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First Things First: Assessing Needs, Comfort, and Role Clarity for Physical Activity Promotion

Laura E. Balis

Virginia Tech and University of Wyoming Extension, laura.e.balis@gmail.com

Thomas E. Strayer III

Vanderbilt University Medical Center, thomas.e.strayer@vumc.org

Samantha M. Harden

Virginia Tech, harden.samantha@vt.edu

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First Things First: Assessing Needs, Comfort, and Role Clarity for Physical Activity Promotion

Laura E. Balis

Virginia Tech

University of Wyoming Extension

Thomas E. Strayer III

Vanderbilt University Medical Center

Samantha M. Harden

Virginia Tech

Extension has recently begun delivering physical activity programs, but delivering evidence-based interventions is a challenge. To increase adoption of evidence-based interventions, a better understanding of agents' perceptions and needs is necessary. The purpose of this research was to conduct a readiness assessment to identify organizational factors and agent perceptions that speed or impede uptake of evidence-based physical activity programs. Data were gathered from agents through a sequential mixed-methods design informed by the RE-AIM (reach, effectiveness, adoption, implementation, maintenance) framework. A survey assessed current work status, demographic variables, physical activity levels, and time spent on programming tasks. Semi-structured focus group questions included current physical activity programs, integration of physical activity into current programs, and barriers and facilitators of physical activity programming. Agents were willing to adopt physical activity programs into their schedule but experienced barriers. Notably, agents perceived a lack of training and evaluation tools for measuring impact. As for organizational factors, "physical activity" was not in their job descriptions, and integrating physical activity with nutrition programs was perceived as a better fit within the USDA-funded system. Understanding the factors that impede adoption is critical for ensuring physical activity program uptake to influence public health behaviors.

Keywords: physical activity, adoption, Extension, mixed-methods, needs assessment

Introduction

Implementing and evaluating evidence-based interventions in community-based organizations is challenging (Bach-Mortensen et al., 2018). However, it has become a necessity as funders and

Direct correspondence to Laura Balis at laura.e.balis@gmail.com

stakeholders ask for accountability for their investments (Fetsch et al., 2012). One system that has recently been tasked with ensuring that the interventions they deliver are evidence-based is the land-grant university Cooperative Extension System (herein: Extension) (Dunifon et al., 2004; Fetsch et al., 2012). While Extension's roots are in agriculture and home economics (U.S. Department of Agriculture, n.d.-b), the system has recently been charged with addressing chronic disease prevention (Braun et al., 2014). Extension has previously delivered nutrition programs (U.S. Department of Agriculture, n.d.-b) but did not strategically focus on physical activity promotion until 2014 (Harden, Lindsay, et al., 2016; U.S. Department of Agriculture, 2015). To date, individual state Extension systems have successfully implemented physical activity programs (Harden, Lindsay, & Gunter, 2018; Harden, Balis, et al., 2020), but challenges remain in ensuring that programs delivered are evidence-based (i.e., findings published in a peer-reviewed journal; Balis, Strayer, Ramalingam, Wilson, & Harden, 2018; Harden, Ramalingam, et al., 2019; National Cancer Institute, 2020).

One barrier to implementing evidence-based interventions in Extension is that the system struggles with scaling-out programs (i.e., delivering to a new population and /or through a new system) (Aarons et al., 2017) between states (Balis, Strayer, Ramalingam, Wilson, & Harden, 2018; Harden, Ramalingam, et al., 2019). Both specialists and Extension educators/agents (herein: agents) often develop their own unique programs rather than collaborating to adopt effective programs from other states. For example, a systematic review reported that there were currently over 17 different older adult physical activity programs implemented across 15 state Extension systems, and most of these programs were not evidence-based (Balis, Strayer, Ramalingam, Wilson, & Harden, 2018). Indeed, agents have reported preferring to create their own programs (which may not be evidence-based) rather than adopt specialists' programs (which may not work in the real world) (Ressler, 2017). To avoid program duplication and inefficient use of resources, specialists and agents need to work together to adopt and adapt programs that are evidence-based and meet the needs of those who will ultimately deliver them.

One way to support the interactivity of agents and specialists in determining state-level needs is to conduct needs assessments, develop advisory boards, and adapt existing interventions to fit the needs of the system. Part of the needs assessment must include Extension agents' personal and professional characteristics, as they are key determinants in program uptake (Damschroder et al., 2009; Rogers, 2003). For example, an agent's academic preparation, on-the-job training, and comfort with physical activity programs influence physical activity program uptake (Downey et al., 2012; Estabrooks et al., 2004). Other factors related to perceptions of physical activity that may affect programming adoption, implementation, and system-level maintenance are unknown. In addition to understanding perceptions of physical activity interventions, the proportion of time Extension agents spend on specific intervention tasks (e.g., program identification, adaptation, delivery) is generally unknown and may influence the capacity to adopt new programs.

Therefore, the purpose of the study was to conduct a readiness assessment for concerted efforts for physical activity intervention and identify organizational factors and agent perceptions that speed or impede uptake of evidence-based physical activity programs. The approach, lessons learned, and implications have generalizability to other state systems and other systems interested in integrating evidence-based programming that is novel to their system.

Methods

Study Design

The RE-AIM (reach, effectiveness, adoption, implementation, maintenance) framework (Glasgow et al., 1999) was used to inform the iterative approach to integrating evidence-based physical activity interventions into the state system. RE-AIM is used to improve the planning and process of translating research to practice (Balis, John, & Harden, 2019; Gaglio et al., 2013), and it includes perceptions of both individual and system-level factors related to physical activity programming. The needs assessment included Extension agents' attitudes toward physical activity programs, current physical activity programming status, amount of time spent on program components, and factors that affect physical activity programming adoption, implementation, and system-level maintenance. A mixed-methods approach (i.e., equal emphasis on the quantitative and qualitative findings; Creswell, 2013) was used.

Participants and Recruitment

An email was sent to all Extension agents of the state within Family and Consumer Sciences and 4-H ($N = 129$), inviting them to take part in the online survey and focus groups. The Extension agents had responsibilities ranging from nutrition education to human development and finance. The final question of the online survey asked participants if they would be willing to participate in a focus group. Those who were willing were invited to attend one of two focus groups held in their local districts. The study was approved by the institutional review board at Virginia Tech; all participants provided implied consent with the return of the survey and written consent before focus groups.

Procedures

Survey. The survey contained multiple-choice, rating-scale, and open-ended questions that addressed current work status, educator demographic variables, participant physical activity levels, and time spent in RE-AIM dimensions. For current work status, participants were asked to specify the number of years they had worked in Extension, their comfort level delivering physical activity programs (5-point Likert scale), and their intention (based on the stages of change model; Prochaska & DiClemente, 1992) to deliver physical activity programs. In addition to standard demographic items, other questions were asked about current health status and self-efficacy in meeting physical activity guidelines. As for physical activity levels, the Godin

Leisure Time Physical Activity Questionnaire (Godin & Shephard, 1985) was used for participants to self-report the frequency and duration of strenuous, moderate, and mild exercise performed within the preceding seven days. Finally, participants were surveyed regarding their time spent with reach, adoption, implementation, and maintenance. These RE-AIM dimensions were selected to understand agents' tasks that may influence the overall impact of programs (e.g., to assess implementation, the survey asked about the amount of time spent developing and/or refining program materials).

Focus Groups. Two one-hour focus groups of four participants each were conducted by two coauthors with focus group experience. The focus groups were semi-structured with a predefined set of questions and were recorded on a digital sound recorder. The participants were asked for their insights on types of physical activity programming currently delivered, physical activity guidelines for youth and adults, physical activity objectives sought after in current programs, ways in which physical activity objectives can be integrated into current programs, barriers for physical activity programming, facilitators and resources for physical activity programming, cross-programming opportunities, and program evaluations.

Data Analysis

Surveys. Surveys were analyzed using SPSS (IBM, Version 25). Descriptive statistics of all variables were calculated. Participants' time spent performing physical activity was converted into whether or not they met national physical activity guidelines (150 minutes of moderate physical activity per week or 75 minutes of vigorous physical activity or an equivalent combination; U.S. Department of Health and Human Services, 2018). Representativeness of those who participated in the survey only to those who participated in both the survey and focus group was calculated through independent samples *t*-test (age and years in Extension) and Fisher's exact test (categorical variables).

Focus groups. Dependability and confirmability were established using independent coders, a sound audit trail (Cutcliffe & McKenna, 2004), and third-party moderators. Focus group data were transcribed verbatim by research assistants and cross-checked. For qualitative approach rigor, the research team established a thematic coding system based on the RE-AIM framework (Kessler et al., 2012; Shanks & Harden, 2015). Six researchers independently coded the transcripts. Coders were put in pairs of novice and more veteran RE-AIM researchers. All authors were trained to identify and resolve meaning units (Elo & Kyngäs, 2008). Meaning units were collapsed into category, subtheme, and RE-AIM dimension theme.

Results

Quantitative

Sixty-nine Extension agents of the 130 eligible (53%) participated in the online survey. The dominant demographic was White (85%) female (87%) with an average age of 43 (± 13) years. A majority (90%) of participants rated their health between good and excellent. Eighty-three percent of participants were not comfortable delivering physical activity programs. Eight Extension agents participated in the focus groups; they were primarily White (88%) females (88%) with an average age of 46 (± 15) and health rated as good or better (100%); they were all comfortable (or neutral) delivering physical activity programs. Comparing the survey respondents to those who also participated in the focus groups, there was no significant difference ($p < .05$) in terms of age ($p = .505$), average years in position ($p = .993$), gender ($p = 1.00$), race ($p = 1.00$), comfort delivering physical activity programs ($p = .342$), current programming status ($p = .708$), self-reported health status ($p = 1.000$), confidence in meeting physical activity recommendations ($p = .337$), or physical activity index ($p = .717$). See Table 1 for demographic work-related item variables from the survey and focus group participants.

Table 1. Extension Agent Demographics and Work Characteristics

Variable	Survey Only <i>n</i> = 61	Survey and Focus Group <i>n</i> = 8
Demographic and Work Characteristics		
Age, years, <i>M</i> (<i>SD</i>)	42.52 (± 12.8)	46.13 (± 14.8)
Average years in position, <i>M</i> (<i>SD</i>)	10.0 (± 14.10)	10.63 (± 11.02)
Gender <i>N</i> (%)		
Female	51 (85)	7 (88)
Male	9 (15)	1 (12)
Race <i>N</i> (%)		
White	58 (88)	7 (88)
Other race	8 (12)	1 (12)
Comfort delivering PA programs <i>N</i> (%)		
Very uncomfortable to uncomfortable	52 (83)	0 (0)
Neutral to very comfortable	11 (17)	8 (100)
Current programming status, <i>N</i> (%)		
Precontemplation to contemplation phases	41 (65)	6 (75)
Preparation to maintenance phases	22 (35)	2 (25)
Health Behaviors		
Health status, <i>N</i> (%)		
Poor to fair	6 (10)	0 (0)
Good to excellent	53 (90)	8 (100)
Confidence for meeting PA recommendations, <i>N</i> (%)		
Not at all to somewhat	13 (22)	0 (0)
Moderately to very	47 (78)	8 (100)
Meeting PA guidelines, <i>N</i> (%)		
No	30 (58)	4 (50)
Yes	22 (42)	4 (50)

Note. PA = physical activity.

Regarding task distribution, participants reported spending the most time in an average week (21 hours) with implementation tasks (Table 2). Participants also reported spending approximately 11 hours on adoption-related tasks, 10 hours on reach, and 6 hours on tasks related to maintenance.

Table 2. Average Time per Week Extension Agents (N=69) Spend on Program Tasks

Dimension	Task	Average time/ week M (\pmSD) hrs
Reach	Recruiting participants	5 (\pm 4.37)
	Tailoring program materials for specific groups of people	4 (\pm 4.43)
	Determining whether those in most need of intervention were recruited	1 (\pm 1.33)
Adoption	Attending training sessions for new programs	3 (\pm 2.72)
	Attending training sessions for programs previously delivered	1 (\pm 1.09)
	Training others to deliver programming	4 (\pm 5.42)
	Traveling related to Extension program training	3 (\pm 2.22)
Implementation	Traveling related to Extension program delivery	4 (\pm 2.58)
	Delivering programs	10 (\pm 8.27)
	Developing and/or refining program materials	5 (\pm 4.37)
	Ensuring that the program is delivered as intended (e.g., completing a checklist at the end of a program session)	2 (\pm 2.07)
Maintenance	Maintaining partnerships for program delivery (e.g., attending community forums, networking, attending meetings)	4 (\pm 2.85)
	Adapting programs for future iterations	2 (\pm 2.23)

Qualitative

Twelve individuals volunteered to participate in the focus groups, with eight available for the district-based in-person focus groups. However, data saturation was met across the two focus groups (e.g., similar items with no new insights) with these eight individuals, so an additional focus group was not sought. The thematic coding of the focus group transcripts yielded 464 meaning units. These meaning units provide clarity and insights on the factors that influence reach, effectiveness, adoption, implementation, and maintenance of physical activity programming. See Table 3 for details.

Table 3. Qualitative Results of Extension Agents' (N = 8) Perceptions of Physical Activity Programming

Theme	Subtheme	Example Meaning Unit
Reach (32)	Barriers to programming (17)	The populations that most need this [Extension programming] they literally, at least in my community, can't afford it.
	Recruitment strategies (15)	Marketing and promoting, but once we get it going...Once we know that this is a program that we as Cooperative Extensive agents can promote it in the community.
Effectiveness (140)	Current evaluation practices (45)	For the two programs that I do that incorporate physical activity, I can use the validated [evaluation] tools that come from Tufts [to measure the success of the programs I do].
	Barriers to evaluation (37)	We [agents] don't have criteria which we should be or told to be evaluated.
	Perceptions of evaluation (33)	And I've learned after many years of doing this [delivering programs through Extension] that never assume something like that [participants understanding concepts taught during programs] because you say you think you did a really good job of explaining something and people don't understand it.
	Technology (25)	I've used clickers before [as a tool to evaluate programs].
Adoption (179)	Barriers (85)	I don't really know if there is any curriculum for us.
	Cross-programming integration opportunities (33)	It's a good opportunity because they get the nutrition and the cooking piece that could easily be tied into educational pieces that accompany physical activity.
	Facilitators (27)	I agree - I think of it as 30 minutes a day, 5 days a week, but it adds up to the same [150 minutes].
	Roles and responsibilities (20)	I think, too, there might be a feeling that our job is not to be exercise leaders, that that's not what we are trained and paid for.
	PA programming status (14)	I think it's, certainly when you're teaching nutrition, it's a marriage of the two [exercise and physical activity]; you have to exercise, and you have to watch your diet.
Implementation (87)	Facilitators to PA programming (38)	I follow the guidelines that come with the curriculum and with the aerobic and nutrition program. The purpose of the program is to reduce risk for heart disease.
	Barriers to PA programming (31)	So there are some activities out there, but it's not a full curriculum.
	Current PA programming status (18)	I do two physical activity programs in my counties.
Maintenance (26)	Barriers to program maintenance (13)	When a specialist leaves, especially if the position is vacant [after the specialist leaves STATE], the programs [overseen by the state specialist] fall apart.
	Individual maintenance data (7)	I think a lot of these curriculums, unfortunately, involve people, and then they [the programs themselves] stop; and it's very hard to track if you've made a long-term impact.
	Ensuring sustainability (6)	I also think there needs to be a buy-in from the leadership team at Extension to do so.

Note. Numbers of meaning units for themes and subthemes are shown in parentheses. Example meaning units have been edited for mechanical correctness and readability. PA = physical activity.

Reach. Thirty-two meaning units around program reach were identified and divided into barriers and recruitment strategies. Participants noted the importance of marketing their programs, particularly to the appropriate audiences. To improve program reach, the participants suggested involving master food volunteers and using social media and place-based recruitment. One barrier to physical activity programming was clients' range of physical activity abilities: the perception was that some clients are not fit enough to engage in 10-minute-long exercise. Another barrier was resources; clients may have financial challenges that prevent them from accessing physical activity resources outside Extension programs (i.e., while they have access to low-cost programs through Extension, they lacked other resources to meet physical activity recommendations).

Effectiveness. The theme of effectiveness was the second most discussed (140 meaning units), with subthemes of current evaluation practices, barriers to evaluation, perceptions of evaluation, and technology. Many participants expressed that program evaluation was crucial for programming. However, there were barriers reported related to the lack of standardized evaluation tools and guidelines. As a result, some participants skipped evaluations, as they often express distrust of evaluation tools with no validation and found it challenging to create their own evaluations. Another issue was the complexity of certain evaluation tools that participants perceived as requiring advanced technical savvy or knowledge of statistics. Despite all the obstacles, many participants still employed various evaluation tools.

Adoption. The theme of adoption was the most common, having 179 meaning units. Several participants viewed their lack of training and credentials in physical activity as barriers to providing physical activity programming and expressed willingness to obtain necessary certification. One salient barrier to providing physical activity programming was the lack of "physical activity programming" explicitly listed in the Extension agents' job descriptions. Nevertheless, the participants demonstrated sufficient knowledge of current physical activity recommendations. Several participants mentioned the (previous) lack of a specialist as a barrier to physical activity program adoption. Regarding cross-programming opportunities, participants offered examples of how physical activity programming can be integrated into various existing programs, leading to resource sharing and staff collaboration.

Implementation. Eighty-seven meaning units aligned with implementation, resulting in three subthemes: facilitators, barriers, and current physical activity programming status. The facilitators to delivering physical activity programs included resources such as equipment (hula hoops, jump ropes, etc.), volunteers, and funds. The barriers to delivering programming included a need for a specialist, lack of equipment storage, and insufficient resources (financial and human). Current physical activity programming status meaning units were related to both delivering physical activity programs and integrating physical activity with other programs.

Maintenance. Twenty-six meaning units were related to maintenance. Regarding continuation of physical activity programming, the participants provided several examples of programs with physical activity components that ended due to either halting of financial support or discontinuation of the program. The participants suggested stronger involvement and commitment from Extension leadership (e.g., state specialists, program leaders, and administrators).

Discussion

Integration of physical activity objectives or physical activity programming in community-based settings may increase the proportion of people meeting the Physical Activity Guidelines for Americans (U.S. Department of Health and Human Services, 2018). This may have a downstream impact on reduced risk for chronic disease and improved chronic disease management. However, packaged evidence-based programs are not readily translated into sustained practice (Brownson & Jones, 2009). The adaptability and fit of interventions within the targeted system are paramount. Therefore, this study aimed to understand current practices related to program selection, adaptation, and delivery – such as recruitment, tailoring, and evaluation efforts – so that the state-level specialist could match training offerings with current roles, responsibilities, and expectations. Overall, the results suggest that Extension agents have positive perceptions of physical activity promotion, but notable barriers remain in integrating physical activity programming within the system.

The quantitative results showed that most agents, while supportive of physical activity in general, were not delivering physical activity programs. This is also reflected in the qualitative results, as agents discussed many barriers to adoption, implementation, and maintenance. Three salient barriers reflected in the qualitative results are a lack of formal training and certification in physical activity programming, a lack of feasible and validated evaluation tools, and “physical activity programming” not being included in their job descriptions.

The absence of “physical activity programming” in Extension agents’ job descriptions was one of the core obstacles preventing physical activity programming in Extension. Lack of physical activity in the job descriptions offers little motivation to Extension agents to adopt and deliver physical activity programs. Increasing the number of Extension agents having “physical activity programming” in their job descriptions may encourage adoption and delivery of physical activity programs. A change in job titles (e.g., from Family and Consumer Science Agent to Health and Wellness Agent) would also be more inclusive of physical activity. This lack of role clarity is reflected in the fact that many state systems do not include physical activity programming goals in their state strategic plans (Harden, Lindsay, et al., 2016). An overall shift is needed for physical activity to be a priority for the state, its agents, and its community members.

Once physical activity is integrated as a priority area, state-level specialists can deliver training in core competencies for public health physical activity practitioners (Dallman et al., 2009) as

well as intervention-specific capacity building (Wandersman et al., 2008). The competencies progress from planning to implementing to evaluating physical activity interventions (Dallman et al., 2009). Intervention-specific capacity building could include information on the program's core elements and experiential learning on program delivery and evaluation. Specialists could also provide ongoing consultation in physical activity programming, as research suggests that continued training, as opposed to one-time training, improves implementation fidelity (Beidas et al., 2012). Future research is needed on the intensity of training needed to build capacity for Extension agents to deliver evidence-based physical activity programs.

Related still, Extension agents need to be able to report against broader impacts in the community (Franz, 2014). Participants in the focus groups indicated that there are difficulties with program evaluations as there are no standardized and validated evaluation tools, and those that are available often require advanced knowledge of statistics and technical savvy. Thus, programs that come bundled with standardized and simplified evaluation tools may appeal to Extension agents.

Extension agents also mentioned a need for integrating nutrition objectives in physical activity programs. Extension is housed in the U.S. Department of Agriculture (USDA); its mission is to "provide leadership on food, agriculture, natural resources, rural development, nutrition, and related issues" (U.S. Department of Agriculture, n.d.-a). Incorporating nutrition education in physical activity programs may adapt these programs to better fit USDA's mission. Palmer-Keenan and Corda (2014) explored Extension in New Jersey and noted that despite the effectiveness of educational efforts at improving participants' nutrition intake, participants often suffer from obesity. To address this problem, the authors integrated physical activity into existing nutrition programs by reallocating 15-20 minutes of nutrition education time toward physical activity and found physical activity improvements without any negative dietary impacts. Until "physical activity" is included as a more prominent focus area, including nutrition education may better align programs with Extension's mission and increase adoption by delivery agents.

It is noteworthy that the barriers to adoption and continued implementation of physical activity that we identified via the survey and focus group interviews are similar to those that other Extension agents face across the nation. For example, a study of barriers to professional competencies among 110 North Carolina Extension agents suggested lack of time and funding as the most constraining barriers (Lakai et al., 2012). Additionally, the nationwide survey by Peña-Purcell et al. (2012) revealed that Extension agents have concerns with various aspects of physical activity programming, including availability of lessons and staff training. The survey also indicated that the majority of respondents are eager to obtain training, suggesting a nationwide opportunity to increase Extension agents' involvement in physical activity interventions, which potentially could contribute to a positive population wellness impact across all states.

As for the amount of time spent on program components, agents spent the most time in an average week with implementation tasks. This is not surprising, as this is agents' primary job responsibility. However, a lack of resources (both time and staff) was mentioned in the focus groups and barriers to adoption and implementation. This is not uncommon in implementing evidence-based interventions in community settings (Bach-Mortensen et al., 2018). In Extension, agents experience many demands on their time as they respond to community needs in broad areas of program responsibility. For example, Extension agents reported delivering programs across 22 unique health-related areas, including everything from human development to food safety to nutrition (Strayer et al., 2020). When new programming areas—like physical activity—are introduced, agents report feeling that they cannot add a new programming focus area without letting go of existing programming (Balis, Strayer, Ramalingam, & Harden, 2018). Prioritizing programming areas on which agents could focus, as well as programs that are evidence-based (as opposed to one-time sessions), may increase the time available to deliver physical activity programs.

Limitations

A limitation of the findings is that they are representative of one state system. Also, it appears that there is no comprehensive, nationwide demographic data on Extension agents, thus limiting the ability to make formal claims regarding generalizing our findings to other states' Extension systems, as we cannot measure similarity to Virginia agents' demographics. As with any mixed-methods approach, response bias must always be considered as what individuals report through research may not always be what is practiced in the field (McCambridge et al., 2014).

In addition, while there was no significant difference in terms of comfort delivering physical activity programs between the Extension agents who participated in the focus groups and those who completed the survey, there was a practical difference. A large proportion (83%) of the respondents were not comfortable delivering physical activity promotion. However, none of the individuals who were less comfortable delivering physical activity were willing to take part in a focus group. This study took place in a pragmatic setting, and this lack of participation may represent organizational issues related to lack of focus on physical activity.

While this represents a limitation to the research, it was used as a strength in practice. Borrowing from the Diffusions of Innovation Theory and other dissemination and implementation strategies, the specialist and research team viewed those who were willing to participate in the focus groups as potential innovators and early adopters who could lead their peers to increased physical activity program adoption (Damschroder et al., 2009; Rogers, 2003). The eight individuals who provided focus group information were asked to be champions of physical activity in the state and serve on a newly formed integrated research-practice partnership (IRPP; Estabrooks et al., 2019). Members of the IRPP worked together to problem prioritize, select and adapt potential solutions, test those solutions, and inform large-scale decision making (Estabrooks et al., 2008;

Harden, Johnson, et al., 2017). This approach led to the selection of two physical activity interventions for statewide delivery: FitEx (Harden, Johnson, et al., 2017; Harden, Ramalingam, et al., 2019) and LIFT (Balis, Strayer, Ramalingam, & Harden, 2018; Wilson, Strayer, Davis, & Harden, 2018a, 2018b). Based on the results presented here, these interventions were selected because they were perceived as easy to implement and fit the needs of educators, including being offered as packaged programs with options for adaptation, robust and experiential training, and evaluation components.

Conclusions

This work reveals changes in policy that may increase the adoption of evidence-based physical activity programs in community settings. Extension agents may be more likely to adopt physical activity programs if physical activity becomes a more prominent focus of the USDA-housed Extension system. Additionally, this work demonstrates the value of encouraging understanding of delivery agents' perceptions and needs and including them in the program adaptation process to facilitate adoption and translation of evidence-based programs. The needs assessment approach used in this study may serve as an example for other state Extension systems, and the barriers to physical activity program adoption, implementation, and maintenance noted by these educators may have implications for improving scale-out within the national Extension system.

References

- Aarons, G., Sklar, M., Mustanski, B., Benbow, N., & Hendricks Brown, C. (2017). "Scaling-out" evidence-based interventions to new populations or new health care delivery systems. *Implementation Science*, 12, Article 111. <http://doi.org/10.1186/s13012-017-0640-6>
- Bach-Mortensen, A. M., Lange, B. C. L., & Montgomery, P. (2018). Barriers and facilitators to implementing evidence-based interventions among third sector organisations: A systematic review. *Implementation Science*, 13, Article 103. <http://doi.org/10.1186/s13012-018-0789-7>
- Balis, L. E., John, D., & Harden, S.M. (2019). Beyond evaluation: Using the RE-AIM framework for program planning in Extension. *Journal of Extension*, 57(2). <https://www.joe.org/joe/2019april/tt1.php>
- Balis, L. E., Strayer III, T., Ramalingam, N., & Harden, S. M. (2018). Beginning with the end in mind: Contextual considerations for scaling-out a community-based intervention. *Frontiers in Public Health*, 6, Article 357. <http://doi.org/10.3389/fpubh.2018.00357>
- Balis, L. E., Strayer III, T., Ramalingam, N., Wilson, M., & Harden, S. M. (2018). Open-access physical activity programs for older adults: A pragmatic and systematic review. *The Gerontologist*, 59(4), e268–e278. <https://doi.org/10.1093/geront/gnx195>
- Beidas, R., Edmunds, J., Marcus, S., & Kendall, P. (2012). Training and consultation to promote implementation of an empirically supported treatment: A randomized trial. *Psychiatric Services*, 63(7), 660–665. <http://doi.org/10.1176/appi.ps.201100401>

- Braun, B., Bruns, K., Cronk, L., Kirk Fox, L., Koukel, S., Le Menestrel, S., Monroe Lord, L., Reeves, C., Rennekamp, R., Rice, C., Rodgers, M., Samuel, J., Vail, A., & Warren, T. (2014). *Cooperative Extension's national framework for health and wellness*. https://nifa.usda.gov/sites/default/files/resource/Cooperative_extensionNationalFrameworkHealth.pdf
- Brownson, R., & Jones, E. (2009). Bridging the gap: Translating research into policy and practice. *Preventive Medicine, 49*(4), 313–315. <http://doi.org/10.1016/j.ypmed.2009.06.008>
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage.
- Cutcliffe, J., & McKenna, H. (2004). Expert qualitative researchers and the use of audit trails. *Methodological Issues in Nursing Research, 45*(2), 126–135. <https://doi.org/10.1046/j.1365-2648.2003.02874.x>
- Dallman, A., Abercrombie, E., Drewette-Card, R., Mohan, M., Ray, M., & Ritacco, B. (2009). Elevating physical activity as a public health priority: Establishing core competencies for physical activity practitioners in public health. *Journal of Physical Activity and Health, 6*(6), 682–689. <http://doi.org/10.1123/jpah.6.6.682>
- Damschroder, L., Aron, D., Keith, R., Kirsh, S., Alexander, J., & Lowery, J. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science, 4*(50). <http://doi.org/10.1186/1748-5908-4-50>
- Downey, S. M., Wages, J., Jackson, S. F., & Estabrooks, P. A. (2012). Adoption decisions and implementation of a community-based physical activity program: A mixed methods study. *Health Promotion Practice, 13*(2), 175–182. <https://doi.org/10.1177/1524839910380155>
- Dunifon, R., Duttweiler, M., Pillemer, K., Tobias, D., & Trochim, W. M. K. (2004). Evidence-based Extension. *Journal of Extension, 42*(2). <https://www.joe.org/joe/2004april/a2.php>
- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107–115. <https://doi.org/10.1111/j.1365-2648.2007.04569.x>
- Estabrooks, P., Bradshaw, M., Fox, E., Berg, J., & Dzewaltowski, D. (2004). The relationships between delivery agents' physical activity level and the likelihood of implementing a physical activity program. *American Journal of Health Promotion, 18*(5), 350–353. <http://doi.org/10.4278/0890-1171-18.5.350>
- Estabrooks, P. A., Bradshaw, M., Dzewaltowski, D. A., & Smith-Ray, R. L. (2008). Determining the impact of Walk Kansas: Applying a team-building approach to community physical activity promotion. *Annals of Behavioral Medicine, 36*(1), 1–12. <http://doi.org/10.1007/s12160-008-9040-0>
- Estabrooks, P. A., Harden, S. M., Almeida, F. A., Hill, J. L., Johnson, S. B., Porter, G. C., & Greenawald, M. H. (2019). Using integrated research-practice partnerships to move evidence-based principles into practice. *Exercise and Sport Sciences Review, 47*(3), 176–187. <http://doi.org/10.1249/JES.0000000000000194>

- Fetsch, R. J., MacPhee, D., & Boyer, L. K. (2012). Evidence-based programming: What is a process an Extension agent can use to evaluate a program's effectiveness? *Journal of Extension*, 50(5). <https://www.joe.org/joe/2012october/a2.php>
- Franz, N. (2014). The role of evaluation in determining the public value of Extension. *Journal of Extension*, 52(4). <https://joe.org/joe/2014august/comm3.php>
- Gaglio, B., Shoup, J. A., & Glasgow, R. (2013). The RE-AIM framework: A systematic review of use over time. *American Journal of Public Health*, 103(6), e38–e46. <http://doi.org/10.2105/AJPH.2013.301299>
- Glasgow, R. E., Vogt, T. M., & Boles, S. M. (1999). Evaluating the public health impact of health promotion interventions: The RE-AIM framework. *American Journal of Public Health*, 89(9), 1322–1327. <https://doi.org/10.2105/ajph.89.9.1322>
- Godin, G., & Shephard, R. (1985). A simple method to assess exercise behavior in the community. *Canadian Journal of Applied Sport Sciences*, 10(3), 141–146.
- Harden, S. M., Balis, L., Strayer III, T., Prosch, N., Carlson, B., Lindsay, A., Estabrooks, P., Dzewaltowski, D., & Gunter, K. (2020). Strengths, challenges, and opportunities for physical activity promotion in the century-old national Cooperative Extension System. *Journal of Human Sciences and Extension*, 8(3), 104–124. <https://www.jhseonline.com/article/view/834/862>
- Harden, S. M., Johnson, S. B., Almeida, F. A., & Estabrooks, P. A. (2017). Improving physical activity program adoption using integrated research-practice partnerships: An effectiveness-implementation trial. *Translational Behavioral Medicine*, 7(1), 28–38. <https://doi.org/10.1007/s13142-015-0380-6>
- Harden, S. M., Lindsay, A., & Gunter, K. B. (2018). How to leverage your state's land grant Extension system: Partnering to promote physical activity. *Translational Journal of the American College of Sports Medicine*, 3(15), 113–118. <https://journals.lww.com/acsm-tj/toc/2018/08010>
- Harden, S. M., Lindsay, A., Everette, A., & Gunter, K. B. (2016). Systematic review of physical activity objectives in Extension strategic plans: Findings and implications for improved public health impact. *Journal of Extension*, 54(5). <https://joe.org/joe/2016october/rb2.php>
- Harden, S. M., Ramalingam, N., Breig, S., & Estabrooks, P. (2019). Walk this way: Our perspectives on challenges and opportunities for Extension statewide walking promotion programs. *Journal of Nutrition Education and Behavior*, 51(1), 636–643. <https://doi.org/10.1016/j.jneb.2018.12.010>
- Kessler, R. S., Purcell, E. P., Glasgow, R. E., Klesges, L. M., Benkeser, R. M., & Peek, C. (2012). What does it mean to “employ” the RE-AIM model? *Evaluation & The Health Professions*, 36(1), 44–66. <http://doi.org/10.1177/0163278712446066>
- Lakai, D., Jayaratne, K. S. U., Moore, G. E., & Kistler, M. J. (2012). Barriers and effective educational strategies to develop Extension agents' professional competencies. *Journal of Extension*, 50(4), Article v50-4rb1. <https://joe.org/joe/2012august/rb1.php>

- McCambridge, J., Witton, J., & Elbourne, D. (2014). Systematic review of the Hawthorne effect: New concepts are needed to study research participation effects. *Journal of Clinical Epidemiology*, 67(3), 267–277. <https://doi.org/10.1016/j.jclinepi.2013.08.015>
- National Cancer Institute. (2020). *Research-tested Intervention Programs*. <https://rtips.cancer.gov/rtips/index.do>
- Palmer-Keenan, D. M., & Corda, K. (2014). Should physical activity be included in nutrition education? A comparison of nutrition outcomes with and without in-class activities. *Journal of Extension*, 52(4). <https://www.joe.org/joe/2014august/a8.php>
- Peña-Purcell, N., Bowen, E., Zoumenou, V., Schuster, E., Boggess, M., Manore, M., & Gerrior, S. (2012). Extension professional's strengths and needs related to nutrition and health programs. *Journal of Extension*, 50(3). https://www.joe.org/joe/2012june/pdf/JOE_v50_3rb2.pdf
- Prochaska, J. O., & DiClemente, C. C. (1992). Stages of change in the modification of problem behaviors. *Progress in Behavior Modification*, 28, 183–218.
- Ressler, A. (2017). *On the road to healthy living mobile cooking school*. Paper presented at the 2017 NEAFCS Annual Session, Omaha, NE. <https://www.neafcs.org/assets/2017-Annual-Session/final%202017%20neafcs%20annual%20session%20program%20book.pdf>
- Rogers, E. (2003). *Diffusions of Innovations* (5th ed). Free Press.
- Shanks, C. B., & Harden, S. M. (2015). A reach, effectiveness, adoption, implementation, maintenance evaluation of weekend backpack food assistance programs. *American Journal of Health Promotion*, 30(7), 511–520. <http://doi.org/10.4278/ajhp.140116-QUAL-28>
- Strayer III, T. E., Kennedy, L. E., Balis, L. E., Ramalingam, N. S., Wilson, M. L., Harden, S. M. (2020). Cooperative Extension gets moving, but how? Exploration of Extension health educators' sources and channels for information-seeking practices. *American Journal of Health Promotion*, 34(2), 198–205. <https://doi.org/10.1177/0890117119879606>
- U.S. Department of Agriculture. (n.d.-a). *About the U.S. Department of Agriculture*. <https://www.usda.gov/our-agency/about-usda>
- U.S. Department of Agriculture. (n.d.-b). *Extension*. <https://nifa.usda.gov/extension>
- U.S. Department of Agriculture. (2015). *The Farm Bill*. <http://www.usda.gov/wps/portal/usda/usdahome?navid=farmbill>
- U.S. Department of Health and Human Services. (2018). *Physical activity guidelines* (2nd ed.). https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf
- Wandersman, A., Duffy, J., Flaspohler, P., Noonan, R., Lubell, K., Stillman, L., Blachman, M., Dunville, R., & Saul, J. (2008). Bridging the gap between prevention research and practice: The interactive systems framework for dissemination and implementation. *American Journal of Community Psychology*, 41(3-4), 171–181. <http://doi.org/10.1007/s10464-008-9174-z>

Wilson, M. L., Strayer III, T. E., Davis, R., & Harden, S. M. (2018a). Use of an integrated research-practice partnership to improve outcomes of a community-based strength-training intervention for older adults: Reach and effect of Lifelong Improvements through Fitness Together (LIFT). *International Journal of Environmental Research and Public Health*, 15(2), 237. <https://doi.org/10.3390/ijerph15020237>

Wilson, M. L., Strayer III, T. E., Davis, R., & Harden, S. M. (2018b). Informed adaptations of a strength-training program through a research-practice partnership. *Frontiers in Public Health*, 6, Article 58. <https://doi.org/10.3389/fpubh.2018.00058>

Laura Balis, PhD, earned her PhD at Virginia Tech in Human Nutrition, Foods, and Exercise with an emphasis on behavioral and implementation science. Her research focuses on translating evidence-based physical activity and nutrition programs for diverse populations into community settings.

Thomas Strayer III, PhD, is a clinical/translational research coordinator at Vanderbilt University Medical Center who has applied his degrees of Applied Economics (MS) and Translational Biology, Medicine, and Health (PhD) to evaluate Cooperative Extension initiatives.

Samantha Harden, PhD, is an Associate Professor and Exercise Extension Specialist in Human Nutrition, Foods, and Exercise at Virginia Tech. Her work focuses on implementing evidence-based physical activity promotion interventions in a variety of programmatic settings, especially within Cooperative Extension.

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