

AN INTEGRATED RESEARCH-PRACTICE PARTNERSHIP TO EXPLORE AND
DEVELOP PHYSICAL ACTIVITY RESOURCES WITHIN A STATEWIDE PROGRAM

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ACADEMIC ABSTRACT

Virginia Cooperative Extension's Family Nutrition Program (FNP), which includes EFNEP and SNAP-Ed, works to help limited-resource families across the state make informed food-choices. Virginia Cooperative Extension (VCE) lacks open-access physical activity resources representing individuals with varying weights, races, and ethnicities. In 2015, an integrated research-practice partnership was initiated for the development of an evidence-based physical activity resource for peer educators employed by FNP to use. The video suite, *Move More, Virginia!*, was created as open-access and includes demographically diverse individuals, representative of FNP clients. Study I determined client perceptions of physical activity and preferences for new resources. Study II identified FNP peer educators' perceptions of physical activity, their resource needs, and intent to use *Move More, Virginia!* resources. Both studies involved quantitative and qualitative data through surveys and focus groups. Formative data collected in Study I revealed the prominent themes related to clients (n=12) were physical activity facilitators (n= 100 meaning units (MU)) and physical activity barriers (n=77 MU). In Study II, peer educator responses(n=15) led to the emergence of four themes related to physical activity itself: barriers to incorporating physical activity within FNP (n=189 MU), physical activity facilitators (n=106), current delivery of physical activity (n=102 MU), and physical activity barriers (n= 16 MU). When prompted to share video specific feedback, the top theme was positive video feedback (n = 115 MU). Identified themes and subthemes provide deeper understanding of the organizational culture within FNP as thoughts, perceptions, and barriers to incorporating physical activity into FNP curriculum are highlighted.

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PUBLIC ABSTRACT

Faculty and staff in the Virginia Cooperative Extension's Family Nutrition Program (FNP), which includes EFNEP and SNAP-Ed, work to help limited resource families across the state of Virginia make informed food choices. In addition to nutrition, physical activity is related to health status. However, Virginia Cooperative Extension lacks free physical activity resources representing individuals with varying weights, ethnicities, and fitness levels. In 2015, an integrated research-practice partnership was initiated for the development of a physical activity resource for FNP peer educators to use during programming. The collection of videos, *Move More, Virginia!*, was created as a free resource and to include individuals that represented the community. Study I determined client perceptions of existing physical activity resources and preferences for new resources. Study II identified perceptions of physical activity and the resource needs of FNP peer educators to deliver physical activity programming. The studies involved concurrent qualitative data through focus group interviews and quantitative data through survey distribution. Results showed common client themes were physical activity facilitators and barriers. The top peer educator theme was barriers to incorporating physical activity within FNP. When prompted to share feedback on the *Move More, Virginia!* videos themselves, the emergent theme was positive video feedback. Thoughts, perceptions, and barriers to incorporating *Move More, Virginia!* into FNP curriculum are highlighted. These findings will guide future physical activity integration within FNP programs.

DEDICATION

To my loving parents, Randy and Valinya Everette, for your continuous support. You both loved me from day one and I will always be appreciative of what you have taught me over the years, for forgiving my mistakes, to celebrating my successes, to wiping my tears when I fall-at the end of the day if I have nothing I know I'll always and forever still have you.

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Chapter 1: Introduction

Introduction

In the United States, roughly 50% of the population has at least one chronic health condition (e.g., heart disease, diabetes, obesity).¹ Heart disease is the leading cause of death.¹ Many factors relate to this global epidemic and one example is physical inactivity. The lack of physical activity is one preventable health risk behavior that contributes to the increasing worldwide prevalence of chronic disease.² Additionally, caloric over consumption combined with insufficient amounts of physical activity play a role in compromised health status. In fact, twenty-five percent of adults surveyed in 2014 reported no leisure-time physical activity.³ Negative consequences are associated with physical inactivity. Previous literature has shown health care costs due to excess weight and chronic disease incidence, are expected to increase by \$48-66 billion per year in the United States; in turn, financially straining the nation's economy.⁴ Lifestyle, social, and environmental influences play essential roles in healthy weight status.

The Physical Activity Guidelines for Americans include recommendations for adults to get at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity aerobic physical activity per week.⁵ However, in the United States only 49% of adults are meeting the guidelines.⁶ The 10 most common physical activity barriers for adults are lack of time, inconvenience, lack of self-motivation, finding exercise unenjoyable, finding exercise boring, low self-efficacy, fear of injury, lack of self-management skills, lack of support, and not having physical parks, sidewalks, etc. in convenient locations.^{7,8} Based on these salient barriers, negative factors associated with adult physical activity levels include, but are not limited to: advancing age, low income, time constraints, low motivation, and rural residency.⁹

The Social-Ecological Model is a framework used in health promotion and disease prevention representing the multiple types of influences on an individual's behaviors.¹⁰ As part of the model, population-based interventions are recommended in combination with multilevel interventions to have a broader public health impact.^{11,12} In order for these interventions to be sustained in practice, integrated research-practice partnerships (IRPPs) are optimal as they focus on both research-based and practice-based evidence, thus ensuring that a particular intervention fits within the resources, mission, and values of the intended delivery system.¹³ IRPPs that include members from priority areas (e.g., low-income households, individuals within minority populations, geographically isolated residents) may contribute to the development of the needed infrastructure for health equity. Researchers theorize that working with representative individuals from the target audience to develop program material will increase the degree to which the resource is attractive and used by the target audience.¹⁴ Taken together, engaging in an IRPP to tailor physical activity programming that meets the needs of priority populations may have a greater impact than the typical efficacy-effectiveness-translational pipeline. The reach, effectiveness, adoption, implementation, maintenance (RE-AIM) framework¹⁵ is used to increase the speed by which research efforts and findings are translated into sustained practice.

This study focuses on the reach of participants—operationalized as proportion, representativeness, and ongoing scope of the video suite—as well as the intention of sustained use of physical activity resources (i.e., system-level maintenance). Aligning with Glasgow et al.'s health inequity work using RE-AIM, the following health intervention targets an audience whom primarily resides in low-income households and belong to minority populations.¹⁶ The studies described in Chapter 3 will aid in the bridging of the gap between evidence-based programming and practice, in this case with FNP and physical activity resources.¹⁷

Chapter 2: Literature Review

Health Disparities

Individuals belonging to these priority areas above (e.g., low income, rural residency) experience chronic disease at a disparate rate. Health equity is defined as “the attainment of the highest level of health for all people,” by Healthy People 2020.¹⁸ In Virginia, 25% of the population consists of working families that reside in lower income homes and experience health disparities.¹⁹ Disparities influence physical activity engagement and sedentary behaviors, further worsening health outcomes.²⁰

Residential/Environmental

Residential location and the environment are factors that affect health disparities. Sallis et al. found residents have higher physical activity levels when neighborhoods are comprised of sidewalks and street lights, and when pedestrians are not exposed to the dangers of heavy traffic.²¹⁻²⁴ In addition, cultural differences exist related to outdoor physical activity, and contribute as to why certain cultures do not feel safe exercising publically.²⁵ For example, African Americans in low socioeconomic status (SES) communities reported there were few physical activity facilities such as sport areas, parks, green spaces, and public pools.²⁶ An analysis of the association between physical activity-related facilities, SES, and health status found that higher SES areas were associated with having one or more physical activity facilities; while low SES areas were less likely to have these facilities.²⁷

Socioeconomic Status

Socioeconomic status also affects physical activity levels among populations. Giles-Corti et al. found even when people in low SES areas had access to recreational areas, they were less likely to use them than those who lived in high SES areas.²⁸ However, people in low SES areas

perceived their neighborhoods as not attractive, having heavy traffic, and being unsupportive of walking.²⁸ Creating supportive environments provides the opportunity to increase physical activity in areas of low SES. SES and geographic remoteness are associated; living in more densely packed areas may increase the likelihood of meeting the physical activity guidelines as inhabitants may be more inclined to walk.²⁹ Elme et al. found regular physical activity participation increased as SES increased, and decreased as geographic remoteness increased, showing the significance SES and location can play in physical activity.³⁰

Age, Gender, and Race/Ethnicity

Physical activity is influenced by age, gender, and race or ethnicity, with disparities in rates of physical activity within different groups. The older individuals get, the less active they become.³¹ Physical inactivity is not only problematic for older adults, but also children, minority adolescents, and specifically non-Hispanic black and Asian females, who are less active than their white counterparts.³² Men (52%) are more physically active than females (43%).³³ Women also experience health disparities as it relates to cultural and societal influences. For example, women's available leisure time to engage in physical activity may be limited due to the workload of care-giving or other cultural restrictions (e.g., taking time to exercise can be seen as selfish, African American women's concerns for their hair, and clothing can be restricting).³⁴⁻³⁶

The United States is composed of individuals who identify with many different cultures, races, and ethnicities-making the need for physical activity resources featuring a range of diverse participants evident. Previous research has shown underserved populations face physical activity-related health disparities and should be targeted for interventions.³⁷ Van Duyn et al. conducted focus groups with low-income Hispanic women in Texas, Hmong families in California, low-income African American adults in the Mississippi Delta, and Native Hawaiian

college students in Hawaii on their physical activity perceptions.³⁸ All groups were supportive of increasing access to physical activity and noted common barriers to all underserved populations regarding physical inactivity (lack of time, transportation, access, neighborhood safety, and economic resources.)³⁸ Additionally, among United States men, Ahmed et al. found that compared to white non-citizens, non-citizen Hispanics were twice as likely to be inactive.^{37,39} Overall, racial/ethnic disparities are most prevalent among middle-aged minorities; the results of the August et al. study support the need for physical activity promotion among under-served populations.⁴⁰

Education

Education levels are highly associated with income.⁴¹ Both low income and limited education are strong predictors of poor health.⁴² Individuals with limited education engage in less physical activity when compared to their counterparts with higher education levels.⁴³ Literature has shown educational level and mortality can be partially explained by leisure time physical activity differences.⁴⁴ Those of lower education level tend to have less leisure time for physical activity and while people with higher education levels tend to have more free time to engage in physical activity.⁴⁵ However, leisure time differences may be attributed to different occupational activity. Individuals of lower education can potentially have more physically intensive occupations and may get their recommended physical activity in that regard.⁴⁶

Taken together, varying groups of people (e.g., those of differing ethnicities, SES status, ages, etc.) may need customized intervention strategies and is an important factor to consider when planning physical activity interventions.

Health Equity

A goal of Healthy People 2020 is to increase physical activity and it defines health equity as the “attainment of the highest level of health for all people.”⁴⁷ Health equity is applicable to physical activity programming as Virginia Cooperative Extension (VCE) aims to make physical activity resources accessible to all, despite other influencing factors. A resource that is in part a) brief, b) free, c) based on exercise science principles, and d) includes those who are similar to the target audience in gender, age, ethnicity, and fitness level⁴⁸ may overcome the salient barriers of time and resources.⁴⁹ FNP’s target population lacks disposable income for gym memberships, equipment, personal trainers, etc. However, the question remains that if this resource was developed, would the target audience engage with the resource and for how long, and would that engagement lead to improved physical activity behaviors?

Need for Practiced-Based and Evidence-Based Programs

Public health practice and health promotion are in need of more evidence-based programs, but current evidence stems from research that is often not readily applicable in practice.⁵⁰ The United States Department of Agriculture encourages and facilitates FNP to use evidence-based programs. However, evidenced-based research occurs in controlled environments, whereas practiced-based research contains numerous additional variables,⁵⁰ such as researchers entering communities and then leaving, lack of ongoing resources, and the intervention not being developed for community sustainability.^{51,52} This hinders the rate at which effective programming is translated to and sustained within the intended delivery system. Implementation research aims to improve health services through the study of methodologies to promote uptake and dissemination of evidence-based research findings into practice.

Integrated research-practice partnerships serve as the translational step between evidence and practiced-based research. IRPPs are mutual relationships between researchers and practitioners, working together to explore problems and seek solutions. Another way to both fill the gaps in our understanding of sustained uptake and delivery, as well as decrease the translational lag-time, is the use of qualitative research.⁵³ Qualitative inquiry allows rich understanding of phenomena in practice and is conducted in real-world settings to gain potential influential findings that can be implemented.⁵⁴

Virginia Cooperative Extension Physical Activity Objectives and the Expanded Food and Nutrition Education Program

From a dissemination and implementation perspective, researchers should identify existing systems with which they may partner to improve the adoption and implementation of evidence-based programming. One such system is Cooperative Extension (CE). CE is an entity associated with land-grant universities with the mission of bringing scientifically rigorous, evidence-based programming to citizens; every state and United States territory has a Cooperative Extension System. In Virginia, CE is run jointly through the two land-grant universities Virginia Tech and Virginia State University. Innovative programming within this system has the potential to reach a large proportion of residents. The Expanded Food and Nutrition Education Program (EFNEP) and Supplemental Nutrition Assistance Program Education (SNAP-Ed), collectively administered as FNP in Virginia, is offered through Virginia Cooperative Extension (VCE), to deliver nutrition and physical activity programming to families from low-income households across the state.

There is a lack of open-access physical activity resources within the Cooperative Extension System.^{55,56} Many physical activity videos lack diversity in participants and leaders,

which may create feelings of inferiority or intimidation.⁵⁷ Individuals are more likely to adhere to a workout video if they can connect with the people in the videos through gender, age, ethnicity, and fitness level to increase self-efficacy.⁵⁸ There are very few evidence-based physical activity resources portraying active individuals who range in age, are overweight, obese, or from minority populations.

The VCE strategic plan of 2011-2016 includes physical activity improvements; however, it is important to note that across all states and territories in the national Extension System only 18% of strategic plans contain physical activity objective language.⁵⁹ Although, physical activity remains a focus of FNP and national guidance is needed. One reason for the absence of physical activity programming relates to low self-efficacy of health educators within VCE⁶⁰ and FNP.⁶¹ To overcome this lack of confidence, interventions including training materials and support that align with the needs and skill set of community health educators are warranted.

FNP Peer Educators

In addition to perceptions of FNP clients, it is imperative to explore perceptions of those who may use and disseminate the resources. Historically, physical activity was not part of the programming until recently and therefore, tremendous work, as in training, is needed. FNP utilizes peer educators from the communities in which they serve and are trained by CE (i.e., have not necessarily received educational credentials outside of the system). However, Baker et al. found peer educators did not fully understand the terminology used in their respective topic areas and by other CE colleagues in their training.⁶² Common and understood language between all CE staff is vital to program success to bridge the gap between research and application.⁶² To lessen the gap in health disparities and inequality, peer educators play an essential role in serving communities because they are indigenous to the area, know the existing issues, and form

relationships with clients.⁶³ Edwards et al. conducted a study on perception of peer educators within CE and found differences existed in what they think their roles are and what Extension agents believe their roles to be.⁵⁸ Role clarity may increase effectiveness. In addition, self-efficacy and scope of practice are issues for peer educators without advanced training in delivering physical activity instruction. Fulfilling the physical activity programming resource needs will aid in cohesively reducing the disconnect between client and peer educator needs.

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Chapter 3:

An Integrated Research–Practice Partnership to Explore and Develop Physical Activity

Resources Within a Statewide Program

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ABSTRACT

Objective: Determine (1) Family Nutrition Program (FNP) client perceptions of existing physical activity resources and use findings to develop needed resources and (2) FNP peer educators' perceptions of the newly developed physical activity resources, *Move More, Virginia!*.

Design: Mixed-methods concurrent triangulation.

Setting: Statewide, federally funded entity of FNP.

Participants: FNP clients and peer educators.

Main Outcome Measures: Perceptions of *Move More Virginia!* and FNP physical activity integration barriers.

Analysis: Independent t-tests, proportions, and frequencies. Researchers independently coded focus groups to determine emergent themes and subthemes.

Results: Formative client data collected in Study 1 revealed the prominent themes related to clients (n=12) were physical activity facilitators (n=100 meaning units (MU)) and physical activity barriers (n=77 MU). In Study 2, the majority of peer educators were middle-aged females with an overweight or obese body mass index. Peer educator responses (n=15) led to the emergence of four themes related to physical activity itself: barriers to incorporating physical activity within FNP (n=189 MU), physical activity facilitators (n=106 MU), current delivery of

physical activity (n=102 MU), and physical activity barriers (n=16 MU). When prompted to share feedback on the videos themselves, the top theme was positive video feedback (n =105 MU).

Conclusions and Implications: Identified themes and subthemes provide deeper understanding of physical activity and the organizational culture within FNP. Thoughts, perceptions, and barriers to incorporating *Move More, Virginia!* into FNP are highlighted. These findings will guide future physical activity integration within statewide programs.

Key words: Cooperative Extension, Family Nutrition Program, health disparities, open-access resources

Introduction

Chronic disease^{1,2} and unhealthy weight status³⁻⁵ may be affected by personal, social, and environmental influences. On the list of the top 10 barriers to physical activity for Americans^{6,7} are a range of personal (such as lack of time, finding exercise unenjoyable), interpersonal (lack of support), and environmental (not having physical parks, sidewalks) factors.^{8,7} The national Physical Activity Guidelines for Americans recommend that adults engage in at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity aerobic physical activity per week with two days of full-body strength training.⁹ However, only 49% of adults met the guidelines¹⁰ and 25% of adults reported no leisure-time physical activity.¹¹

Population-based physical activity promotion interventions that combine the social-ecological model¹² and multilevel interventions,¹³ are needed in order to have a broader public health impact.^{14,15} To increase the likelihood that these interventions are sustained in practice, integrated research-practice partnerships (IRPPs) are recommended as they focus on both research and practice-based evidence.¹⁶ Participants within an IRPP may elucidate the degree to which interventions may fit within the resources, mission, and values of the intended delivery system.¹⁷ While there remains a need to adapt and implement physical activity promotion interventions,¹⁸ the need to disseminate and implement existing evidence-based programs is paramount.^{18,19} Researchers and practitioners can help identify systems in which particular interventions will fit best.

One system that may reach a broad audience and have ongoing contact with intervention participants is the Cooperative Extension (CE) system. CE is an entity associated with land-grant universities with the mission of bringing scientifically rigorous, evidence-based programming to citizens.²⁰ Within CE, the Family Nutrition Program (FNP), which includes the Expanded Food

and Nutrition Education Program (EFNEP) and the Supplemental Nutrition Assistance Program Education (SNAP-Ed), is a federally funded program that aims to impact health behaviors of families from low-income households across the nation.²¹ FNP paraprofessional staff, referred to as peer educators, live in the communities in which they serve and directly use hands-on learning to educate residents.²¹ FNP directors provide a list of programming from which peer educators are trained and required to report against. Peer educators deliver these evidence-based programs tailored to their specific community needs and environment through their choice of recipes, learning activities, or take-home resources.²¹

Part of FNP's mission is to deliver a variety of health promotion programming to families who are under-served across the nation. Historically, there has been a food and nutrition emphasis, but more recently physical activity was added; therefore, training of FNP professionals is needed. These health behavior programs often target nutrition and physical activity.²²⁻²⁵ However, many CE systems lack physical activity resources that are both open-access and represent individuals with varying weights, races, and ethnicities.^{26,27} Many existing physical activity videos lack diversity in participants and leaders, which may create feelings of inferiority or intimidation in individuals.²⁸ There are very few evidence-based physical activity resources portraying active individuals who are overweight, obese, or from minority populations.²⁹

Therefore, in 2015 an IRPP was initiated for the development of an evidence-based physical activity resource for FNP peer educators to use during programming. The video suite resource entitled, *Move More, Virginia!*, was created as open-access and to include individuals from the community to be more representative of FNP clients. The two following studies aimed to identify the perceptions of physical activity, the resource needs of FNP peer educators, and

their intent to use *Move More, Virginia!* in delivering physical activity programming. These areas are explored through surveys and focus groups interviews.

Study 1

Methods

Study Design

Study 1 was used to capture formative data for the work presented in Study 2. FNP peer educators were surveyed in 2015 asking what types of physical activity videos were needed for their programming. Results revealed there was demand for the following workouts in respective order: “Mommy and Me” for parents of young children, full body chair-based moderate intensity, seven-minute resistance band, full body moderate intensity with modifications for seniors, 10-minute upper body, lower body, and core with cardio bursts, 30-minute yoga/Pilates, and 30-minute dance aerobics. These needs led the VCE Family Nutrition Program (FNP) program director and social media coordinator, an exercise scientist, a local peer educator, and a behavioral and implementation scientist to begin an IRPP to develop evidence-based physical activity materials that were representative of the target audience. To understand the development and delivery of these materials, we explored client perceptions of existing physical activity materials, the perceptions of individuals’ who participated in the material development, and a three-month follow-up as it was related to the IRPP’s development of additional requested materials.

Members of the IRPP from a research lab were called upon to create open-access physical activity resources. A research assistant, who was also a certified personal trainer, led material design. The evidence-based seven-minute high-intensity interval-training (HIIT)³⁰ workout was filmed with participants of varying gender, age, ethnicity, body mass index, and

fitness level to provide like-models for participant engagement.³⁰ The workout was comprised of 12 exercises, with modifications for beginner, intermediate, and advanced fitness levels. A 30-minute full body workout was also recorded involving muscular strengthening and cardiovascular exercises. An IRPP member who is an exercise scientist and certified group fitness instructor approved and led these videos during production in Spring 2015. Three months later, the IRPP developed a suite of videos with an emphasis on resistance bands. Collectively, these materials were all part of the *Move More, Virginia!* campaign encouraging physical activity.

Measures and Data Collection

Participants

The focus group interview target population was FNP clients ages 18 and over who participated in the creation of the video suite. Recruitment procedures included emails, word of mouth, and flyers. The Virginia Tech Institutional Review Board approved both study protocols, participation was voluntary, and all data were kept confidential.

Quantitative

Surveys were emailed or administered via telephone to participants (n=15) in spring 2015. All participants (n=21) contributing to the summer 2015 videos were asked to complete a survey distributed via iPads at the second video recording. 29% of these participants were included in both the spring and summer video production. By completing the survey, participants provided implied consent. All survey scales and items can be found in Appendix A.

Qualitative

For a richer picture of the clients' perceptions, participants were asked to attend one of two one-hour focus groups. The exercise specialist, who is experienced in conducting focus

groups, led both interviews. The semi-structured interview guide included physical activity questions regarding beliefs, barriers, current behaviors, current resources, and motivators for volunteering to participate in the filming. Video content questions concerning equipment, video usage length, frequency, location, and with whom clients would use the videos, were asked. All items included in the guide can be found in Appendix B. Audio files of the focus groups were transcribed verbatim for further analysis. Findings from the qualitative portion of this study were included components in the development of the videos.

Statistical Analyses

Quantitative data were analyzed for descriptives on frequency and proportions for variables of age, ethnicity, education level, income level, body mass index, and current physical activity behavior. Prior to qualitative data analysis, co-authors were trained in identifying meaning units and the categorization process by the first author who was experienced in qualitative data analysis. A deductive approach was used by generating themes and subthemes from meaning units. Meaning units are described as words or statements that convey unambiguous and relevant meaning within the context it is found.^{31,32} Focus group transcripts were assigned to the authors to independently identify meaning units. In an iterative process, once meaning units were agreed upon, authors created subthemes and theme for each meaning unit. Any discrepancies were discussed in pairs, and when unable to be reconciled in the pair, addressed to all authors, followed with resolution by consensus. Lastly, all authors completed consolidation of similar meaning units, subthemes, and themes across all focus groups. Subthemes that were salient across both focus groups were categorized as major, subthemes that were present in only one focus group were categorized as minor.

Results

At the first filming, 15 volunteers were available to develop a seven-minute HIIT and 30-minute full body workout videos were produced, eight volunteers (53% of total volunteers) completed the survey. At the second video shoot all volunteers (n=21) completed the survey, and then 12 participated in focus groups for insight about physical activity, lifestyle, and resource future directions. Four videos (two resistance band and two core workouts) ranging from 14-22 minutes each were produced. The video suite containing the six total workouts, has been put on YouTube for public access, as well as burned onto digital video discs (DVDs) for those without Internet access to reduce the barrier of non-open access physical activity resources.

T-tests revealed no significant differences in socio-demographic variables between the spring and summer video productions. Participants were predominantly highly educated, middle-aged females with overweight body mass index (BMI) and of Caucasian and African American race. Although income level results were not statistically significant ($p > 0.05$), it is important to note the difference in summer 2015 with a 35% increase in the \$50,000-\$90,000 income level. See Table 1 for more details on client information.

Table 1.

FNP Client Video Participants’ Demographics, Self Perceptions of Health Status, and Confidence to Engage in Moderate Physical Activity.

	Spring 2015 (n=8)	Summer 2015 (n=21)
Age (M, SD), years	41.0 (±13.7)	46.6 (±17.8)
Sex, %		
<i>Female</i>	87.5	82.4
<i>Male</i>	12.5	17.6
B M I (M, SD)	27.5 (±5.7)	29.6 (±6.8)

Ethnicity, %		
<i>White</i>	50.0	47.6
<i>African American</i>	50.0	38.1
<i>Other</i>	0	14.3
Education, %		
<i>Some college</i>	25.0	44.4
<i>College graduate</i>	37.5	22.2
<i>Post college work</i>	37.5	33.3
Employment Status, %		
<i>Employed for wages</i>	87.5	85.7
Individual Household Income, %		
	0	11.1
<i>Less than \$15,000</i>	42.9	5.6
<i>\$15,000-\$29,999</i>	28.6	27.8
<i>\$30,000-49,999</i>	14.3	50.0
<i>\$50,000-\$99,999</i>	14.3	5.6
<i>\$100,000 or more</i>		
Marital Status, %		
<i>Married</i>	37.5	50.0
<i>Divorced</i>	25.0	5.6
<i>Single</i>	25.0	38.9
<i>Living common law or with partner</i>	12.5	5.6
Self Perceptions of Health Status, %		
<i>Somewhat healthy</i>	62.5	55.6
<i>Very healthy</i>	0	5.6
<i>Extremely healthy</i>	37.5	38.9
Confidence to Engage in Moderate Physical Activity, %		
<i>Completely confident</i>	62.5	55.6
<i>Very confident</i>	0	22.2
<i>Moderately confident</i>	37.5	11.1
<i>Somewhat confident</i>	0	11.1

*Indicates significance at $p < 0.05$

Qualitative data were collated to describe three emergent themes with 13 major subthemes related to facilitators for physical activity, barriers to physical activity, and physical activity video characteristics. Among the clients there was desire for physical activity resources

that varied in intensity levels and exercises, and had positive instructor characteristics such as one who provides safety cues, “*If you cannot do this [exercise], you can follow the instructor and she will show you the alternate way of doing the exercise without hurting yourself.*” In total, 12 individuals participated in focus groups. See Table 2 for more information on client emergent themes and subthemes.

Table 2.

FNP Client Thoughts and Perceptions on Physical Activity Facilitators, Barriers, and Desired Resource Characteristics.

(n=12)

Theme	Theme Type	Subtheme	MU #	Participant #	Example MU
Facilitators for physical activity (n=100 MU)	Major	Health benefits	60	9	“I feel happier, more joyful [when I exercise].”
		Social marketing	14	4	“I mean if you look at organizations like YMCA they have that presence [because of marketing].”
		SMART goal characteristics	11	4	“It’s being realistic with your approach [helps to reach goals].”
		Open-access resources	7	6	“Now everything [physical activity resources] is on YouTube.”
	Minor	Music	4	3	“And so it [music] makes it [physical activity] easier. It makes you want to do it, if it’s actually a song that I know and not like elevator music.”
		Nutrition tools	4	2	“I’d love to see like some of the meal planners and the food planners [given out to accompany physical activity].”
Physical activity barriers (n =77 MU)	Major	Time	19	6	“I think the schedules of people, the way they work. All of our people are working shift work and so then they have children, when they come home they’re not able [to exercise] so I think that could be a real barrier for a lot of people.”
		Cost	14	8	“Everybody cannot afford to go to the YMCA you know or to a gym...it might be that even if they could afford to go you know it might be they have don’t have the um babysitting services or whatever services that would allow them to go.”
		Current physical activity	10	5	“I do my videos at home [for physical activity].”
		Transportation	9	5	“Even transportation especially in the rural areas, transportation’s a huge barrier for a lot of things.”
		Weather	8	4	“When bad weather happens, if there’s not a place that people who have free access to go to, that is a determinant that kind of like steers them away.”
	Minor	Lack of organizational support	6	3	“Making sure that we do have the budget for that or places or organizations have the budget for that so we could have more billboards or we could have more posters and things.”

		Risks	6	3	"... people can say well, umm, I've had a previous injury before...or I don't know how to properly do a certain exercise."
		Lack of resources	5	4	"I just didn't know where to go...so I would like to see it [resources] in the libraries or community rec centers. That they're out there that you can say you can find our videos such...they're easily accessible."
Physical activity video characteristics (n=49 MU)	Major	Instructor characteristics	12	5	" [An instructor characteristic is] providing motivation in the video."
		Intensity levels	12	5	"Because it doesn't say everybody has to do jumping jacks you know and I mean it does give you that leeway so you know you're just as normal as everybody else and everybody just does things at different paces."
		Setting	12	8	"When I look at my videos I'm always looking around at the area but to get an idea of what the building looks like so I think the background should be mood setting like if it's going to be high energy impact it should be bright, cheery and stuff like that. I see some of these videos and they are just so pretty in the background."
		Variety of exercise types	10	7	"I have a thirteen-year old and she's not going to want to do the same video three times a week. I mean, if there's variety she'll want to."
	Minor	Modifications	3	2	"In the video that I watched that y'all made I liked the beginner intermediate and advanced cause I could see which one I could fit in."

Upon completion of the video productions, FNP distributed the *Move More, Virginia!* video suite on DVDs to peer educators. The videos were then shown at an FNP statewide training and made available to all on the open-access website, YouTube. Peer educators were given the autonomy related to if, when, where, and how to use the materials. It is important to note the *Move More, Virginia!* materials were not an intervention, but an additional resource that peer educators could utilize in their programming.

Study 2

Methods

Move More, Virginia! physical activity resources were created based on peer educator survey results (resistance band, core, etc. listed above). These resources were developed to align with participants' need for representative and open-access physical activity materials by including a diverse production cast. However, it remains unclear as to whether the tools would be used in practice. Therefore, the IRPP developed a second study to determine material perception and the degree to which the peer educators intended on using them in practice.

Study Design

Study 2 consisted of survey and focus group interview methods employed with FNP peer educators to determine needs and perceptions as it relates to the *Move More, Virginia!* physical activity resources.

Participants

FNP peer educators were sent an email invitation to complete an online survey. For eligibility, peer educators must have worked for FNP for at least a year to ensure time for community needs assessments. Survey completion entered participants in a raffle to win a \$25 gift card. From this survey, peer educators were invited to participate in an in-person focus

group. Recruitment entailed emails, flyers, word of mouth, and monetary incentive for focus group participation, as well as a complimentary meal. The Virginia Tech Institutional Review Board approved both study protocols, participation was voluntary, and all data were kept confidential.

Measures and Data Collection

Quantitative

A similar survey was completed by peer educators as FNP clients in the formative data collection of Study 1. Surveys were emailed to participants (n=50) in summer 2016. By completion of the survey, participants provided implied consent. All items included in the survey can be found in Appendix C.

Socio-Demographic Characteristics: The survey included socio-demographic items that align with United States Census data collection of age, gender, race, ethnicity, education level, employment status, household income amount, and marital status.

Health-Related Characteristics: Participants self-reported their weight and health status, completed the short form of the International Physical Activity Questionnaire,³³ and answered an item asking their knowledge of the adult physical activity recommendations.⁹ Height and weight were used by researchers to calculate BMI. Additionally, barriers to physical activity were asked in a check all that apply format.³⁴

Move More, Virginia! Videos

Knowledge and usage of the *Move More, Virginia!* videos were asked. A 7-point bipolar adjective Likert (1= extremely useful, enjoyable, wise, pleasant, beneficial, or interesting 7 = extremely useless, unenjoyable, foolish, unpleasant, harmful, boring) scale^{35,36} was used to assess instrumental and affective components of attitude survey peer educators about their perceptions

of the materials and how peer educators thought their clients would perceive them. Music as a physical activity motivator was asked using a 5-point Likert scale (strongly disagree, disagree, neither disagree or agree, agree, strongly agree).³⁷

Qualitative

In order to create a richer picture of the peer educators' perceptions, participants were invited to attend one of two 90-minute focus groups. These focus groups were conducted at the FNP Annual Conference on June 21, 2016 in Richmond, Virginia. The exercise specialist and a graduate research assistant, who are experienced in conducting focus groups, led the interviews. A semi-structured interview guide was used exploring perceptions of ease of use, barriers, video use frequency, and physical activity beliefs within FNP and can be found in Appendix D. Clips of the videos were played during the focus groups for peer educators to provide direct feedback. Audio files of the focus groups were transcribed verbatim for further analysis.

Statistical Analyses

Quantitative data were analyzed for descriptives on frequency and proportions for peer educator variables of age, ethnicity, education level, income level, body mass index, perceptions of health, physical activity barriers, current physical activity behavior, and physical activity recommendation knowledge. For qualitative analysis, subthemes that were salient across both focus groups and had at least three participants in each focus group contributing to meaning units, or those subthemes that were in one focus group but had greater than 80% of the participants were operationalized as major emergent themes.³⁸ Those subthemes that were only discussed in one focus group and had 50% or less of participants contributing to meaning units or were in both focus group but had less than 30% of participants were operationalized as minor emergent themes.³⁸

Results

The participants in Study 2 (n=31) were, on average, 48.7(±9.5) years of age with obese BMIs, and 84% were female. The majority of peer educators were educated with 71% having a college degree. Participant ethnicity was comprised of Caucasian and African American. This is representative of the overall peer educator population (n=47) with an average age of 51(±9.6) years old, and 64% Caucasian, 34% African American, and 2% Asian. Lack of time was the top barrier to physical activity, but a majority self-reported they engaged in high levels of physical activity. This equates to at least three days a week of vigorous intensity activity or seven or more days of any combination of walking, moderate-intensity or vigorous intensity activities a week.³³ One fourth of participants incorrectly identified the physical activity recommendations for adults.⁹ See Table 3 for complete demographic and physical activity information.

Table 3.

FNP Peer Educator Demographics, Physical Activity Barriers, and Knowledge of Physical Activity Guidelines for Adults (n=31).

<i>Peer Educator Demographics</i>	
Years worked in FNP (M,SD)	9.9 (±7.8)
Age (M, SD)	48.7 (±9.5)
BMI (M, SD)	30.7 (±6.4)
Sex, %	
<i>Male</i>	9.7
<i>Female</i>	83.9
Race, %	
<i>Caucasian</i>	51.6
<i>African American</i>	41.9
Education, %	
<i>Some college</i>	16.1
<i>College graduate</i>	35.5
<i>Post college work</i>	35.5

Peer Educator Physical Activity Variables

Compared to other people of your own age would you describe yourself as, %

<i>Not at all physically active</i>	9.7
<i>Not very physically active</i>	16.1
<i>Fairly physically active</i>	51.5
<i>Very physically active</i>	19.4

International Physical Activity Questionnaire classification, %

<i>High</i>	42
<i>Moderate</i>	35
<i>Low</i>	13
<i>Declined to answer</i>	10

Physical activity barriers, %

<i>Lack of time</i>	54.8
<i>Inconvenience</i>	9.7
<i>Self motivation</i>	25.8
<i>Not enjoyable</i>	12.9
<i>Boring</i>	3.2
<i>Low self-efficacy</i>	3.2
<i>Fear of injury</i>	9.7
<i>Lack of self management</i>	12.9
<i>Lack of support</i>	9.7
<i>Not having parks, sidewalks</i>	9.7

What are the physical activity recommendations for most adults?, %

<i>30 minutes of moderate intensity physical activity 5 days a week</i>	71
<i>20 minutes of moderate intensity physical activity 3 times per week</i>	6.5
<i>60 minutes of moderate intensity physical activity most days of the week</i>	19.4

More than half of the peer educators (58%) were aware of the *Move More, Virginia!* resources and 30% had used the resources in their programming. One third of the peer educators both a) intended to use the materials within the next three months and b) believed clientele would use them at home. Based on the instrumental and affective components of attitude scale, peer educators were neutral with regard to the *Move More, Virginia!* resources usefulness (2.94±1.65), enjoyableness (2.82±1.67), wise-ness (2.94±1.69), pleasantness (2.81±1.72), beneficial-ness (2.41±1.73), interestingness (3.00±1.71). When asked these same scale measures in regards to their clients' perceptions, peer educators reported that clients would have similar perceptions of the resources': usefulness (2.88±1.41), enjoyableness (2.88±1.41), wise-ness

(3.19±1.38), pleasantness (3.06±1.39), beneficial-ness (2.82±1.47), interestingness (3.00±1.37).

T-tests revealed no significant differences. See Appendix E for more details on this scale.

Barriers to Incorporating Physical Activity into FNP

Responses from the semi-structured interview guide led to four emergent themes of barriers to incorporating physical activity into FNP, physical activity barriers, current delivery of physical activity, and physical activity facilitators. The theme with the most meaning units—and across the most participants—was barriers to incorporating physical activity into FNP (n=189) with subthemes of technology, time, training needs, scope of practice, lack of programmatic support, risk management, setting, job dissatisfaction, and clothing. Taken together, this indicates that peer educators within FNP may need programmatic support such as training or funding, technology resources, and training related to defining their scope of practice before they are ready to use the materials. Liability and funding are especially important, it is emphasized here that this study was initiated in 2015 while physical activity promotion as part of Extension work was added to the Farm Bill in 2014.³⁹ Therefore, appropriate protocols and procedures for incorporating physical activity into FNP programming have not had the time to be well established. In response to this barrier, the IRPP has developed a step-by-step guide to integrating physical activity into FNP programming. These videos can be one modality to help with the physical activity resource need in the form of programmatic support. However, as previously mentioned, funding was one example of lack of programmatic support, was also perceived as a barrier by a participant indicating, *“I know it would be too costly to purchase [DVDs], for everyone.”*

Another subtheme of barriers was related to technology as the peer educators would have to ensure facilities had audio and video projection that would be large enough for clients to see,

and DVD players or access to the internet because peer educator laptops are incapable of playing DVDs, as demonstrated by a participant sharing: “*We don't even have DVD [players] with our laptops, so we can't utilize our own DVDs.*” This is interesting because peer educators also said they currently use indoor walking DVDs in their classes. Peer educators feel comfortable passing out equipment such as resistance bands and playing a walking DVD; however, there is a disconnect with them using the *Move More, Virginia!* DVDs. The created resource suite was meant to be a free exercise tool that they did not have to lead, but rather show in classes or distribute. The dissemination method of these resources was not ideal as instruction on how or when to use the materials was minimal.

Scope of practice was an additional barrier to incorporating physical activity into FNP. Many peer educators believe that delivering physical activity is not part of their job description because they are peer nutrition educators. Risk management, qualifications, liability, and safety were other factors mentioned related to scope of practice. Peer educators do not have the credentials of a personal trainer or group exercise instructor and are worried of the repercussions if a client gets injured while participating in their sessions. Clients are willing and wanting to receive physical activity information as found in Study 1, but peer educators are hesitant due to the aforementioned reasons. The *Move More, Virginia!* DVDs were an attempt to bridge the disconnect between peer educators and clients.

Physical Activity Facilitators

This theme had seven subthemes: incentive, support, equipment, health benefits, education, environment, and music. Peer educators discussed that incentives keep clients coming back to participate in FNP programs. FNP provides program participants a free resistance band to encourage at home exercise; however, instruction is not provided. The newly created

resources were an attempt to fill this gap in providing equipment along with education. Peer educators are aware of the health benefits of physical activity demonstrated by a participant sharing, *“the more muscle you develop, the more calories you are able to burn.”* The *Move More, Virginia!* DVDs can provide needed knowledge to further motivate retention of physical activity behaviors. All of these are important factors to consider when implementing physical activity resources and training materials.

Current Delivery of Physical Activity

This theme had six subthemes: informal evaluation, DVDs, lack of evaluation, stretching, equipment, and paper resources. Current programs that are delivered do not have an established means for evaluation; one participant shared they do not evaluate, *“because we’re not with them (clients) on a daily basis, we don’t have any other [measurement of physical activity participation] besides seeing them physically lose weight.”* Peer educators currently use indoor walking DVDs, paper resources such as informational hand-outs that explain how to exercise, and voluntarily leading participants in stretches throughout classes. Use of existing indoor walking DVDs show that peer educators are comfortable with using videos as a method of physical activity instruction.

Physical Activity Barriers

This theme had the fewest meaning units (MU = 16), with the subthemes of lack of immediate results, environment, and age. Peer educators indicated that the time it took to see results from physical activity was a personal barrier as one shared, *“I’ve exercised now for a year and it has taken a year for me to notice difference in stamina, strength, endurance... but it just doesn’t happen in a couple days.”* Environment also inhibited physical activity as some peer educators live in locations perceived as dangerous, having neighborhoods without sidewalks, and

they work in small or tight places that limit physical activity. When prompted to discuss what is needed to overcome physical activity barriers, a participant shared “*Space to do it because sometimes we’re in small spaces so you wanna be able to have enough room to spread out with your group.*” All of these factors are part of peer educators’ built environment, which they expressed they cannot change. The average peer educator age was 48.7(±9.5) years old so age as a barrier for peer educators was not surprising because physical activity declines with age.⁴⁰ Age should be taken into account when planning the creation of resources or physical activity organizational policy change. The *Move More, Virginia!* videos purposely included a cast of diverse ages from children to older adults for accurate representation of clientele. Personal peer educator physical activity barriers reveal that worksite wellness can be a potential avenue in which these videos can be utilized to allow FNP staff to become familiarized with the materials. See Table 4 for more information on peer educators’ thoughts and perceptions on physical activity.

Table 4.

FNP Peer Educator Thoughts and Perceptions on Physical Activity (n=15)

Theme	Theme Type	Subtheme	MU #	Participant #	Example MU
Barriers to incorporating physical activity into FNP (n= 189 MU)	Major	Technology	36	11	"I'm already carrying a portable kitchen to do a cooking demo, I don't want to have to carry a DVD player and a projector, and it's just a lot to carry already."
		Time	34	8	"...[our]curriculum doesn't lend for you to have an hour or a half an hour, 30 minutes of movement."
		Training needs	32	9	"Cause each peer educator probably uh has a different order on how they do their things."
		Scope of practice	27	11	"It's also a next step to what we can't do. Because we are not instructors, we are not certified, we are not supposed to be doing all of that [physical activity]."
		Lack of programmatic support	25	9	"Sometimes it gets confusing with what we're allowed to do, what we're not allowed to do and each district sometimes gets different information on lots of things that's supposed to be across the board with all of us, so that's confusing."
		Risk Management	23	8	"I wouldn't want to do it [physical activity] personally because I would not want to be responsible if they got hurt and liability was on us."
		Setting	7	5	"It [physical activity] wouldn't work for us, you know. You really do need to be in a space where you can workout."
	Minor	Job dissatisfaction	3	1	"That's why we have a big turnover. Because there's no fun in it [my job]. I can say I enjoyed it at one time. But everything has changed."
		Clothing	2	2	"We're not in gym clothes [so it makes delivering physical activity difficult]."
Physical activity facilitators (n=106 MU)	Major	Incentive	33	9	"So if they could get an incentive to join a gym or rec center or something like that, that would be"
		Support	22	7	"You know, um, even with walking, going to a gym, or even just being at someone's house, if it's two or more, or even two, that's, that can be a group. I seem to do better, because, again, you can conversate with that person, you can ask them to be talking about things as you're doing the whatever the movement is or whatever, and your mind will, you know, go elsewhere and you won't really be concentrating on the exercise."
		Equipment	13	7	"But that's what they do give us, they [FNP] give us resistance bands."
	Minor	Health benefits	12	5	"And the more muscle you develop, the more calories you are able to burn [when exercising]."
		Education	9	4	"Yeah because then the other thing will be is after we leave... will they continue? So the whole thing is to encourage them [clients] to start it themselves and really think about cause it's all about behavior change, lifestyle changes."

		Environment	9	3	“Most of the communities now, the low income areas, they’re building a walking trail.”
		Music	8	3	“[music] that represent the group and that you know they gonna like and get them moving [encourages physical activity]”
Current delivery of physical activity (n=102 MU)	Major	Informal evaluation	34	11	“Weight change ... getting on the scale and if they’ve lost weight.”
		DVDs	21	9	“It’s good that we lead them in things, we suggest things, we can model some things. Uh, whether it’s the DVDs, the exercise bands, ya know, walking groups.”
		Lack of evaluation	21	7	“I don’t evaluate. I never wanna put them [clients] on the spot.”
		Stretching	12	4	“I just [say], let’s get up and stretch. So we’ll just do this, touch our toes and do little twists. There’s no resource. It’s just me saying let’s, it’s time to do something”
		Equipment	11	7	“I show them how to use the resistance bands, what they can do, and with exercisin’ with the resistant bands.”
		Paper resources	3	3	“There is a handout that accompanies the resistance bands that you can give to them.”
Physical activity barriers (n=16 MU)	Minor	Lack of immediate results	9	3	“I do tell my participants that you know it does take a long time to see a difference [when starting physical activity].”
		Environment	4	3	“A lot of the neighborhoods the parents don’t necessarily feel safe letting their kids just go and play in the neighborhoods.”
		Age	3	2	“A lot of the seniors, a lot of them are not as mobile as others.”

During the focus groups, segments of the *Move More, Virginia!* videos were played for the participants and questions regarding their perceptions were asked from the semi-structured interview guide. Emergent themes included adaptations to videos, dissemination of videos, implementation of videos, negative video feedback, and positive video feedback.

Positive Video Feedback

This theme had six subthemes: positive perception of content, positive perception of different fitness levels, clear instructions, participant diversity, relatability of resources, and music. Peer educators enjoyed the variety of the video suite as it had core and full-body workouts, resistance band workouts, and included short cardio intervals. The inclusion of a video cast that differed in fitness levels such as beginner, intermediate, and advanced was also appealing because the materials were intended to be representative of the target population. For example, a participant said, *“I liked that there was someone demonstrating how to do each level.”* Peer educators discussed how these videos were relatable and applicable to their FNP programming.

Dissemination and Implementation of Videos

This theme had six subthemes: community partnership, negative training experience, lack of video knowledge, client home use, application of resources, and scope of practice. Community partnerships are essential to FNP because peer educators have to operate out of worksites, churches, schools, gyms, etc. to deliver their programming. Peer educators noted partnering with community partners such as the YMCA that has certified group exercise instructors could help lead participants through DVD use. In regards to the DVDs, a negative training experience was commonly associated with peer educators. Peer educators were first shown the DVDs at a statewide training in a small space where there was no air conditioning, to expand, one peer educator put it as, *“I didn’t think the training was the perfect place to display that [videos] on that particular day.”* Additionally, peer educators noted the statewide training was not appropriate because only *“the people who were leading it were dressed appropriately [to exercise].”* In the peer educators’ opinions, the dissemination of the videos was not organized

and lacked structure as *“a bunch of them [DVDs] did not play.”* Additionally, many peer educators were given blank CD’s mistakenly opposed to DVDs. This could have contributed to many peer educators not having knowledge of these materials. However, peer educators could see their clients using the resources at home as one peer educator was an advocate of telling clients to *“try it maybe at home, get back to me the next time we meet.”* DVDs are meant to be used anywhere, so client home use is applicable. From the peer educator perspective, this led them to perceive the materials as a resource for clients to use on their own rather than them having an implementation role. *“Well, I think I would not mind showing them a five-minute clip, but not necessarily have to go up there and tell, ok everybody get up and let’s do this,”* shows that scope of practice was still a concern. Peer educators do not wish to implement the DVDs because they believe it is not part of their job description or out of their scope of work thus contributing to the lack of implementation.

Adaptation to Videos

This theme had three subthemes: music, more representative participants, and variety of resources. Peer educators commented on the generic music or lack of music in videos and suggested to add *“maybe some familiar old songs, upbeat instead of that generic [music].”* Unfortunately, only copyright-free music was permitted for use. The IRPP suggests that the peer educators or participants play their own music preference while completing the workouts. A future direction could also be for the IRPP to distribute a playlist of songs that match the beats per minute for each workout. Although the video participants were of diverse genders, ethnicities, ages, BMI, and fitness levels the peer educators still perceived the videos as not representative enough of their clients. They wanted a video cast that was had larger BMIs, of more beginner fitness levels, and older age, exemplified by a participant stating *“have one*

[video] that has older people in it.” Finally, peer educators suggested adaptations in the form of more of a variety of DVDs such as yoga, Pilates, or stretching. All of the adaptations discussed here can serve as informed steps for future directions of the IRPP.

Negative Video Feedback

This theme had three subthemes: adaptability of resources, distraction, and discomfort. The videos were produced in a gym setting; however, more often than not, peer educators do not have gym access as stated by a participant, *“I think it’s really a video for if you was in a gym setting.”* Therefore, the adaptability of these resources were questioned; however, one potential solution could be for FNP to reproduce the videos in a home or office setting to increase adaptability. Additionally, the peer educators believed there were too many participants in the videos, thus causing distraction to the viewer. With so many moving people, it was difficult to know where to focus as demonstrated by a peer educator stating, *“it could be confusing to someone who’s trying to do it [videos] and, and they’re not really focused on the expert.”* Additionally, the peer educators that used the videos in practice noted that they associated certain floor-based exercises with the onset of pain or discomfort due to being on the floor for certain exercises. They were not advocates of the *“getting down on the floor part.”* Confounding variables such as age, inactivity, and fitness level could explain this phenomenon and should be accounted for in future implementation planning. See Table 5 for more information on peer educators’ perceptions on the *Move More, Virginia!* videos.

Table 5.

FNP Peer Educators' Perceptions of *Move More, Virginia!* Videos (n=15)

Theme	Theme Type	Subtheme	MU #	Participant #	Example MU
Positive video feedback (n= 115 MU)	Major	Positive perception of content	43	9	“Limited [video use], but I’ve used them, and people are very happy with them.”
		Positive perception of different fitness levels	26	11	“Now, I did like the beginner, intermediate, and advanced, you know, options.”
		Clear instructions	18	6	“And then, she was precise with her instructions.”
		Participant diversity	12	6	“You saw um, older, elderly people in the last video, male and female, so, all sizes, I thought it was enjoyable to watch.”
		Relatability of resources	10	10	“Because they have on their street clothes. They don't have on workout stuff. And so, to me, that would let, let people know, that you don't have to have the workout stuff to be able to do it.”
	Minor	Music	6	4	“Um, the music there. You know, if you're doing something different like Zumba. Zumba requires different music, so I guess it really depends on what type of exercise they're doing, so I thought their music was appropriate.”
Dissemination and Implementation of videos (n= 84 MU)	Major	Community partnership	32	7	“It would be a great to be able to partner with someone else in the community, be it a rec center, ... be it a gym, somebody that is certified, ... to do all of that with them.”
		Negative training experience	15	5	“Because we were at a training in Richmond, we were in this teeny-weeny room all jammed in, with no AC.”
		Lack of video knowledge	13	8	“First of all I've never seen that video, first time I'm seeing it.”
	Minor	Client home use	11	6	“It's actually beneficial to our program if we show them a three minute clip or a five minute clip on different exercises that they can try at home.”
		Application of resources	7	3	“When I did do it [use the physical activity videos], it was with a certain class; it was with the Slim Down class.”

		Scope of practice	6	2	“We're not actually leading it [physical activity], the video is.”
Adaptations to videos (n= 51 MU)	Major	Music	26	8	“Certain music gets me a little more motivated, and unfortunately that [generic music] didn't motivate me.”
		More representative participants	17	6	“To see three people in great shape, even though they're doing the beginner phase, I would like to show that someone who actually is a beginner can do it.”
	Minor	Variety of resources	8	4	“Just more [resources] like maybe stretching.”
Negative video feedback (n= 39 MU)	Major	Adaptability of resources	18	9	“That's not the kind of stretch bands we give out.”
		Distraction	16	7	“Having all of those people in the video, it's just too busy. Too many things go on, you know, too many people to watch.”
		Discomfort	5	3	“It [the video] really uses your knees a lot, and somebody who's not used to doing a lot of exercise, it hurt my knees.”

General Discussion

This was the first study, to our knowledge, to use formative data from both clients and peer educators on needed physical activity resources to accompany FNP programming and the degree to which they would be used in practice. The data indicate a disconnect between peer educators and clients related to integrating physical activity into FNP programming. Specifically, Study 1 revealed that clients cited numerous facilitators and advantages, such as health benefits of engaging in physical activity. The barriers they cited included time, cost, transportation, and weather. All of these barriers can be mitigated by the use of the DVD-based resources that would be free to clients and available for indoor use. The clients wanted exercise modifications, and people of diverse ethnicity, size, and age in the videos. Study 1 results indicated that clients are amenable to physical activity integration in FNP programming.

Therefore, while the DVD series that was developed met the needs of the clients, there were system-based barriers expressed by the peer educators. Based on their concerns, we need a) peer educators' scope of work to include physical activity, b) an app for a low-cost resource way for out of class use, and c) use of best practices when training peer educators on how to utilize the DVDs. Taken together, to aid in the reduction of the global obesity epidemic, peer educators targeting health behaviors should be eligible to deliver both nutrition and physical activity promotion. However, training, support, and resources are needed.

Related to the first point, physical activity promotion in Extension is relatively new. In fact, only 13 state Cooperative Extension systems include 'physical activity' as part of their statewide strategic plan.⁴¹ This lack of 'physical activity' language in strategic plans supports the peer educators' perceptions that physical activity is not part of their job description. Taking an IRPP approach, it is recommended that peer educators be a part of the physical activity

integration process from the beginning and have meaningful and clearly defined roles, and be engaged throughout the entire process. This study relied on input from FNP clients and peer educators to structure the material design and was reflective of their wishes.

Using the evidence that supports programs that include both nutrition and physical activity, may alleviate peer educators' concerns.⁴² Palmer-Keenan et al.⁴² assessed physical activity education's affects on dietary impacts with FNP clients. Results showed that nutrition education programming can be reduced by 15-20 minutes to allow time for physical activity demonstrations and in turn, physical activity behaviors increase without negatively impacting dietary outcomes. For example, Eating Smart, Being Active is a program designed for FNP peer educators to assist in educating low-income families on healthy eating habits and physical activity.⁴³ Auld et al. tested the effectiveness of this program in five states using pretests and posttests, finding Eating Smart Being Active is effective in eliciting positive behavior change.²² In 2011, 36 FNP programs reported using Eating Smart Being Active.⁴⁴

The choice of DVD resources was strategic as they are a low cost and wide reaching method to delivery physical activity.⁴⁵ From a research-evidence perspective, DVD-delivered physical activity program are effective.⁴⁶ Members of the IRPP shared that peer educators currently often use the *Indoor Walking!* series created by New Jersey FNP associates that includes a diverse cast.⁴² Not having a DVD player could pose as a barrier for some, so the IRPP looks forward to creating an app for the *Move More, Virginia!* resources. A study of Indiana's low-income population revealed that 78% had internet connection in their homes.⁴⁷ Thus, an open-access app has the potential to reach a large percentage of FNP clients in combination with the DVDs.

Finally, training on the integration of the materials and physical activity at large, could benefit from FNP setting an example for the importance of physical activity and being a leader in changing the culture surrounding it. Peer educators need instruction on how to use the DVDs.⁴⁸ An IRPP is ideal for this because the process encompasses co-learning between researchers and community members.⁴⁹ A result is that FNP educators will take ownership and pride in these DVDs. Through trust and open communication, physical activity will be sustainable in this organization. A future step of this work could be to create instructional videos for peer educators. This could be expensive, but may be a major contributor to getting the DVDs used more in practice. These how-to videos could play a vital role in increasing peer educators' self-efficacy to deliver physical activity while building long-term capacity.⁵⁰

Limitations

The IRPP does not have data related to the overall FNP client base, but exploring representativeness of these participating clients to the overall FNP client base would increase the generalizability of this study.⁵¹ The studies' small sample size and concentration on Greenville, VA is also a limitation. However, we can generalize the process or methods from these studies, but this research was customized for FNP. Different strategies may be needed when applying the methodology within different settings. Limitations specific to the *Move More, Virginia!* DVDs included restricted funding and resulted in being unable to use popular music during the video recording. This may have affected the video suite effectiveness on increasing physical activity and influence negative peer educator feedback. Research has shown that music people are familiar with can motivate individuals to work harder during physical activities.⁵² Still, the IRPP was able to identify copyright-free music with beats per minute that align with recommendations for aerobic exercise.⁵³ Lastly, members of the research team led the focus groups, this could have

influenced participants to respond in a certain manner or withhold true opinions on the topics discussed.⁵⁴

General Implications For Research and Practice

This IRPP initiated from a bottom-up approach, an FNP peer educator contacted the research team for a representative physical activity resource. This study fills the gap in practice to include a DVD cast that largely resembles the intended audience. Results of this study uncovered important information about the organization, finding numerous barriers to incorporating physical activity. DVDs are popular among individuals who exercise in a home setting, which eliminates confounding barriers such as time, transportation, weather.⁵⁵ Although the results of this study may not be generalizable across all Extension systems, the methodology can be used in future replication to determine peer educator readiness to use DVD (or other) resources. Researchers recommend strategies focused on progressing peer educators' job description to include physical activity, utilizing open access interfaces for resource distribution, and shifting the organizational culture surrounding physical activity while incorporating delivery during staff training. Pragmatic means for integrating physical activity into existing programming has not been identified, but this study helps the bridge the translational rift between organizational systems and physical activity.⁵⁶ Future research is needed to evaluate physical activity resource needs within FNP.

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Chapter 4

Preliminary research supports the need for physical activity resources that include visually representative participants (e.g., BMI, race, gender),¹ and that exercise DVDs are a viable means of delivering physical activity in community settings.² The studies that comprise this thesis work aimed to evaluate needs, perceptions, and use of physical activity materials. For the material development, the integrated research-practice partnership sought to include participants who represent diverse ethnicity, age, BMI, and fitness levels in the production of the visual materials. Overall, the goal of this project was to provide open-access physical activity materials with a cast of individuals who were representative of FNP clients as they were the target audience for use of the DVDs.

The results of this work highlight future steps needed for physical activity resources to be broadly adopted within FNP programs. Specifically, the work of this thesis highlights three areas of interest: a) promoting worksite wellness among Extension professionals, b) physical literacy among Extension professionals, and c) continued research-practice partnerships to ensure training needs are identified and delivered to those in need.

This thesis work indicates there is a ripe opportunity for worksite wellness among FNP peer educators. That is, if peer educators do not personally engage in physical activity, how can we expect them to teach the importance of it to their clients? Workplace physical activity interventions have the ability to improve employee health and worksite outcomes such as work culture and job stress.³ Programs that include leadership involvement, wellness screening activities, preventative interventions, and population-level strategies⁴ lead to success. Through the integrated research-practice partnership, the latter two factors are promoted through the DVDs. Employees who are early physical activity adopters can lead the way for others to follow

suit. In the long term, worksite wellness has the potential to shift the organizational culture within Extension to view physical activity in a positive light. This in turn, could increase peer educators' self efficacy to integrate physical activity into their programming because they themselves are participating in physical activity.

Secondly, physical literacy training is needed among Extension professionals. Physical literacy is defined as, “the ability to move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person.”⁵ Since FNP programming often targets “health behaviors” and chronic disease prevention and management; physical literacy objectives could be added to program goals. Additionally, physical literacy could be measured as a tangible outcome of an FNP program or lesson. Future directions for the DVDs are to add segments to the beginning of each resource, instructing peer educators on how to use the materials in their classes, educating them on the latest physical activity research, and sharing useful lifestyle tips to share with participants. These suggestions will help to increase physical literacy within Extension employees.

Third, as peer educators work with autonomy, they are not required to deliver programs with emphasis on physical activity promotion. To improve physical activity integration, resources and programmatic support are needed. FNP has been an organization based on nutrition for years, so it is not surprising there are difficulties in shifting emphasis to also include physical activity. Research-practice partnerships can help overcome these difficulties and strengthen the educational aspects of FNP. When researchers and community collaborators working together to develop sustainable programs, community needs are a priority. A collaborative approach is ideal as the focus is on both research and practice-based evidence to aid intervention sustainability.⁶ Including members from systems in which physical activity can

be integrated may create the needed infrastructure for increased health behaviors. Taken together, engaging in a research-practice partnership to tailor physical activity programming that meets the needs of the priority population may have a greater impact than the typical efficacy-effectiveness-translational pipeline.⁷ A continuation of use of these partnerships will help ease the integration of physical activity into FNP over time and may improve the rate at which physical activity is implemented.⁸

Final Thoughts

After data collection, analysis, and the above interpretation I could not help but think of the time old question of which is more important, nutrition or physical activity? At the end of day these two health behaviors are going to be competing for programmatic resources. The question remains, must they compete? The case can be made that everyone eats and needs food to survive, but physical activity is not necessary to live. However, we need to change that mindset because physical activity can improve health outcomes and prolong life. Instead of nutrition vs. physical activity, the discussion should be around nutrition *and* physical activity. We all have one life, one body to live in, so why not make the best of it?

As a senior in the Department of Human Nutrition, Foods, and Exercise I was afforded the opportunity to contribute to the development of these DVDs. At the time, I—and the partners on this work—were not aware that we were at the beginning stages of a research-practice partnership. The materials developed in the spring 2015 were in response to a peer educator's need for free exercise resources. Members of the lab I was assisting and myself realized that these DVDs should be developed with evidence-based principles for exercise as well as the inclusion of a diverse cast. Study 1 was completed before I started graduate school. When I was tasked with deciding my thesis topic, I listed the pros and cons of every project I was

contributing to, but I still could not decide on one. Ultimately, I went with the project I enjoyed the most. The production of the DVDs was the first time in my graduate career I had the opportunity to engage in community outreach, I made connections with people, in my eyes I was making a difference.

In retrospect, that feeling alone gave me enough drive to turn a small side project into a full fledged thesis by introducing the peer educators. I can only hope that our DVDs made a lasting impact. The take home message of this project is that you do not have to move outside, move far, move with others, or move for long, but to simply *Move More!*

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Appendix A: Study I Client Surveys

Part A: Tell us about yourself.

1) Age _____

2) Sex: 1 Male 2 Female

3) **About how tall are you without shoes?**

_____ feet _____ inches

4) **About how much do you weigh without shoes?**

_____ lbs

5) **I consider (or have been told by a physician) that my weight status is classified as:**

1 Underweight

2 Normal weight

3 Overweight

4 Obese

5 Don't know

6) **Has your weight changed during the past 6 months?**

1 No

2 Yes (If yes, please continue)

3 Decreased by < 5 pounds

4 Decreased by 6-10 pounds

5 Decreased by > 10 pounds

6 Increased by < 5 pounds

7 Increased by 6-10 pounds

8 Increased by > 10 pounds

7) **Please indicate which of the following best describes you (check all that apply):**

1 White

2 Black or African American

3 Asian

4 American Indian/Alaskan Native

5 Native Hawaiian or Other Pacific Islander

6 Not sure

7 Other: _____

8) **Please indicate which of the following best describes you:**

1 Hispanic or Latino

- 2 Not Hispanic or Latino
- 3 Unsure

9) Please mark the highest grade of school that you have completed.

- 1 Less than High School
- 2 High school/ GED
- 3 Some college
- 4 College graduate
- 5 Post college work

10) What is your employment status?

- 1 Employed for wages
- 2 Self-Employed
- 3 Out of work for more than 1 year
- 4 Out of work for less than 1 year
- 5 A homemaker
- 6 A student
- 7 Retired
- 8 Disabled/unable to work

11) What was your total HOUSEHOLD income in 2014?

- 1 Less than \$15,000
- 2 \$15,000 to \$29,999
- 3 \$30,000 to \$49,999
- 4 \$50,000 to \$90,999
- 5 \$100,000 or more

12) What is your marital status?

- 1 Single
- 2 Married
- 3 Widowed
- 4 Separated
- 5 Divorced
partner
- 6 Living common-law or living with

PART B: Health

1) In general, compared to other persons your age, how would you rate your health?

- 1 Extremely healthy
- 2 Somewhat healthy
- 3 Not healthy
- 4 Very unhealthy
- 5 Don't know

2) Over the past 6 months, has your health:

- 1 Gotten better
- 2 Gotten worse
- 3 Stayed the same

3) What is your smoking status?

1 Currently smoke 2 Do not smoke 3 Ex-smoker

4) **Over the past 4 weeks have you had physical difficulty completing your normal daily activities?**

- 1 Yes
 1 Quite a bit
 2 Moderately
 3 A little bit
2 No

5) **Over the past 4 weeks have you experienced bodily pain?**

- 1 Yes
 1 Regularly
 2 Occasionally
 3 Rarely
5 No

6) **How confident are you that you can engage in moderate physical activities (e.g., not exhausting, light perspiration) for 30 minutes for 5 or more days per week?**

- 1 Not at all 2 Somewhat 3 Moderately 4 Very 5 Completely

7) **Physical activity over the past week.**

Considering the past 7-day period (last week), how many times did you do the following kinds of exercise for more than 15 minutes during your free time (write on each line the appropriate number)? Only count exercise that was done during free time (i.e., not occupation or housework). Note that the main difference between the three categories is the intensity of the exercise.

Please write the average frequency on the first line and the average duration on the second line.

	Times Per Week	Average
	Duration	(Minutes Per Session)
a. STRENUOUS EXERCISE (HEART BEATS RAPIDLY, SWEATING) (e.g., running, jogging, hockey, soccer, squash, cross country skiing, vigorous swimming, vigorous long distance bicycling, vigorous aerobic dance classes, heavy weight training)	_____	_____
b. MODERATE EXERCISE	_____	_____

(NOT EXHAUSTING, LIGHT PERSPIRATION)
 (e.g., fast walking, baseball, tennis, easy bicycling,
 volleyball, badminton, easy swimming, alpine skiing,
 popular and folk dancing)

c. MILD EXERCISE _____
 (MINIMAL EFFORT, NO PERSPIRATION)
 (e.g., easy walking, yoga, bowling)

6) What are the physical activity recommendations for most adults?

- 1 30 minutes of moderate intensity physical activity 5 days a week
- 2 20 minutes of moderate intensity physical activity 3 times per week
- 3 60 minutes of moderate intensity physical activity most days of the week
- 4 Unsure

7) The amount of physical activity I engage in is:

- 1 Less than the recommended amount of physical activity
- 2 Meeting physical activity recommendations
- 3 More than the physical activity recommendations
- 4 I do not engage in physical activity
- 5 Unsure

8) Over the past 6 months, has your physical activity:

- 1 Increased
- 2 Decreased
- 3 Stayed the same

PART C: Confidence

Please answer the following questions using this scale:

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Not at All										Completely
Confident										Confident

How confident are you that you can stick with eating healthful foods...

- 1) ...even if you need a long time to develop the necessary routines. _____ %
- 2) ...even if you have to try several times until it works. _____ %
- 3) ...even if you have to rethink your entire way of nutrition. _____ %
- 4) ...even if you have to make a detailed plan. _____ %

How confident are you that you can be physically active...

- 5) ...even if you need a long time to develop the necessary routines. _____ %
- 6) ...even if you have to try several times until it works. _____ %

7) ...even if you have to rethink your entire way of physical activity. _____ %

8) ...even if you have to make a detailed plan. _____ %

How confident are you that you can lose weight ...

9) ...even if you need a long time to develop the necessary routines. _____ %

10) ...even if you have to try several times until it works. _____ %

11) ...even if you have to rethink your entire way of losing weight. _____ %

12) ...even if you have to make a detailed plan. _____ %

PART D: Attitudes and Intentions

Over the next three months:	Completely Disagree	Disagree	Neither agree nor disagree	Agree	Completely Agree
1. I intend to do physical activity at least 3 times each week	1	2	3	4	5
2. I plan to do physical activity at least 3 times each week.	1	2	3	4	5
3. I am determined to do physical activity at least 3 times each week.	1	2	3	4	5

PART E: Use of fitness videos

8. How often have you used the video we produced in the spring?

- 1 Never
- 2 Occasionally
 - 1 1-2 times per month
 - 2 3-4 times per month
- 3 Regularly
 - 1 1-2 times per week
 - 2 3-4 times per week
 - 3 5+ times per week

9. Did you use the entire video each time?

- 1 Yes
- 2 No *(add display logic when this is selected:*
 - If not, how long did you normally exercise along with the video?*
 - < 10 minutes*
 - About 15 minutes*
 - About 20 minutes*
 - About 25 minutes*

10. Did you use the video with anyone else?

- 1 Yes (*Add display logic: **If yes, who?***)
 - 1 Spouse / significant other
 - 2 Kids
 - 3 Parent
 - 4 Extended family members
 - 5 Friends
 - 6 Other: (*allow text entry*)

Appendix B: Study I Focus Group Questions

1. Beliefs about physical activity and exercise:
 - A. Is there a difference between physical activity and exercise?
 - B. What are your beliefs about exercise? About physical activity?
 - C. Are there benefits to being physically active and / or exercising?
 - D. Are there risks to being physically activity and / or exercising?
2. What are the obstacles / barriers to being physically active?
3. What are the obstacles / barriers for exercise?
4. What things do you do to be physically active? Exercise?
5. Describe the things you have access to help you be physically active? (i.e. fitness facility, walking trails / sidewalks, fitness equipment, internet, mobile devices such as iPods, etc., fitness videos, fitness classes, etc.)
6. What types of things would improve your ability to be physically active / exercise?
7. What motivated you to volunteer for this video?
8. How do you keep track of your physical activity?
9. What are your fitness goals? What types of things can help you achieve these goals?

Video Content:

10. Can you describe some of the content you would like included in the videos.
Probes: Resistance bands, yoga, chair, upper body, lower body, dance-based, family-based, etc.
11. What is your impression of a video that incorporates equipment?
Probes: options for resistance band, free weights, stability ball, etc.
11. How long do you think you would continue to use a fitness video?
Probes: What would make you discontinue use? What would help you to continue to use the videos?
12. Please describe how frequently you would use the videos.
13. Please describe when you would use the videos.
14. Please describe where you would use the videos.
15. Please describe with whom you would use the videos.

For program administrators:

1. How have you used the fitness videos with your participants?

Appendix C: Study II Peer Educator Survey

Part A: Tell us about yourself.

1) County (ies) or city (ies) I serve: _____

2) How long have you worked for the Virginia Family Nutrition Program (EFNEP and SNAP-Ed)?

_____ years _____ months

3) Age _____

4) Sex: 1 Male 2 Female

5) **About how tall are you without shoes?**

_____ feet _____ inches

6) **About how much do you weigh without shoes?**

_____ lbs

7) **Please indicate which of the following best describes you (check all that apply):**

- 1 White
- 2 Black or African American
- 3 Asian
- 4 American Indian/Alaskan Native
- 5 Native Hawaiian or Other Pacific Islander
- 6 Not sure
- 7 Other: _____

8) **Please indicate which of the following best describes you:**

- 1 Hispanic or Latino
- 2 Not Hispanic or Latino
- 3 Not sure

9) **Please mark the highest grade of school that you have completed.**

- 1 High school/ GED
- 2 Some college
- 3 College graduate
- 4 Post college work

Part B: Physical activity

10) What are barriers do you have to physical activity: check all that apply

- 1 Lack of time

- 2 Inconvenience
- 3 Lack of self-motivation
- 4 Not enjoyable
- 5 Boring
- 6 Low self-efficacy
- 7 Fear of injury
- 8 Lack of self-management skills
- 9 Lack of support
- 10 Not having parks, sidewalks, etc. in convenient locations
- 11 Other: _____

11) Compared to other people of your own age would you describe yourself as...

- 1 Not at all physically active
- 2 Not very physically active
- 3 Fairly physically active
- 4 Very physically active

12) What are the physical activity recommendations for most adults?

- 1 30 minutes of moderate intensity physical activity 5 days a week
- 2 20 minutes of moderate intensity physical activity 3 times per week
- 3 60 minutes of moderate intensity physical activity most days of the week
- 4 Unsure

Part C: IPAQ

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the last 7 days. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the vigorous activities that you did in the last 7 days. **Vigorous** physical activities refer to activities that **take hard physical effort and make you breathe much harder than normal**. Think only about those physical activities that you did for at least 10 minutes at a time.

1. During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling?

_____ days per week

No vigorous physical activities Skip to question 3

2. How much time did you usually spend doing vigorous physical activities on one of those days?

_____ hours per day _____ minutes per day

_____ Don't know/Not sure

Think about all the moderate activities that you did in the last 7 days. **Moderate** activities refer to activities that take **moderate physical effort and make you breathe somewhat harder than normal**. Think only about those physical activities that you did for at least 10 minutes at a time.

3. During the last 7 days, on how many days did you do moderate physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ days per week

No moderate physical activities Skip to question 5

4. How much time did you usually spend doing moderate physical activities on one of those days?

_____ hours per day _____ minutes per day

_____ Don't know/Not sure

Think about the time you **spent walking** in the last 7 days. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

5. During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

_____ days per week

No walking Skip to question 7

6. How much time did you usually spend walking on one of those days? _____ hours per day

_____ minutes per day

_____ Don't know/Not sure

The last question is about the time you spent **sitting** on weekdays during the last 7 days. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

7. During the last 7 days, how much time did you spend sitting on a weekday? _____ hours per day

_____ minutes per day

_____ Don't know/Not sure

Part D: FNP Physical Activity Resources and music

Move More, Virginia! Physical activity resources consist of client testimonials, promotional videos, a 7-minute high intensity interval training video, a 30-minute fully body workout video, two core workout videos, and 2 resistance band videos. All of which are open-access and available on YouTube. DVD's are also available.

13. Were you aware of the *Move More, Virginia!* physical activity resources?

- 1 Yes [survey logic, if yes show questions 14, 15, 16, 17, 18]
- 2 No [survey logic, go to question 19]
- 3 Not sure

14. Have you used the *Move More, Virginia!* physical activity resources in your programs?

- 1 Yes
- 2 No

15. Over the next three months, I intend to use the *Move More, Virginia!* materials.

- 1 strongly disagree
- 2 disagree
- 3 neither disagree or agree
- 4 agree
- 5 strongly agree

16. Thinking about the *Move More, Virginia!* materials, they seem to be:

Extremely Useful	1	2	3	4	5	6	7	Extremely Useless
Extremely Enjoyable	1	2	3	4	5	6	7	Extremely Unenjoyable
Extremely Wise	1	2	3	4	5	6	7	Extremely Foolish
Extremely Pleasant	1	2	3	4	5	6	7	Extremely Unpleasant
Extremely Beneficial	1	2	3	4	5	6	7	Extremely Harmful
Extremely Interesting	1	2	3	4	5	6	7	Extremely Boring

17. Thinking about the *Move More, Virginia!* materials, I think MY CLIENTS will find them to be:

Extremely Useful	1	2	3	4	5	6	7	Extremely Useless
------------------	---	---	---	---	---	---	---	-------------------

Extremely Enjoyable	1	2	3	4	5	6	7	Extremely Unenjoyable
Extremely Wise	1	2	3	4	5	6	7	Extremely Foolish
Extremely Pleasant	1	2	3	4	5	6	7	Extremely Unpleasant
Extremely Beneficial	1	2	3	4	5	6	7	Extremely Harmful
Extremely Interesting	1	2	3	4	5	6	7	Extremely Boring

18. I think my clients will use the *Move More, Virginia!* materials outside of the programs I lead:

- 1 strongly disagree
- 2 disagree
- 3 neither disagree or agree
- 4 agree
- 5 strongly agree

19. Music is a motivator when engaging in physical activity. Do you.....?

- 1 strongly disagree
- 2 disagree
- 3 neither disagree or agree
- 4 agree
- 5 strongly agree

20. Email (for compensation purposes): _____

Thank you for your participation in this survey! If you are interested in participating in a 90 - minute focus group at the Family Nutrition Program training in Richmond, VA on June 21, 2016 at 5:30 pm, complimentary dinner and a \$25 gift card will be provided, please fill out the information below:

This information is provided solely to help us link written responses to your verbal responses at the focus group.

Example Name John Smith
 Example Birthday: March 5
 Example ID: JOHSMI53

ID 1. First three letters of your FIRST NAME: ___ ___ ___

ID 2. First three letters of your LAST NAME: ___ ___ ___

ID 3. Birthday: _____ (Day)_____ (Month-Number)

Follow this link (hyperlink) to complete your sign up. You will be asked to provide your participant identification code again and email.

Appendix D: Study II Focus Group Questions

I'm going to start with questions related to current physical activity resources and FNP goals

1. What physical activity resources do you currently use in your programming?
2. What physical activity resources do you need for your programming?
3. How do you currently evaluate changes in participants' physical activity? What advice do you have on how we can best measure physical activity for your participants?
Probe: how to best incorporate physical activity components into your lessons
4. What do you think the ideal exercise integration of physical activity into FNP programming looks like?
Probes: goals for future
5. What would you need to help sustain physical activity into your programs?
Probes: Support from FNP
6. What are the ideal characteristics of someone leading or demonstrating physical activity?
7. What role does physical activity play in weight management?
Probe: How might FNP modify current programs to enhance the weight management skills your participants need?

Move More, Virginia! Campaign and video questions

8. Are you aware of the *Move, More Virginia!* physical activity video resource suite for facilitating physical activity in your programs and as incentives for your participants?
Probes: How did you hear about it? Have you used them? Initial thoughts?

“Now I’m going to play a brief video clip from the 7 minute high intensity interval training video.” [Clip: 0:00- 1:50](#)

8. What did you like about this video?
9. What are your suggestions for improvements to make it more useful for your participants?
Probes: music, intensity levels

“Now I’m going to play a brief clip from the 15-minute Stretch band workout” [Clip: 1:59-3:21](#)

10. What did you like about this video?
11. What are your suggestions for improvements to make it more useful for your participants?
12. What are your thoughts on exercise videos that have participants of different
 1. Ages
 2. Body size

3. Race/ethnicity

13. Please share your feedback on the music from the video.

Probes: changes, like, dislike, importance

“Now I’m going to play a brief clip from the 30-minute Stretch band workout” [Clip: 1:58-3:20](#)

14. What did you like about this video?

15. What are your suggestions for improvements to make it more useful for your participants?

16. What are your thoughts on the music included?

Intention, attitudes, and overall suggestions

17. What are your thoughts that the videos are _____

1. Useful/useless
2. Enjoyable/unenjoyable
3. Wise/foolish
4. Pleasant/unpleasant
5. Beneficial/harmful
6. Interesting/boring

18. What is the likelihood you will use these resources in your lessons?

19. What would make you more likely to use them?

20. Would you recommend using this to other peer educators?

21. What suggestions for improvement do you have?

Appendix E: Study II Peer Educator Knowledge, Thoughts and Perceptions of the *Move More, Virginia!* Materials

Question:	
Were you aware of the <i>Move More, Virginia!</i> physical activity resources?, %	<i>Yes</i> 58.1
	<i>No</i> 22.6
	<i>Not Sure</i> 12.9
Have you used the <i>Move More, Virginia!</i> physical activity resources in your programs?, %	<i>Yes</i> 29
	<i>No</i> 29
Over the next three months, I intend to use the <i>Move More, Virginia!</i> materials., %	<i>Strongly disagree</i> 6.5
	<i>Disagree</i> 3.2
	<i>Neither disagree or agree</i> 12.9
	<i>Agree</i> 29
	<i>Strongly agree</i> 6.5
Thinking about the <i>Move More, Virginia!</i> materials, they seem to be (M, SD)	<i>Useful-useless</i> 2.94 (±1.65)
	<i>Enjoyable-unenjoyable</i> 2.82 (±1.67)
	<i>Wise-foolish</i> 2.94 (±1.69)
	<i>Pleasant-unpleasant</i> 2.81 (±1.72)
	<i>Beneficial-harmful</i> 2.41 (±1.73)
	<i>Interesting-boring</i> 3.00 (±1.71)
Thinking about the <i>Move More, Virginia!</i> materials, I think MY CLIENTS will find them to be (M, SD)	<i>Useful-useless</i> 2.88 (±1.41)
	<i>Enjoyable-unenjoyable</i> 2.88 (±1.41)
	<i>Wise-foolish</i> 3.19 (±1.38)
	<i>Pleasant-unpleasant</i> 3.06 (±1.39)
	<i>Beneficial-harmful</i> 2.82 (±1.47)
	<i>Interesting-boring</i> 3.00 (±1.37)
I think my clients will use the <i>Move More, Virginia!</i> materials outside of the programs I lead, %	<i>Strongly disagree</i> 9.7
	<i>Neither disagree or agree</i> 16.1
	<i>Agree</i> 32.3

Music is a motivator when engaging in physical activity., %

<i>Strongly disagree</i>	16.1
<i>Disagree</i>	0
<i>Neither disagree or agree</i>	3.2
<i>Agree</i>	19.4
<i>Strongly agree</i>	54.8

Appendix F: IRB Permission Letters



Office of Research Compliance
Institutional Review Board
North End Center, Suite 4120, Virginia Tech
300 Turner Street NW
Blacksburg, Virginia 24061
540/231-4606 Fax 540/231-0959
email irb@vt.edu
website <http://www.irb.vt.edu>

MEMORANDUM

DATE: July 18, 2016
TO: Samantha Marie Harden, Austin Nicole Brooks, Alicia Everette, Renee Selberg-Eaton
FROM: Virginia Tech Institutional Review Board (FWA00000572, expires January 29, 2021)
PROTOCOL TITLE: FNP Exercise Demonstration Survey
IRB NUMBER: 15-395

Effective July 18, 2016, the Virginia Tech Institutional Review Board (IRB) Chair, David M Moore, approved the Continuing Review request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at: <http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As: **Expedited, under 45 CFR 46.110 category(ies) 5,6,7**
Protocol Approval Date: **August 7, 2016**
Protocol Expiration Date: **August 6, 2017**
Continuing Review Due Date*: **July 23, 2017**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
An equal opportunity, affirmative action institution

MEMORANDUM

DATE: June 21, 2016
TO: Samantha Marie Harden, Alicia Everette, Austin Nicole Brooks, NithyaPriya Priya Shivanthi Ramalingam, Elena L Serrano, Megan Craig, Daniel Giraldo Herrera, Shelby Alexis Keye, Rachael Harris
FROM: Virginia Tech Institutional Review Board (FWA00000572, expires January 29, 2021)
PROTOCOL TITLE: Family Nutrition Program Move More, Virginia! Physical Activity Resources
IRB NUMBER: 16-441

Effective June 21, 2016, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the Amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As: **Expedited, under 45 CFR 46.110 category(ies) 5,6,7**
Protocol Approval Date: **April 28, 2016**
Protocol Expiration Date: **April 27, 2017**
Continuing Review Due Date*: **April 13, 2017**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

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