFNEP, physical activity.^{4 5} The implementation of this research serves as a pilot initiative to expand the research nationally with the goal of providing a greater insight into the peer educators' experience teaching physical activity. This information uncovers the successful facilitating approaches currently being used in different EFNEP offices, while also uncovering the peer educators' barriers and needs to enhance their physical activity lessons. This research can serve as a set of information to guide future curricula and programmatic improvements, such as enhancing physical activity training.

Table 1: Northeast Peer Educator Demographic Information (n=15)	
	%(n)
Sex	
Male	(0)
Female	15 (100)
Non-binary	(0)
Race	
White	4 (27)
Black or African American	1 (7)
American Indian, Alaskan Native, or Indigenous	(0)
Asian	1 (7)
Multi Race/ethnicity	8 (53)
Prefer Not to Say	1 (7)
Ethnicity	
Hispanic/Latino	9 (60)
Non-Hispanic/Non-Latino	5 (33)
Prefer Not to Say	1 (7)
Age (in years)	
18-25	(0)
26-35	(0)
36-45	4 (27)
46-55	2 (13)
56-65	7 (47)
65+	2 (13)
Education	
Graduated High School	1 (7)
Some College	7 (46)
Graduated 2 Year College	1 (7)
Bachelors	1 (7)
Post Graduate Degree	5 (33)
Work Zone n (%)*	
Rural	5 (33)
Urban	7 (46)

* = Data not collected from all participants

Table 2: EFNEP Peer Educator Professional Experience (n=15)		
		n (%)
Years of Experience as an EFNEP Peer Educator		
	< 2 years	(0)
	2-3 years	(0)
	3-5 years	1 (6)
	5-10 years	7 (47)
	More than 10 years	7 (47)
Years Teaching Adult Curricula		
	Less than 2 years	(0)
	2-3 years	1 (6)
	3-5 years	(0)
	5-10 years	7 (47)
	More than 10 years	7 (47)
Adult Curricula Workload Percentage		
	25 %	4 (27)
	50 %	6 (40)
	75 %	4 (27)
	100%	1 (5)
EFNEP Curriculum Used		
	Eating Smart Being Active	7 (47)
	Families Eating Smart Moving More	7 (47)
	Other	6 (40)

Table 3: EFNEP Peer Educator Self-Reported Physical Activity (n=15)		
		n (%)
How often do you make small changes on purpose to be more active?		
	Never	(0)
	Rarely (about 20% of the time)	1 (7)
	Sometimes (about 40% of the time)	3 (20)
	Often (about 60% of the time)	2 (13)
	Usually (about 80% of the time)	8 (53)
	Always	1 (7)
Days Peer Educator Exercised for 30 Minutes		
	0 days	1 (7)
	1 day	1 (7)
	2 days	3 (20)
	3 days	2 (13)
	4 days	(0)
	5 days	2 (13)
	6 days	3 (20)
	7 days	3 (20)
Days Peer Educator Engaged in Strength Training		
	0 days	3 (20)
	1 day	3 (20)
	2 days	2 (13)
	3 days	2 (13)
	4 days	4 (27)
	5 days	1(6)
	6 days	(0)
	7 days	(0)

Table 4: Themes and Key Quotes From Interviews		
Themes	Subthemes	Quotes
Barriers to teaching PA		
	Peer Educator's Perception of Participant Barriers to PA	
		"Yeah. You have to break it down. Sometimes you have a person that is overweight and they complain that they have a lot of pain in their knees, and you know that's because of the extra weight. And so, you teach them how to do physical activity sitting down. Movement, if you're sitting down, if you move your legs, you'll be better. The pain will be less if you do the movement. And I have a video with a lady doing physical activity sitting down."-P14
		"Some people have trouble with their hands, they cannot carry any stuff or mobility issues, they feel like they're being nauseous, or they have predisposition to do physical activity."-P10
		"Doing that with home visits and with groups really has taught me a lot of how to witness how participants are dealing with anxiety and anxiety disorder, or crowd anxieties. That often, in my experience, has been the reason why they want to

		<p>turn around and go home or they really are resisting going for a 15-minute walk. It's not the walking they're resisting, it's the being out in public, which might be something you could dig into with research someday. It really is more a mental barrier than a physical barrier, in my experience, so just giving them that opportunity to go out with someone they feel safe with in a group and try it, and then talk about how do we make this into a habit, and how do we celebrate accomplishments along the way if we're able to turn this into a habit."-P12</p>
		<p>"One thing I would add in, and again, this is not EFNEP specific, and not even adult specific, but there seems to be just an increasing level of generalized anxiety in populations. So getting out and being social and doing any kind of class is more challenging. And exercise classes are always likely to cause a little bit of discomfort."-P4</p>
		<p>"I find that anxiety is a big roadblock for the people that come to EFNEP classes – they don't want to go outside and walk, they're worried</p>

		<p>about whatever, someone looking at them or getting hurt, or whatever they're worried about, but they're sometimes not going to go outside and walk by themselves – but they could pick a dance video and do it in their living room, and still have it be fun and get their blood pumping. I think that's something that I definitely proposed in classes, because it's fun, and especially if your kids are home, they're going to want to do it."-P12</p>
		<p>"A little culturally in the classes that I've taught, we've had a large influx of Muslim participants. Well, just like everyone else, they do physical activity, it's just a lot of where and with whom they participate, it's a lot of family working or women working together for things. That's not really a barrier, it's just like an occasion to be aware of. Also, their families may not be comfortable with them walking through Home Depot by themselves, which is respected. But take the family — make it a family thing. Other than let's see, the island was a challenge like I said. We didn't have to take a ferry or anything out to that, that's another CEA</p>

		did that, there's a bridge."-P11
		"People are very busy, go to appointments, and can't get people to watch their children. The bus schedule has filed them up and made them late and oh, just ongoing. I tried, I think three times working with this group, so I'm taking a little break because I can't seem to get good attendance and have people, I mean I've waited like 40 minutes for people, and I have to start the class and there's two people."-P15
		"I think their time is stressed. My group, my consistent group, are now mothers who are going to school, who are probably working after school, so they're looking at me like, yeah, that's a dream, if I could go work – if I could go to a Zumba class. So that's a challenge. They're overwhelmed with what they have to do daily. And then, of course, the challenge of – some of them are depressed. They're not – you know, not at the place where they're going to get up and go for a walk or what not. Not very healthy. They smoke. They are drinking

		soda three times a day. So it's just that – they're on the opposite end of what we want them to be, and it's – yeah. Just trying to put them."-P5
	Classroom Space	
		"makes a big difference, the size, sometimes you're limited but you can be resourceful, right. You can do small movements, and especially with COVID, you don't want anyone on top of another person, right. We're still living to COVID, numbers are rising especially in the city now. Being very careful with that, being extra careful that we have ventilation. It's so many things to think about, that we have to be very careful about, especially when we're doing physical activity."-P9
		"Well, if I am in an institution where the classroom is next to mine, the noise sometimes, we want to be quiet, we don't want to disturb any other people around. Sometimes that is a huge issue because no matter how quiet you want to do the activity, and then sometimes the music we going to play, the music that we want and stuff like

		that."-P13
	Neighborhood	
		"It's not in a really good, safe location for walking, I'll tell you something, they walk in the driveway, the driveway is quite long. But I told the ladies, and they have a transport van that does take them out, I said, right up the road here there's a town walk, they've built in trails to walk. I told them that they've been up there, that the social workers have driven them up there. Yeah, they do take them out for walks, but it's not in a location that's safe, there's two major roads and the house sits right in the middle. Yeah, heavy traffic."-P15
		"Some of them, if there's like a public pool, or there's centers where they can go, I kind of like to hand out the information. But again, rural areas, no transportation. A lot of the information I give, like stretching, dancing in place, walking in place is okay."-P6
		"Yes, the sad part was the same community center, they were closing, they close from time to time and people were coming in like, we can't even be in our

		neighborhood because it's so unsafe, so we come here for community and to be able to exercise. They have so many other programs in this community center, they do sewing, they do martial arts, I mean a whole array of classes. It was just sad because I happened to be there, we were discussing when we were going to begin again, but the center was really closed for outsiders. It's the saddest thing, because they say it's so unsafe to just be downstairs and sit down because of the violence, and they feel safe being in the center. It's just sad."-P9
	Weather	
		"Well, I mean I think weather, like when it gets cold, it's snowy or gloomy out, it gets challenging to get people to participate and be actively participating. Like they may initially start, and then it gets challenging to keep them, and that's 'cause of the weather and because of the way New England is. That could be a challenge."-P7
		"Yeah. In the winter, no. I mean, especially in nighttime winter classes, everybody's ready to

		<p>hibernate. I found that lunchtime classes are more apt to want to do a little bit of movement. Sitewise like I said, if I can get the people themselves to buy into it, like I said, we're not going to run around and play tag. But we can do some standing work, some sitting work. Yeah, and the evening classes, they don't want to move at all."-P11</p>
	<p>Training</p>	
		<p>"Yeah. Because, you know, the other thing, I like physical activity, the other thing with us, you know, the majority of us, we're not certified. You know, certified. And because we're not certified we couldn't just – you know, with our program, we could encourage them or, you know, what can you do, you know, in a basic way. Because even with the kids, you know, sometimes I do, "Let's do something like go like this," you know, like just, you know, that's exercise, that's moving around. But just something very basic. But if we want to really go into teaching them, you know, get a and stuff, then right there, because of liability, I have to kind of</p>

		like, you know, be certified."-P13
		"And I'd say the other thing is just not feeling like I have had as much training and support, and I've continued to reiterate that over the years, you know, that I can't do this work if I don't feel trained. And it's, you know, it's hard. Nobody trained me in cooking before I started either, but I did that. So, you know, but I feel obviously a lot more comfortable. I come from more of a cooking background than a physical activity background, so it's more of a comfort area in terms of being actively engaged with other people."-P4
		"Like I said, I wish I could do more, and I always mention that to my supervisor, about including more ways of physical activity. I know that with the curriculum that we use, it's also videos and stuff that we could show the participants, so they could see ways that, again, some of them – for me, they could just see it, but I cannot do it with them, because of liability because I'm not certified."-P3
Facilitating Approaches Used During Class		

	Including Participants' Interests	
		<p>"Right. Right. With Spanish music or maybe we had to bring some – all these for depending on the group, or maybe we can just ask them to bring some music that they maybe are enjoying. And then depending on the group, we adapt to the group, the personality of the group and the people in the place. So we had to be very flexible in that way. But with the videos it's let's say there are so many good videos to do physical activity now. The in line dances are so many different ones. So depending on who's in the audience, we can choose maybe a country music one, or maybe we can do R&B or we can do our children one. When I know that I have children in the audience, especially with so many and I knew that they had their children, I always put something that is related with children and everybody enjoys it. And especially the children, the ones that we want them to be taking part of it"-P8</p>
		<p>"I had some people who were into cheerleading. I had a personal trainer. So it</p>

		<p>was like I listen to what they do already and then I tried to grab them by saying, “oh. I think you'll be good to teach us what you like to do” or things like that, or would you like to show us a cheer?, because I'll hear them talking with their fellow students and I'll grab them, and I'm like, “oh, so today maybe we won't do the Pyramid. But maybe you want to show us a dance.” so things like that. so I try to listen to what they are already doing"-P1</p>
<p>Motivational Strategies</p>		
		<p>"So I tell them my bad habits and how I've gotten past it. And I think, again, sharing what we've experienced and what we've done. Say we're human, you know? I'm not sitting up here at a podium talking down to you; I'm telling you this is what I went through, this is what I've done, and I know how hard it is to get used to drinking plain water."-P7</p>
		<p>"I say, "On that day, don't watch your telenovela. I don't watch you standing up watching your telenovela. No. You're going to be watching your telenovela and then you're going to sit</p>

		<p>straight and then you're going to lean to the right, and then you bend it, and then you let it go slowly, and then you're going to do the other one. And you're going to be laughing and listening to the telenovela. By the time the telenovela is over, you've got one hour of physical activity without knowing it."-P14</p>
		<p>"Yeah. The other thing I suggest to my parents is, you know how we do the menu planning, when you do your menu planning, put one or two days that you're going to do an activity, on your menu plan board. Oh, look, we're having spaghetti on Wednesday, so we're going to go to the park right before dinner, right after dinner and we're going to go walk around. Or you we're going to check out oh, look, there's a fair coming up, we can go walk around the fair on Saturday."-P11</p>
	Class Discussions	
		<p>"So mostly what I do in my teaching, and I was teaching virtually during the pandemic, is to really talk through people about what they do, about what their opportunities are, about why it matters, and about why I</p>

		<p>talk about it when I'm talking about food and nutrition, as opposed to getting up and doing a lot of exercises together. Because too often, I found that I was the only one doing them, and I felt really silly."-P4</p>
		<p>"I'm not very physically fit, so I'm obese, and 57 years old. So I'm not in top shape at all. So when we are talking about physical activity or giving examples of physical activity, you know, when we have a moment to break, it's very low impact, very accessible to everyone. Like I said before, a lot of stretches, maybe some yoga poses. The only time I ever really do like a run in place or aerobic is when I'm in the classroom with the kids. I don't do it with the adults. We might – we talk about it, the ten minute burst of aerobic activity, and how important it is. But I'm not – I'm not doing it with them. I'm just kind of suggesting that become part of their day."-P5</p>
		<p>"I tell them, I know a lot of us are tired, but you think because you exercise, you're going to be more tired and it's the opposite. Energy</p>

		gives energy, I talk about that phenomenon and they're like, I say just try it. I say give it five minutes, and I usually win them over, I mean, I can tell you it works for me. "-P9
	EFNEP Tools	
		"We use the Leslie Sansone walking videos, one mile, two miles. And we sometimes, depending on the group, they do it on their own after we leave. And if not, we go to the – if the school has a park we just try to go to do the walking on the park. We try to create a group of working parents before the workshops or after the workshop, so if it's feasible we do that." -P8
		"I will say presently. a typical class would be: we follow the curriculum where it's actually built in for the adults and it's called the Cardio pyramid. or we have a CD that walks with Leslie Sansone, so it's already built in. so I really just follow that once we get to that portion, I would usually follow it." -P1
	Meeting Participants at Their Level	
		"Even if it's pushups on the wall, right, wall pushups, and I showed them how they

		<p>can graduate to making it a little harder for themselves where they're building more muscle. Because they can start at the wall, then they can do it at an angle and then eventually the floor and I say yes, ladies, you can do the floor and you don't have to pick up your legs, you can do it just the same way males do it."-P9</p>
		<p>"Trying to add skill – more skills into their lives is what I focus on. Like, well, what do you like? Okay, we can walk. Let's talk about walking. Okay. You cannot walk. Let's talk about stretching. So I just try to add a lot of skill-based education into the day, into the class. So one day I will do stretching. Another day – you know, add all of these other skills, and see which they prefer, you know. Like the person that I talked to about losing 45 pounds, she told me, ‘you know, when you did all that stretching, I really got into it. And then someone in my – in whatever class three years ago told me about a yoga app, and then I started doing yoga, and now I’m like a yogi.’"-P6</p>
		<p>"I said ‘You're going to drop</p>

		<p>off your baby at school and then you're going to make sure that the baby is in the stroller, you're going to have water or milk or something to entertain them.' I encourage them to talk on the phone so they don't complain. And I say, "This is your great opportunity to walk for ten minutes on your own. Nobody is waiting for you at the house. And the baby that you care for is with you. They fall asleep. As soon as you're rolling, they're going to fall asleep. So, why don't you take the opportunity in the morning to do that?"-P14</p>
	Contact Outside of Class	
		<p>"But that doesn't stop me, or if you'd like me to call me, here is my card. You have questions, you know, you can always call me and if I don't have the answer, you know, I'll call somebody on the other agencies too, so I mean they could probably help you."-P3</p>
		<p>"But yeah, I mean I do follow up emails, after each class. The one that's physical activity email is these are the additional things, and we have the walking videos that you can link into."-P11</p>
		<p>"Yeah, we have a text thread</p>

		<p>and sometimes I'll send them a five-minute YouTube, usually for people who are having a difficult time. Those people will approach me maybe after class or, it's hard for me, what are your suggestions? I'm like, you can begin five minutes, because they say the only physical activity I get is when I come to your class, and I'm like, oh, no, we're going to work at doing more. A lot of people are excited because they've been wanting to begin something and just don't know how to begin. Or they need the push, or they need the community to do it. That's something I also really try to have them stay in contact with one another so that they can continue. I say you guys can meet via Zoom and exercise yourselves, you don't need me, you can do it yourselves. That's something else that I tried to engage with them. But I have them reaching out to me one on one, so they don't usually create the circle to do it themselves."-P9</p>
		<p>"Yes. Of course. So again, if I feel like the audience wants more, I've done Zumba classes with them. I've done things like go</p>

		<p>outside and take a walk today. So yeah, we – again, it's like the audience is what really says. Like some of the audience are really trying to lose weight, and really excited about it. So I will add at the end, okay, we can either do it – come early, and we'll do a 25 minute Zumba session, or after the lesson, when it's online, I will say, you know, let's – why don't we just meet at this place and take a walk? I also try to just keep them connected. I do have a Facebook group, so I kind of create a Facebook group with the groups that I teach. And then I try to just send little activities through the Facebook group. And just like support. And then I ask questions like, oh, what physical – what did you guys do today to get active? Or – so that's one of the tools that I use the most. It's really hard to maintain it. So I try to make sure that they are the ones maintaining it. So they continuously share recipes, or they send a picture of a hike they're doing. So I feel like the best tool that I use is peer support. If we connect them to each other, and they're all going through that</p>
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		contemplating phase, but some might be really taking action, then the contemplaters are looking into that action. And so there is a lot of peer support. I think that's the best tool that I have. "-P6
Future Programmatic Needs		
	Training	
		"You know, that's what we do. And physical activity. So if that's going to be an equal part of the equation then that has to happen in everything we do, from how we name our programs, how we introduce them to community agencies and participants, and how we get trained as we move into our work. Yeah. And I don't think I'm mentioning anything unique either. You know, time, training, things that are appropriate for a population." -P4
	Educational Extenders	
		"We don't have a lot of – we don't have that much to offer with physical activity to our parents. We talk about it. And to be honest with you, 'cause I like to – when I do my class I like to talk, but I also like to show visual things or give out something in related to what I'm talking

		<p>about so they can take home with them or something.</p> <p>And the only thing that we have right now – I'm talking about today – is the rope, it's a jump ropes. I've got some here with me. The jump rope. And this jump rope is practically for the kids." "I was talking to my supervisor the other day about it, and I said the same thing, I said, "We need something to give out to adults that want to talk about physical activity. Because I've only been giving them this jump rope." "</p> <p>-P3</p>
<p>Affordable Physical Activity Options</p>		
		<p>"So what can people access, like I said, in terms of videos and classes and tips that they're going to find? I would love to have go-to places where I can say "Click on this thing." Because you can't just go search yourself; you'll be there forever, finding the right thing. I am really a stickler for only sharing with people what I know is from an approved site and something that I know is going to be non-commercial, that they can click on and they can get their information without seeing a</p>

		bunch of wretched pop-up ads. So things that are really safe." -P4
		"think vouchers for things like classes, Zumba, bowling, roller skating, ice skating. Yeah. Stuff like that."-P5
		"If there's a personal trainer that would like to do a six-week training, and nationally, EFNEP can be like, all right, we're going to have this person and members – we pay for him. Right. And then people can connect, and you can just – you know, have a trainer on a Zoom, and say, you know, this is what we're going to do. Here's what we're – you know? That can be a great way to connect people nationally, but also get them motivated to do it, even though they're – they really are isolated."-P6
	Teaching Props	
		"So that would be something that may be in the EFNEP programs could be done, like having a list of clean songs. Because you know it just sounds sometimes, the lyric is like, "Oh my, I can't play this one. This is crazy, what they are saying." And especially that we like the tune, but the words are like

		"No, that's nothing good here. Uh-uh." -P8
		"Maybe some of those little hand weights would be good."-P15
	Cultural Resources	
		"Well, I'm seeing that we have a lot more Spanish information. And I'm bilingual. We don't have a lot for Portuguese yet, or maybe for Swahili. But maybe as the audiences that we're targeting more, and maybe just having more information that they can relate to from like their culture versus here or something. Just more – because, you know, there's also things that get lost in translation. You know, so maybe just more – if you have a video they could take home that shows it in another language. Or just maybe the links." -P7
		"You know, people seeing themselves reflected in the materials that we're using. You know, people seeing themselves reflected in the materials that we're using. Yeah. No, I think those are all very general and I think they're all very surmountable also. You know, I don't think there's anything there – there's

		nothing that we can't get over those barriers." -P4
Peer Educator Physical Activity Training and Experience		
	Minimal Training	
		"And I'd say the other thing is just not feeling like I have had as much training and support, and I've continued to reiterate that over the years, you know, that I can't do this work if I don't feel trained. And it's, you know, it's hard. Nobody trained me in cooking before I started either, but I did that. So, you know, but I feel obviously a lot more comfortable. I come from more of a cooking background than a physical activity background, so it's more of a comfort area in terms of being actively engaged with other people."-P4
		"I just had a group maybe last week, two weeks ago or so. I think the age of the audience is of concern. I think the fact that I'm not certified with exercise – I forget what they call it, but certification would probably make me feel a lot better."-P2
	Some EFNEP Training	
		"And then the other thing I

		<p>remember is when Cardio Pyramid came about. Some I can't remember exactly when we did it like when it started, but I know it was. It's still fairly first. Maybe 5, 6 years give a take. We actually had to practice. Every educator actually had to do the practice. the whole pyramid and teach us. So we knew they knew how to do each move. And then there's muscle and strength training. exercise to attach to the Cardio Pyramid for each lesson. So we had to practice those 2 to make sure we knew what we were doing. And then later we were. So they actually have video because and as we go along we're not sure we can watch the video. but we actually had to do hands on the actual exercise, every last one of them."-P1</p>
		<p>"We really haven't had a lot. We had one supervisor about five years ago, and she did a training on physical activity and what was in our curriculum, our handout. Also, actually you know what, I'm sorry, there was another one of my co-workers, she did a training for us to show a light workout. Yeah, but it really hasn't been talked</p>

		about a lot. "-P15
	Personal Physical Activity and Training	
		"On my own of course, and training provided by the office, I don't remember any but as an icebreaker in our training, we do a lot of stuff together, but I never have a training. But on my own yes, I have a book that explain everything about the muscles and the different types of exercise, and I watch videos, I used to be in a gym for years, I have my membership and everything. I know you may be going to ask that later, but I was in Zumba classes, in boxing, all these type of things. I like to read and see what it is before I start any group class."-P13
		"A whole nother life, yes. By the time you reach my age, and I'm proud of my age being 64, I've lived a variety of different lives up until now, as everyone does as they progress through their lives. I also worked at a local school running the after-school program. I've coached track, I've taught aerobics, I've had a lot of different things that feed into helping me do this complete job, yeah. I know

		<p>the importance of the physical activity component especially for adults. I have kids of my own, I have grandkids of my own so I understand the challenges that they have, trying to get that time for themselves or for their families to incorporate that physical component. Yeah, it's all there."-P11</p>
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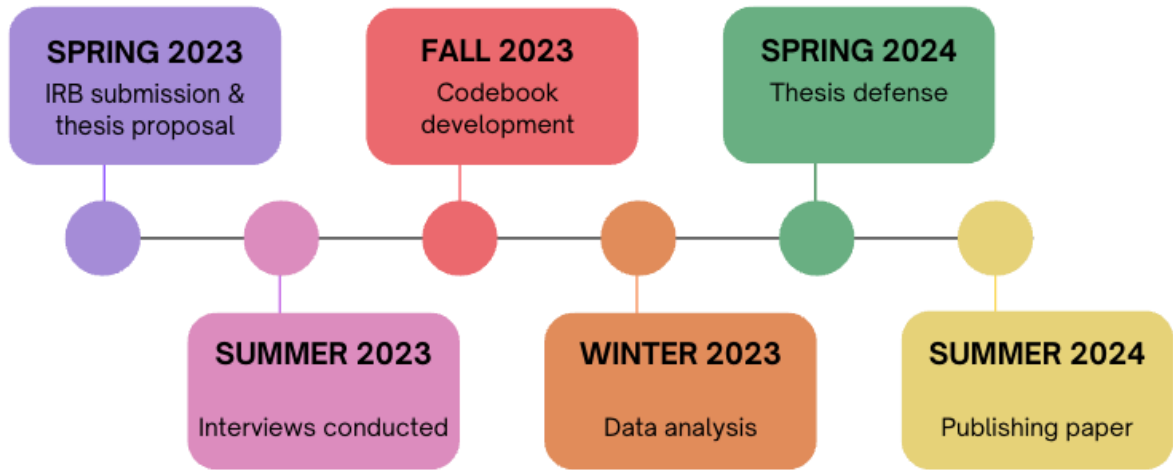
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Appendices

A.



B. Qualtrics Survey

EFNEP Physical Activity and Peer Educator Survey 2023

IRB (will be updated)

You have the right to ask questions about this research study and to have those questions answered by me before, during or after the research. If you have questions about the study, at any time feel free to contact Sarah Amin, PhD, MPH at 401-874-4024 or Amanda Missimer, PhD, RDN at 401-874-4911.

You may contact the URI Institutional Review Board (IRB) if you have questions regarding your rights as a research participant. Also contact the IRB if you have questions, complaints or concerns which you do not feel you can discuss with the investigator. The University of Rhode Island IRB may be reached by phone at (401) 874-4328 or by e-mail at researchintegrity@etal.uri.edu. You may also contact the URI Vice President for Research and Economic Development by phone at (401) 874-4576. If you would like to keep a copy of this document for your records, please print or save this page now.

You may also contact the researcher to request a copy. By clicking below to be taken to the survey, you: (1) agree that you are 18+ and (2) indicate that you have read and understood the above and volunteer to participate in this study.

Q1 How many years of experience do you have as an EFNEP peer educator or paraprofessional?

Less than 2 years (1)

2-3 years (7)

3-5 years (4)

5-10 years (5)

More than 10 years (6)

Q2 Do you teach EFNEP classes/series to **adult** audiences?

Yes (1)

No (2)

Q3 How many years of experience do you have teaching EFNEP classes/series to **adult** audiences?

- I do not teach adult audiences (1)
- Less than 1 year (2)
- 1-2 years (3)
- 2-5 years (4)
- 5-10 years (5)
- More than 10 years (6)

Q4 Approximately how much of your work time as an EFNEP peer educator is spent teaching adult classes?

- I do not teach adult classes (4)
- 25% (2)
- 50% (3)
- 75% (5)
- I only teach adult classes (6)

Q5 Select the ENFEP **adult** curriculum that you teach.

- I do not teach adult audiences (1)
- Eating Smart Being Active (2)
- Eat Smart, Move More (3)
- Other (5) _____

Q6 *You will recognize these questions from the Adult EFNEP Entry Form:*

In the past week, how many days did **you** exercise for at least 30 minutes?

This includes things like jogging, playing soccer, and doing fitness or dance classes, or exercise videos. This 30 minutes could be all at once or a few minutes at a time. Do not count housework, taking care of your kids, or walking from place to place.

- 0 days (1)
- 1 day (2)
- 2 days (3)
- 3 days (4)
- 4 days (5)
- 5 days (6)
- 6 days (7)
- 7 days (8)

Q7 You will recognize these questions from the Adult EFNEP Entry Form:

In the past week, how many days did **you** do workouts to build and strengthen your muscles? This includes things like lifting weights and doing push-ups, sit-ups, or planks.

- 0 days (1)
- 1 day (2)
- 2 days (3)
- 3 days (4)
- 4 days (5)
- 5 days (6)
- 6 days (7)
- 7 days (8)

Q8 *You will recognize these questions from the Adult EFNEP Entry Form:*

How often do **you** make small changes on purpose to be more active?

This includes things like walking instead of driving, getting off the bus one stop early, doing a few minutes of exercise, or moving around instead of sitting while watching TV.

- Never (1)
- Rarely (about 20% of the time) (2)
- Sometimes (about 40% of the time) (3)
- Often (about 60% of the time) (4)
- Usually (about 80% of the time) (5)
- Always (6)

Q9 *Demographic Questions:*

Which of the following best describes your gender identity?

- Woman (1)
- Man (2)
- Non-binary (3)
- Prefer to self-describe: (4) _____
- Prefer not to say (5)

Q10 *Demographic Questions:*

Check the race category you identify with (you may check more than one):

- American Indian, Alaskan Native, or Indigenous (1)
 - Asian (2)
 - Black or African American (3)
 - Native Hawaiian or other Pacific Islander (4)
 - White (5)
 - Prefer not to say (6)
-

Q11 *Demographic Questions:*

Select the ethnicity you identify with:

- Hispanic/Latino (1)
 - Non-Hispanic/Non-Latino (2)
 - Prefer not to say (4)
-

Q12 *Demographic Questions:*

What is your highest grade completed?

- Graduated High School (1)
 - GED (2)
 - Some College (3)
 - Graduated 2 year College (4)
 - Bachelors Degree (5)
 - Post Graduate Degree (6)
-

Q13 *Demographic Questions:*

What is your age range?

- 18-25 years (1)
 - 25-35 years (2)
 - 35-45 years (3)
 - 45-55 years (4)
 - 55-65 years (5)
 - 65+ years (6)
-

Survey Completion Thank you for completing the survey. By clicking the link below you will be directed to a separate page to add your name and email to provide times to schedule a virtual interview lasting 30-45 minutes. This will ensure that your responses on this survey are not connected to your contact information. As a thank you for your time participating in both this

survey and interview, you will receive a \$25 Amazon gift card.

Please complete the form below and then hit 'Complete' on the survey.

C. Recruitment Email

EMAIL SCRIPT

Dear [Insert EFNEP Coordinator Name],

We are conducting a study at the University of Rhode Island and University of Connecticut to understand peer educator/paraprofessional perspectives on adult physical activity in the Expanded Food and Nutrition Education Program (EFNEP). More specifically, we are interested in learning more about peer educator experiences implementing physical activity in adult programming including: participant enjoyment of physical activity, barriers and facilitators to physical activity, and their personal relationship with physical activity. Peer educator feedback on these topics are invaluable to us to better understand how we can support the delivery of physical activity within EFNEP programming in the future.

To accomplish this, we are asking EFNEP peer educators from your state to participate in an anonymous 10-minute online survey and 30-45 minute Zoom interview to discuss their experiences and perspectives. Peer educators that participate in *both* the survey and Zoom interview will receive a \$25 Amazon gift card after interview completion as a thank you for their time. In order to be eligible, EFNEP peer educators must: (1) have 2 years of experience as an EFNEP peer educator including 1 year of experience teaching adult classes and (2) teach adult classes for at least 1/2 of their overall workload.

Where we need your help is with referring EFNEP peer educators from your state that we can contact and recruit for this study. If you could please reply to this e-mail providing: the name and work e-mail addresses of peer educators in your state we could contact, we would greatly appreciate it.

If you have any questions about the study, contact Dr. Sarah Amin (Principal Investigator) from the Department of Nutrition and Food Sciences at the University of Rhode Island, at 401-874-4024 or sarah_amin@uri.edu. This research has been approved by The University of Rhode Island and University of Connecticut Institutional Review Board.

Thank you for your consideration.

Regards,

URI & UConn EFNEP Research Team / Amin Lab

D. Peer Educator Recruitment Email

EMAIL RECRUITMENT SCRIPT

Hello,

We hope this email finds you well! Your name and email were provided by your EFNEP Coordinator/Supervisor in your state to be contacted and invited to take part in a study conducted by the University of Rhode Island and University of Connecticut on peer educator/paraprofessional perspectives on adult physical activity in the Expanded Food and Nutrition Education Program (EFNEP). More specifically, we are interested in learning more about your experiences with delivering physical activity during adult programming including: participant enjoyment of physical activity, barriers and facilitators to physical activity, and your personal relationship with physical activity. Your participation and feedback on these topics are invaluable to us, along with the work you do in the community! To understand your perspective, we are asking you to:

1. Complete an anonymous online survey (linked below). This should take no more than 10 minutes of your time. At the end of the survey, you will also be invited to participate in a 30-45 minute Zoom interview.
2. If you choose to participate in the 30-45 minute Zoom interview, our team will contact you to schedule an interview. You will receive a **\$25 Amazon gift card** upon both survey and interview completion.

You can still participate in the anonymous online survey, without having to participate in the Zoom interview but will not receive a gift card.

If you have any questions about the study, contact Dr. Sarah Amin (Principal Investigator) from the Department of Nutrition and Food Sciences at the University of Rhode Island, at 401-874-4024 or sarah_amin@uri.edu. This research has been approved by The University of Rhode Island and University of Connecticut Institutional Review Board.

Thank you for your consideration.

Regards,

URI & UConn EFNEP Research Team / Amin Lab

E. Extended Literature Review

Lack of physical activity among the adult population is a rising issue of concern worldwide. In the United States less than one-third of adults currently meet the Physical Activity Guidelines for Americans (PAG) of 150 minutes a week.¹ Lack of physical activity and sedentary lifestyle is associated with several chronic diseases including obesity, cardiovascular disease, and type II diabetes.² Recent research also suggests that minority groups such as Latinos and African Americans are less likely to meet Physical Activity Guidelines for Americans (PAG). This evidence further supports and emphasizes the needs for public health interventions to address the racial and economic disparities of different groups.

The Expanded Food and Nutrition Education Program (EFNEP) is a United States Department of Agriculture (USDA) federal nutrition education program that aims to improve nutrition-related behaviors and physical activity of underrepresented low income populations.³ EFNEP is delivered by trained paraprofessionals who are hired based on their lived experience and understanding of community needs to support four core priority areas: Diet and Physical Activity, Food Resource Management, Food Safety, and Food Security.^{4,5} The role played by the EFNEP peer educators is essential to ensure the success of lifestyle changes of participants because the peer educator model is a tool that promotes health by giving guidance from relatable and approachable individuals who understand the community's needs through lived experiences.⁶ Peer educators provide unique experiences and perspectives that are similar to the challenges and experiences faced by the community they serve.⁶ This allows the peer educators to meet participants where they are and help them set realistic and attainable goals. Physical activity is a significant contributor to the overall well-being of individuals, and a core priority area of EFNEP that often plays a minor role in the curricula used. Evaluation of the program and research are

essential for EFNEP to continue to attend to the needs of the population.⁷ This study is part of a multistate initiative formed by: Arizona, California, Idaho, Maine, Minnesota, New York, Oklahoma, Rhode Island, South Dakota, Texas, Washington state, Connecticut, and Rutgers University.⁷ This multistate group has been conducting research in various states for the past 15 years on EFNEP'S behalf.⁷ The proposed plan for the next 5 years includes: Cost benefit analysis, quality of life, 24 hour recall, Youth evaluation, Spanish adult questionnaire translation, curricula analysis.⁷ This thesis proposal aims to conduct research that will support the curricula content analysis section. Based on national data, participation in EFNEP is associated with improvements in dietary behaviors, including increased fruit and vegetable consumption.^{4,5,8} Although improving physical activity is one of the EFNEP objectives, it is believed that the program is failing to educate participants about physical activity. While physical activity is one of the EFNEP core areas, there is anecdotal evidence that suggests that EFNEP peer educators lack the proper training and resources for delivering physical activity content to adult participants. Furthermore, evidence-based curricula used in EFNEP demonstrate the disproportionate amount of nutrition content that needs to be covered to align with EFNEP core priority areas. To better understand physical activity and EFNEP, it is integral to assess peer educator perceptions of physical activity implementation including facilitators and barriers to help inform federal programming and assess training needs. Also previous research on the content of the EFNEP curricula found that even when various curricula cover the same topics, there are differences in the way these classes are being taught and methods used to reinforce learning.⁷ This information emphasizes the need of reevaluating the curricula to identify the areas of improvement to enhance learning for participants. To better understand physical activity and EFNEP, it is integral to assess peer educator perceptions of physical activity implementation

including facilitators and barriers to help inform federal programming and assess training needs. This study will provide recent content analysis on physical activity curricula that is currently lacking from the literature.

A. Justification for and Significance of the Study

Justification

Implementation of physical activity in EFNEP including facilitators, barriers, and peer educator's needs can help to guide future improvements to curricula to better serve the low-income communities EFNEP reaches. A critical literature review was conducted with the goal of identifying research gaps in understanding the benefits of physical activity, current Physical Activity Guidelines for Americans and how they compare the level of physical activity of the population, the barriers and facilitators to physical activity, as well as EFNEP's mission and curricula.

Benefits of Physical Activity

The benefits of physical activity are observed throughout the lifespan. Among adults, physical activity even at moderate intensity is associated with reductions in all-cause mortality including cancer and heart disease.⁶ The positive effects of physical activity on adults' cardiorespiratory health include reduced risk of hypertension in adults.⁶ It may also help improve the weight status of individuals which in turn may help to reduce the risk of type 2 diabetes, obesity, and dyslipidemia.⁶ Through promoting bone, muscle and joint health, physical activity also plays a role in preventing arthritis, fractures, and falls.⁶ Lastly, physical activity also helps to improve mental health by reducing anxiety, improving sleep, and improving cognitive function.⁶

Physical Activity Guidelines for Americans

The Physical Activity Guidelines for Americans (PAG) were first developed by the Department of Health and Human Service in 2008 after decades long of epidemiological evidence pointing at physical inactivity as one of the main risk factors of mortality and chronic diseases.⁸ These guidelines were then updated in 2018 and now emphasizes sitting less and moving more by recommending that all adults should engage in 150 to 300 minutes for moderate-intensity physical activity weekly or 75 to 150 minutes of vigorous-intensity aerobic physical activity.^{8,9} It is also recommended that adults engage in muscle-strengthening activities twice a week, and activity that improves balance and flexibility.^{8,9}

Research on the topic of physical activity has demonstrated the benefits of living an active lifestyle as compared to the implications that come from a sedentary life. The PAG are recommendations that the American population should meet and have also guided some of the goals in Healthy People 2030 developed by the U.S. Department of Health and Human Services.¹⁰ These goals are the set priorities for individuals to improve their health and well-being in the United States.¹⁰ Some of the evidence-based goals include reducing the proportion of adults that do not engage in physical activity by increasing both aerobic and strengthening muscle activity in the adult population to improve their health.¹¹

Community education on the topic of physical activity is important because about half of Americans are not meeting these guidelines. In 2020, the Centers for Disease Control and Prevention reported an estimate of the adult men and women over the age of 18 meeting the 2018 PAG for both aerobic and muscle-strengthening activities.¹² The disparities of gender, age, race/ethnicity, and income were highlighted in this report where 46.3% of adults over the age of 18 did not meet the PAG for both aerobic and muscle-strengthening activities. It was found that across all age groups, men had consistently higher percentages of meeting PAG compared to

women. For ages 18-35, 41.3% of men and 28.7% of women met the PAGs, but for both groups physical activity percentages decreased with age where only 15.3% of men over 65 and 10.8% of women met the guidelines.¹² Hispanic men and women were less likely to meet the PAG than non-Hispanic White population.¹² Twenty-three percent of Hispanic men met both of the PAG compared to 30.5% of non-Hispanic White men, 29.7% non-Hispanic Black men, and 30.2% non-Hispanic Asian men. There are racial and ethnic disparities for women as well with only 18% of Hispanic, 16.5% of non-Hispanic, and 16.7% of non-Hispanic Asian women meeting the PAG compared to 24.3% of non-Hispanic white women.¹² See graphs in Appendix A for reference.

The data reported above demonstrates the importance of increasing physical activity interventions and education to improve physical activity levels of Americans. It's important to point out that the data above used subjective data collection methods compared to more accurate objective measurements. This means that while using subjective measurements Americans are not meeting PAG, with objective measurements the results would be even more alarming. One major issue with self report data is social desirability bias that leads participants to provide an answer perceived as more favorable by society or by the researchers.¹³ Studies that have compared levels of physical activity using self reported data and accelerometer measurements found that both men and women in all age groups reported less sedentary time, higher levels of vigorous intensity physical activity compared to moderate intensity physical activity compared to the accelerometer data.¹⁴ with the substantial variation of self-report. Due to the issues with self-reported data according to the NHANES 2005–2006, fewer than 10% of U.S. adults met the PAGA according to accelerometry.¹⁵

Barriers to Meeting the Physical Activity Guidelines for Americans in Racially and Ethnically Diverse Low-Income Communities

The neighborhoods and built environments are one of the social determinants of health that affects physical activity and contributes to disparities in adults being physically active.¹⁶ Some environmental factors that may interfere with individuals living an active lifestyle include access to sidewalks, parks and recreational facilities.¹⁷ The environmental aesthetics of the community are often not discussed, yet the sense of satisfaction with the community has been shown to contribute to the level of activity in the community.¹⁷ The socioeconomic status of a neighborhood can impact access and availability of parks, recreational spaces, and other activity-promoting resources and affects low-income families at disproportionate rates.^{16,18} The financial burden that many families face not only determines where they live and affects their neighborhood, but it also prevents them from attending gymnasiums and recreational buildings such as the YMCA due to the cost of memberships.¹⁹

The environment of low income communities is a factor that affects the safety of individuals.^{17,20} Crime rates in low income communities intervenes with sense of security which in turn may negatively impact willingness to exercise in the neighborhood.^{19,20} Some factors that often make individuals feel unsafe is lack of lighting in public areas such as parks and sidewalks and insufficient police monitoring of these communities.¹⁹ Women are more likely to express environmental safety concerns compared to men.¹⁷

Even when physical activity resources are available in low-income communities, individuals still struggle to meet the PAG because along with the environmental barriers, there are also several intrapersonal barriers that these communities face.¹⁹ Adults often report lack of motivation as one of the main reasons they do not exercise. Another common barrier is lack of

time due to work schedule and taking care of the household, adults often do not have the energy to exercise after all the day-to-day responsibilities.^{19,21} Some adults have also reported lack of confidence as a barrier when exercising and explain that they prefer to exercise in private as compared to in a group or public setting.^{19,20}

Cultural differences are also a significant factor that influences the disparities of physical activity among groups. Some cultures such as Hispanic communities prioritize family and the household needs. Physical activity is not a priority and is perceived more as a luxury that is reserved for high income households.²² In addition to this, women are less likely to be encouraged to exercise compared to men due to the constant encouragement to maintain femininity and in this culture growing muscles are perceived as masculine.²² In immigrant households there is a high level of stress that is associated with leaving their home country and assimilating to a new culture.²³ The stressful process of moving to a new country and losing social support is a factor that contributes to adult immigrants engaging in more physical activity back in their homeland compared to when they moved to the United States.²³ The language barrier that immigrant families face also prevents them from finding social support or interventions that may help them increase their physical activity.²³

Intrapersonal and Social Facilitators of Physical Activity

Those from low-income and racially diverse communities explain that social support such as walking groups facilitates their overall engagement in physical activity.¹⁹ It was reported that exercising in a group setting such as walking groups in the community addresses the safety concerns often reported as a barrier to exercise by making individuals feel safe and comfortable in their neighborhood.^{19,24} Along with this, increasing self-efficacy is essential for ensuring maintenance of physical activity.²⁴ Self-efficacy is the perceived ability to achieve a behavior.²⁵

Research on the topic of self-efficacy has demonstrated that when participants express a high level of self-efficacy prior to the beginning of a physical activity intervention, they are more likely to be successful and maintain the habit of physical activity as compared to other participants with low self-efficacy.²⁴ Another factor that may serve as a facilitator to physical activity is the understanding the benefits of regular physical activity that may serve as intrapersonal motivator.²⁶ Such benefits include the enjoyment of the activity, mental and physical health benefits, while also improving overall well-being.²⁶

The Expanded Food and Nutrition Education Program

The U.S. The Department of Agriculture (USDA) and National Institute of Food and Agriculture (NIFA) distribute funds through the land-grant university system for research and programs such as EFNEP.²¹ The Expanded Food and Nutrition Education Program (EFNEP) was developed between 1962 and 1967 as a result of Americans living in extreme poverty in rural and urban areas.²⁷ Malnutrition was linked to the economy, which led to the development of EFNEP with the intent to use paraprofessionals or peer educators to reach the poorest neighborhoods and improve the nutrition knowledge, skills, and attitudes of families as a whole.²⁷ The paraprofessionals delivering EFNEP today are members of the community that EFNEP reaches and have similar economic status and experiences as EFNEP participants.²⁷ The work EFNEP does goes beyond the communities that it reaches because EFNEP also works with community partners and stakeholders to support decisions that will continue to improve nutrition and physical activity of individuals.²⁴ EFNEP has changed over the years to stay relevant to current issues, but the overall mission of helping low-income communities with paraprofessionals and focusing on four core areas: diet & physical activity, food resource management, food safety, and food security remains the same.²⁷

Physical Activity in EFNEP Curricula

EFNEP peer educators use evidence-based and approved curricula while also ensuring program fidelity to protect the integrity and quality of the lessons.²⁸ Two popular examples of evidence-based adult curricula are Eating Smart, Being Active and Families Eating Smart Moving More. Other curricula that can be used include: Eat Healthy-Be Active Community Workshops; Eat Smart, Live Strong; and Healthy, Happy, Families.²⁹

The EFNEP lessons are based on the most current Dietary Guidelines and PAG for Americans. EFNEP serves an important role in the community as it facilitates change that improves the well-being of the population.²⁷ Eating Smart Being active lessons are part of an evidence-based and approved curricula that uses the Socio Ecological Model, Social Cognitive Theory, and Adult Learning principles to help promote lifestyle changes regarding healthy eating and increasing physical activity through a series of nine classes.³⁰ This curricula was first written in 2005 by Colorado State University and it was last revised in 2017. The content in the curricula is based on the 2015-2020 Dietary Guidelines for Americans and MyPlate.³⁰ The lessons taught in subsequent order touch upon different topics related to nutrition such as budgeting, food safety, and healthy eating with the promotion of fruits and vegetables, whole grains, and calcium. Along with these lessons, this curricula aims to increase physical activity with the lessons of “Get Moving!” and “Eat Smart and Be Active.”³⁰ One of the goals of EFNEP is to improve physical activity behaviors of individuals, yet only 2 out of the seven lessons in the curricula focus on physical activity.

Another common curricula used is the Families Eating Smart, Moving more curricula that emphasizes healthy living through nutrition education classes and including a physical activity component in every lesson.^{31,32} This curricula consists of 21 lessons that fall under 5

major categories, such as: Introduction to the Expanded Food and Nutrition Education Program, Eating Smart at Home, Eating Smart Throughout the Lifecycle, Eating Smart on the Run, Moving More, Every Day, Everywhere, Watching Less.³¹ This curricula addresses and aims to improve major risk factors of obesity such as diet and sedentary lifestyle.³²

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