SNAP-Ed **Healthy Food.**
Pennsylvania **Healthy Moves.**
Healthy YOU.

Pennsylvania SNAP-Ed
Fiscal Year 2021

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Annual Report

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COLLEGE OF HEALTH AND HUMAN DEVELOPMENT

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1. SNAP-Ed Program Overview

▪ **Progress in Achieving Overarching Goals:**

Pennsylvania Supplemental Nutrition Assistance Program Education (PA SNAP-Ed) FY 2021 Plan included five statewide goals that address federal directives, state priorities and community needs. In PA, the State Agency is the Department of Human Services (DHS) and the Implementing Agency is the Pennsylvania State University (PSU) Management Entity (ME).

Goal 1: **Conduct Statewide Evaluation efforts in the context of assessing SNAP-Ed Evaluation Framework Priority Indicators.**

To capture outcome data effectively, and to work to ensure generalizability to other state's SNAP-Ed programming results, current approved, evidence-based curricula continued to be reviewed according to the SNAP-Ed Evaluation Framework Indicators by identifying and documenting Indicators for each planned lesson. The Indicators were then mapped to appropriate statewide evaluation tools for the School-age and Adult/Senior Projects. This process will continue as Local Partners (LP) request additional curricula to be added to the approved curricula list. As a continuous quality assurance process, ME staff will continue to update curriculum maps to reflect revisions to education content and ensure alignment with the evaluation outcome indicators outlined on the SNAP-Ed Toolkit curriculum description. (Read more in *Section 4, SNAP-Ed Planned Improvements.)*

Goal 2: **Assess and improve program effectiveness through formative, process, outcome, and impact evaluation activities and develop strategic approaches to determine overall plan's impact using appropriate measures and indicators.**

PA SNAP-Ed continues to utilize the STARtracks online reporting system to collect process evaluation data related to direct education and indirect channels, and the Program Evaluation and Reporting System (PEARS) to collect data about policy, systems and environmental interventions. PA SNAP-Ed uses both systems to meet the requirements of EARS reporting.

A modified version of the School Physical Activity and Nutrition Survey (SPAN, also known as the School-Based Nutrition Monitoring Questionnaire), which has established validity and reproducibility reported in the literature,[1,2] was planned for administration according to a pre/post protocol as a statewide outcome assessment for 4th – 6th grade students. Due to a pause of in-person programming due to COVID-19, this project was postponed for FY 2021.

An abbreviated version of the Youth Risk Behavior Surveillance (YRBS), named The Nutrition and Physical Activity Survey, was planned to be administered to 8th -12th grade students according to a pre/post protocol to monitor nutrition related behavior of middle and high school students. Data from this assessment were to be compared to Pennsylvania and national data sets, most recently conducted in 2019, to assess possible differences in dietary and physical activity behaviors. Due to a pause of in-person programming due to COVID-19, this project was postponed for FY 2021.

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[1] Thiagarajah K, Fly AD, Hoelscher DM, et al. Validating the Food Behavior Questions from the Elementary School SPAN Questionnaire. *J Nutr Educ Behav*. 2008;40(5):305–310.
[2] Penkilo M, George GC, Hoelscher DM. Reproducibility of the School-based Nutrition Monitoring Questionnaire among Fourth-grade Students in Texas. *J Nutr Educ Behav*. 2008;40(1):20–27.

Adult/Senior evaluation projects were planned to utilize the University of California (UC) Davis Food Behavior Checklist[3] to assess nutrition-related behavior changes and the UC Davis EFNEP Checklist to assess food resource management behaviors in adults and senior program participants. Due to a pause of in-person programming due to COVID-19, this project was postponed for FY 2021.

The work of the PA SNAP-Ed Evaluation Workgroup, made up of ME and LP staff with responsibility for evaluation activities continued in FY 2021 with a focus on PEARS best practice strategies and evaluation of virtual learning technical assistance.

Goal 3: **Expand reach by identifying methods to notify eligible individuals of SNAP-Ed and exploring opportunities for web-based SNAP-Ed.**

Work continued to target the unserved and underserved audiences. In FY 2021, the ME continued to monitor approved program delivery sites that were not receiving SNAP-Ed programming and work with LPs partnering with those locations to determine why and how programming might be implemented successfully. If a resolution could not be achieved, LPs were encouraged to seek opportunities for programming elsewhere.

Opportunities remain to collaborate to market PA SNAP-Ed to eligible Pennsylvanians, and the goal to implement web-based SNAP-Ed continues to be a goal in FY 2022.

Goal 4: **Employ technology to maximize efficiency and effectiveness of PA SNAP-Ed programming and evaluation activities.**

Collection of program delivery and process evaluation data via the web-based STARtracks and PEARS reporting systems informs program management, evaluation efforts, and target audience considerations for both the ME and LPs. STARtracks system updates continued in FY 2021 to enhance the user experience, improve data accuracy, and minimize reporting burden. (Read more in the section labeled *'Major Achievements.'*)

PA SNAP-Ed maintains partner resources and information on a SharePoint site, known as the *Partner Portal*. The portal provides secure access to LP users with varying access levels. For domain users, the portal serves as a comprehensive repository of PA SNAP-Ed resources, including policies & procedures, memos, forms, training videos and more. For plan development users, the portal also serves as a workspace for uploading, tracking and editing plan documents.

PA SNAP-Ed maintains a website (https://sites.psu.edu/pasnaped/) for publicly accessible information about PA SNAP-Ed, evaluation reports, and the annual Request for Partners (RFP.)

In response to the ongoing COVID-19 pandemic and shift to virtual education strategies, the ME is exploring opportunities to pilot test the use of online evaluation tools. Beginning in FY 2022 and beyond, online versions of validated evaluation tools for adults and seniors will be used to evaluate PA SNAP-Ed programming.

Goal 5: **Develop new, and strengthen existing, partnerships with agencies providing related public health services to support coordination of efforts, prevent duplication of services, and build**

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[3] Townsend, M. S. Improving Readability of an Evaluation Tool for Low-Income Clients Using Visual Information Processing Theories. at http://www.sciencedirect.com/science/article/pii/S1499404607008263

community/public health approaches recommended in Federal SNAP-Ed Guidance.

Federal SNAP-Ed Guidance expects implementation of a variety of approaches including multi-level interventions and community and public health approaches in addition to individual or group-based nutrition education. To assess PA SNAP-Ed efforts with these approaches to date, and to assist partners with these efforts, a number of activities were conducted in FY 2021.

PA SNAP-Ed partners were asked to complete a section of FY 2021 Statement of Work on Coordination of Efforts to identify and describe existing efforts to coordinate and complement nutrition education and obesity prevention with other USDA nutrition assistance programs as well as partnerships with national, State and local initiatives to implement multi-level interventions and public health approaches. LPs use the Programming Evaluation and Reporting System (PEARS) to report on PSE initiatives.

▪ **Number of Ongoing Projects Operational during the Reporting Year:**

Three ongoing statewide projects operated throughout the year for key target audiences: preschool children, school-age children, and adults/seniors. Projects consist of behaviorally focused objectives, age-specific teaching strategies, evidence-based curricula and outcome evaluation plans, with direct education and policy, systems and environmental approaches.

In FY 2020, PA SNAP-Ed began reporting process evaluation data on six statewide interventions: K-12 schools, early childhood, food assistance, food retail, community and social marketing (Be Healthy PA). Except for social marketing, these interventions are defined by applicable EARS intervention settings. In FY 2021, a new intervention was added for a VeggieBook smartphone app pilot.

Be Healthy PA is a social marketing campaign designed to improve nutrition and boost physical activity among SNAP-Ed eligible Pennsylvanians through a core message: healthy food, healthy moves, healthy you. Be Healthy PA is primarily an online campaign focused on connecting with people via social media. In FY 2021, NEN continued to provide messages via social media even when participants were practicing social distancing and unable to participate in face-to-face PA SNAP-Ed events. NEN posted five times per week on a variety of topics related to nutrition, free or low-cost movement opportunities, and obesity prevention. Messages encouraged participants to go to NEN's website which highlights current, credible, and evidence-based information related to nutrition and physical activity. See attached NEN Year-End Report for more information.

In May 2021, NEN launched a pilot of PA VeggieBook, a mobile application that is designed to help users choose PA SNAP-Ed approved recipes and healthy eating tips that ultimately lead to increased vegetable-based preparation for meals at home. The original VeggieBook app was designed, tested and implemented by the University of Southern California and is featured in the SNAP-Ed Toolkit. NEN brought this innovative intervention to Pennsylvania, piloting it as a tool offered during nutrition education classes at the Salvation Army of Harrisburg. The app is helping families make decisions about cooking healthy meals at home, connecting people to effective nutrition education resources, and increasing digital engagement. See attached NEN Year-End Report for more information.

▪ **Major Achievements:**

STARtracks Reporting System. Major achievements for FY 2021 included: integrated multigenerational programming into system architecture; improved user interactions for data editing and plan

development activities; developed new reports to show the scope of non-SNAP-Ed staff in program delivery and to monitor programming by delivery method (in person or virtual); updated existing reports to improve quarterly monitoring, program oversight, and EARS reporting efforts.

Other major achievements in FY 2021: migrated the STARtracks system to new cloud servers boosting performance and reducing costs; upgraded applications used in STARtracks development and implemented additional improvements made possible by the upgrades.

Policy, Systems, and Environmental Change Intervention Reporting. In FY 2021, the ME and LPs continued to utilize the Program Evaluation and Reporting System (PEARS) to track, document, and report results of approved PSE activities. The PEARS system is aligned with SNAP-Ed Guidance and EARS, with the goal of providing standardized data collection among SNAP-Ed programs nationwide. PEARS provides LPs a more comprehensive means to report on the breadth and depth of PSE activities implemented within the scope of their SNAP-Ed work. In FY 2021, the third year of using the PEARS system, LPs implemented and documented PSE activities at 937 program delivery sites across Pennsylvania.

In FY21, the ME streamlined its method for importing PSE data from PEARS into STARtracks and enhanced reports combining direct education, PSE activities, and indirect channel data. These reports continue to provide ME staff with powerful tools for ensuring data quality, monitoring program delivery efforts, and approving expenditures.

Other Evaluation Projects. The PA SNAP-Ed ME and LPs conducted a variety of evaluation activities that yielded useful, relevant data to inform program delivery and provide tested initiatives to expand program reach. These activities are documented in *Appendices 5-20*.

- **Unanticipated Challenges:**

Due to the COVID-19 pandemic, in-person PA SNAP-Ed programming was suspended in March 2020, and remained so until July 8, 2021. Programming pivoted to online delivery, with LPs providing access to online recorded lessons, and delivering live lessons via social media platforms during this time, until in-person programming could safely resume. Since in-person programming did not resume until Q4, many LPs were unable to provide in-person programming in K-12 schools in FY 2021 and efforts were significantly limited at other sites based on ongoing restrictions related to COVID-19. As reported in PEARS, 98.3% of PSE sites were impacted by the COVID-19 restrictions and resulted in modifications, postponements, or cancellations of planned initiatives.

While NEN could not offer an in-person annual conference to membership, speakers previously scheduled to present at the conference offered their content via webinars made available to conference registrants. While working remotely, the ME reviewed applicant proposals and compiled the FY 2021 plan and monitored programming implementation and compliance via a virtual site review process.

Statewide evaluation projects were directly impacted by the suspension of in-person programming due to the COVID-19 pandemic. Statewide school-age evaluation projects (SPAN and YRBS) were postponed in FY 2021, as in-person SNAP-Ed programming did not resume until the summer when schools were not in session. School-age evaluation projects will resume in FY 2022. Statewide Adult/Senior evaluation projects were also postponed due to the COVID-19 in-person programming suspension. Adult/Senior

evaluation projects will resume in FY 2022. Partner-specific evaluation projects that evaluated online nutrition education are included in *Appendices 9* and *16*.

While truly an unprecedented challenge, it is expected that best practices learned while working to meet the needs of the SNAP-Ed audience during this time will improve future efforts to reach the unserved audience via on-line programming.

2. SNAP-Ed Administrative Expenditures:

Type of Administrative Expense:	Penn State University Management Entity	
	% Values	$ Values
Administrative Salary	72.66	6,253,984.35
Administrative Training Functions	0.7	60,306.77
Reporting Costs	1.0	86,115.23
Equipment/Office Supplies	1.66	142,457.17
Operating Costs	3.34	287,782.29
Indirect Costs	14.82	1,276,040.99
Building/Space Lease or Rental	5.78	497,260.02
Cost of Publicly-Owned Building Space	0.0	0
Institutional Memberships and Subscriptions	0.04	3,500.00

3a. SNAP-Ed Evaluation Reports for Reporting Year 2021:

Project Name	Key Objectives	Target Audience	Evaluation Type(s)
Statewide Evaluation Projects			
PA SNAP-Ed Statewide Evaluation Summary (*Appendix 5*)	Summary report of statewide evaluation projects planned/conducted in FY 2021	Preschool children, school-age children, adults/seniors	**PE**
	Framework Indicators Assessed: MT5, MT6, ST7		
Local Partner Evaluation Projects			
CCOR New Foods Take Time Addendum (*Appendix 6*)	Updated analyses of the New Foods Take Time curriculum evaluation	Preschool children	**PE, OE**
	Framework Indicators Assessed: ST1, MT1		
DRX DRAGON Project Intervention Report (*Appendix 7*)	Describes DRX DRAGON nutrition education curriculum development	High school students	**PE**
	Framework Indicators Assessed: ST6, MT1, MT2, MT3, MT5, MT6 (planned in FY 2022)		

Project Name	Key Objectives	Target Audience	Evaluation Type(s)
DRX Analysis of The Effect of COVID-19 Pandemic Closures on Drexel University's PA SNAP-Ed/Eat Right Philly Program Delivery Indicators (*Appendix 8*)	Evaluation of delivery of virtual nutrition education lessons due to the COVID-19 pandemic	K-12 students, adults	**PE**
	Framework Indicators Assessed: N/A		
DRX Evaluation of Online Learning (*Appendix 9*)	Evaluation of virtual delivery of DRX ERP High School Curriculum related to healthy eating behaviors	High school students	**PE, OE**
	Framework Indicators Assessed: MT1, MT2		
DRX Efficacy of a Five-Lesson Nutrition Education Curriculum for High School Students Administered via Pennsylvania SNAP-Ed Programming (*Appendix 10*)	Evaluation of the DRX High School curriculum	High school students	**OE, IE**
	Framework Indicators Assessed: ST1, MT1, MT2		
DRX PA SNAP-Ed/Eat Right Philly FY 2021 Annual Report (*Appendix 11*)	Overview of nutrition education and evaluation projects completed by the DRX/ERP SNAP-Ed program in FY 2021	K-12 students, adults	**FE, PE, OE, IE**
	Framework Indicators Assessed: ST5, ST7, MT1, MT2, MT5, MT6		
DRX Drexel University PA SNAP-Ed/Eat Right Philly 2020 to 2021 Program Survey Summary (*Appendix 12*)	Feedback from classroom teachers on virtual programs delivered by DRX SNAP-Ed educators	Teachers of classrooms receiving SNAP-Ed programming	**FE, PE**
	Framework Indicators Assessed: ST5, MT1		
DRX Evaluation of COVID-19 Program Changes on the Technology Competency of PA SNAP-Ed Staff (*Appendix 13*)	Evaluation of technology competency on virtual program delivery by SNAP-Ed educators	SNAP-Ed educators	**FE, PE**
	Framework Indicators Assessed: ST5		

Project Name	Key Objectives	Target Audience	Evaluation Type(s)
DRX 2020-2021 Year in Review *(Appendix 14)*	Infographic highlighting partnerships and projects completed by the DRX/ERP SNAP-Ed program in FY 2021	K-12 students, adults	**PE**
	Framework Indicators Assessed: ST7		
HPC Effectiveness of a Training and Technical Assistance Model for Food Service Departments *(Appendix 15)*	Evaluation of a training and technical assistance PSE initiative for food service and kitchen department staff at locations serving meals to SNAP-eligible populations	Food service staff serving SNAP-eligible populations	**PE, OE**
	Framework Indicators Assessed: ST5, ST7, ST8, ST1, MT1		
HPC FY 2021 Curriculum-Specific Evaluation *(Appendix 16)*	Evaluation of *A Taste of African Heritage* and *Seniors Eating Well* education curricula	Adults, seniors	**PE, OE**
	Framework Indicators Assessed: MT1		
HPC FY 2021 Partnership Assessment Results *(Appendix 17)*	Results of HPC's Partnership Assessment Survey conducted in FY 2021	SNAP-Ed program delivery sites partnering with HPC	**FE, PE**
	Framework Indicators Assessed: ST5, ST7		
HPC FY 2021 PSE Evaluations *(Appendix 18)*	Summary report of Lactation Support, Breastfeeding Champions, and School Health Index PSE initiatives	SNAP-Ed program delivery sites partnering with HPC	**FE, PE**
	Framework Indicators Assessed: ST5, ST6, ST7, MT5		
NEN FY 2021 Year-End Report *(Appendix 19)*	Overview of progress on the NEN social marketing campaign, professional development opportunities and smartphone app development in FY 2021	SNAP-eligible Pennsylvanians, nutrition educators working with SNAP-eligible populations	**FE, PE**
	Framework Indicators Assessed: MT12		
TFT FY 2021 Annual SNAP-Ed Evaluation Report *(Appendix 20)*	Overview of TFT Community-based Participatory Research project in Philadelphia area	Public and private organizations partnering with TFT to provide SNAP-Ed programming to low-income Philadelphians	**FE, PE**
	Framework Indicators Assessed: ST6, ST7, ST8		

* FE = Formative Evaluation, PE = Process Evaluation, OE = Outcomes Evaluation, IE = Impact Evaluation

3b. Impact Evaluation:
See *Appendices 10 & 11*.

4. SNAP-Ed Planned Improvements:

SNAP-Ed Evaluation Framework Linked to Direct Education Curricula. Beyond FY 2021, the ME will continue efforts to refine Statewide Evaluation protocols in the context of aligning with the SNAP-Ed Evaluation Framework. Direct education curricula will continue to be mapped to applicable Framework indicators, as the approved curricula list is refined, and curricula revised or added with the re-opening of SNAP-Ed Toolkit submission periods. Mapping outcome measures will be valuable for planning data analysis strategies as well as allowing for explanation of variance in observed versus expected outcomes when interpreting evaluation results. It will also be valuable for understanding and documenting outcome measures as part of the program integrity process and will strengthen SNAP-Ed outcome evaluation results.

A phased replacement of the current photo-based evaluation tools for Adults/Seniors is planned for FY 2022 and beyond. To align with SNAP-Ed Guidance and reduce participant burden of completing survey tools, the Food Behavior Checklist and Food Resource Management Checklist tools are planned to be replaced with the EFNEP Adult Questionnaire. This change will allow for data collection related to additional behavioral change Framework indicators using a single assessment tool.

Additional evaluation tools may be identified, pilot-tested, and added to the Statewide Evaluation assessment tool list to evaluate more thoroughly the SNAP-Ed Framework Priority Indicators. Due to the ongoing COVID-19 pandemic, additional tools for evaluation of virtual learning in the Adult/Senior audience may be implemented. An online version of the EFNEP Adult Questionnaire, which assesses SNAP-Ed Evaluation Framework indicators MT1, MT2, MT3, and MT4 has been developed for pilot use in FY 2022.

PEARS Data Fidelity. The ME will continue to develop and implement standard procedures for monitoring and improving the quality of PSE data entered into the PEARS system. This process will ensure high-quality data is available for PA SNAP-Ed project reporting by providing technical assistance as needed to LPs. ME staff including nutritionists, evaluation staff, and informatics will collaborate on this initiative.

A statewide PEARS Workgroup was convened in FY 2021 and will continue into FY 2022. This workgroup has been developing best practices for data entry and fidelity to ensure consistent data entry for PSE projects statewide.

STARtracks Improvements. Improvements planned for FY 2022 include: implementing updates requested by the STARtracks user community and approved by the ME; accommodating changes required for FY 2023 EARS reporting; developing new reports to: summarize the delivery of multigenerational programming; compare SNAP vs SNAP-Ed participants by project and county; present total reach by intervention, project, and county; and compare planned vs. actual lessons for series programming); and enabling users to generate more customizable reports; and incorporating online survey tools (e.g., Qualtrics) into process evaluation plans to improve data collection efforts from non-SNAP-Ed educators.

Partner Portal. The Partner Portal will be upgraded and migrated to new cloud servers in FY 2022, with many planned enhancements (e.g., improved versioning, workflows, collaboration, etc.).

PA VeggieBook App. The app received positive feedback and in October 2021 (FY 2022), NEN began to roll-out the app across Pennsylvania making the app available for free download in the Apple and Google online stores. NEN is currently working to upgrade the app based on feedback from end-users, PA SNAP-Ed Partners, and User Interface specialists. These upgrades will improve functionality and customization while adding features that make the overall experience easier and more useful.

Appendix 1. Partner Trainings

Training	Date(s)	Format
FY 2021 RFP Training	1/23/2020	Training video posted on FY 2021 RFP Website
FY 2021 PA SNAP-Ed 101 Training	9/29/2020	Recording and handout slides posted on the Partner Portal, Trainings
FY 2021 Fall Partner Meeting	10/8/2020	Virtual; Slides and Handouts are posted on the Partner Portal, Meetings Archive
FY 2021 STARtracks – Introduction and Overview	10/22/2020	Recording posted on the Partner Portal, Trainings
FY 2021 STARtracks – Performing Administrative Tasks	10/22/2020	Recording posted on the Partner Portal, Trainings
FY 2021 STARtracks – Compile Reports	10/22/2020	Recording posted on the Partner Portal, Trainings
FY 2021 STARtracks – Editing Data	10/22/2020	Recording posted on the Partner Portal, Trainings
FY 2021 STARtracks – Entering Data	10/22/2020	Recording posted on the Partner Portal, Trainings
FY 2022 RFP Training	1/21/2021	Training video posted on FY 2022 RFP Website

Appendix 2. Conference Presentations and Journal Publications

Presentations

Bresnahan C., Fornaro E., Cassar E., Hawes P. Implementing School-Based Food Access Programs through SNAP-Ed Community Partnerships: School Stakeholders' Satisfaction. Presentation at the American Public Health Association Annual Meeting and Expo. Virtual Meeting. October 24-28, 2020.

Cassar E., Servello S., Fogarty A., Hawes P. The relationship wasn't built overnight: Supplemental Nutrition Assistance Program Education (SNAP-Ed) community partners' collaboration with schools to achieve collective impact. Interactive poster published in the American Educational Research Association 2020 Interactive Presentation Gallery. November 17, 2020.

Fornaro E., Cassar E., Servello S., Fogarty A., Hawes P. What does PSE mean for me? Tensions of SNAP-Ed partnerships and the sustainability of policy, systems, and environmental changes. Presentation at the American Public Health Association Annual Meeting and Expo. Virtual Meeting. October 24-28, 2020.

Fornaro E., Cassar E., Servello S., Hawes P., Tkatch C., Erdem E. Something's Got to Give: How Tensions Within School-Community Partnerships Challenge the Sustainability of School-based Initiatives. Presentation at the American Educational Research Association. Virtual Meeting. April 9-12, 2021.

Francis, L., Rollins, B. Increasing preschool children's food literacy as a means of increasing fruit and vegetable acceptance. Presentation at the Society for Research in Child Development Biennial Meeting. Virtual Meeting. April 7-9, 2021.

Roche A., Ramirez, J. Berks Farm Bucks: Connecting the Fresh Food Network in Reading, PA. Presentation at the PA NEN Annual Meeting. Virtual Meeting. April 26-27, 2021.

Santella, M., Bender, R., Mitchell, N., Rarick, J., Zwergel, B. Establishing Adagio Health Clinical Food Cupboards to Combat Food Insecurity in PA. Poster presented at The National Institutes of Health - Food Insecurity, Neighborhood Food Environment, and Nutrition Health Disparities: State of the Science Workshop. Virtual Workshop. September 23, 2021.

Todaro, A.M., McCoy, M., Groxx, M., Anim, A. Pivoting amidst COVID-19: Feedback and behavioral outcomes among SNAP-Ed Virtual nutrition education participants. Presentation at the Society for Nutrition Education Annual Conference. Virtual Meeting. August 8-10, 2021.

Zwergel, B., Mitchell, N., Bender, R., Santella, M. Improving Food Security by Activating Food Cupboards at Adagio Health's WIC and Healthcare Clinics. Interactive poster presented at the American Public Health Association Annual Meeting and Expo. Virtual Meeting. October 24-27, 2021.

Journal Publications

Gilman A., Ensslin J., Cullison J., Marsteller A., Volpe S. Efficacy of a Five-Lesson Nutrition Education Curriculum for High School Students Administered via Pennsylvania SNAP-Ed Programming. Article published in the *Journal of Child and Adolescents Health* in July 2021 (included as Appendix 10 of this Report).

Appendix 3. Summary of Policy, Systems and Environmental Approaches

Partner	Project Title	Type	Domain	Intervention	COVID-19 Impact
AHI	School Wellness	Policy, Systems, Environment	Learn	K-12 Schools	Modified/Postponed
AHI	Get Growing Schools	Systems, Environment	Learn	K-12 Schools	Modified
AHI	Growing Up with Power Up	Systems, Environment	Learn	Early Childhood	Modified/Postponed
AHI	GPCFB Healthy Pantries	Systems, Environment	Shop	Food Assistance	Modified
AHI	Summer Food Program	Systems	Shop	Food Assistance	New
AHI	Food Insecurity Screening in Clinical & Community Settings	Systems	Live	Community	None
CAP	Oregon Food Bank Healthy Pantry Initiative	Systems, Environment	Shop	Food Assistance	Modified/Postponed
CCOR	Early Childhood Policy, Systems and Environmental Work	Systems, Environment	Learn	Early Childhood	Modified
CEO	School Wellness	Policy, Systems, Environment	Learn	K-12 Schools	Cancelled
CEO	Healthy Start	Policy, Systems, Environment	Learn	Early Childhood	Modified
CEO	Healthy Pantries Initiative	Policy, Systems, Environment	Shop	Food Assistance	Not Reported
CEO	Produce Market Expansion	Systems, Environment	Shop	Food Assistance	Modified
CEO	Healthy Options @ the Soup Kitchen	Policy, Systems, Environment	Shop	Food Assistance	Not Reported
CEO	Farmers Markets	Systems	Shop	Food Retail	Not Reported
CEO	Corner Store Initiative	Environment	Shop	Food Retail	Not Reported
CEO	Food Policy Councils	Systems, Environment	Shop	Food Assistance	Not Reported
COM	Out of School Needs Action Plan and Implementation	Policy, Systems, Environment	Play	Community	Modified/Postponed

Partner	Project Title	Type	Domain	Intervention	COVID-19 Impact
DRX	Building SDP School Capacity for Sustained PSE Change	Policy, Systems, Environment	Learn	K-12 Schools	Modified
DRX	Collaboration on School Wellness in Charter Schools	Systems, Environment	Learn	K-12 Schools	Modified
DRX	Gardening K-12 Schools	Systems, Environment	Play	K-12 Schools	Modified
DRX	Collaborative Efforts of Food Assistance Partners and SNAP-Ed in SDP Schools	Systems, Environment	Shop	Food Assistance	Modified
DRX	Increasing Food Access through Food Pantries or Food Distribution Programs	Systems, Environment	Shop	Food Retail	Modified
DRX	Improving Healthy Food Access, Outreach, and Engagement in SDP Schools	Systems, Environment	Shop	Food Retail	Cancelled
DRX	Increasing Food Access through Produce/Farm Stand	Systems, Environment	Shop	Food Retail	Not Reported
DRX	Community Wellness	Policy, Systems, Environment	Live	Community	Modified
DRX	Gardening	Systems, Environment	Play	Community	Modified
FAY	Oregon Food Bank Healthy Pantry Initiative	Systems, Environment	Shop	Food Assistance	Modified
FPA	Healthy Pantry Initiative	Systems, Environment	Shop	Food Assistance	Modified/Cancelled
FUL	Produce Access for Schools	Policy, Systems	Shop	Food Assistance	Modified
FUL	Oregon Food Bank Healthy Pantry Initiative	Systems, Environment	Shop	Food Assistance	Modified
FUN	Building School Capacity for Sustained PSE Change	Policy, Systems, Environment	Learn	K-12 Schools	Modified/Postponed
FUN	SEPA Preschool Initiative	Systems, Environment	Learn	Early Childhood	Modified/Postponed
FUN	Healthy Food Pantry Initiative	Environment	Shop	Food Assistance	Modified

Partner	Project Title	Type	Domain	Intervention	COVID-19 Impact
FUN	Collaborative Efforts of Food Assistance Partners and SNAP-Ed in SDP Schools	Systems, Environment	Shop	Food Assistance	Modified/Postponed
FUN	Faith Based Initiative	Systems, Environment	Live	Community	Modified/Postponed
FUN	Improving Health Food Access, Outreach, and Engagement in SDP Schools	Systems, Environment	Shop	Food Retail	Postponed/Cancelled
FUN	AEMC Healthy Community	Environment	Shop	Food Retail	Not Reported
FUN	Chester County Community Liaisons Initiative	Policy	Live	Community	Postponed
HPA	Oregon Healthy Pantry Initiative	Systems, Environment	Shop	Food Assistance	Modified
HPC	Building SDP School Capacity for Sustained PSE Change	Policy, Systems, Environment	Learn	K-12 Schools	Modified
HPC	School Wellness Initiative	Policy, Systems, Environment	Learn	K-12 Schools	Modified
HPC	Healthy Food Pantry Initiative	Systems, Environment	Shop	Food Assistance	Not Reported
HPC	School Food Access	Systems	Shop	Food Assistance	Not Reported
HPC	Lactation Support in Family Shelters	Policy	Live	Community	Modified
HPC	Healthy Out of School Time Initiative	Policy, Systems, Environment	Live	Community	Modified
HPC	Effectiveness of a Training and Technical Assistance Model for Food Service Departments	Policy, Systems, Environment	Live	Community	Modified
LAF	Ready Set Grow	Systems	Learn	Early Childhood	Not Reported
LAF	Modifying the Preschool Food Environment	Systems, Environment	Learn	Early Childhood	Modified
LAF	Smarter Lunchrooms	Environment	Learn	K-12 Schools	Modified
NEN	Healthy Pennsylvania Food Bank Initiative	Policy, Systems, Environment	Shop	Food Assistance	Modified

Partner	Project Title	Type	Domain	Intervention	COVID-19 Impact
NLA	Oregon Food Bank Healthy Pantry Initiative/Voices for Food Pantry Toolkit	Systems, Environment	Shop	Food Assistance	Modified/Postponed
SAH	Choice Food Pantry	Environment	Shop	Food Assistance	Modified
SDP	Collaborative Efforts of Food Assistance Partners and SNAP-Ed in Schools	Systems, Environment	Shop	Food Assistance	Modified
SDP	School-Based Gardens	Environment	Learn	K-12 Schools	Not Reported
SDP	Building District & School Capacity for Sustained PSE Change	Policy, Systems, Environment	Learn	K-12 Schools	Modified
SDP	Improving Healthy Food Access, Outreach, and Engagement	Systems, Environment	Shop	Food Retail	Cancelled
TFT	Whole School, Whole Community, Whole Child/Building SDP Capacity for Sustained PSE Change	Systems, Environment	Learn	K-12 Schools	Modified
TFT	School Gardens	Environment	Learn	K-12 Schools	Modified
TFT	Ready Set Grow	Policy, Systems, Environment	Learn	Early Childhood	Modified
TFT	Food Distribution	Systems, Environment	Shop	Food Assistance	Modified
TFT	Improving Healthy Food Access, Outreach, and Engagement	Systems, Environment	Shop	Food Retail	Modified
TFT	Heart Smarts/Health Screening at the Store	Policy, Systems, Environment	Shop	Food Retail	Postponed
TFT	Financial Incentives Programs	Systems, Environment	Shop	Food Retail	Modified
TFT	Community Based Participatory Approach	Policy, Systems, Environment	Live	Community	Not Reported
TFT	Community Gardens	Systems, Environment	Live	Community	Modified

Partner	Project Title	Type	Domain	Intervention	COVID-19 Impact
UNI	Champions of Change (School)	Policy, Systems, Environment	Learn	K-12 Schools	Modified
UNI	School Gardens Sowing Sustenance	Systems, Environment	Learn	K-12 Schools	Modified
UNI	Food Pantry Technical Assistance	Policy, Systems, Environment	Shop	Food Assistance	Not Reported
UNI	Collaborative Efforts of Food Assistance Partners and SNAP-Ed in SDP Schools	Systems, Environment	Shop	Food Assistance	Modified
UNI	Good Food Bag	Systems, Environment	Learn	Community	Not Reported
UNI	Community Healthcare Linkages	Policy, Systems, Environment	Live	Community	Not Reported
UNI	Summer Sowing Sustenance	Systems, Environment	Live	Community	Not Reported
UNI	Senior Center Wellness	Policy, Systems, Environment	Live	Community	Modified/Postponed
UNI	Summer Champions of Change	Policy, Systems, Environment	Live	Community	Not Reported
UNI	ASNP Ambassadors	Systems, Environment	Live	Community	Modified
VCP	Overall School Wellness	Policy, Systems, Environment	Learn	K-12 Schools	Modified
VCP	School Gardening	Environment	Learn	K-12 Schools	Modified
VCP	Building District & School Capacity for Sustained PSE Change	Policy, Systems, Environment	Learn	K-12 Schools	Modified

Appendix 4. Partnership Activities

PA SNAP-Ed participated in a call with representatives of the Pennsylvania Department of Education (PDE) Division of Food and Nutrition and Project PA, their implementation partner. In addition to school meal programs, current projects include School Breakfast Program mini-grants, PA Harvest of the Month funded through a farm-to-school grant, and the Fresh Fruit and Vegetable Program (FFVP). A mechanism is in place to obtain a list of mini-grant and FFVP recipients and facilitate PA SNAP-Ed local partner coordination with those recipients that also receive SNAP-Ed services. PA SNAP-Ed will explore opportunities for future collaboration with PDE and Project PA.

PA SNAP-Ed participated in a call with representatives of the Pennsylvania Department of Health (DOH) and the Tuscarora Intermediate Unit (TIU), their implementation partner. PA DOH administers a GO NAPSACC mini-grant project, funded by CDC, and manages Pennsylvania's access to UNC's GO NAPSACC online intervention. A few PA SNAP-Ed partners have obtained GO NAPSACC access through DOH and are working with PA SNAP-Ed program delivery sites on completing needs assessments, developing action plans, providing technical assistance, etc. A mechanism is in place to obtain a list of mini-grant recipients and facilitate PA SNAP-Ed local partner coordination with those recipients that also receive SNAP-Ed services. PA SNAP-Ed will explore opportunities for future collaboration with DOH and TIU.

The Governor's Food Security Partnership is a partnership between the Pennsylvania Departments of Aging, Agriculture, Community & Economic Development, Education, Health, and Human Services. SNAP-Ed involvement in the Partnership continues, however, no meetings occurred in FY 2021 due to the COVID-19 pandemic.

The Partnership is guided by the *Blueprint for a Hunger-free PA* that includes several goals in which SNAP-Ed can play a role, as described below:

Blueprint for a Hunger-free PA Goals	PA SNAP-Ed Opportunities
Every county and/or region in Pennsylvania will have a local food alliance to combat hunger in their local communities.	Representation in local food alliance groups.
The SNAP participation rate will increase from 90 percent to 98 percent or higher.	Communicate with relevant SNAP outreach partners.
The number of children benefiting from free and reduced-price meals during the school year (linked to nutrition programs in summer) will increase from 20 percent to 30 percent.	Partnering with SNAP-Ed eligible schools (CEP designated schools and schools with >50% free/reduced) and summer meal programs to provide evidence-based nutrition education and school food environment interventions.
Sixty percent of students benefiting from free and reduced priced school meals will participate in school breakfast. This is an increase from 47 percent in 2014-15.	Partnering with SNAP-Ed eligible schools to provide evidence-based nutrition education and breakfast policy interventions.
The Women, Infants, and Children (WIC) Farmers' Market Nutrition Program redemption rate will increase from 308,000 to 340,000 checks annually.	Marketing SNAP-Ed farmers' market nutrition education to WIC audiences.

Double SNAP Bucks will be available at all highly accessible, high-need farmers' markets, and additional SNAP recipients will have access to SNAP employment and training and SNAP education.	Farmers' market nutrition education and PSE interventions, such as food demonstrations, tastings, and recipes.
Pennsylvanians will have streamlined access to food security information and benefits.	Streamlined access to SNAP benefits for seniors; partnering with Area Agency on Aging to expand SNAP-Ed at senior centers.
Pennsylvania will improve access to healthy, nutritious food.	Partnering with corner stores to provide evidence-based nutrition education and PSE interventions

Pennsylvania SNAP-Ed
Fiscal Year 2021

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Statewide Evaluation Summary

FY 2021 Pennsylvania SNAP-Ed Evaluation Summary

Statewide Evaluation Projects

In FY 2021, Pennsylvania SNAP-Ed planned to conduct statewide evaluation activities that assessed nutrition and physical activity behavior changes related to direct education programming provided to school-age and adult/senior participants. These evaluation projects were postponed in FY 2021 due to the ongoing restrictions in providing in-person SNAP-Ed nutrition education due to COVID-19.

School-age participants were planned to be assessed using two evaluation tools:

Modified SPAN – a modified version of the School Physical Activity & Nutrition survey (SPAN). This assessment was to be administered to students in 4th-6th grade in a pre/post format and indicates nutrition and physical activity behavior changes resulting from series direct education programming.

- SNAP-Ed Evaluation Framework Indicators measured: MT1, MT3

Modified YRBS – a subset of nutrition and physical activity-related survey questions from the nationally-administered Youth Risk Behavior Survey (YRBS). This assessment was to be administered to students in 8th-12th grade in a pre/post format and indicates nutrition and physical activity behavior changes resulting from a series or direct education programming.

- SNAP-Ed Evaluation Framework Indicators measured: MT1, MT3

Adult/senior participants were planned to be assessed using the following evaluation tools:

UC Davis Food Behavior Checklist – a photo-based assessment tool that was to be administered in a pre/post format to assess nutrition-related behavior change after a series of direct education programming. Starting in FY 2020, Pennsylvania SNAP-Ed included additional survey items to assess sodium and whole grain intake (MT1), as well as measures of physical activity (MT3) as an addendum to this tool.

- SNAP-Ed Evaluation Framework Indicators measured: MT1, MT2, MT3

EFNEP Food Resource Management Checklist – a photo-based assessment tool that was to be administered in a pre/post format to assess nutrition-related and food resource management behavior change(s) after a series of direct education programming that included outcome objectives related to food resource management behaviors. Starting in FY 2020, Pennsylvania SNAP-Ed included additional survey items to assess sodium and whole grain intake (MT1), as well as measures of physical activity (MT3) as an addendum to this tool.

- SNAP-Ed Evaluation Framework Indicators measured: MT1, MT2, MT3, MT4

Challenges to Statewide Evaluation in FY 2021

In response to the COVID-19 pandemic, in-person SNAP-Ed activities were paused March 16, 2020 and continued to be suspended until July 8, 2021. Despite the resumption of in-person direct education and Policy, Systems and Environmental initiatives in Q4, the planned statewide evaluation projects were unable to occur as planned. While many local partners were able to provide opportunities for nutrition education virtually, evaluation of virtually delivered programming was not feasible on a statewide level. Thus, data on the three core indicators of MT1 - Healthy Eating Behaviors, MT2 - Food Resource Management Behaviors and MT3 - Physical Activity and Reduced Sedentary Activity Behaviors were unable to be measured. Data on MT5 - Nutrition Supports Adopted, MT6 - Physical Activity and Reduced Sedentary Behavior Supports and ST7 - Organizational Partnerships are included later in this report.

Evaluation Improvement for FY 2022 and Future Years

Priority Indicator Alignment – Statewide evaluation activities in FY 2022 will continue to be refined to more closely align with evaluation goals related to the priority SNAP-Ed Evaluation Framework Indicators: ST7 - Partnerships; ST8 - Multi-sector Partnerships and Planning; MT1 - Healthy Eating Behaviors; MT2 - Food Resource Management; MT3 - Physical Activity and Reduced Sedentary Behaviors; MT5 - Nutrition Supports Adopted in Environmental Settings; and R2 - Fruits and Vegetables.

In FY 2020, additional questions were added as an addendum page to the adult/senior statewide evaluation tools to collect data on MT3 - Physical Activity and Reduced Sedentary Behaviors. These data will continue to be collected in FY 2022 as addendums to the adult/senior assessment tools.

Beginning in FY 2022, the EFNEP Adult Questionnaire will be added as a statewide tool for evaluation of adult/senior healthy eating, food resource management, and physical activity behavior change assessment. The goal of this tool addition is to phase out older versions of statewide adult/senior tools, while evaluating additional Evaluation Framework Indicators with a single assessment tool.

Other evaluation tools may be identified, and pilot tested with selected local partners for assessment of adult/senior programming in FY 2022.

Direct Education and PSE Data Integration – Integrations of the two data reporting systems used by PA SNAP-Ed: STARtracks for direct education and program management and PEARS for policy, systems and environmental (PSE) activities is planned to continue in FY 2022. This integration will allow for increased data quality related to PSE evaluation as well as providing added context for evaluation results related to direct education programming, especially at locations where PSE initiatives and direct education may be delivered as complementary approaches.

Evaluation of Virtual SNAP-Ed Programming – In response to the COVID-19 pandemic, many local partners shifted towards providing SNAP-Ed programming in a virtual format. While evaluation of this programming was not feasible from a statewide perspective in FY 2021, local partners were able to conduct limited formative and process evaluations related to their virtual lessons. Opportunities to evaluate outcomes associated with virtual delivery of direct education programming will continue to be explored in FY 2022 including evaluating virtual lessons at the partner-level and identifying tools and survey platforms that may be used to conduct a statewide-level online assessment.

Evaluation PA SNAP-Ed Policy, Systems, and Environmental Approaches and Partnerships

Medium-Term Indicators – Changes; Organizational Adoption and Promotion

MT5: Nutrition Supports - Sites and organizations that adopt PSE changes and complementary promotion often including favorable procurement, meal preparation activities, or other interventions that expand access and promote healthy eating.

PA SNAP-Ed local partners reported PSE activities in the Program Evaluation and Reporting System (PEARS) PSE module. FY 2021 data compiled from those reports, statewide, is presented in the table below:

Nutrition Supports Adopted - Description	Change Level	Times Implemented
Created or enhanced healthy check out areas	Environmental	5
Decreased space/amount/variety of unhealthy options (includes shelf space, number of booths, options on menus)	Environmental	12
Eliminated or reduced amount of competitive foods/beverages	Environmental	1
Establish or improve a practice that encourages meal service staff to prompt healthy choices	Environmental	3
Established a new food bank, pantry or distribution site	Environmental	16
Established a new healthy retail outlet	Environmental	21
Established healthy food/beverage defaults (whole wheat bread, salad, or fruit instead of fries, water instead of soda, etc.)	Environmental	1
Established or improved salad bar	Environmental	4
Expanded, improved, or implemented storage for fresh produce and other perishable foods	Environmental	24
Improve appeal, layout or display of snack or competitive foods to encourage healthier selections	Environmental	21
Improved appeal, layout or display of meal food/beverages to encourage healthy and discourage unhealthy selections	Environmental	31
Improved or expanded cafeteria/dining/serving areas or facilities	Environmental	1
Improved or expanded kitchen/food preparation facilities that allow for healthier or more appealing options (e.g. refrigeration, appliances that allow for scratch cooking, etc.)	Environmental	8
Increased or improved opportunities for nutrition education	Environmental	306
Increased space/amount/variety of healthy options (includes shelf space, number of booths, options on menus)	Environmental	25
Initiated or expanded dedicated lactation space and other environmental concerns	Environmental	5
Initiated or expanded price manipulation/coupons/discounts to encourage healthy choices	Environmental	27
Initiated or expanded the use of digital platforms (websites, social media, text messages, etc.) to improve convenience of/access to healthy food (i.e. by promoting food distribution site, retail, cafeteria, community garden, etc.)	Environmental	18

Nutrition Supports Adopted - Description	Change Level	Times Implemented
Initiated or expanded use of onsite garden produce for meals/snacks provided onsite	Environmental	5
Initiated or expanded use of the garden for nutrition education	Environmental	29
Initiated, improved, expanded, reinvigorated, or maintained edible gardens	Environmental	15
Used interactive educational display (that will stay at the site), other visual displays, posters, taste testing, live demonstrations, audiovisuals, celebrities, etc. to prompt healthy eating behavior choices close to the point of decision	Environmental	339
Breastfeeding support policy	Policy	4
Developed policies that encourage the establishment of new food distribution sites, food banks, food pantries, etc.	Policy	5
Developed policies that encourage the establishment of new healthy retail outlets	Policy	6
Established or improved food/beverage or nutrition related policy (childcare wellness, school wellness, workplace wellness, etc.)	Policy	58
Policy for increasing nutrition education or cooking activities	Policy	71
Policy increasing healthy foods and beverages	Policy	11
Policy limiting unhealthy foods	Policy	13
Policy restrictions on using food as a punishment	Policy	51
Policy to improve hours of operation of food distribution sites, food bank, retail, cafeteria, etc. to improve convenience of/access to healthy food	Policy	5
Policy to reduce portion sizes of foods/beverages sold or served	Policy	1
Initiated or improved menu labeling (e.g. calories, fat, sodium, added sugar counts)	Promotion	1
Took steps to improve the appeal of the school meal program in order to increase meal participation	Promotion	71
Began, expanded, or promoted acceptance and use of SNAP/EBT/WIC	Systems	24
Clients have the opportunity to choose at least some foods they would like to take from food pantries, food banks, or soup kitchens (i.e. a client-choice model)	Systems	29
Implemented guidelines for healthier competitive foods options	Systems	1
Implemented improvements in hours of operation for food distribution site, food bank, retail, cafeteria, etc. to improve convenience of/access to healthy food	Systems	2
Implemented new or improved standards for healthier eating across the organization	Systems	5
Implemented novel distribution systems to reach high-risk populations, such as home delivery for elderly, farmers market, etc.	Systems	24
Implemented nutrition standards for foods distributed (at food pantries)	Systems	9

Nutrition Supports Adopted - Description	Change Level	Times Implemented
Implemented price manipulation/coupons/discounts to encourage healthy choices	Systems	43
Implemented, improved or expanded healthy fundraisers	Systems	2
Improved child feeding practices (e.g. served family style, adults role model healthy behaviors, staff sit with children, children decide when they are full, etc.)	Systems	20
Improved food purchasing/donation specifications or vendor agreements towards healthier food(s)/beverages	Systems	23
Improved free water access, taste, quality, smell, or temperature	Systems	37
Improved menus/recipes (variety, quality, etc.)	Systems	8
Improved or increased healthy beverage options	Systems	10
Initiated or enhanced limits on marketing/promotion of less healthy options	Systems	1
Initiated or expanded a mechanism for distributing onsite garden produce to families or communities (e.g. gardens, or farmer's markets)	Systems	4
Initiated or expanded farm-to-table/use of fresh or local produce	Systems	76
Initiated or expanded mechanism for distributing seedlings and/or other materials to families or communities for home gardening	Systems	25
Initiated or expanded the collection or gleaning of excess healthy foods for distribution to clients, needy individuals, or charitable organizations	Systems	2
Initiated, improved or expanded implementation of guidelines for healthier snack options	Systems	1
Initiated, improved or expanded implementation of guidelines on use of food as rewards or during celebrations	Systems	4
Initiated, improved or expanded opportunities for parents/students/community to access fruits and vegetables from the garden	Systems	5
Initiated, improved, or expanded opportunities for parents or youth to participate in decision making through a wellness committee or other process	Systems	3
Initiated, improved or expanded opportunities for parents/students/community to work in the garden		10
Initiated, improved or expanded professional development opportunities on nutrition	Systems	71
Initiated, improved or expanded use of a clinical screening tool for food insecurity and/or a referral system to nutrition or healthy food access resources (e.g. direct education, food bag, resource list, produce prescription, etc.)	Systems	18
Initiated, improved or expanded use of federal food programs (CACFP, TEFAP, summer meals, NSLBP, etc.) including improvements in enrollment procedures	Systems	121
Initiated, improved or expanded use of standardized, healthy recipes	Systems	43

Nutrition Supports Adopted - Description	Change Level	Times Implemented
Integrate culturally relevant, healthy, traditional foods at food service or distribution sites	Systems	2
Offered on-site enrollment in federal food programs	Systems	3
Partners adopt or improve use of a system to monitor implementation of food/beverage or wellness related policy	Systems	55
Staff include nutrition education as a learning standard for children	Systems	12
Total Number of Nutrition Supports Adopted		**1,907**

MT6: Physical Activity and Reduced Sedentary Behavior Supports – Sites and organizations that adopt PSE changes and complementary promotion that expand access and promote physical activity and reduce time spent being sedentary.

PA SNAP-Ed local partners reported PSE activities in the PEARS PSE module. Data compiled from those reports, statewide, is presented in the table below:

Physical Activity and Reduced Sedentary Behavior Supports Adopted - Description	Change Level	Times Implemented
Implemented complete streets environmental change (e.g. street trees, accessibility, buffer/barrier between sidewalk and street, crosswalks, intersection improvements)	Environmental	2
Improved or expanded physical activity facilities, equipment structures or outdoor space	Environmental	80
Improved quality of structured physical activity (non-PE)	Environmental	5
Improvements in access to, or appeal of, stairwells	Environmental	1
Increased access or safety of walking or bicycling paths	Environmental	1
Increased or improved opportunities for physical activity during recess	Environmental	26
Increased or improved opportunities for structured physical activity	Environmental	137
Increased, improved, or incorporated physical activity/reduced sitting during usual, on-going site activities and functions	Environmental	38
Initiated or improved playground markings/stencils to encourage physical activity	Environmental	3
Established or improved physical activity policy (childcare wellness, school wellness, workplace wellness, etc.)	Policy	51
Implemented recess before lunch policy	Policy	1
Established or improved physical activities to incorporate more culturally relevant practices	Systems	1
Implemented new or expanded restrictions on use of physical activity as punishment	Systems	1
Improved quality of physical education	Systems	4
Incorporated physical activity into the school day or during classroom-based instructions (not recess/free play or PE)	Systems	131
Increased or improved opportunities for unstructured physical activity time/free play	Systems	162

Physical Activity and Reduced Sedentary Behavior Supports Adopted - Description	Change Level	Times Implemented
Initiated, improved and/or expanded strategies to decrease screen time	Systems	1
Initiated, improved or expanded professional development opportunities on physical activity	Systems	25
Total Number of Physical Activity and Reduced Sedentary Behavior Supports Adopted		**670**

Short Term Indicators - Readiness and Capacity; Organizational Motivators

ST7: Organizational Partnerships – Partnerships with service providers, organizational leaders, and SNAP-Ed representatives in settings where people eat, learn, live, play, shop, and work.

PA SNAP-Ed local partners engage in partnerships with many different public and private organizations to provide SNAP-Ed direct education programming, PSE approaches, and social marketing projects. The ME continues to explore best practices to document the scope and depth of partnership activities that contribute to the strengths and successes of PA SNAP-Ed. PA SNAP-Ed partnerships in FY 2021, compiled from STARtracks data, are presented in the table below:

Entity Type	Number of Community Partnerships	Number of PA SNAP-Ed Local Partners
Agricultural organizations (includes farmers markets)	6	4
City and regional planning groups	1	1
Colleges and Universities	4	3
Early care and education facilities (includes childcare centers and day care homes as well as Head Start, preschool, and pre-kindergarten programs)	77	8
Faith-based groups	53	10
Food Banks/Food Pantries	19	9
Food stores (convenience stores, grocery stores, supermarkets, etc.)	52	7
Foundations/philanthropy organizations/nonprofits	22	10
Government program/agency (Federal, State, Local, etc.)	69	12
Hospitals/healthcare organizations (includes health insurance companies)	18	11
Human services organizations	91	12
Labor/workforce development groups	3	3
Parks and recreation centers	30	11
Public health organizations	4	3
Schools (preschools, K-12, elementary, middle, and high)	133	14
Schools (colleges and universities)	4	3
Total	**582**	

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**New Foods Take Time Curriculum Addendum: Intake of Study Foods**

Overview and Methods

"New Foods Take Time" is a repeated exposure curriculum designed to increase preference for and intake of fruits and vegetables among Head Start preschoolers. To evaluate effectiveness of the "New Foods Take Time" intervention, child consumption of study foods (i.e. chickpeas, sweet peppers, edamame, mango, and broccoli) was measured through individual assessments with participating children before and after the intervention. Each food sample was offered to children one at a time, and children were instructed to eat as much or as little as they would like during the given time frame. The number of study foods that children consumed (i.e. swallowed) was counted by research staff and recorded at pre- and post- intervention. Possible range for intake of each type of fruit or vegetable was 0-3 pieces for each study food (maximum for total intake=15 pieces). For data analysis, paired t-tests were conducted using SAS, version 9.4 to determine if there were within-child changes in study food intake before and after participating in the "New Foods Take Time" lessons. Final analysis excluded any children who were absent for the lesson where the corresponding food was discussed and presented.

Results

On average, there was a significant increase in the amount of fruits and vegetables that children consumed after the "New Foods Take Time" intervention compared to before the lessons.

Figure 1. Average Change in Preschoolers' Consumption of Fruits and Vegetables Before and After "New Foods Take Time" Lessons
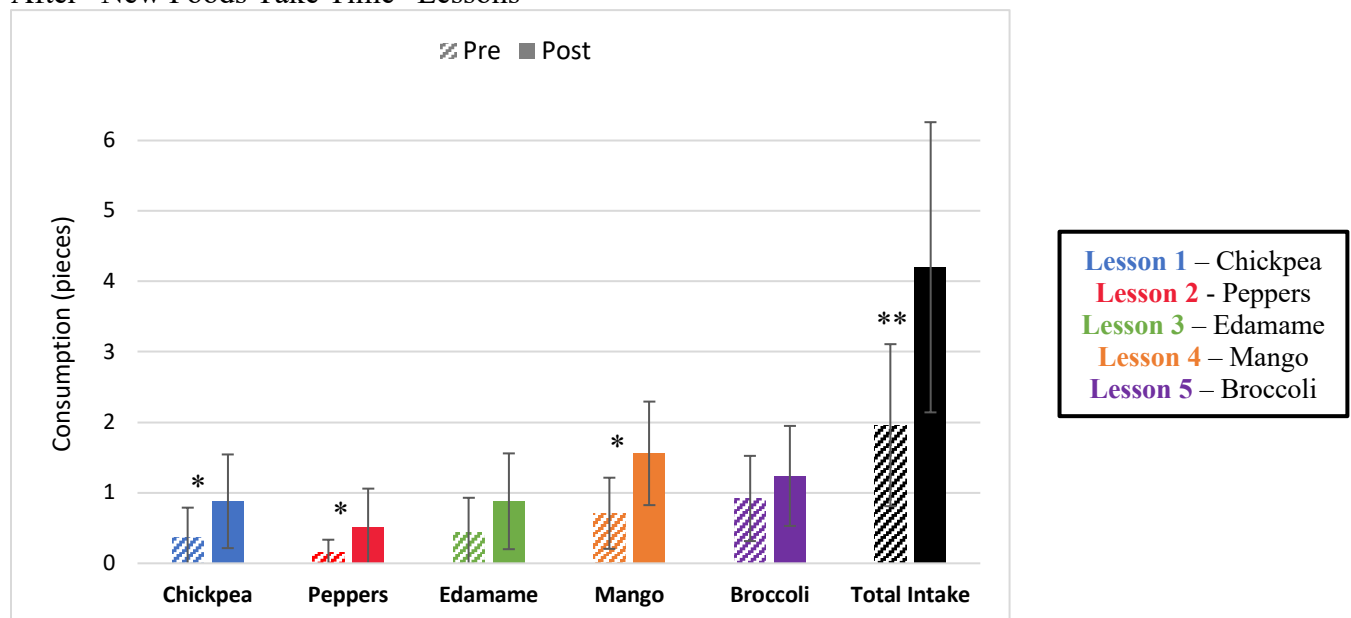
The results from t-tests comparing the pre- (M=1.96, SD=2.30) and post-study (M=4.20, SD=4.12) fruit and vegetable intake assessment indicate that the "New Foods Take Time" intervention resulted in an increased total consumption of fruits and vegetables, $t(24)=2.88$, $p=0.008$. $**p<.01$, $*p<.05$

Table 1: Preschooler Fruit and Vegetable Consumption Before and After "New Foods Take Time" Curriculum

	Chickpea	Sweet Pepper	Edamame	Mango	Broccoli	Total
Pieces of food consumed before curriculum (pre) (M±SD)	0.36±0.86	0.15±0.37	0.44±0.98	0.71±1.01	0.92±1.21	**1.96±2.30**
Pieces of food consumed after curriculum (post) (M±SD)	0.88±1.33	0.52±1.08	0.88±1.36	1.56±1.47	1.24±1.42	**4.20±4.12**
Change in pieces of food consumed for all children (n=25) (M±SD)	+0.54*	+0.24	+0.36	+0.60†	+0.24	**+1.72***
Absent children (n)	0	5	7	4	1	
Change in intake after removing children who did not attend lesson (pieces)	+0.54* (n=25)	+0.35* (n=20)	+0.39 (n=18)	+0.70* (n=21)	+0.38 (n=24)	**+2.24** (n=25)
Change in intake after removing children who did not attend lesson (% change)	+150%	+67%	+89%	+99%	+41%	**+114%**

**p<.01, *p<.05, † p<.10

Conclusion

In conclusion, after completing food intake analyses, CCOR found that from pre- to post-assessment, children consumed more chickpeas (p=0.0294), sweet peppers (p=0.0493), mango (p=0.0398), and overall (p=0.008). These findings indicate that the "New Foods Take Time" lessons led to increased intake of the healthy foods provided. Overall, it appears that the "New Foods Take Time" repeated exposure lessons were effective in leading to the targeted behavior change, consumption of study fruits and vegetables.

The FY21 DRAGON Project Intervention Report

Introduction and Background

The Drexel University Eat Right Philly Nutrition Education Program (DRX ERP), a Pennsylvania Supplemental Nutrition Assistance Program Education (PA SNAP-Ed) partner, funded by the United States Department of Agriculture (USDA), provides nutrition education programming in schools and community sites. The goal of SNAP-Ed is to provide nutrition education to SNAP-eligible individuals to increase the likelihood that participants will make healthy food choices and choose physically active lifestyles within their budget.

DRX ERP uses evidence-based, comprehensive, and multilevel interventions, including direct nutrition education and Policy, Systems, and Environmental (PSE) interventions in nutrition programming. Currently, the Drexel University HS Curriculum and/or Cooking Club Curriculum are primarily used with high school students in the DRX ERP. Additional curriculum available for DRX ERP use in high school populations include A Taste of African Heritage (ATOAH) and Growing Foods. There are a few additional high school curricula available in the SNAP-Ed Toolkit, but most require additional funds for materials, licenses, etc. Topics addressed in these approved curricula focus on the basic principles of the MyPlate Food Guidance and often incorporate food preparation activities. While these curricula are successful and beneficial, there are more topics included in the Dietary Guidelines for Americans that are relevant to students who are preparing for adulthood. Such topics include: follow a healthy eating pattern across the lifespan, support healthy eating patterns for all, food resource management and plant-based diets.

Feedback from teachers in the School District of Philadelphia reinforces a concern of gaps in the current programming. Teachers have expressed a need for curriculum that is more challenging and provides relevant lessons that prepare students for life after high school. Some have also suggested project-based learning opportunities. The current curriculum in the SNAP-Ed Toolkit does not fit these needs and suggestions.

Literature supports the use of a multiplatform intervention. The Academy of Nutrition and Dietetics published a position paper on interventions that combat pediatric obesity, and notes that interventions need to be multifaceted and include environmental supports to

achieve sustained behavior change. Furthermore, they recommend that initiatives present as "out of the box" and that the more intensive the intervention, the greater the results (Hoelscher, 2013). In response to these needs, DRX ERP submitted an emerging curriculum as a part of the FY2021 Statement of Work called the DRAGON project, which challenges students to Determine, Recognize and Achieve Goalsetting through Nutrition. With the addition of self/peer led activities that act as a reinforcement of the direct education, DRX ERP predicts that this intervention will present an innovative addition to the consortium of nutrition education materials available for use in SNAP-Ed.

Intervention Description

The DRAGON project is an intervention developed by DRX ERP staff members to address the gaps in High School nutrition education. The goal of this project is to create a high school intervention which combines direct education with the practical application of concepts, as well as, provide project-based learning, giving youth an opportunity to develop skills needed to take leadership and participation roles in making positive changes in their communities.

The DRAGON Project consists of a five lesson direct education series plus a student-led wellness project which incorporates PSE approaches. The direct education is comprised of a five lesson series focused on topics including the impact of food choices, making healthy choices, managing a food budget and sustainable diets. The defunct, research-based Pennsylvania Department of Education Curriculum (PDE) was used as a starting point in developing this new five-lesson series. Throughout the new lessons, students are encouraged to practice mindfulness in making everyday wellness decisions as they work toward achieving a personal wellness goal. All series lessons include a detailed lesson plan, activities and may include a food tasting.

The student-led wellness project consists of six to ten sessions and engages students to find wellness opportunities. Students are guided through a process of assessing their environment, identifying opportunities, exploring options for action, selecting and implementing actions and evaluating the outcome. This part of the DRAGON Project utilizes concepts and tools adapted from The Food Trust's HYPE: Healthy You. Positive Energy Program for Youth Engagement.

All DRX ERP nutrition coordinators who deliver the DRAGON Project and non-SNAP-Ed staff who work with them will be trained on all aspects prior to implementation. An intervention manual guides staff through implementation of the entire intervention.

Evaluation Plan

The original evaluation plan was to pilot this intervention in up to three high school classrooms. Classrooms would be selected based on teacher interest in participating and principal approval. All involved staff would be trained in the intervention prior to implementation. At the start of the implementation, students were to complete the 'Starting the Conversation: Diet" survey, an eight question simplified food frequency questionnaire. Students would be asked to complete the same survey at the completion of the intervention. The intent was to evaluate the change in each student's reported intake from baseline to post-intervention. Students and non-SNAP-Ed staff would also be asked to participate in focus group discussions at baseline and post-intervention to obtain their thoughts in regards to various health and wellness concepts. At post-intervention, the discussion would also include comments on the lesson content, activities, and suggestions for improvement. Data obtained would be used to revise and refine the intervention.

Due to COVID-19 and the cessation of in-person programming, the study design was adapted as in-person lesson delivery was not possible. DRX ERP nutrition coordinators were asked to review the lessons. After reviewing each lesson, they were asked to complete a questionnaire about the lesson content, organization, and activities, and provide suggestions for improvement. After reviewing all five lessons, they were asked to complete another questionnaire addressing concepts about the curriculum series. Additional peer-reviewers, high school teachers and SNAP-Ed partners, were also asked to complete this same review. Suggestions and comments were used to revise and refine the lesson content.

In addition to the peer review, a plan to trial curriculum lessons virtually in the schools as single or series lessons was implemented. Select classrooms of students were chosen for the sampling. After the lesson, feedback was solicited from students and the classroom teacher about the content and activities.

Program Activities

Curriculum lessons were developed by the DRX ERP team. The five core lessons are: (1) Exploring Food Choices: Why Did I Eat That? (2) Where to Find Our Food (3) Shop Right to Eat Right (4) Understanding the Food Web and (5) Sustainability: The Attainable Choice. Lessons include a detailed lesson plan and activities. The project sessions were developed after the lessons and are composed of the following six sessions: (1) Introduction: The DRAGON Project, (2) Assess the School, (3) Survey Analysis, (4) Prioritizing Areas, (5) Plan and Implement the Project and (6) Evaluate and Celebrate Project Completion.

DRX ERP researchers conducted a peer review by recruiting feedback from DRX ERP nutrition coordinators, staff who are responsible for implementing PA SNAP-Ed programming. DRX ERP researchers asked five nutrition coordinators to review the five curriculum lessons. A standard review email was established and sent to all reviewers (Appendix A – Email Invitation to Peer Reviewers). This email invited reviewers to read through the lessons and provide feedback on the concepts taught. Feedback was collected through a survey, which was completed for each lesson, to provide feedback on areas such as: quality of content, flow of the lesson, and whether the content will be interesting to school staff. (Appendix B – The DRAGON Project Feedback and Review: Individual Lessons). After reviewing all five lessons, the five nutrition coordinators were also asked to complete an additional series survey to provide a review of the entire lesson series (Appendix C - The DRAGON Project Feedback and Review: Curriculum Review). This series review asked the nutrition coordinators questions surrounding: audience interest in the content, an identifiable theme, what they liked and disliked about the curriculum, and challenges to implementation. All surveys were conducted through Qualtrics©, and all respondents were recorded as anonymous. Results were downloaded into SPSS for statistical analysis. Five nutrition coordinators completed the individual lesson survey reviews, and three nutrition coordinators completed the overall survey review of the lesson series. Feedback from the coordinator reviews was used to make changes to the curriculum lessons.

DRX ERP researchers expanded the peer review by asking four PA SNAP-Ed professional staff members from around the state of Pennsylvania for feedback on the content of the

curriculum lessons. DRX ERP utilized the same feedback method conducted in the nutrition coordinator review process. Three PA SNAP-Ed professional staff members completed the full review of individual lessons, and two PA SNAP-Ed professional staff members completed the full overall series review. The feedback data were analyzed for trends and descriptive statistics through IBM SPSS version 26 and will be used to further refine the lessons

DRX ERP researchers also asked nutrition coordinators to trial single lessons or the series in classrooms virtually, in a school of their choice. The research staff aimed to recruit up to 8 classrooms to participate in this informal evaluation. Coordinators were advised to choose a teacher who was willing to participate as well as a group of students that would be engaged in this type of content. Researchers sought to understand the opinions of coordinators, students and teachers and gain feedback on lesson content, flow, time and any other qualitative information that would help researchers to finalize the lessons. This input was crucial to inform researchers on changes that would improve the lessons and inform successful classroom implementation. A total of six lessons were conducted by four coordinators in four high school classrooms. Lessons and post-lesson feedback were obtained from the students and staff who participated in the trial lessons from April 2021 through June 2021. Nutrition Coordinators were provided with a lesson review implementation guide to assist in classroom selection, lesson selection and preparing to teach the material (Appendix D – Lesson Review Implementation Guide). Coordinators and researchers worked together to develop a schedule for lesson delivery. At least one researcher and one coordinator were present in each lesson taught. Coordinators taught the lesson content to the students, and the researcher noted observations. (Appendix E - PA SNAP-Ed DRAGON Project Pilot Observation Checklist- Virtual Programming). Coordinators were asked to provide individual feedback on the flow of the lesson and scheduled a follow-up voluntary group discussion to get teacher and student feedback on the lesson implementation. At least one researcher and one coordinator were present during each discussion with each classroom, where the nutrition coordinator asked questions from the suggested Post Lesson Review Questions (Appendix F - Post Lesson Review Questions). The researcher documented the feedback provided. The post-lesson review questions included

prompts like "Did your nutrition coordinator explain the concepts clearly" or "is there something else you would have liked to see in the lesson."

DRX ERP also submitted these lessons to the Penn State management entity for review. DRX ERP obtained feedback on the curriculum lessons, and suggested changes requested by Penn State nutritionists and reviewers were made to the curriculum.

Data Analysis and Results

The peer review process of the DRAGON project was conducted on both the individual lessons and the overall curriculum series. Eight peer reviewers, five DRX ERP nutrition coordinators and three external reviewers familiar with SNAP-Ed, provided feedback via a survey administered through Qualtrics©. Respondents were asked to rate each lesson on the following:

- Lesson content that is both relevant and interesting to the audience
- Organization and flow of content
- Quality and relevance of activities provided
- Interest in the intervention overall to participants
- Appropriate behavioral outcomes and objectives
- Appropriate teaching methods and activities for the intended audience
- Engagement of teaching methods for students

Reviewers were also asked to rate the overall curriculum series and were asked to rate the following:

- The series' content makes sense, is reasonable and is well organized.
- The audience will be interested in the subject and series information.
- The theme of the DRAGON project was carried out through the lessons.

Lesson Summary - Peer Reviewers

Feedback was gained to inform changes and modifications to the DRAGON project. Peer reviewers were asked if the information provided was relevant to the intended audience. Table 1 indicates that lessons #2 and #5 were seen to have the most relevant content for the

audience. Results from this table are skewed, as lesson #2 has 9 respondents and lesson #3 has 7 respondents. Still, with that discrepancy, both lessons still have most of the respondents indicating that they strongly agree that the lesson content is relevant.

Table1: Lesson content is relevant to the intended audience

Lesson Name	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
1 – Exploring Food Choices	5	3	0	0	0
2 – Where to Find Our Food	8	1	0	0	0
3 – Shop Right to Eat Right	3	2	1	1	0
4 – Food Web	5	2	1	0	0
5 - Sustainability	8	0	0	0	0

One respondent indicated that they somewhat disagreed that lesson #3, "Shop Right to Eat Right", may be relevant to the intended audience. A further look into comments revealed the following thoughts related to difficulties with this lesson:

- "This lesson seems a bit mature for high school students. The topics of planning meals, leftovers and keeping a kitchen organized seem irrelevant to most of the high school students that I teach."
- "If the students are doing the shopping, helping with food shopping or have an impact on the foods that are bought, this lesson is perfect. If the students aren't included in food shopping, they may not be interested."

The responses help to reinforce that choosing the appropriate classroom is an important part of the process when implementing the DRAGON project.

Reviewers were asked to rate whether the lesson content would be interesting to the intended audience. Table #2 shows that lessons #1 and #4 received the highest scores, with most respondents overall stating that they "strongly agree" or "somewhat agree" with this statement.

Table 2: Lesson content would be interesting to the intended audience

Lesson Name List name below	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
1 – Exploring Food Choices	6	2	0	0	0
2 – Where to Find Our Food	4	5	0	0	0
3 – Shop Right to Eat Right	4	2	0	1	0
4 – Food Web	6	1	1	0	0
5 - Sustainability	5	3	0	0	0

One reviewer disagreed somewhat that the information in Lesson #3 would be interesting to the intended audience. This reviewer was the same one who noted that the lesson seemed "a bit mature for high school students," in Table 1, when asked if the lesson content is relevant to the intended audience. This response may relate to a reviewer's personal experiences with students as well as selecting the appropriate classroom in which to conduct the DRAGON project. Table 2 also indicates one neutral response. The respondent noted a concern that there is a lot of interesting information in Lesson #4 that requires a lot of listening on the part of the student and it might be too much listening for some students.

Reviewers were asked to rate the organization of the lessons. Table 3 shows that overall, most reviewers reported that the lessons were organized.

Table3: The Lesson Content is Organized

Lesson Name List name below	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
1 – Exploring Food Choices	6	1	0	1	0
2 – Where to Find Our Food	8	1	0	0	0
3 – Shop Right to Eat Right	7	0	0	0	0
4 – Food Web	5	1	1	1	0

5 - Sustainability	7	0	0	0	0

Two reviewers somewhat disagreed on the organization in lesson #1 and lesson #4 and one reviewer left a neutral rating for lesson #4. Feedback from reviewers included the following suggestions for improvement:

- Reorganize the slides – the reviewer noted that this was a personal preference on methods this reviewer usually used.
- Another reviewer felt the slides were a bit confusing. This reviewer did note that learning the information well might resolve this issue.
- There is a lot of information in lesson #4 and there is concern with students needing to spend a lot of time listening to the content.

Respondents were also asked to rate whether the content flowed smoothly. Table 4 shows that overall, most reviewers reported that the lessons flowed smoothly, and one comment noted that the activities reinforce the content provided.

Table 4: The Lesson Content Flows Smoothly

Lesson Name List name below	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree
1 – Exploring Food Choices	5	2	0	1	0
2 – Where to Find Our Food	8	1	0	0	0
3 – Shop Right to Eat Right	7	0	0	0	0
4 – Food Web	6	1	0	1	0
5 - Sustainability	7	0	0	0	0

Two reviewers responded that they somewhat disagreed that lesson content flowed smoothly and were the same two reviewers who noted that they somewhat disagreed in the previous question that asked about the organization of the lesson content. This rating could be reflective of different teaching styles and methods used, or an indication that content on the slides may

benefit from minor editing to make the content language more appropriate for the audience. This rating may also reinforce the need to choose an appropriate classroom for DRAGON project implementation.

Reviewers were also asked to assess the activities and handouts. All reviewers agreed that the activities reinforced the content well. Most reviewers indicated that the quality and appropriateness of the handouts is good. One reviewer indicated neutral for the handout in lesson #3 and somewhat disagree for that in lesson #2. Suggestions for handout quality and improvement are under consideration to help with the flow of the lessons.

When asked about the presumed interest of school staff in the content, all but one response agreed that school staff would be interested in the content material. One reviewer indicated neutral for lesson #4.

Reviewers were asked to assess the alignment of the behavior outcomes and the content. All reviewers agreed that the behavior outcomes align with the lesson content. Reviewers were also asked if they agreed that the lesson objectives were reasonable for the audience. For lessons #1, #4 and #5, reviewers agreed that the objectives were reasonable for the audience. For lessons #2 and #3, however, one reviewer somewhat disagreed that the objectives were reasonable, but provided suggestions for revision.

An assessment of the teaching methods and activities was also requested. For all lessons most reviewers either strongly agreed or somewhat agreed that the methods were appropriate for the target audience. One reviewer somewhat disagreed for the methods in lesson #2 and another reviewer somewhat disagreed for the methods in lesson #3. Both reviewers provided comments and suggestions. As for activities, all reviewers either strongly agreed or somewhat agreed that the activities are practical and reasonable for the audience.

Lastly, reviewers were asked about their agreement as to whether each lesson's methods would adequately engage the audience. Table 5 shows the responses.

Table 5: Teaching Methods Adequately Engage the Audience

Lesson Name List name below	Strongly Agree	Somewhat Agree	Neutral	Somewhat Disagree	Strongly Disagree

1 – Exploring Food Choices	3	5	0	0	0
2 – Where to Find Our Food	7	2	0	0	0
3 – Shop Right to Eat Right	6	0	0	1	0
4 – Food Web	4	2	1	1	0
5 – Sustainability	5	2	1	0	0

Some reviewers were neutral or had some disagreement that the teaching methods would adequately engage the audience. The reviewer for lesson #3 who somewhat disagreed to this question had the opinion that the lesson topic was "a bit mature for high school students." The reviewers for lessons #4 and #5 who were neutral or somewhat disagreed that the teaching methods were adequate to engage students were external reviewers. These reviewers had suggestions that will be considered when updating the lessons.

Series Summary – Peer Reviewers

All reviewers were provided with a link to a survey that requested input about the whole series. Of the eight reviewers, five completed the series survey with three being nutrition coordinators and two being external peer reviewers. All reviewers rated the series highly. The ratings are as follows:

- All of the reviewers strongly agreed that the content is reasonable for the audience.
- Four strongly agreed and one somewhat agreed that the content is well organized.
- Three strongly agreed and two somewhat agreed that the audience would be interested in the subjects.
- Five reviewers strongly agreed that the main theme was well carried out throughout the series.

A variety of open-ended questions asked reviewers what they liked about the curriculum, disliked, and what challenges they might see with implementation. Reviewers noted that they liked the following items:

- The subject is more challenging than the current curriculum. It goes deeper into concepts that can help students prepare for adulthood.

- The lessons are realistic, relatable, well organized, and easy to understand.

- Lessons are extremely interactive.

- It covers information that is not covered in other curriculum.

- The students can use the information and resources every day in their own lives.

Reviewers were asked what they dislike about the curriculum. Reviewers noted items the following items:

- There is a lot of content, but there could be more activities.

- Activities could be more "action-oriented". This reviewer did provide a suggestion.

- Lessons rely on student engagement. If the students are not engaged and responding, lessons might be difficult to implement.

- Need more visuals.

Reviewers were also asked about the challenges they foresee in implementing the curriculum. Reviewer's comments focused on a few themes.

- Choosing the right classroom – Students need to participate actively for success

- Instructor learning the content, activities and ice breakers

- Lack of technology in some classrooms

- Class time might be a concern with a talkative classroom as content could trigger a lot of participation.

Lesson Feedback Summary – Students and Staff

Informal feedback was gained from students and staff on the trial lessons conducted during Spring 2021. Nutrition Coordinators taught six total lessons in four different classrooms with a total of 58 students. (Table 6) Classroom teachers encouraged feedback through verbal cues, participation points, and extra credit for class attendance. Zero students participated with cameras on, which was not an unusual occurrence in classrooms having virtual programming delivery.

Table 6 – Lesson Feedback Summary Information

Classroom	Number of Students	Grade	Lesson	Students with Cameras On
#1	11	10th	Lesson 1	0
#2	14	12th	Lesson 1	0
#3	8	12th	Lesson 5	0
#4	9	12th	Lesson 4	0
#5	10	12th	Lesson 5	0
#6	6	12th	Lesson 1	0
Total Students	58			

Positive student and teacher feedback on the lesson and content included:

- *The lesson material made sense, and got the students thinking*

- *Thinking about how available food is, and how that effects our food choices*

- *How accessibility plays a large role in what we eat*

- *I am trying to think more about the food I buy (Student)*

- *"We need to make healthy choices in the foods we eat"*

- *"It's practical and can be applied right away to life"*

- *I like how relevant the information was to them [the students], and they could take it and apply it right away. They didn't need prior knowledge, and they could take what they learned and apply it right away.*

- *Students were engaged mostly through chat but some unmuted to respond.*

- *In all the previous lessons you've taught us I found them very interesting and helpful. I've changed what I eat and how much exercise I do now. (Student)*

- *I take most of the information into my life because I like to eat better and I feel like my body is getting more healthier and I feel good and I have so much confidence in myself. (Student)*

Student and teacher comments on areas for improvement included:

- *I thought the coordinator and the teacher did a good job of encouraging the students to participate—they are 12th graders; they're already checked out!*
- *Some concepts were not clear (when asked did the coordinator explain the topic clearly)*
- *I think that everything would be much easier, and you would get a lot more participation in person.*
- *Lesson was completed a bit early. Increased feedback would have extended the lesson into a full class*

Although positive feedback heavily outweighs the criticism or negative feedback, it is encouraging to note that many respondents had positive experiences in learning the information in DRAGON Project lessons.

Limitations

Several limitations occurred with this pilot evaluation. DRX ERP researchers invited a few School District of Philadelphia teachers to review the lessons, but they did not review them, so we do not have feedback from SDP teachers.

Inconsistency with data collection in individual reviews was a limitation. For example, one individual lesson had 4 reviews while one had 6 reviews indicating that a reviewer may have mixed up the lessons that they were reviewing.

The trial lessons were implemented virtually due to the COVID-19 restrictions. Student burnout and limited interaction due to virtual delivery, including students with cameras off, caused limitations to the curriculum delivery. In some instances, classes ended earlier because of the lack of discussion. Comments from participants included that the curriculum "would get a lot more participation if this was done in-person."

Conclusions

Implications from this pilot review process allowed for DRX ERP to understand the strengths and limitations of the project. Creators of the DRAGON curriculum are using the

feedback provided to update and make these lessons more cohesive for the program review of

the DRAGON series that will take place in fiscal year 2022.

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Appendix A

Email Invitation to Peer Reviewers

Hello XXXX!

 Drexel University's PA SNAP-Ed/Eat Right Philly Program is developing a new five lesson high school series. The series is intended to teach students the skills needed to establish personal wellness goals and to make daily decisions that will help them to reach these goals. We are currently looking for a few people who would be willing to review these lessons and provide us with feedback. I wanted to invite you to participate in this review. We value your knowledge, experience and collaboration with our program and know that your input would be valuable to us.

 All we ask is that you review each lesson plan and then complete an evaluation survey for each one. If you are willing to help us, I would provide you with the links to the curriculum and to a survey that we ask you to complete after reviewing each lesson. After completing the lesson review we ask you to complete a final survey to review the curriculum as a whole. We were hoping that we could have this done by XXXX. If you would be willing to do this for us, please let me know and I will send out the information. If you are unable to help, just let me know. We appreciate the consideration.

Respectfully,

DREXEL EAT RIGHT PHILLY

Appendix B

The DRAGON Project Feedback and Review: Individual Lessons

Q1 What lesson are you evaluating?

▼ Lesson 1 - Exploring Food Choices: Why Did I Eat That? (1) ... Lesson 5 - Sustainability: The Attainable Choice (5)

Q2 Please rate the lesson content on the following:

	Strongly agree (1)	Somewhat agree (2)	Neutral (3)	Somewhat disagree (4)	Strongly disagree (5)
The content is relevant to the intended audience. (1)	○	○	○	○	○
The content should be interesting to the intended audience. (2)	○	○	○	○	○
The content is organized. (3)	○	○	○	○	○
The content flows smoothly. (4)	○	○	○	○	○
The activities reinforce the content. (5)	○	○	○	○	○
The handouts are appropriate and good quality. If no handouts, leave blank. (6)	○	○	○	○	○
The content should be interesting to school staff. (7)	○	○	○	○	○

Q3 If you answered neutral or disagree above, please elaborate below:

_____

Q4 Is there any missing information?

_____

Q5 Is there information that should be removed?

_____

Q6 Please rate the methods used for the lesson:

	Strongly agree (1)	Somewhat agree (2)	Neutral (3)	Somewhat disagree (4)	Strongly disagree (5)
The objectives, behavioral outcomes and lesson content make sense when looked at together. (1)	○	○	○	○	○
The lesson objectives are reasonable for the intended audience. (2)	○	○	○	○	○
The teaching method will work well with the intended audience. (3)	○	○	○	○	○
The activities are practical and reasonable for a class. (4)	○	○	○	○	○
The methods for teaching will adequately engage intended students. (5)	○	○	○	○	○

Q7 If you answered neutral or disagree above, please elaborate below:

_____

_____

Q8 Please include any suggestions for improvement:

_____

_____

_____

Appendix C

The DRAGON Project Feedback and Review: Curriculum Review

Q1 Can you see a theme or trend throughout the curriculum? If yes, what is that theme?

_____

_____

Q2 Please evaluate the series as a whole:

	Strongly agree (1)	Somewhat agree (2)	Neutral (3)	Somewhat disagree (4)	Strongly disagree (5)
The series content makes sense and is reasonable. (1)	○	○	○	○	○
The series content is well organized. (2)	○	○	○	○	○
The intended audience will be interested in the subject matter. (3)	○	○	○	○	○
The theme of the series is adequately carried through the curriculum. (4)	○	○	○	○	○
School staff will be interested in the series information? (5)	○	○	○	○	○

Q3 If you answered neutral or disagree above, please elaborate below:

_____

_____

_____

Q4 What do you like about the curriculum? Please be specific:

_____

_____

Q5 What do you dislike about the curriculum? Please be specific:

_____

_____

Q6 Are there parts of the curriculum that might be challenging to conduct in a classroom? If so what are they?

_____

_____

Q7 Do you see any challenges to implementing this curriculum in a virtual setting?

_____

_____

_____

Q8 What factors might need to be considered if lessons were to be implemented virtually?

_____

_____

_____

Q9 Please list any additional specific suggestions that you have not covered in this review below:

_____

_____

_____

Appendix D

LESSON REVIEW IMPLEMENTATION GUIDE

Thank you for taking the opportunity to deliver DRAGON Project Lessons! The trial implementation of these lessons is an important step in preparing them for completion. Please review the following document before preparing to conduct a lesson. If at any time you have questions about content, implementation, instructions, or any other piece of the curriculum, please ask.

GETTING STARTED

1. Select a classroom – We suggest that you choose the classroom carefully, consulting with the classroom teacher in the decision. While this curriculum is intended for grades 9-12, it does deal with concepts that may be more impactful to the older high school student and high school students who are engaged in the topic. It will also be helpful to engage a teacher who has interest in the topic as well.
2. Lesson Feedback – Inform the teacher that after the lesson, we would like time to meet with the students and with the teacher to discuss their thoughts on the lesson that they received. A letter with appropriate verbiage will be provided for nutrition coordinator use.
3. Select the lesson – Review the 5 lessons and choose the right one(s) for the group of students. Since this process is about reviewing the quality, content, and flow of the lessons, the entire series does not have to be implemented during this phase of development.
4. Schedule the lesson – Once you have scheduled the lesson, please let your supervisor and Kusuma know the date and time. We will be scheduling to have an evaluation team member observe the lesson. You will need to arrange for that person to have the needed access to the classroom.
5. Prepare for the lesson – Give yourself plenty of time to review the lesson content and to learn it. Be sure that you know how to do the activities that are in the lesson and understand the intended implementation of the lesson content. Some of these lessons may have subject matter that is new to you to that is something you have not taught before. Please make sure that you learn the content before delivering the lesson. If there is anything you would like to practice with a curriculum developer prior to delivery, please ask.
6. Decide which activities to do as a class and offer remaining activities as post class assignments if the teacher wants to use them.

LESSON DELIVERY

1. This curriculum has a theme of goal setting and using mindfulness each day to help a person make decisions that will help them to reach their health and wellness goals. If this curriculum was being delivered in its entirety, the students would be making their own SMART goal in the first session and would work on this goal during the series and subsequent student engagement project. Each lesson includes a brief review and update on students' progress on their personal goals. Since this current implementation plan is not an implementation of the entire curriculum, it is suggested that you eliminate the section of the lesson in which the class discusses the goals that were made in the first session and the progress towards these goals.
2. At the start of the lesson, tell the students that you will be asking the students for their feedback regarding the lesson. Use the verbiage that will be provided

3. Use the lesson plan, power point presentation, and worksheets as planned.

POST LESSON REVIEW

1. Record your own thoughts and critiques about the lesson using the Lesson Review questions provided.
2. Arrange a time after the lesson delivery to meet with students to obtain their feedback on the lesson(s). Arrange a separate time to meet with the teacher to get his/her feedback as well.
3. Invite an evaluation team member to the post lesson review.
4. Obtain questions from Kusuma.
5. Working with the evaluation team member, ask the students the questions and record their responses in the required document. Do the same with the classroom teacher in a separate meeting.
6. Provide the completed document to Kusuma.

Sample Letter for teacher explaining the project

Thank you for your interest in helping us to trial new lessons for the Drexel High School Curriculum. We are currently developing The DRAGON Project, a new intervention for high school students that will include a five-lesson series and a student engagement project. The lessons are intended for students who have already received other DREXEL HS EAT RIGHT PHILLY lessons during their high school years. The DRAGON Project is intended to give students the skills needed to make food choices that will help them to reach and support their personal health and wellness goals.

As a part of this lesson review, we would like to meet with the students at some time after the lesson to get their feedback. We would also like to meet with you to get your feedback. We plan on using the comments to help inform edits and adjustments to the curriculum.

Curriculum topics include:

1. Exploring Food Choices: Why Did I Eat That?
2. Where to find our food
3. Shop Right to Eat Right
4. Understanding the Food Web
5. Sustainability: The Attainable Choice

The EAT RIGHT PHILLY team appreciates your help in creating a curriculum that delves deeper into current nutrition topics and teaches students skills that will help them to make food choices that will enable them meet their own wellness goals.

Verbiage to inform students about their role in the lesson review

Today we are going to learn about _____. This lesson has been developed as a part of new series of lessons that EAT RIGHT PHILLY is developing. We will be asking you for your feedback on the lesson on (insert date). So please listen and pay attention. Your feedback is very important to us.

Date: Start Time: End Time:
Educator's Name: Lesson Title:
Site Name: Series Name/Staff Name:
Grade: Number of Students:

Observations	Yes	No	Comments
Introduction • Provides an overview of what students will learn.	☐	☐	
• Coordinator informs students of post lesson review using suggested verbiage.	☐	☐	
• Includes section on respectful language	☐	☐	
Lesson Flow • Lesson started and ended on time	☐	☐	
• Completes lesson within the allotted time	☐	☐	
• Followed the lesson template	☐	☐	
• Utilized all components of the lesson	☐	☐	
Actively engages participants in the lesson: • Check's student understanding regularly	☐	☐	
• Asks open ended questions	☐	☐	
• Students relate material to their world	☐	☐	
• Uses appropriate vocabulary and explains difficult words	☐	☐	
• Involves/encourages all students to participate	☐	☐	
• Students have cameras on for the lesson	☐	☐	
• Number of students with camera on _____			
• Students are participating in the lesson topics	☐	☐	
Provides a strong conclusion: • Reviews take home messages from lesson	☐	☐	
• Asks students to articulate what they learned	☐	☐	
Behavior and or behavior management detracted from the lesson	☐	☐	
Teacher is present and assists with behavior management and student engagement	☐	☐	
The activities were engaging and appropriate for the students	☐	☐	
Teacher given lesson plan and follow up materials (if applicable)	☐	☐	

List Activities/Materials that were used in this lesson:

Additional Comments:

Evaluator Signature: _____

Educator Signature: _____ Date Reviewed:_____

Appendix F

Post-Lesson Review Questions:

1. Poll have you had Eat Right Philly lessons in the past? Yes or No
2. Poll – Did you like the lesson, (title)? Yes or No
3. For those who liked it, what did you like about it?
4. For those who disliked it, what did you not like about it?
5. Poll - How challenging was the topic – Not challenging, Somewhat challenging, Very challenging
6. What about the topic provides challenges?
7. Poll – Did (Name of coordinator) explain the topics clearly? Yes, no, some concepts were not clear
8. Please expand on any subjects that were not clear and what if you have suggestions on how to make them clearer?
   a. If no suggestions, might need to prompt with: more time on a topic, a different method of delivery, what else?
9. What was something new that you learned in the lesson?
10. What parts of this lesson are relevant to your own life?
11. What parts of this lesson do you think you will practice or do in your life and why?
12. What was your favorite part of the lesson?
13. What other nutrition-related topics interest you or you would like to learn more about?
14. Thank you for your participation. Your feedback is important to help us understand and explore ways to make a relevant, current and useful curriculum for high school students. We appreciate your thoughts and time.

Analysis of the Effect of COVID-19 Pandemic Closures on Drexel University's PA SNAP-Ed/ Eat Right Philly Program Delivery Indicators

The Drexel University PA-SNAP-Ed Eat Right Philly Nutrition education program (DRX ERP) analyzed program delivery data from Quarter 1 of fiscal year 2020 (Q1 2020) and Quarter 1 of fiscal year 2021 (Q1 2021) to evaluate the effect of COVID-19 restrictions on the number and types of lessons taught and program reach. Q1 2020 reflects lesson data from October through December of 2019, which was 100% in-person programming before the COVID-19 pandemic. Q1 2021 reflects data from October through December 2020, when all programming was conducted in a virtual format. Data analysis was conducted using the STARtracks data reports for these time periods. STARtracks is the online data reporting system for Pennsylvania Supplemental Nutrition Assistance Program Education (PA SNAP-Ed).

DRX ERP has eleven staff who provide direct nutrition education with supporting indirect channels in school and community settings. These individuals also provide education materials, training and support for classroom teachers to conduct SNAP-Ed lessons themselves. The nutrition lessons may be conducted as a single lesson or as a series of lessons. Series lessons occur over multiple sessions.

Lesson Completion

The number of lessons conducted and time spent conducting lessons are indicators that have been used to assess educator productivity. These data are usually assessed by educator, but for the purposes of this evaluation, are being considered as an indication of overall programming volume changes.

There was a significant reduction in the number of total intervention hours and lessons taught in Q1 2021 compared to Q1 2020. (Figure 1) Total intervention hours dropped 51%, from 825 hours in Q1 2020 to 401 hours in Q1 2021. The drop in single lessons was especially large, with 77% reduction in single lessons completed in Q1 2021 as compared to Q1 2020, and 38% drop in series lessons in Q1 2021 as compared to Q1 2020. (Table 1)
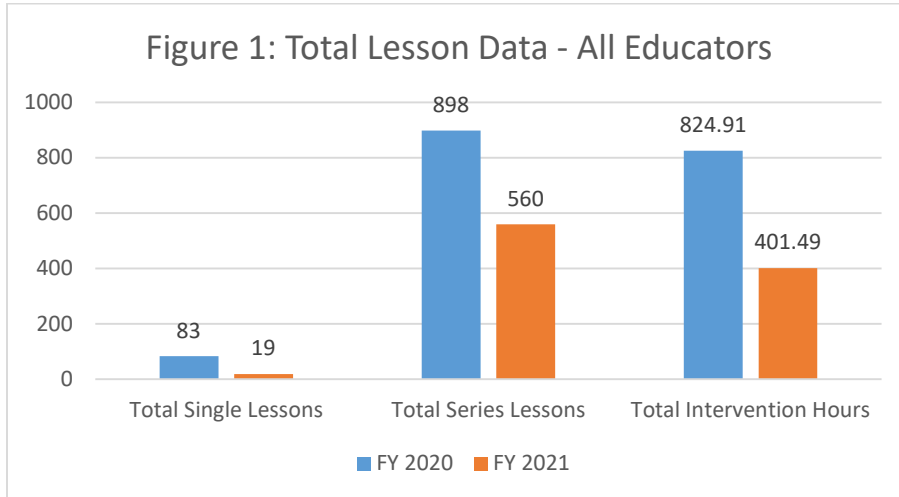
Figure 1: Total Lesson Data - All Educators

Table 1: Total Lessons and Hours per Fiscal Year with Percent Change

	FY 2020	FY 2021	% Difference
Total Single Lessons	83	19	-77.1%
Total Series Lessons	898	560	-37.6%
Total Intervention Hours	824.91	401.49	-51.3%

Lessons by Staff Type

PA SNAP-Ed lessons may be taught by SNAP-Ed Staff or by non SNAP-Ed Staff. SNAP-Ed staff are those who are paid using SNAP-Ed funds and include DRX ERP staff. Non SNAP-Ed staff include teachers and staff of schools and community sites who partner with DRX ERP to provide SNAP-Ed programming. Non SNAP-Ed staff are trained on delivering approved curriculum as intended and provide the needed program information for inclusion in the DRX ERP reporting.

Q1 2021 showed an increase in the percentage of single lessons taught by SNAP-Ed staff rather than non SNAP-Ed staff. Table 2 shows that In Q1 2020, 95.4% of single lessons were taught by DRX ERP staff as compared to 100% in Q1 2021. For series lessons, the percentage of lessons taught by DRX ERP staff was marginally higher in Q1 2021 as compared to Q1 2020. (Table 2)

Table 2: Percentage of Lessons Taught by Educator Type and Fiscal Year

	Single Lessons		Series Lesson	
	Q1 2020	Q1 2021	Q1 2020	Q1 2021
DRX ERP Staff (SNAP-Ed)	95.4%	100%	78.2%	79.6%
Non SNAP-Ed Staff	4.6%	0%	21.8%	20.4%

Single Lesson and Series Lesson Reach

Direct education reach is defined as the number of unduplicated individuals who experience an intervention and are assumed to be influenced. In the STARtracks system, the number of new participants represents the direct education reach, but the STARtracks system also records repeat participants and the total of new plus repeat participants or contacts.

Reach numbers are shown in Figure 2. A decline of approximately 47% in reach was seen from Q1 2020 as compared to Q1 2021.

Figure 2: Reach for Q1 2020 and Q1 2021
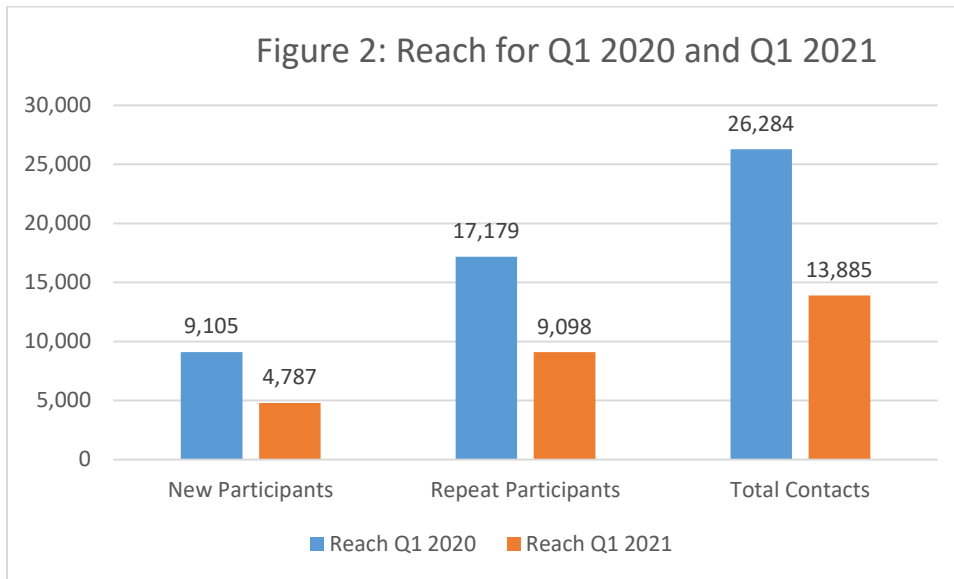
In both Q1 2020 and Q1 2021, the K-12 intervention accounted for the majority of new participants, repeat participants, and contacts. Figure 3 illustrates the percentage of reach by intervention and shows that 95.1% of reach was derived from the K-12 intervention in Q1 2020, and this percentage increased to 99.2% for Q1 2021. In the Community Intervention, reach went from 3.7% in Q1 2020 to 0.8% in Q1 2021. Food Assistance and Food Retail had reach of 0.5% and 0.6%, respectively in Q1 2020 and no reach in Q1 2021.
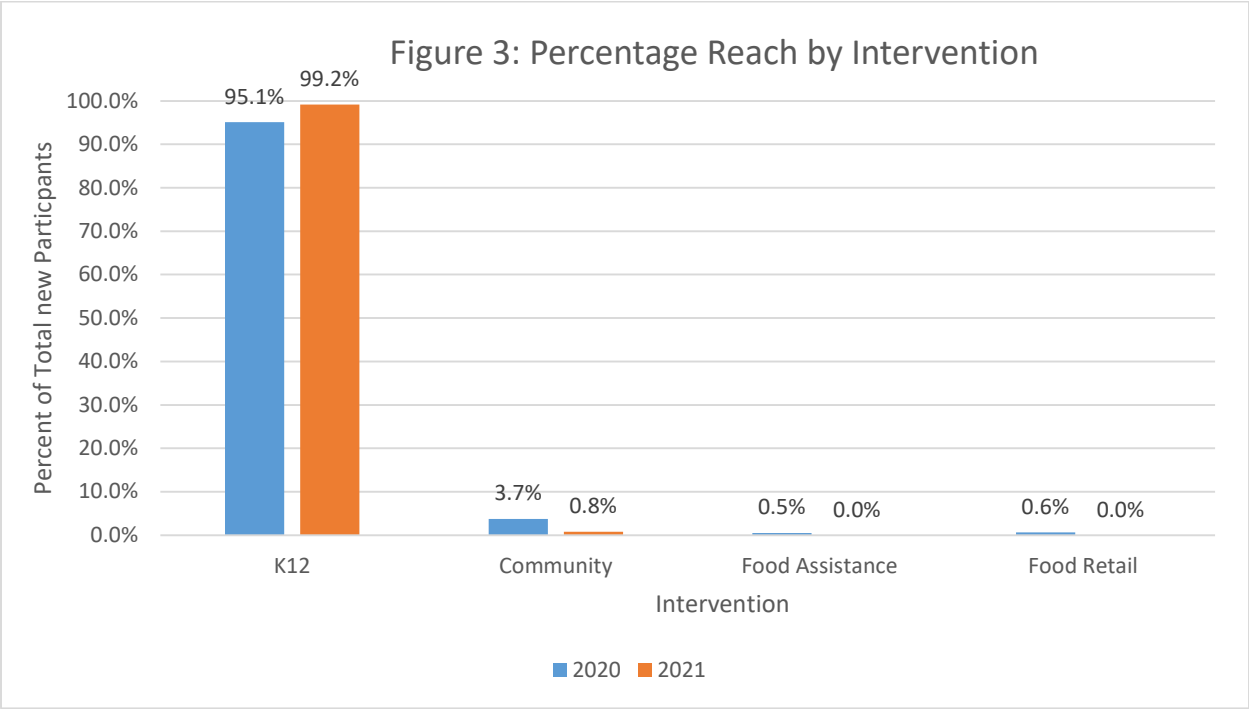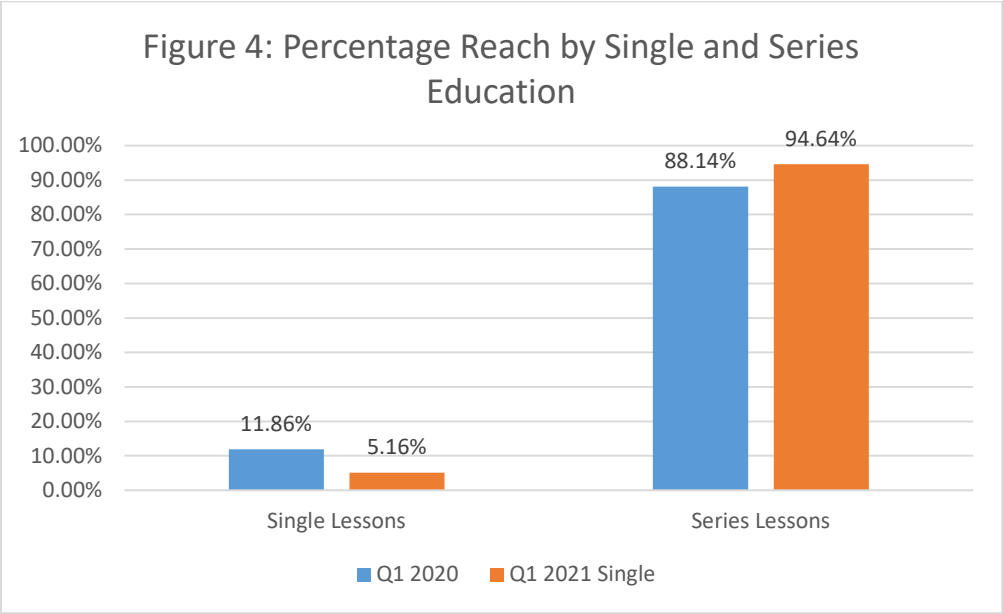
Figure 3: Percentage Reach by Intervention

Figure 4 illustrates the reach by single and series education for both time frames. Both time frames show that the majority of reach was derived from series lessons, which are the preferred method of program delivery.

Figure 4: Percentage Reach by Single and Series Education

Curriculum Usage

DRX ERP utilizes a variety of curricula with participants. Q1 2020 showed greater diversity of curriculum usage at the K-12 intervention. Table 3 shows the number of lessons conducted in Q1 of each year for school-age participants.

| Table 3: Lessons Conducted by Curriculum for School-Age		
School Age	**Q1 2020**	**Q1 2021**
204: ATOAH	2	0
205: Balance My Day	109	0
206: Basics	232	152
227: ERN Drexel	650	492
229: ERP SDP	0	17
246: Power Panther Pals	17	57
250: Show Me Nutr	88	0
253: TN Dig In	5	0
254: TN Discover MyPlate	2	0
257: TN Serving Up My Plate	51	0
263: Corner Store Youth Initiative	22	0
Total	**1178**	**718**

In Q1 2020, 11 curricula were represented in the total completed lessons, which includes single and series lessons. In Q1 2021, only five curricula were represented in total lessons. In both Q1 2020 and Q1 2021, ERN Drexel and the Basics curricula were the most used in K-12 intervention lessons, although the number of lessons completed for each curriculum was lower in Q1 2021.

For the adult population, Table 4 shows the curricula and number of lessons conducted. Three curricula were used in each year. Q1 2020 utilized ERN Drexel CG, Nutrition for Life and Heart Smarts and Q1 2021 utilized Eat Healthy Be Active, ERN Drexel CG and Nutrition for Life. ERN Drexel CG and Nutrition For Life had similar levels of usage during both Q1 2020 and Q2 2021. The Heart Smarts curricula was not used in Q1 2021 because it is primarily used with Food Assistance or Food Retail interventions and neither intervention received direct education programming in Q1 2021. (Table 4)

Table 4: Lessons Conducted by Curriculum for Adults		
Adult	**Q1 2020**	**Q1 2021**
222: Eat Healthy Be Active	0	1
227: ERN Drexel CG	8	6
244: Nutr for Life	9	8
260: Heart Smarts	18	0
Total	**35**	**15**

Lesson Length

The average length of lessons decreased in Q1 2021 as compared to Q1 2020, from 49.8 minutes in Q1 2020 to 43.2 minutes in Q1 2021 in the K-12 Schools intervention. The average length of lessons in the Adult – Community intervention decreased from 63.6 minutes in Q1 2020 to 54 minutes in Q1 2021. The Food Retail and Food Assistance interventions were not included in this analysis because the Heart Smarts curriculum was used in these interventions and the length of these lessons is usually 10 – 20 minutes. Since Heart Smarts was not used in Q1 2021, the results for Q1 2020 would skew lower if these lessons were included in the calculations.

Figure 5: Average Time of Lessons in Minutes
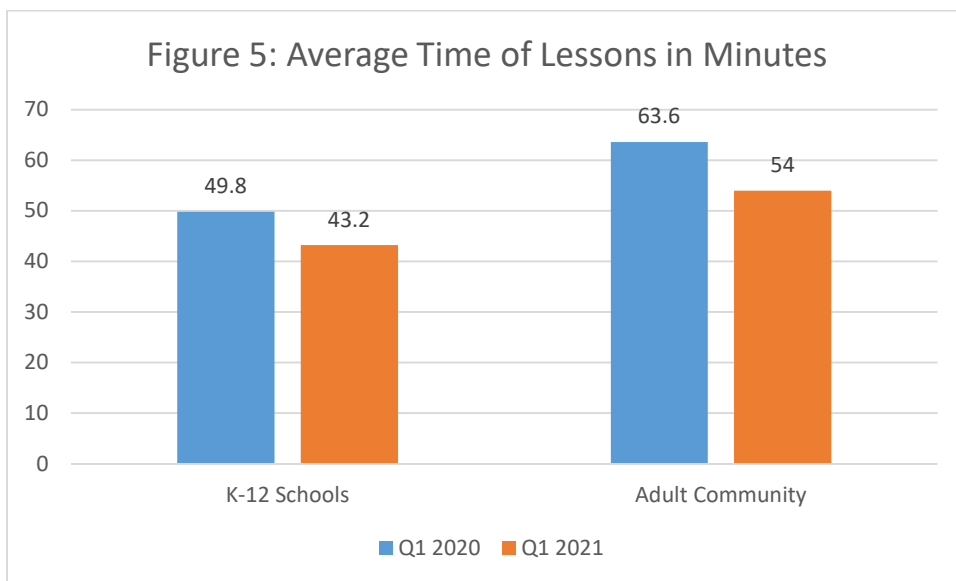
Discussion

The COVID-19 pandemic required DRX ERP SNAP-Ed to transition from fully in-person nutrition education programming to fully virtual nutrition education programming. DRX ERP SNAP-Ed adjusted to teaching remotely on platforms like Zoom and Google Classroom and altering learning resources, like handouts, to electronically available formats. Because DRX ERP SNAP-Ed partners with the School District of Philadelphia, the ability to complete SNAP-Ed lessons was heavily influenced by the classroom teachers' ability to adjust their classroom operations to the virtual format. For successful SNAP-Ed lesson completion, classroom teachers needed to reach technological proficiency that allowed them to successfully have the DRX ERP SNAP-Ed educators as virtual classroom guests who could perform technology functions that were new to many.

Much of the change in data from Q1 2020 to Q1 2021 was expected when considering the barriers that arose during the COVID-19 pandemic. The transition from in-person to virtual learning was challenging for DRX ERP SNAP-Ed staff, non SNAP-Ed staff, partners and participants. Total programming (interventions hours, lessons completed) and overall reach were expected to be lower in Q1 2021 compared to Q1 2020. The decrease in diversity of curriculum used in the K-12 intervention was primarily due to a lack of curriculum available for virtual use. Converting lessons from in-person to virtual delivery required time for preparation. Curriculum that could easily be converted into engaging lessons was selected. The shorter average lesson length in Q1 2021 may be attributed to less food demonstrations, the shorter attention span of students, a decrease in student engagement in some lessons, and/or virtual programming fatigue, i.e. doing screen-based activities for a large part of the day.

Ultimately, while the data outcomes reflected in this report were not unexpected, it is helpful to quantify exactly how the COVID-19 pandemic affected DRX ERP SNAP-Ed program delivery. Going forward, both in-person and virtual programming is expected to be used as the new fiscal year begins. Future comparisons of this data will be considered as the learning environment changes. This information may prove helpful in shaping future SNAP-Ed programming, policies and coordinator training protocols.

DREXEL UNIVERSITY PENNSYLVANIA SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM EDUCATION (PA SNAP-ED) / EAT RIGHT PHILLY (DRX ERP) PROGRAM

EVALUATION OF ONLINE LEARNING

September 2021

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EXECUTIVE SUMMARY

In the 2020 – 2021 school year, the Drexel University Eat Right Philly Nutrition Program (DRX ERP) pivoted to virtual delivery in response to the COVID-19 pandemic and the School District of Philadelphia's implementation of remote learning. DRX ERP, a partner with the Pennsylvania Supplemental Nutrition Assistance Program Education (PA SNAP-Ed) funded by the U.S. Department of Agriculture, provides direct nutrition education in schools and community sites.

The goals of this study, conducted by an external evaluator, were to evaluate the DRX ERP High School (HS) Curriculum delivered virtually in six Philadelphia high schools. Over 100 high school students from six schools participated in the evaluation by completing surveys prior to the provision of nutrition education and after its conclusion in spring 2021; nearly one-third completed both surveys.

Results suggest a small improvement in some nutrition behaviors, with a slight reduction of the number of students at greater risk related to not eating vegetables and a slight increase in the number of times students ate green salad. There was no significant impact on changes in other nutrition or physical activity behaviors. Notably, DRX ERP coordinators reported that student engagement was low in most lessons, and most students did not have their cameras on during virtual lessons. The study was limited by a small sample size, particularly among students who provided both surveys, precluding opportunities to explore whether impacts might have been greater among subgroups of students or in classrooms with greater levels of student engagement.

Future research with a larger number of students and classrooms and a higher response rate may provide additional information about the effectiveness of virtual delivery of the DRX ERP HS Curriculum. Notably, the shift to virtual learning was still relatively recent when this study took place, and, as of this writing, the School District of Philadelphia has reestablished in-person learning in 2021-2022, with some schools still opting for DRX ERP nutrition coordinators to deliver lessons remotely. Future implementation and evaluation of the DRX ERP HS Curriculum should include obtaining information on face-to-face and virtual program delivery, to continue to deliver effective education regardless of delivery mode.

OVERVIEW

The Drexel University Eat Right Philly Nutrition Program (DRX ERP) is a Pennsylvania Supplemental Nutrition Assistance Program Education (PA SNAP-Ed) partner, funded by the United States Department of Agriculture (USDA). DRX ERP provides direct nutrition education in schools and community sites (see Gilman, Ensslin, Cullison et al. (2021)[1] for more information and results from prior years' evaluations). In response to the School District of Philadelphia implementing virtual learning due to the COVID-19 pandemic, DRX ERP High School Lesson Curriculum was adapted into a synchronous, live lesson delivery model utilizing web-based materials delivered by a trained educator. The eight-lesson series includes the following lessons: MyPlate: Build a Healthy Plate; Breakfast: Choose a Healthy Breakfast; Energy Balance: Understanding Energy Balance; Calcium and Vitamin D: Strong Bones; Snacks and Label Reading: Snack Wise; Fast Food: Figuring Out the Facts; Choosing Healthy Beverages: Rethink Your Drink; and Fruits and Vegetables: Fear Factor.

The goal of this study was to evaluate the PA-SNAP-Ed/DRX ERP High School Lesson series, as delivered in virtual format, and its impact on nutrition and physical activity behaviors in students in the School District of Philadelphia in grades 9 through 12. The lesson series was delivered in six high schools, with one classroom per school.

The Drexel University Eat Right Philly Nutrition Program contracted with the PHMC Research and Evaluation Group (PHMC) to act as external evaluator for this study. This synopsis presents PHMC's summary of results from the spring 2021 surveys. The synopsis begins with an overview of the study methods then presents results from both time points and an analysis of change from the beginning to the end of the virtual administration of DRX ERP. The summary concludes with recommendations for future research.

METHODS

Procedures

All study procedures were approved by the Drexel University Institutional Review Board and the School District of Philadelphia Research Review Committee. Classroom teachers provided study and assent information to parents/guardians and an opportunity for students to opt out before completing the baseline surveys. Classroom teachers shared the link to the online assent form with students, who were automatically redirected to the survey if they clicked to indicate their assent. Students provided their student identification numbers to allow for matching of baseline and follow-up surveys without personal identifiers. PHMC had no access to student names or other identifying information. Teachers used a provided script to give students directions to complete each survey.

PHMC created the survey and assent forms for administration using Alchemer, a HIPAA-compliant online survey platform (formerly Survey Gizmo). Data were exported into Excel files and imported into SPSS for

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[1] Gilman AD, Ensslin J, Cullison J, et al. Efficacy or a Five-Lesson Nutrition Education Curriculum for High School Students Administered Via Pennsylvania Snap-Ed Programming. 2021;5(4):1-9.

analysis. Due to version licenses and available modules, repeated measures analyses were conducted with version 24 and all other analyses were conducted in version 26.

The baseline survey collection took place in February-March 2021, prior to the provision of nutrition education. The post-intervention survey was administered no later than June 2021, or at the conclusion of the HS Eight Lesson curriculum, whichever occurred sooner.

Instruments

Lesson notes. DRX ERP Coordinators took evaluation notes on each classroom lesson. Notes included the number of students in attendance, the number who had their cameras on, and the number who were engaged with the lesson, as well as some descriptive comments. PHMC calculated (1) the average classroom percentage of students with cameras on (first, calculating the percent of students with cameras on of those in attendance for each lesson, then averaged across all lessons for that classroom), and (2) the average classroom percentage of students who were engaged with the lesson (percent of students engaged in each lesson averaged across lessons). These data had been collected across all students in a classroom and did not identify any individual student nor tie the data to particular students.

Demographic and school information. Students responded to four demographic questions (age, grade, gender, and race/ethnicity). They also identified their high school.

Modified Youth Risk Behavior Survey (YRBS). The modified version of the Youth Risk Behavior Survey contains nine items asking about frequency of foods eaten or beverages consumed yesterday, and two items asking about physical activity for the past seven days. Foods and beverage questions included one item asking whether the student had eaten breakfast yesterday, plus the number of times yesterday they ate or drank each of the following items:

- 100% fruit juices such as orange juice, apple juice, or grape juice (not including punch, Kool-Aid, sports drinks, or other fruit-flavored drinks.)
- Fruit (not counting fruit juice)
- Green salad
- Potatoes (not counting french fries, fried potatoes, or potato chips)
- Carrots
- Other vegetables (not counting green salad, potatoes, or carrots)
- Glasses of milk (including milk in a glass or cup, from a carton, or with cereal)

Physical activity questions asked students to consider behaviors in the prior week. Students were asked, "During the past 7 days, on how many days:

- Were you physically active for a total of at least 60 minutes per day? (Add up all the time you spent in any kind of physical activity that increased your heart rate and made you breathe hard some of the time.)
- Did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?"

Variable calculations. PHMC calculated nine analysis variables for both surveys to supplement the individual raw items. First, two summary variables were created: (1) the number of times the student

ate fruit and the number of times the student drank 100% fruit juices were summed, and (2) the four vegetable items (number of times ate green salad, potatoes, carrots, or other vegetables) were summed to create variable "number of vegetables."

Then, risk variables were calculated based on CDC guidance from the Youth Risk Behavior Survey.[2] A student's behavior is considered to be at greater risk if they answered a question about that behavior (or summary of answers to several questions) in a particular manner. Greater risk was defined by the CDC individually for each behavior. Table 1 presents, for each variable indicating greater risk, each behavior and the student answer that indicates behavior that is considered to be at greater risk.

Table 1. Variable calculations for nutrition and physical activity behaviors considered to be at greater risk

YRBS Greater Risk Variable	YRBS Behavior	Student Response
Did not eat fruit or drink 100% fruit juices	Number of times ate fruit or drank 100% fruit juice yesterday	0
Did not eat vegetables	Number of vegetables eaten yesterday	0
Drank at least one soda or pop	Number of times drank soda/pop yesterday	>=1
Drank two or more sodas	Number of times drank soda/pop yesterday	>=2
Did not drink milk	Number of times drank milk yesterday	0
Did not eat breakfast	Ate breakfast yesterday	No
Did not participate in at least 60 minutes of physical activity on at least 1 day	During past 7 days, number of days were physically active for a total of at least 60 minutes per day	0
Was not physically active at least 60 minutes per day on 5 or more days	During past 7 days, number of days were physically active for a total of at least 60 minutes per day	<5
Did not do exercises to strengthen or tone muscles on 3 or more days	During past 7 days, number of days did exercises to strengthen or tone muscles	<3

Analytical Plan

PHMC conducted a series of analyses to (1) describe classroom-level student attendance and engagement with lessons, and (2) examine individual students' self-reported nutrition and physical activity behaviors at baseline and post-intervention. Student behavior analyses began with descriptive data within time point (means, standard deviations, minimum, and maximum of continuous variables, as well as number and percentages of dichotomous risk variables). Then, PHMC examined change over time for the subsample of 32 students with both surveys, including paired samples t-tests for continuous variables and chi-square tests for dichotomous variables. In addition, PHMC explored correlations among variables, and whether changes in scores were evident between groups of students based on other characteristics (e.g., grade in school, amount of engagement in the lessons in their classroom).

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[2] Greater risk for dietary behaviors:
https://nccd.cdc.gov/Youthonline/App/QuestionsOrLocations.aspx?CategoryId=C06
Greater risk for physical activity behaviors:
https://nccd.cdc.gov/Youthonline/App/QuestionsOrLocations.aspx?CategoryId=C06

RESULTS

Participants

Table 2 presents student characteristics within survey and for the subgroup of students who completed both surveys. Seventy-seven students completed the baseline and 56 completed the follow-up survey. Among these, 32 students completed both surveys. More than half of students were in 9th grade, nearly one-quarter were in 10th grade, and the rest were in 11th or 12th grade. Student age, which ranged from 13 to 18 years old (m = 15.5 years, sd = 1.3), was highly associated with grade, as expected. Most students reported themselves as female. Among respondents to the baseline survey, about half were Black, 14 percent were Asian, nine percent were white, one percent were Native Hawaiian or Other Pacific Islander, and 26 percent were Hispanic or Latino.

Table 2. Participant Characteristics

	Baseline (n= 77)		Post-intervention (n= 56)		Both Surveys (n= 32) [1]	
	n	%	n	%	n	%
Student Age						
13 years old	1	1.3	0	0	0	0
14 years old	15	19.5	12	21.4	7	21.9
15 years old	33	42.9	27	48.2	15	46.9
16 years old	13	16.9	11	19.6	5	15.6
17 years old	6	7.8	2	3.6	2	6.3
18 years or older	9	11.7	4	7.1	3	9.4
Grade						
9th grade	47	61	37	66.1	19	59.4
10th grade	15	19.5	13	23.2	8	25
11th grade	9	11.7	3	5.4	3	9.4
12th grade	6	7.8	2	3.6	2	6.3
Gender						
Female	45	58.4	38	67.9	21	65.6
Male	31	40.3	18	32.1	10	31.3
Race						
Black	38	49.4	30	53.6	17	53.1
Asian	11	14.3	8	14.3	7	21.9
White	7	9.1	3	5.4	1	3.1
Native Hawaiian or Other Pacific Islander	1	1.3	2	3.6	1	3.1
Hispanic or Latino	20	26	11	19.6	6	18.8
School						
Lincoln HS	14	18.2	4	7.1	3	9.4
Murrell Dobbins CTE HS	10	13	17	30.4	5	15.6
Roxborough HS l	9	11.7	7	12.5	4	12.5
Samuel S. Fels HS	20	26	14	25	11	34.4
South Philadelphia HS	12	15.6	6	10.7	3	9.4
The Linc	9	11.7	8	14.3	3	9.4

Source: Student baseline and post-intervention surveys
HS = High School
[1] The characteristics of the 32 students who completed both surveys are also included in the columns reporting baseline and post-intervention results.

Student Engagement

As reported by coordinators, most students had their cameras off during lessons, though this varied by classroom. Two classrooms averaged between one and four percent of students with cameras on, and two more classrooms averaged zero students with cameras on. One classroom averaged 14%. The last was an outlier, averaging 61% of students with cameras on.

The percent of students engaged with the lessons ranged from 13 to 70 percent (m = 33.3, sd = 20.5). Three classrooms averaged less than one-third of students engaged (13%, 15%, and 32%, respectively), and a fourth averaged 39 percent of students engaged. Two classrooms had higher engagement, with one averaging 59 percent and the other averaging 70 percent of students engaged.

The classroom with the highest average percent engaged was the classroom where most students had cameras on; the coordinator's notes indicate that during some of the lessons, the teacher encouraged students to turn their cameras on at the start and wrote in the chat that turning cameras on would count as a quiz grade. Most did so, although only a few had the camera pointed at their face. The coordinator's notes also indicate that this class had some of the best levels of engagement for the year.

Impact

This section summarizes analyses of point-in-time and longitudinal data from the YRBS.

Point in time analyses. The first two tables present student behaviors at baseline for all 77 students who completed the first survey. Table 3 presents descriptive statistics on the individual Modified YRBS items, and Table 4 presents the number and percent of students whose behaviors were considered greater risk.

Regarding nutrition behaviors at baseline (Table 3), the mean number of times students drank fruit juice was slightly higher than eating fruit. The mean number of times students ate vegetables was two, with a wide range from none to one outlier who reported eating vegetables 12 times. Examining the behaviors regarding individual vegetables, it can be seen that half of this variable was attributed to eating vegetables other than green salad, potatoes, or carrots. The mean number of times students drank sodas was slightly higher than the number of glasses of milk, though both had the same range of zero to four. Regarding physical activity behaviors at baseline, students were active for at least 60 minutes on less than two of the past seven days, ranging from zero to three, and did strengthening exercises on slightly more than two of the past seven days, ranging from zero to daily.

Table 3. Individual nutrition and physical activity questions at baseline (n = 77): Means, standard deviations, minimums and maximums

	m	*sd*	Min	Max
Yesterday, how many times did you…				
… drink 100% fruit juices such as orange juice, apple juice, or grape juice?	1.22	1.20	0	4
… eat fruit?	.83	1.07	0	4
Yesterday, how many times did you…				
… eat green salad?	.35	.63	0	3
… eat potatoes?	.38	.74	0	4
… eat carrots?	.26	.57	0	3
…eat other vegetables?	1.01	1.22	0	4
Number of vegetables eaten yesterday	1.99	2.26	0	12
Yesterday, how many times did you…				
…drink a can, bottle, or glass of soda or pop?	.99	1.26	0	4
…drink a glass of milk?	.71	.94	0	4
During the past 7 days, on how many days…				
…were you physically active for a total of at least 60 minutes per day?	1.69	1.07	0	3
…do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?	2.21	2.08	0	7

Source: Student baseline surveys

As shown in Table 4, 20 and 33 percent of students did not consume fruit/fruit juice or any vegetables, respectively. Half of students had consumed at least one soda and 28 percent two or more, while 55 percent did not drink milk. Twenty-nine percent of students did not eat breakfast. Those who did not engage in these activities at all in the past seven days and were categorized at greater risk included 16 percent who did not participate in 60 minutes or more of physical activity on any day and 60 percent who did not do strengthening exercises on three or more days.

Table 4. Number and percent of students whose nutrition and physical activity behaviors were of greater risk at baseline (n = 77)

	N	%
Yesterday …		
…did not eat fruit or drink 100% fruit juices	15	19.5
…did not eat vegetables	25	32.5
…drank soda/pop		
…drank at least one soda/pop	38	49.4
…drank 2 or more serving of soda/pop	21	27.3
…did not drink milk	42	54.5
…did not eat breakfast	22	28.6
During the past 7 days…		
…did not participate in at least 60 minutes of physical activity on at least 1 day	12	15.6
…was not physically active at least 60 minutes per day on 5 or more days	77	100
…did not do exercises to strengthen or tone muscles on 3 or more days	46	59.7

Source: Student baseline surveys

The next two tables present student behaviors at post-intervention for all 56 students who completed the second survey, even if they had not completed the first. Table 5 presents descriptive statistics on the individual Modified YRBS items, and Table 6 presents the number and percent of students whose behaviors were considered greater risk.

Regarding nutrition behaviors at post-intervention (Table 5), results looked fairly similar to those at baseline (note that this comment is not based on direct statistical comparison of change; that will be presented in the next section). At post-intervention, the mean number of times students drank fruit juice was about the same as eating fruit. The mean number of vegetables students ate was just under two, with a wide range from zero to nine vegetables. The mean number of times students drank sodas was about the same as the number of glasses of milk they drank, with both ranging from of zero to four. Regarding physical activity behaviors at post-intervention, students were active for at least 60 minutes on one and a half of the past seven days, ranging from zero to three, and did strengthening exercises on less than two of the past seven days, ranging from zero to six days.

Table 5. Individual nutrition and physical activity questions at post-intervention (n = 56): Means, standard deviations, minimums and maximums

	m	*sd*	Min	Max
Yesterday, how many times did you…				
… drink 100% fruit juices such as orange juice, apple juice, or grape juice?	1.11	1.07	0	3
… eat fruit?	1.27	1.17	0	4
Yesterday, how many times did you…				
… eat green salad?	.41	.78	0	3
… eat potatoes?	.33	.61	0	2
… eat carrots?	.30	.74	0	4
…eat other vegetables?	.85	1.04	0	4
Number of vegetables eaten yesterday	1.88	2.22	0	9
Yesterday, how many times did you…				
…drink a can, bottle, or glass of soda or pop?	1.05	1.42	0	4
…drink a glass of milk?	1.02	.46	0	4
During the past 7 days, on how many days…				
…were you physically active for a total of at least 60 minutes per day?	1.54	1.01	0	3
…do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?	1.75	1.53	0	6

Source: Student post-intervention surveys

As shown in Table 6, 13 and 38 percent of students did not consume fruit/fruit juice or any vegetables, respectively, indicating greater risk. Forty-five percent of students had consumed at least one soda and 30 percent two or more sodas, while half did not drink milk. Seventy percent of students did not eat breakfast.

Those who did not engage in physical activities at all in the past seven days and thus were at greater risk included 16 percent who did not participate in 60 minutes or more of physical activity on any day, and 71 percent who did not do strengthening exercises on three or more days.

Table 6. Number and percent of students whose nutrition and physical activity behaviors were of greater risk at post-intervention (n = 56)

	N	%
Yesterday …		
…did not eat fruit or drink 100% fruit juices	7	12.5
…did not eat vegetables	21	37.5
…drank soda/pop		
…drank at least one soda/pop	25	44.6
…drank 2 or more serving of soda/pop	17	30.4
…did not drink milk	28	50.0
…did not eat breakfast	38	69.6
During the past 7 days…		
…did not participate in at least 60 minutes of physical activity on at least 1 day	9	16.1
…was not physically active at least 60 minutes per day on 5 or more days	56	100
…did not do exercises to strengthen or tone muscles on 3 or more days	40	71.4

Source: Student post-intervention surveys

Change in behaviors from baseline to post-intervention   Tables 7 and 8 present analyses of change from baseline to post-intervention for the 32 students who had completed both surveys. Table 7 presents the means and standard deviations of individual behaviors at both time points and the results of paired-samples t-tests comparing change over time. One nutrition behavior increased significantly; the mean number of times students reported eating salad yesterday increased from .29 to .63 (t(30) = -2.25, p = .03). No other individual nutrition or physical activity behaviors changed significantly.

Table 7. Change in individual nutrition and physical activity behaviors from baseline to post-intervention (n = 32): Means, standard deviations, and paired-samples t-tests

		m	*sd*	t (*df*)	p-value
Yesterday, how many times did you…					
… drink 100% fruit juices such as orange juice, apple juice, or grape juice?	Baseline	1.16	1.14	.442 (31)	.66
	Post-intervention	1.06	1.11		
… eat fruit?	Baseline	.80	1.06	-1.25 (29)	.22
	Post-intervention	1.19	1.12		
… eat green salad?	Baseline	.29	.59	-2.25 (30)	**.03**
	Post-intervention	.63	.94		
… eat potatoes?	Baseline	.38	.61	.49 (30)	.63
	Post-intervention	.32	.60		
… eat carrots?	Baseline	.22	.41	-1.10 (31)	.28
	Post-intervention	.41	.88		
…eat other vegetables?	Baseline	.97	1.18	.66 (30)	.52
	Post-intervention	1.16	1.13		
Number of vegetables eaten yesterday	Baseline	1.84	1.90	-1.57 (31)	.13
	Post-intervention	2.47	2.48		
Yesterday, how many times did you…					
…drink a can, bottle, or glass of soda or pop?	Baseline	.71	1.19	.24 (30)	.82
	Post-intervention	.69	1.12		
…drink a glass of milk?	Baseline	.72	.99	-.32 (31)	.75
	Post-intervention	.78	1.13		
During the past 7 days, on how many days…					
…were you physically active for a total of at least 60 minutes per day?	Baseline	1.63	1.07	-.15 (31)	.88
	Post-intervention	1.66	1.04		
…do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?	Baseline	1.84	1.57	-.51 (31)	.61
	Post-intervention	2.00	1.55		

Source: Student baseline and post-intervention surveys
Note: A Wilcoxon signed-rank test showed the same results, namely that the number of salads eaten increased statistically significantly from baseline to post-intervention (*Z* = -2.15, *p* = 0.03) and no other nutrition or physical activity behavior changed significantly.

Table 8 presents the numbers and percentages of students at greater risk for nutrition and physical activity behaviors at each survey and the results of chi-square tests comparing change in risk over time. One nutrition behavior improved from baseline to post-intervention: a small number of students moved to lower risk regarding vegetable consumption. Specifically, a smaller number did not eat vegetables at post-intervention than at baseline in an improvement that approached statistical significance (χ^2 (1) =

3.74, *p* = .09). Five of the 11 students who had not eaten vegetables at baseline moved to lower risk (i.e., ate vegetables) at post-intervention, whereas only 3 of the 21 students who had eaten vegetables at baseline moved to greater risk (i.e., did not eat vegetables) at post-intervention.

One change was statistically significant but, because of students moving in both directions from lesser to greater risk or vice versa, the finding did not indicate systematic change from baseline to post-intervention. The chi-square test for students who did not drink milk was significant (χ^2 (1) = 15.08, *p* < .001), but as some individual students moved from greater to lower risk while about the same number of different students moved in the reverse direction, about the same number of students were at greater risk at both time points.

The number of students who did not eat breakfast increased significantly from baseline to post-intervention (χ^2 (1) = 9.62, *p* <.01); a larger number of students did not eat breakfast at post-intervention (*n*=22) than at baseline (*n*=10).

Table 8. Change risk of dietary and physical activity behaviors from baseline to post-intervention (n = 32): Number, percent, and chi-square statistic

		N	%	χ^2 (df)	P-value
Yesterday …					
… did not eat fruit or drink 100% fruit juices	Baseline	6	18.8	.02 (1)	.69
	Post-intervention	6	18.8		
… did not eat vegetables	Baseline	11	34.4	**3.74 (1)**	**.09**
	Post-intervention	8	25		
…drank at least one soda/pop	Baseline	11	34.4	1.36 (1)	.42
	Post-intervention	11	34.4		
…drank 2 or more serving of soda/pop	Baseline	6	18.8	.93 (1)	.57
	Post-intervention	7	21.9		
… did not drink milk	Baseline	17	53.1	**15.08 (1)**	**<.001**
	Post-intervention	18	56.3		
… did not eat breakfast	Baseline	10	31.3	**9.62 (1)**	**< .01**
	Post-intervention	22	68.8		
During the past 7 days…					
…did not participate in at least 60 minutes of physical activity on at least 1 day	Baseline	6	18.8	1.76 (1)	.23
	Post-intervention	5	15.6		
…did not do exercises to strengthen or tone muscles on 3 or more days	Baseline	21	65.6	3.02 (1)	.12
	Post-intervention	21	65.5		

Source: Student baseline and post-intervention surveys

Associations of nutrition and physical activity behaviors within and between time points. Looking at correlations among nutrition and physical activity behaviors within and between time points can provide information on how these behaviors associated with one another. Table 9 (on the next page) presents correlations among behaviors within baseline surveys (below the diagonal) and follow-up surveys (above the diagonal). Unsurprisingly, within time points the two physical activity behaviors (number of days active and number of days did strengthening activities) were significantly and positively correlated with each other (baseline, $r = .50$, $p < .01$; follow-up, $r = .47$, $p < .01$).

Within baseline, a few of the vegetable and fruit variables are significantly and positively correlated with one another though not with other behaviors. In other words, the number of times students reported eating fruit was associated with the number of times they reported eating various types of vegetables. Within post-intervention, this was also the case, but most of the fruit and vegetable consumption variables were also significantly and positively correlated with drinking milk. In addition, at post-intervention the number of days of physical activity and strengthening exercises were also significantly and positively correlated with eating vegetables.

However, while the number of vegetables eaten was not significantly correlated with the physical activities behaviors at baseline, it was significantly and positively correlated with both at post-intervention (Vegetables and number of days active: $r = .43$, $p = .01$; number of vegetables eaten and number of days strengthening activity $r = .55$, $p = .001$).

Table 10 (on the following page) presents correlations between baseline and post-intervention behaviors. Unsurprisingly, the number of some of the vegetables eaten at baseline were significantly and positively correlated with eating green salad and other vegetables at post-intervention. In other words, the number of times students reported eating some of the fruits and vegetables at baseline was associated with a similar number of times eating those items at post-intervention. Also unsurprisingly, physical activity behaviors were correlated between baseline and post-intervention.

Perhaps more of interest, several baseline nutrition behaviors were significantly and positively correlated with drinking 100% fruit juice at post-intervention, and a couple were correlated with drinking milk at post-intervention. In addition, one baseline nutrition behavior – eating fruit – was significantly and positively correlated with the number of days of strengthening exercises at post-intervention.

Table 9. Correlations between nutrition and physical activity behaviors (n = 32) within survey at baseline (below diagonal) and post-intervention (above diagonal)

	Juice	Fruit	Salad	Potatoes	Carrots	Other Vegetables[1]	Number Vegetables	Soda	Milk	Breakfast	Days Physically Active	Days Strengthening Exercises
100% fruit juices	--	0.28		0.13	0.24	**0.43***	**0.40***	-0.01	**0.45***	0.22	0.19	0.19
Fruit	0.10	--		-0.03	0.31	**0.34▪**	**0.42***	-0.18	0.19	0.05	0.38	0.15
Green salad	-0.30	0.10	--	0.07	0.23	**0.62****	**0.76****	0.19	**0.53****	-0.05	0.26	0.31
Potatoes	0.24	**0.47****	0.01	--	0.05	0.21	**0.39***	-0.10	0.13	0.35	0.28	-0.06
Carrots	-0.21	0.11	0.26	0.05	--	**0.50****	**0.64****	-0.06	0.19	0.16	0.23	**0.43***
Other vegetables	0.03	**0.44***	**0.34▪**	0.29	0.34▪	--	**0.89****	-0.01	**0.44***	-0.09	**0.41***	**0.69****
Number of vegetables eaten[1]	-0.05	**0.45***	**0.57****	**0.50****	**0.53****	**0.89****	--	0.03	**0.50****	0.07	**0.44***	**0.55****
Soda	0.22	0.05	-0.17	-0.11	-0.06	0.18	0.01	--	0.25	0.18	0.27	0.19
Milk	0.04	**0.36***	-0.13	-0.18	0.15	0.13	0.13	0.04	--	-0.01	**0.38***	0.17
Breakfast	0.10	0.29	0.00	0.10	**-0.45***	0.00	-0.07	0.08	-0.07	--	0.04	0.04
Days physically active	0.29	-0.03	0.13	0.02	-0.10	-0.06	-0.01	-0.10	-0.01	-0.29	--	**0.47***
Days strengthening exercises	0.29	0.26	0.15	0.00	0.00	0.21	0.18	0.13	0.18	-0.18	**0.50****	--

† $p < .10$; * $p < .05$; ** $p < .01$

Source: Student baseline and post-intervention surveys
[1] Number of vegetables eaten is the sum of the four individual vegetables variables, and thus the correlation reflects that overlap.

Table 10. Correlations between baseline and follow-up nutrition and physical activity behaviors (n = 32)

		Post-intervention										
		Juice	Fruit	Salad	Potatoes	Carrots	Other Vegetables	Number Vegetables[1]	Soda	Milk	Breakfast	Days Physically Active	Days Strengthening Exercises
Baseline	100% fruit juices	**0.43***	-0.02	-0.12	-0.06	0.23	0.24	0.11	-0.14	0.18	-0.03	0.16	0.15
	Fruit	**0.48***	-0.06	0.02	0.16	0.08	0.28	0.27	0.01	0.00	0.14	0.10	**0.45***
	Green salad	0.04	-0.02	**0.43***	-0.26	-0.05	0.03	0.10	**0.33†**	-0.01	0.11	-0.28	0.02
	Potatoes	**0.35†**	-0.01	0.25	0.28	0.13	**0.35†**	**0.35†**	0.04	0.31	0.08	0.21	0.17
	Carrots	0.18	-0.02	**0.38***	0.01	0.01	0.20	0.24	**0.36†**	0.24	0.03	-0.12	0.20
	Other vegetables	**0.45***	-0.09	**0.54****	0.29	0.20	0.30	**0.48****	0.24	**0.43***	-0.02	0.18	0.20
	Number of vegetables eaten[1]	**0.43***	-0.08	**0.63****	0.18	0.16	**0.35†**	**0.50****	**0.34†**	0.06	0.01	-0.03	-0.06
	Soda	0.00	-0.19	0.02	0.21	0.11	-0.04	0.09	0.12	0.06	0.01	-0.03	-0.06
	Milk	**0.40***	0.14	0.23	0.27	0.06	0.30	**0.32†**	-0.14	**0.46***	0.22	0.19	0.15
	Breakfast	0.12	0.02	-0.11	0.24	0.25	-0.06	0.07	0.01	-0.18	**0.56****	-0.02	-0.09
	Days physically active	-0.14	0.20	0.05	-0.04	0.06	0.27	0.18	0.01	-0.15	-0.30	**0.35†**	0.27
	Days strengthening exercises	0.21	-0.07	0.20	-0.04	0.02	0.26	0.21	0.25	0.14	-0.11	**0.34†**	**0.39***

† $p < .10$; * $p < .05$; ** $p < .01$

Source: Student baseline and post-intervention surveys
[1] Number of vegetables eaten is the sum of the four individual vegetables variables, and thus the correlation reflects that overlap.

CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH

The Drexel Eat Right Philly program continued in a virtual format during the spring of 2021, when participating high schools (and the entire School District of Philadelphia) implemented remote learning due to the COVID-19 pandemic. The results of this evaluation of virtual delivery of DRX ERP HS Curriculum suggest a small impact on some nutrition behaviors. The number of students at greater risk due to not eating vegetables declined slightly, and the number of times students ate green salad increased slightly. Other nutrition behaviors did not change as a result of participation in the intervention. In addition, physical activity behaviors did not change post-DRX ERP.

DRX ERP coordinators noted that student engagement was low in most lessons, and most students did not have their cameras on during virtual lessons. Whether this was unique to DRX ERP lessons or endemic throughout the school day is unknown, but evidence from other studies has suggested differential engagement in virtual school and the importance of engagement for students during online learning.[3]

The current study was limited by a small sample size, with only one-third of participants completing both surveys. As such, analyses that could have explored differential impact by student characteristics or classroom engagement could not be conducted. Future research with a larger number of students and classrooms and a higher response rate may provide additional information about the effectiveness of DRX ERP overall and among subgroups of students and classrooms.

Another limitation stems from the YRBS. The fact that there are three questions on the YRBS asking about three individual vegetables and a fourth that simply asks about "other vegetables," and that this last question accounted for half of vegetable consumption in this sample, means that the variety of vegetables eaten is unknown. This limits the ability to capture sufficient understanding student nutrition behaviors and the various ways that these behaviors could be improved.

[3] Domina, T., Renzulli, L., Murray, B., Garza, A. N., & Perez, L. (2021). Remote or removed: Predicting successful engagement with online learning during COVID-19. *Socius*, *7*, 2378023120988200. Accessed September 2021 at https://journals.sagepub.com/doi/pdf/10.1177/2378023120988200

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It is hard to know from these data the extent to which these students' behaviors were related to virtual school or predated the pandemic and whether they will endure. That said, monitoring the number of students whose behaviors are at levels considered to be at greater risk according to the CDC provides an important window into risk. To call out one example, while about 16 percent of students had not exercised for at least 60 minutes on at least one day in the past week, no student had done so for at least five of the past seven days (the average was less than two days and the maximum was three days). These rates suggest the need for continued intervention efforts, and to do so regardless of school delivery mode.

Notably, the shift to virtual learning was still relatively recent when this study took place in the spring of 2021. As of this writing, the School District of Philadelphia has reestablished in-person learning for the 2021-2022 school year. Some schools, however, are still opting for DRX ERP nutrition coordinators to deliver lessons remotely, with students in the classroom. It is possible that schools may need to return to virtual learning from time to time as the pandemic continues. Future provision and evaluation of DRX ERP should continue to obtain information on face-to-face and virtual program implementation to continue providing effective education in all delivery modes.

Efficacy or a Five-Lesson Nutrition Education Curriculum For High School Students Administered Via Pennsylvania Snap-Ed Programming.

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Abstract

Background: The Pennylsvania (PA) Supplemental Nutrition Assistance Program – Education (SNAP-Ed) provides nutrition education to students in schools where a significant proportion of the students are SNAP eligible. A solid foundation in nutrition knowledge is critical to empower young people to develop lifelong healthy eating patterns and lifestyles. The purpose of this research was to examine the efficacy of a five-lesson high school nutrition curriculum on influencing nutrition-related knowledge, attitudes, and behaviors among high school students in Philadelphia, PA.

Methods: SNAP-Ed nutrition educators provided the five-lesson curriculum to students enrolled in 18 PA SNAP-Ed eligible high schools. The modified Youth Risk Behavior Surveillance Survey was used to assess nutrition-related behaviors at baseline (n=1100) and post-intervention (n=972). A curriculum-specific, supplemental questionnaire was added at baseline (n=852) and post-intervention (n=753) in the second and third year of the intervention. The questionnaire was added to assess nutrition knowledge and attitudes. Data were analyzed to determine changes in nutrition-related knowledge, attitudes, and behaviors of students after they were exposed to the educational intervention.

Results: After completing the five-lesson curriculum, students reported significant increases in consumption of 100% fruit juice (p=0.0008), non-fried potatoes (p=0.005), carrots (p=0.0360), and milk (p=0.0057), and significant decreases in soda consumption (p=0.0330). Students significantly improved nutrition knowledge and attitudes after completing the intervention (p=0.0002). Specifically, students improved their overall score, as well as in six of the 18 knowledge and attitude questions.

Conclusion: The five-lesson curriculum was effective in improving nutrition-related behaviors, knowledge, and attitudes. This study provides evidence of the success of a nutrition curriculum specific to high school students.

Introduction

Obesity affects nearly one quarter of children and adolescents 2 to 19 years of age in the United States [1]. Obesity in childhood tends to track into adulthood and is associated with the development of chronic disease [2-5]. While influenced by a number of factors, dietary intake plays a critical role in the development of obesity. Dietary intake can be influenced by nutrition knowledge and attitudes, but having a strong understanding of nutrition does not always translate into healthy dietary choices. Adolescents report that food and nutrition knowledge is important, but they often fail to meet the daily recommendations for certain food groups, such as fruit and vegetables [6].

The eating behaviors of children change from early childhood throughout adolescence with a reduced consumption of fruits and vegetables. The consumption of fruits and vegetables is inversely associated with the risk of developing chronic diseases,

such as diabetes mellitus and cardiovascular disease, later in adulthood [7]. There is a need for effective nutrition education interventions for youth regarding healthy food choices. Because adolescents spend a significant amount of time in school and consume a large portion of their daily energy intake in schools, school-based interventions are a logical place for nutrition interventions [8-12]. However, school nutrition curricula specifically targeting the dietary behaviors of adolescents in high school are limited. The Supplemental Nutrition Assistance Program – Education (SNAP-Ed) is a United States Department of Agriculture (USDA) grant-funded program that aims to educate SNAP-eligible individuals to make healthy food and lifestyle choices, in accordance with the Dietary Guidelines for Americans, to prevent diet-related chronic disease [13].

Programming encompasses a combination of nutrition education, social marketing, and policy, systems, and environmental changes. A combination of these programs is provided to interested schools, early childhood centers, or

community settings where federal funds are received. Schools are a common location for SNAP-Ed programming, and those that receive reimbursement through the National School Lunch Program (NSLP) are eligible to receive SNAP-Ed Programming. The exact type, intensity, and duration of programming depend on the needs of the individual community. The effectiveness of the SNAP-Ed programming is largely attributed to the community nature of each local SNAP-Ed agency. Each agency tailors the programming to fit the needs of their community. In Philadelphia, the demand is driven largely by a high poverty rate matched by a high percentage of households eligible for SNAP assistance. Eat Right Philly (housed in the Department of Nutrition Sciences at Drexel University) is one of the local SNAP-Ed agencies and primarily focuses programming in the school setting. All schools within the School District of Philadelphia, as well as many Charter schools in Philadelphia, receive federal reimbursement through the National School Lunch Program and are eligible for SNAP-Ed programming through Eat Right Philly. One approach of Eat Right Philly's SNAP-Ed programming is to provide direct nutrition education to individuals and groups through the provision of evidence-based curriculum. Often these direct nutrition lessons are provided in schools in combination with other nutrition interventions such as policy, systems, and environmental changes.

The lessons are meant to be evidence-based and incorporate features that have been shown to be effective, such as behaviorally-focused strategies, multi-level approaches that reinforce the materials, and culturally and individually tailored programs [13]. While evidence-based curricula are the preferred method for providing nutrition education, few curricula are available for SNAP-Ed programming in the high school population. The objective of the study was to administer a five-lesson nutrition education curriculum to high school students and determine the efficacy of the curriculum to enable students to change their nutrition-related behaviors, such as increasing the consumption of fruits and vegetables, low-fat milk, and calcium-rich foods, and increasing physical activity. Additionally, we sought to determine if the curriculum influenced the nutrition-related knowledge and attitudes of adolescents.

Research Methodology

The study was approved by the Drexel University Institutional Review Board and the Research Review Committee at the School District of Philadelphia. We conducted a quasi-experimental study that was administered over three academic school years, from 2012 to 2015. Each year, eligible high schools were recruited to receive a five-lesson nutrition curriculum for their students. New schools were recruited each year and no school was included for more than one year. Baseline and post-intervention surveys were used to determine changes in nutrition-related behaviors, knowledge, and attitudes in students. Baseline assessments were completed before any lessons from the curriculum were provided. A curriculum-specific supplemental questionnaire was used in the second and third year of the study to assess specific nutrition-related knowledge and attitudes taught throughout the curriculum. Depending on the needs of each individual school, the five-

lesson curriculum was conducted over the course of several weeks to several months. Post-intervention surveys were completed at the conclusion of the five-lesson curriculum.

Five-lesson high school curriculum

The curriculum consisted of five progressive lessons:

1) Build a Healthy Plate,

2) Fast Food: Figuring out the Facts,

3) Choosing Healthy Beverages,

4) Calcium and Vitamin D, and

5) Understanding Energy Balance.

The curriculum underwent an iterative development process and was reviewed by SNAP-Ed state management prior to implementation. The curriculum was taught by trained Drexel University Eat Right Philly nutrition educators. Educators were trained to conduct each lesson in a way that maintained lesson and intervention fidelity. This was accomplished by training each nutrition educator through regular peer-led reviews and ample job training. Each lesson was provided as intended in the lesson plan and educators noted any specific information about the lesson and/or classroom conditions that may have influenced the provision of each lesson. Students enrolled in the study received no additional SNAP-Ed-sponsored nutrition lessons or activities during the intervention time period. However, schools were permitted to provide assemblies and food tastings, as applicable to each individual school. Other health-related education curricula continued as it fit within individual students' schedules, and varied depending on the pre-determined scheduling and curricula established in each school.

Baseline and post-intervention assessment

The Youth Risk Behavior Surveillance Survey (YRBSS) is administered and monitored by the Centers for Disease Control and Prevention and assesses six categories of health-related behaviors in children that contribute to the leading causes of death and disability in young adults. The survey is public domain and able to be used for free by the public [14]. A modified version of the YRBSS was used for this study and included self-reported demographic information and questions pertaining to nutrition and physical activity attitudes and behaviors. In 2012, the YRBSS included questions asking for self-reported height and body weight, calcium intake, and internet access. The modified YRBSS used in this study included 28 questions. The survey was administered by trained Drexel University Eat Right Philly nutrition educators. Surveys were provided to enrolled students in the study before and after the completion of the five-lesson curriculum. Each nutrition educator provided the surveys in-person in each classroom.

Supplemental questionnaire

In years two and three of the study, a curriculum-specific, 18-question supplement was added to the modified YRBSS to better assess how nutrition information taught throughout the curriculum affected students' knowledge and attitudes. The supplemental questionnaire was developed by nutrition

educators and SNAP-Ed staff. Each question was reviewed by nutrition faculty and experts for content validity before being included in the supplemental questionnaire. Following development, the supplemental questionnaire was included with the modified YRBSS and provided at the same time as the baseline and post-intervention surveys. All surveys were completed anonymously. Surveys were coded to identify the type of survey collected (baseline, post-intervention), school, classroom, and individual survey number. Survey responses were logged and sent to the Pennsylvania State University survey center for compilation of survey data.

Participants and recruitment

Eligible schools included those that were SNAP-Ed eligible for three years prior to the beginning of the study. SNAP-Ed eligibility is defined as schools that receive federal reimbursement through the National School Lunch Program. Schools also had to have had SNAP-Ed programming for at least one year prior to being enrolled in the study. Eligible schools were then randomly selected to be included in the study each year. Four or more schools were enrolled per year and each school provided at least three classrooms for inclusion in the study. At least 50 students per school were needed to be eligible to enroll in the study and no classroom was permitted to have more than 60 students. An individual school was eligible for only one year of program intervention, and subsequently removed from the eligibility pool for future years of the intervention. Four schools were recruited in year one, six in year two and eight in year three. All participants in the study were high school students enrolled in 9th through 12th grades. Each participant was enrolled in the study only once and completed one baseline and one post-intervention survey. Changes in matriculation and school absences led to different baseline and post-intervention sample sizes. Participants did not complete the post-intervention survey if they were unavailable to complete it during the scheduled time for the class.

Data analyses

Statistical analyses utilized aggregate scoring from survey responses to assess change in behaviors. Baseline modified YRBSS survey and supplemental questionnaire responses from each year were analyzed together as one aggregate baseline assessment. Post-interventions modified YRBSS survey and questionnaire responses from each year were analyzed together as one aggregate assessment. The following methods were used to assess nutrition-related behaviors, knowledge, and attitudes.

Nutrition-related behaviors: Nutrition-related behaviors were assessed by analyzing the responses of the modified YRBSS survey and did not include the supplemental questionnaire. A total of 1,100 baseline modified YRBSS surveys were collected and analyzed throughout the three-year intervention; 972 post-intervention modified YRBSS surveys were collected and analyzed. Comparisons of the median of baseline and post-intervention scores were conducted using a two-sample Wilcoxon test due to our inability to pair unidentified, anonymous baseline and post-intervention results. Data were tested for normality, variance distributions, and assumptions for non-parametric testing due to survey sampling. Pooled

variance and Satterthwaite variances with a two-sample t-test were used to compare overall variances (spread) between baseline and post-intervention survey responses. The creation of a new scoring rubric based on survey responses was used to assess change in nutrition-related behaviors. The newly created rubric assigned higher values to survey responses that indicated higher frequencies of consumption of that food or beverage. For example, a response of "never or less than 1 time per month" was assigned 0; a response of "4 or more times per day" was assigned 4. Using the newly created scores, t-tests were used to test for significant differences between mean baseline and post-intervention scores. Significance of $p<0.05$ was set a-priori.

Nutrition-related knowledge and attitudes: Nutrition-related knowledge and attitudes were assessed by analyzing the supplemental questionnaire provided in years two and three. A total of 852 baseline supplemental questionnaires were collected and analyzed; 753 post-intervention supplemental questionnaires were collected and analyzed. Chi-square test was used to test to evaluate significant differences between the results of the baseline survey responses and post-intervention responses. Main areas of knowledge and attitudes that were influenced by the intervention were identified and highlighted.

Results

Survey collection

In year one, four schools were recruited with 248 baseline modified YRBSS surveys, and 219 post-intervention modified YRBSS surveys completed. No supplemental questionnaires were collected in year one. In year two, six schools were recruited with modified YRBSS and supplemental questionnaires collected from 407 participants at baseline, and 342 participants post-intervention. In year three, eight schools were recruited. Modified YRBSS surveys and supplemental questionnaires were completed by 445 participants at baseline, and 411 participants post-intervention. In total, 1100 baseline modified YRBSS surveys were completed and 972 post-intervention surveys were completed. A total of 852 supplemental questionnaires were completed at baseline and 753 were collected post-intervention. Differences in baseline and post-intervention survey collection sample size were due to changes in matriculation and student absences.

Nutrition-related behaviors

Wilcoxon tests indicated that students reported an increased consumption of 100% fruit juice ($p=0.0008$), non-fried potatoes ($p=0.005$), carrots ($p=0.0360$), and milk ($p=0.0057$) after completing the intervention and a decrease in consumption of soda ($p=0.0330$) after completion of the intervention (Table 1).

Fruit and vegetable consumption: Pooled variance t-tests indicated an increased percentage of students reporting consumption of 100% fruit juice ($p=0.0260$), non-fried potato consumption ($p=0.0155$), not including French fries, fried potatoes, or potato chips, and carrot consumption ($p=0.054$). Consumption of whole fruit and vegetables did not change after the intervention.

Other beverage consumption: Wilcoxon tests showed a significant shift in the distribution of milk ($p=0.0057$) and soda

Table 1. Percent of student responses to modified youth risk behavior surveillance survey questions significant changes after the intervention.

Variables	100% Fruit Juice		Potatoes (Not French fries, fried potatoes, or potato chips)		Carrots		Milk (Not in cereal)		Soda	
	Baseline[a] (%)	Post-Intervention[b] (%)	Baseline[a] (%)	Post-Intervention[b] (%)	Baseline[a] (%)	Post-Intervention[b] (%)	Baseline[a] (%)	Post-Intervention[b] (%)	Baseline[a] (%)	Post-Intervention[b] (%)
Did not Eat or Drink	23.9	17.8	41.3	33.6	66.3	62.6	40.2	34.4	21.3	23.9
1 to 3 times/ week	32.8	32.6	35.6	39.0	19.8	18.8	24.6	24.9	28.2	29.5
4 to 6 times/ week	13.8	16.0	7.0	8.9	3.8	4.8	9.5	13.9	17.5	16.6
1 time/day	8.1	11.2	8.1	7.8	4.3	6.2	11.0	11.5	7.5	6.5
2 times/day	9.8	8.3	2.3	2.0	1.7	2.1	6.7	8.2	7.8	9.5
3 times/day	4.7	6.5	2.2	2.0	1.0	1.5	5.2	4.9	6.0	4.9
4 times per day	4.4	5.3	1.2	1.7	1.3	1.4	N/A[c]	N/A[c]	9.2	6.5
No Answer	2.5	2.4	2.4	2.7	2.6	2.6	2.9	0.8	2.6	3.7

*All food and food groups presented had significant shifts in the distribution of student responses as determined by two-Sample Wilcoxon tests, with significance established *a-priori* at p<0.05.

[a]Sample size at baseline survey collection was 1100.

[b]Sample size at post-intervention survey collection was 972.

[c]4 times per day was not an available response for this question.

(p=0.0226) consumption post-intervention.

Nutrition-related knowledge and attitudes

Students demonstrated a significant improvement in overall nutrition knowledge from baseline to post-intervention (p=0.0002). The mean score for nutrition knowledge and attitudes at baseline was 45.3 and improved to 48.1 after the five-lesson curriculum. Significant improvements in knowledge and attitudes were identified in six of the 18 questions from baseline to post-intervention. Improvements were seen in some knowledge questions, such as identifying components of a healthy diet. Only 16.8% of participants identified the correct answer of soda as "empty calories" at baseline survey collection. After completing the five-lesson curriculum, the correct response rate statistically improved (p<0.001), with 30.5% selecting the correct answer. Improvements were also seen in questions addressing current behaviors, such as opting for the stairs instead of an escalator (Table 2).

Discussion

The purpose of this study was to determine if a five-lesson nutrition education curriculum for high school students enabled students to improve their nutrition-related behaviors, knowledge, and/or attitudes. There were several behaviors that were positively influenced by the intervention. Students reported an increased consumption of 100% fruit juice, non-fried potatoes, carrots, and milk, and a decreased consumption of soda. Additionally, several markers of nutrition related knowledge and attitudes were significantly influenced by the intervention. An increased proportion of students reported consuming 100% fruit juice after the intervention. There is ample evidence that fruit and vegetable intake is associated with a reduced risk of many chronic diseases including cardiovascular disease, diabetes mellitus, and certain forms of cancer [15,16].

The Dietary Guidelines for Americans recommend that fruit be included in a healthy diet, especially as whole fruit [17]. Although 100% fruit juice is lower in fiber than whole fruit, intake of 100% fruit juice is not associated with excess weight gain in children [18]. Juice consumption may actually help children, especially those of lower socioeconomic status with less access to fresh, whole-fruit, improve their nutrient intake and overall diet quality [19]. The Dietary Guidelines for Americans recognize that 100% fruit juice can play a role in assisting those living in the United States in meeting their daily fruit recommendations [17]. Rosi et al. [20] reported that most adolescents, 10 to 19 years of age, living in North America, Europe, and Oceania, do not meet fruit intake recommendations. Kimmons et al. [21] reported that fewer than one in every 10 Americans meet the fruit or vegetable intake recommendations, and that the primary contributors of total fruit intake among adolescents was from 100% fruit juice. Byrd-Bredbenner et al. [22] reported that, compared to non-consumers, children who consume 100% fruit juice come closer to meeting daily fruit needs and had better diet quality than those who did not. In children, 100% fruit juice consumption is associated with increased intake of vitamin C, folate, and potassium. These results are congruent with the changes that were observed in our research.

Although students did not significantly increase their whole fruit consumption, they reported increased 100% fruit juice consumption after completing the intervention. While we did not directly quantify the servings of fruit consumed, the increased 100% fruit juice consumption may have facilitated an improved overall intake of key nutrients found in fruit. There was also a shift in the consumption of other beverages after the five-lesson curriculum intervention. Students reported a decreased intake of sugar-sweetened beverages (e.g., soda/pop), and increased milk consumption. This is important because beverages contribute approximately 20% of energy to the diets

Table 2. *Responses of nutrition-related knowledge and attitudes questions.*

Questions Assessing Nutrition Attitudes and Behaviors	Response Options[1]	Correct Responses Baseline (%)[a]	Correct Responses Post-Intervention (%)[b]	Chi-square p-value
As part of healthy eating each day, I try to	A. Eat a variety of foods from the five food groups B. Exercise at least 60 minutes **C. Do both A and B[1]** D. Do none of the above	42.5	49.4	0.0064*
Identify the drink with "empty Calories"	**A. Soda** B. Smoothie C. 100% juice D. Skim Milk	16.8	30.5	<0.0001*
When I am physically active or playing my favorite sport for less than 60 minutes, I..	**A. Drink water** B. Drink soda C. Drink a sports drink D. Drink lemonade	70.0	74.8	0.0379*
I get Vitamin D from	**A. Fish** B. Beans and Legumes C. Fruits D. Vegetables	22.6	27.7	0.0248*
Physical Activity is important for	A. Stronger muscles and bones B. Maintaining a healthy body weight C. Sleeping well at night **D. All of the above**	54.3	60.9	0.0106*
If I went to a shopping mall, I would take	A. Escalator **B. Stairs** C. Elevator	41.6	47.1	0.0370*

[1]Bolded options are the correct answer [a] Sample size at baseline survey collection was 852; [b] Sample size at post-intervention survey collection was 753.

of children and adolescents [23]. While the beverage choices of high school students have changed in the past two decades, with students consuming fewer sugar-sweetened beverages [24] these high-energy beverages continue to contribute to excess energy intake in children [25]. High school students, in particular, are vulnerable to making unhealthy beverage decisions as they gain autonomy of their dietary decisions. Evans et al. [25] studied beverage consumption of ethnically diverse high school students in Texas and reported that milk and juice consumption declined steadily with each grade level, with a concomitant increase in soda consumption.

In contrast, results from this study showed high school students choosing healthier beverage options after completing the five-lesson curriculum. The percentage of students who reported never consuming milk decreased by 14.5%, and those who consumed milk four to six times per week increased consumption nearly 50% after completing the intervention. This was paired with an overall reduction in those reporting consuming soda three or more times per day. Our results provide strong evidence that the use of our five-lesson curriculum for high school students enabled healthier beverage choices. Potato and carrot intakes were also reported to have been influenced by the intervention. Students reported increases in both categories of food after students completing the five-lesson curriculum. Daily consumption of potatoes, excluding French fries, fried potatoes, or potato chips, increased by 13% after the intervention. This can generally be seen as an improvement to the overall diet of

adolescents.

Although potatoes are generally thought to contribute to the consumption of excess energy and the development of chronic disease, [26,27] the change in consumption patterns among our participants is beneficial. Veronese et al. [26] identified that people who ate fried potatoes twice per week saw an increased risk of death, but failed to identify a correlation between non-fried potato consumption and risk of death. Non-fried white potato consumption may add important nutrients to the diet and improve overall health in children. White potatoes are low in fat and high in potassium, magnesium, dietary fiber, and vitamin C [28].

Replacing white potatoes with other vegetables may deplete potassium levels and decrease the overall diet quality in children. Nicklas et al. [29] analyzed the National Health and Nutrition Examination Survey (NHANES) 2005 to 2012 24-hour dietary recall data using replacement modeling. They reported that, by replacing potato consumption with an equivalent amount of other vegetables, the potassium intake significantly decreased. Carrot intake also increased after completing the five-lesson curriculum. Children were likely to have had exposure to carrots prior to this intervention and they are often a preferred vegetable choice [30].

Before receiving the five-lesson curriculum, 66.3% of participants reported that they did not eat carrots at all. This percentage dropped to 62.7% after completing the intervention.

Students who reported eating carrots daily also increased from 4.3% at baseline to 6.2% after receiving the five-lesson curriculum. This increase may have been attributed to the repetitive exposure of this vegetable. The repetitive exposure to novel foods tends to increase food acceptability in adolescents [31]. The five-lesson curriculum introduced the adolescents to carrots, and provided lessons highlighting the nutrition and importance of vegetables including carrots in healthy diet. The intervention also influenced the nutrition-related knowledge and attitudes of students. The percentage of students who correctly answered the knowledge and attitudes question increased significantly for six of the 18 questions. Improvements were seen in correct answers to questions asking students to identify the components of a healthy lifestyle, identify the importance of physical activity, and identify ways to increase physical activity.

Improvements were also seen in identifying sources of empty calories, vitamin D, and proper hydration sources during exercise after completing the five-lesson curriculum. In addition, improved attitudes were identified, with a larger percentage of students choosing to take the stairs instead of the escalator or elevator. Changes in nutrition-related behaviors, knowledge and attitudes showed that the five-lesson curriculum was effective in educating students on nutrition and a healthy lifestyle. Some researchers suggest that improvements in nutrition-related knowledge through ecological school-based interventions can translate to improvements in behaviors as well [32]. Whereas other researchers have reported that even with improvements in knowledge, nutrition behaviors are left unchanged [33,34]. Although the literature is equivocal in the association of knowledge and attitudes influencing nutrition behaviors, we found that improvements in nutrition-related behaviors and attitudes were simultaneously paired with improvements in nutrition behavior.

Strengths and limitations

The intervention was provided to a large sample of students receiving SNAP-Ed programming in SNAP-eligible high schools. There are limited curricula specific to the needs of high school students available for SNAP-Ed programming. Our research furthers the field of nutrition education for high school students and demonstrated significant improvements in nutrition-related behaviors, knowledge, and attitudes among the high school students who completed the curriculum. This curriculum is universal for high school students and is adaptable if nutrition requirements and recommendations change. A limitation of the study was the use of survey responses, which are not always reliable estimates of actual intake. Newer technologies may allow for more accurate assessment of dietary intake in adolescents [35]. Additionally, the research was unable to match baseline surveys to post-intervention surveys for individual students. This prevented us from conducting individual level analyses on a yearly basis. While survey responses were analyzed as collective baseline and post-intervention responses, our research was not able to determine change over time based on the intervention.

Implications for research and practice

Nutrition behaviors are influenced by a plethora of real-life factors such as food access, [36] parental behaviors, [37] and gender, [38] among others; but, a strong platform of nutrition education remains essential to supporting improved knowledge and behaviors of adolescents. Comprehensive programs addressing more than knowledge may be beneficial in changing nutrition behaviors.23 The joint position of the Academy of Nutrition and Dietetics, Society of Nutrition Education and Behavior and School Nutrition Association state that, "comprehensive, integrated nutrition programs in pre-school through high school are essential to improve the health, nutritional status, and academic performance of our nation's children," [39] validating the need for evidence-based curricula development. SNAP-Ed currently does not have evidence-based curriculum specific to high school students. There are currently 134 curricula available, but only 32 of them are relevant for high school students. Of the 32 high school curricula available, all are practice-based rather than evidence-based [40].

Conclusion

Although practice-based curricula have use in the high-school setting, a validated curriculum with significant nutrition outcomes will provide strength to SNAP-Ed programming. The use of the five-lesson curriculum for high school students described here can provide the evidence-based foundation necessary for nutrition education in for high school students and begin the process of changing nutrition-related behaviors.

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PA SNAP-Ed/ EAT RIGHT PHILLY 2021 Annual Report

Inspiring health, wellness, and better learning.

From the Desk of the PI....

The Drexel University, Department of Nutrition Sciences' Pennsylvania Supplemental Nutrition Assistance Program-Education (PA SNAP-Ed) / EAT RIGHT PHILLY Team continued to provide quality nutrition education to participants this year, despite the challenges of 100% virtual learning in the midst of a pandemic. The work of the team resulted in measurable impact on participants' ability to adopt healthy lifestyles. This year the Team of nutrition professionals provided education and interventions to over 16,000 students and adults in 80 schools and community sites in the city of Philadelphia. More telling than numbers, however, may be when one of our nutrition coordinators was thrilled to receive a picture from a student very proud of the dish she made for her family from one of the lessons taught virtually!

The Team has continued to work toward the goal of improving the health of our participants. I want to thank each of the Team members, led by Judy Ensslin, Program Director, for their hard work and dedication that makes the PA SNAP-Ed/ EAT RIGHT PHILLY Program a success.

This year the EAT RIGHT PHILLY Team developed a new curriculum series called the DRAGON project, which challenges students to Determine, Recognize and Achieve Goalsetting through Nutrition. The DRAGON project combines education lessons with personalized sessions in which students develop a project to allow them to become educators of their own community. The team has incorporated the most up to date research on behavioral change to develop this new program which will be piloted in the next year, with a plan to further evaluate it in the future.

This year the Team also had its first peer-reviewed publication. "Efficacy of a Five-Lesson Nutrition Education Curriculum for High School Students Administered via Pennsylvania SNAP-Ed Programming" was published in the Journal of Child and Adolescent Health. The curriculum was developed and tested by Drexel's PA SNAP-Ed/EAT RIGHT PHILLY Program over many years and is now a part of the SNAP-Ed Toolkit, a national compilation of evidence-based interventions that are approved for use by SNAP-Ed Implementing Agencies.

In continuing efforts to increase evaluation of efficacy of the EAT RIGHT PHILLY interventions, the Team worked with the Public Health Management Corporation (PHMC) of Philadelphia to evaluate efficacy of the 100% virtual program in select schools during the COVID -19 pandemic. Findings indicated that despite challenges of virtual programming, the High School Curriculum was effective in increasing produce consumption among participants.

Our staff also continues to serve as preceptors to students from Drexel University, Department of Nutrition Sciences' Master of Science in Nutrition and Dietetics program. We are also proud of the continuing opportunities we provide Drexel students. We employ student nutrition educators from the Department of Nutrition Sciences, the School of Public Health, and the College of Arts and Sciences, providing opportunities to gain valuable experiences working in the community.

Despite the challenges of the year, the EAT RIGHT PHILLY team has provided fun, engaging, high quality education that is appreciated by both participants and teachers in the School District of Philadelphia. Throughout this report are quotes and stories from this year's programming that demonstrate some of the program successes. One especially nice story came recently from the parent of a high school student. This mother participated in School Advisory Council meetings throughout the school year, as did our nutrition coordinator who provided nutrition lessons for parents and caregivers. At the start of this school year, this mother greeted the EAT RIGHT PHILLY nutrition coordinator saying, "Now I eat healthier because of you and what I learned last year!"

Congratulations and thank you to the EAT RIGHT PHILLY Team!

Jennifer J. Quinlan, Ph.D.

Professor and Interim Chair

Department of Nutrition Sciences and Department of Food and Hospitality Management

Goal of Nutrition Education in SNAP-Ed

To provide experiences that will "improve the likelihood that persons eligible for SNAP will make healthy food choices within a limited budget and choose physically active lifestyles consistent with the current Dietary Guidelines for Americans and the USDA food guidance". USDA SNAP-Ed Plan Guidance FY2019

Program Overview

Drexel University's EAT RIGHT PHILLY Program is a Pennsylvania Supplemental Nutrition Assistance Program - Education (PA SNAP-Ed) partner which provides free nutrition outreach programs and services to SNAP-eligible participants. Drexel's team is one of six partners to the School District of Philadelphia (SDP) EAT RIGHT PHILLY Program, the official nutrition education program of the School District of Philadelphia. This program provides interactive nutrition lessons, as well as, interventions that engage and support students, families, staff, and the community in the quest to make the healthy choice the easy choice.

The COVID -19 Pandemic caused changes in PA SNAP-Ed nutrition programming. With the cessation of all in-person programming in March of 2020, the Drexel EAT RIGHT PHILLY team successfully transitioned from in-person to virtual programming. By the start of the 2020-2021 school year, the team of managers and coordinators was ready to begin virtual programming with SNAP-Ed eligible participants. Virtual programming continued throughout the school year. In-person programming resumed in limited amounts for the beginning of the 2021-2022 academic year.

Strategies and interventions used to promote healthy behaviors include:

- Virtual and In-Person Nutrition Lessons
- Virtual and In-Person Food Demonstrations
- Recipe Videos
- Virtual Gardening Projects
- Hydration Promotion
- Physical Activity and Movement Break Promotion
- Fruit and Vegetable Promotion
- Breakfast Promotion
- Food Access Support
- Social Media

By the Numbers....

$2,078,050 Total Grant Award for 2020 to 2021

74 Schools and Charter Schools

6 Community Sites

2,202 Nutrition lessons conducted with students and adults

7,083 Students and adults who participated in direct education

39,457 Students and adult contacts through direct education

13,891 Participants reached through Policy, Systems, and Environmental (PSE) change strategies

Program Highlights

Drexel University
PA SNAP-Ed/
EAT RIGHT PHILLY PA SNAP-Ed
2020-2021
YEAR IN REVIEW

Building Skills: Nutrition Education
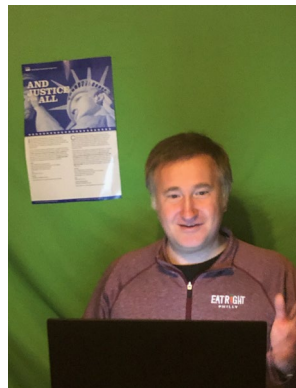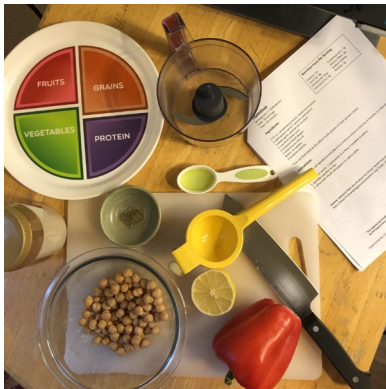
Drexel's EAT RIGHT PHILLY Team delivers interactive nutrition lessons to SNAP-Ed eligible kindergarten through twelfth grade students and adults. Virtual and in-person lessons with interactive activities and food demonstrations were used to engage students, spark interest in wellness, and develop knowledge in nutrition and physical activity. The EAT RIGHT PHILLY team educated themselves in various virtual platforms and programs and used this knowledge to create online worksheets, games, videos and activities to engage learners.

Drexel's EAT RIGHT PHILLY team taught single and series lessons in:

- 135 Kindergarten through fifth grade classrooms

- 51 middle school classrooms

- 193 high school classrooms

- 39 adult classrooms
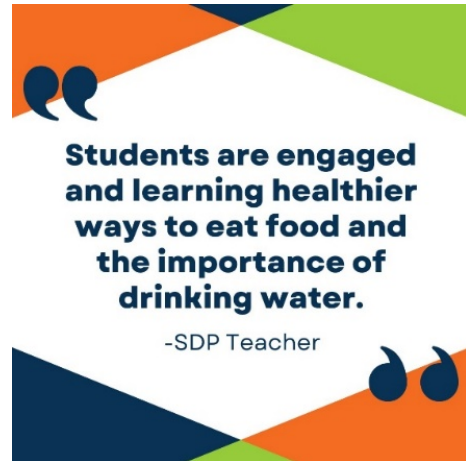
Building Skills: Gardening

While in-person gardening with participants was not possible for most of the year, that did not prevent EAT RIGHT PHILLY from promoting and teaching gardening. Working with School District of Philadelphia teachers, classes learned how to plant seeds, nurture growth and care for various herbs and vegetable plants through virtual gardening. EAT RIGHT PHILLY supported classes with soil, seeds, and gardening materials which teachers distributed to students. Students at home and those in schools planted seeds and cared for the growing plants. EAT RIGHT PHILLY also highlighted gardening activities on social media. With the start of the 2021-2022 school year, in-person gardening resumed with two Environmental Science classes who learned about plant growth and how to plant seeds.
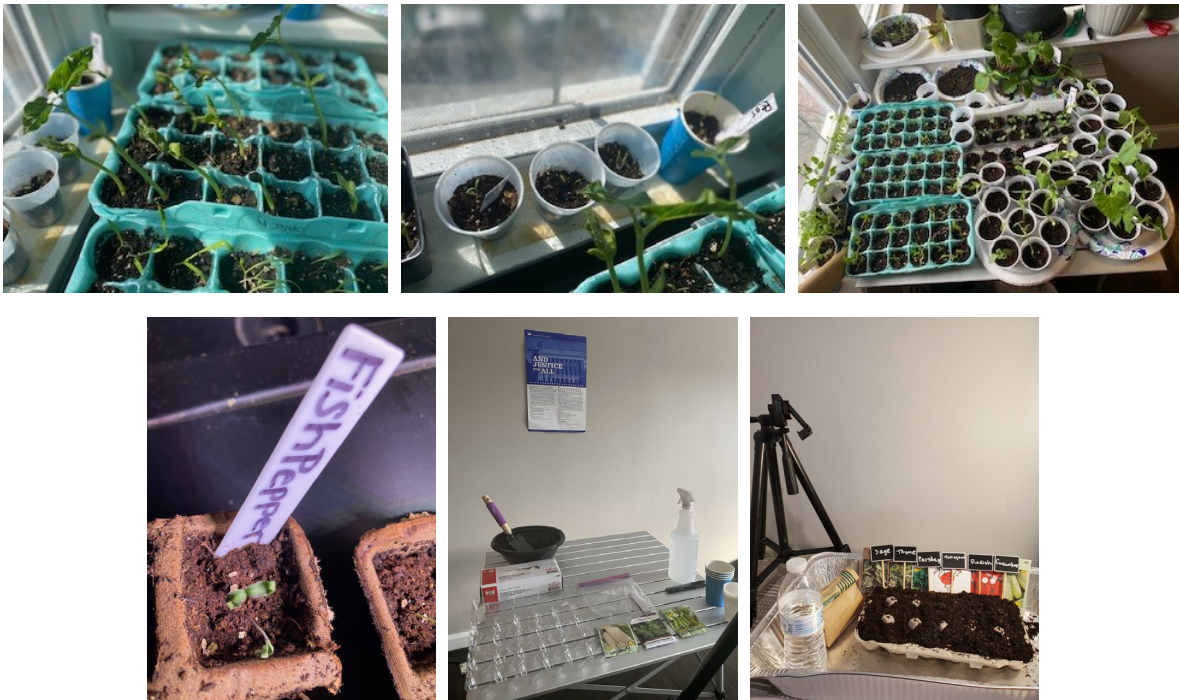
School Wellness Initiatives

Promoting student health and school wellness continues to be a priority for the EAT RIGHT PHILLY Team. Creative methods were used to continue the promotion of proper hydration, physical activity, fruit and vegetable consumption, breakfast consumption, and wellness despite the pandemic shutdowns. Working with district teachers and community partners, students participated in wellness events and activities that were weaved into education programming. EAT RIGHT PHILLY also used social media to further promote wellness topics.

Healthy Hydration

EAT RIGHT PHILLY has partnered with SDP's Green Futures sustainability plan, the Philadelphia Department of Public Health's Get Healthy Philly team, the Philadelphia Water Department, the City of Philadelphia Office of Children and Families, and the Promise Neighborhood to promote healthy hydration to the Philadelphia community. Nutrition Coordinators led hydration promotions in twenty-five schools using both virtual and in-person interventions which included:

- Virtual lessons on hydration and importance of water

- Encouraging students to have water with them and to stop and take a sip during EAT RIGHT PHILLY programming

- SDP teachers' support by reminding students every day to have water with them and to take time to take a sip

- Hosting virtual "Hydration Challenges" where students would show they had water with them during classes

- Students creating posters and social media posts depicting healthy hydration tips

- Provided 4600 reusable water bottles to students to use throughout the school day when schools re-opened

- Hosting hydration information tables at Back-to-School events featuring information, infused-water recipes with samples, and EAT RIGHT PHILLY reusable cups

Successes:

- *"I loved that we were able to do a water bottle check-in to encourage students to drink more water throughout the day!" Teacher, Samuel Powel ES*

- *Students were given a reusable water bottle and then participated in a water challenge in which teachers tracked student use of a reusable water bottle for a week. "We loved the water challenge." Teacher, McCall ES*

- *We conducted a "Hydration Challenge" with students who were encouraged to have a water bottle with them during each lesson. The class did a great job in remembering to have water with them at lessons. The teacher continued the challenge throughout the school day and every day, helping students to make having water a routine part of each day. Nutrition Coordinator, Martin Luther King High School*

- *After discussing healthy hydration in class, one group of students noted that they usually don't drink enough water while in school. They collectively agreed that they all need to consume water more frequently. Nutrition Coordinator, Constitution High School*

- *At one hydration event, students were able to personalize their own reusable water bottles. Students, teachers, and the principal voiced their excitement and gratitude for receiving the bottles, noting that students did not have them and they make it easier to have water available throughout the day.*

Physical Activity Promotions

Being physically active is an important part of wellness. EAT RIGHT PHILLY encourages participants and partners to take time throughout each day to get up, move, and refocus for better learning. Nutrition coordinators conduct movement breaks during nutrition programming and also provide tools, resources, and training for teachers to develop their movement break skills. Younger students especially enjoyed participating in active movement breaks that use energy. Older students enjoy mindfulness and stretching activities that help to refocus the mind.

Successes:

- *As a class was wrapping up, one student asked the coordinator, "Aren't you forgetting something?" Not knowing what was forgotten, the student happily reminded the coordinator, "We need to do our exercise!" So the class used the last few minutes to do some movement and expend some energy. EAT RIGHT PHILLY Nutrition Coordinator*

- *"The students liked doing the brain breaks!" Teacher, Belmont Elementary Charter School*

Increasing Fruit and Vegetable Consumption

Fruits and vegetables are delicious! Eating them every day is a great way to fuel the body with energy, antioxidants, fiber, vitamins, and minerals. To support consumption of fruits and vegetables, EAT RIGHT PHILLY conducted programming to teach students about a variety of fruits and vegetables. Prior to the pandemic closures, this programming would be in-person and include nutrition information, activities, a recipe and a food tasting, but the food tastings were suspended for this programming year. Virtual, monthly fruit or vegetable promotions included an informational video, a recipe, activities and sometimes, a virtual food demonstration to peak student interest in eating fruits and vegetables.

Successes:

- *During our monthly Fruit & Vegetable virtual meeting, an excited group of students were ready to share their thoughts on Pears! One student explained that her favorite way to eat pears is when her grandmother makes soup with pears in it! Martha Washington Academics Plus*

- *"After last month's lesson about mango's, I shared everything I learned with my mom asked her if we could go to the store to get a mango because I really wanted to try one!" His mom let him pick out three mangos and they shared them with the whole family! He said everyone loved how sweet and juicy they were. Martha Washington Academics Plus*

- *During monthly lessons on a variety of fruits and vegetables, a particularly inquisitive student kept her nutrition coordinator on her toes, asking several questions about how the foods grow. The teacher commented on her enthusiasm, stating that EAT RIGHT PHILLY lessons are the highlight of the month! Belmont Elementary Charter School*

- *During a lesson focused on oranges, one student happened to be drinking orange juice at the start of the lesson. By the end of the lesson, some parents provided their students with orange juice or a whole orange to enjoy. This spontaneous and unexpected sharing made the subject more relevant and the class more engaged. Belmont Elementary Charter School*

- *After learning about mangoes, students were sharing what they had learned in the class. One excited student stated that he looked forward to trying mango in a salad. Kearny Elementary School*

The children learned a lot about fruits and veggies that they may not normally see.

-Teacher, McCall Elementary School

The students enjoy the lessons and love to tell about the fruit or vegetables they learn about in school.

-Teacher, Forrest Elementary School
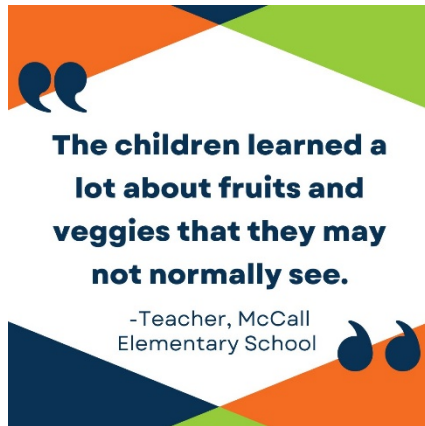
School Breakfast Promotions

Starting the day off by fueling with a healthy breakfast is one of the easiest ways that students can energize their brains for the day. The EAT RIGHT PHILLY team continued to promote increased consumption of breakfast while students were learning from home. Nutrition coordinators led students through interactive, breakfast-themed nutrition lessons to teach the importance of starting each day with the fuel needed to learn. During National School Breakfast Week, some classrooms participated in a breakfast challenge to encourage eating breakfast to start the day, while others did "Breakfast Selfies" or made social media posts to show themselves eating breakfast.
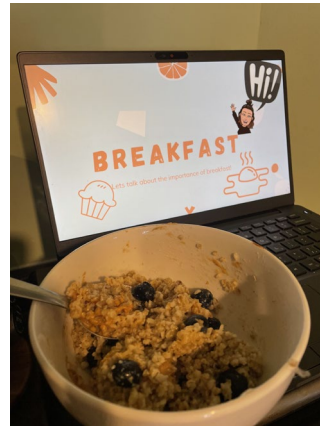
Food Assistance

Since EAT RIGHT Philly staff were not able to assist in Food Assistance sites during most of the year, staff got creative in order to stay connected and provide information and recipes to participants. Working through partners who were able to do in-person programming and assist with food distribution at food assistance sites, EAT RIGHT PHILLY provided information, recipes and reinforcements which partners then included in the distribution of food boxes or bags to participants.

Community Partnership Highlights

Promise Zone

Drexel's EAT RIGHT PHILLY team partnered with schools and sites in the West Philadelphia Promise Zone to provide a variety of nutrition education programming. Nutrition coordinators taught virtual lessons, conducted virtual food demonstrations, and promoted several wellness initiatives in the Promise Neighborhood Schools. With the beginning of the 2021-2022 school year, some schools held in-person Back-to-School events and others were virtual. Nutrition Coordinators participated in-person when they could but also provided informational videos that were presented during virtual events.

Drexel's EAT RIGHT PHILLY team continued its collaboration with Drexel's West Philadelphia Promise Neighborhood Team to promote wellness, hydration, fruit and vegetable consumption, and increased movement in the Promise Neighborhood. While programming was limited due to the COVID-19 pandemic, the West Philadelphia Promise Neighborhood Team worked to continue to build partner relationships and connect community and partners in providing services to the residents. With the students' return to school, the Drexel teams are working together with other partners to help make fruits and vegetables more accessible to families in the upcoming year.

Dornsife Center for Neighborhood Partnerships
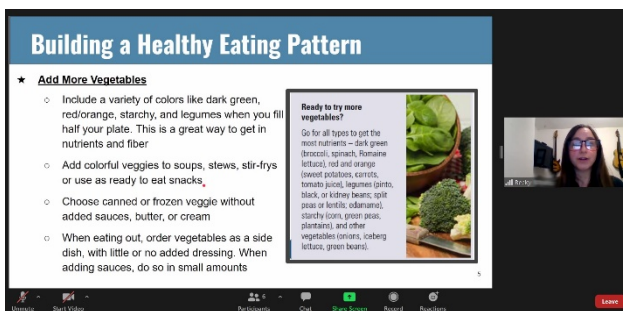
Drexel's EAT RIGHT PHILLY team has continued to work with partners at Drexel's Dornsife Center for Neighborhood Partnerships throughout this year. Virtual lessons were held throughout the year and in-person lessons and food demonstrations resumed in September 2021. In addition to providing lessons, EAT RIGHT PHILLY contributed to the monthly Dornsife Newsletter with nutrition information, recipes, and tips.

Stephen and Sandra Sheller 11th Street Family Health Services

Drexel's EAT RIGHT PHILLY team continued to collaborate with the Team at Drexel's Stephen and Sandra Sheller 11th Street Family Health Services. The Drexel Team conducted virtual lessons with various groups throughout the year. A total of 30 lessons were conducted with most being done virtually, but some were done via conference call to better meet the needs of the participants.

For nearly five years, Drexel EAT RIGHT PHILLY has been partnering with SOWN at 11th Street to work with a group of grandparents who are raising their grandchildren. When the group met previously in person, they were always lively and engaged in nutrition workshops. The switch to virtual lessons was a difficult transition for this group, and they found that conducting programming over the phone was a better fit. At the end of one session, participants shared some of the changes they had made to eat healthier. One commented that "Since I have been coming to these nutrition lessons, I have completely cut out soda from my diet." Another member said, "With the recipes you provide, the information the class shares, I have really increased the amount of different colored vegetables I eat every day."

Community Schools

Through the City of Philadelphia's Office of Children and Families (OCF), Drexel's EAT RIGHT PHILLY team continued a partnership with eight Community Schools to collaborate on projects meant to promote wellness for the school community. Each Community School has a designated Community School Coordinator who brings community partners together to address the needs of the school community. Drexel's EAT RIGHT PHILLY program supports these coordinators in specific wellness initiatives by providing nutrition lessons, food demonstrations, and a variety of wellness promotions, depending on the needs of the school. This year, programming was provided to the following community schools:

- Alain Locke School
- George Washington High School
- Kensington Health Sciences Academy
- Murrell Dobbins CTE High School

- Overbrook Educational Center
- Samuel Gompers School
- South Philadelphia High School
- Tilden Middle School

In addition to virtual lessons, schools participated in a variety of initiatives. Hydration, Fruit and Vegetable, and Physical Activity promotions were conducted at several of the community schools. Food Access projects were supported at Dobbins High School and Kensington Health Sciences Academy.

While the PA SNAP-Ed Statewide Evaluation plan was suspended due to the COVID-19 pandemic and no in-person programming, the Drexel EAT RIGHT PHILLY evaluation plan went through adaptation and change throughout the year. The pandemic also provided some new evaluation opportunities.

Online Learning Evaluation

An Evaluation of online learning was conducted with classes in grades nine through twelve in order to assess the effect of virtual delivery of the Drexel High School curriculum on student nutrition behaviors. Drexel EAT RIGHT PHILLY contracted with Public Health Management Corporation to conduct this impact evaluation. The study was designed to evaluate changes in nutrition behaviors after receiving a five-lesson nutrition curriculum. Results suggested a small improvement in some nutrition behaviors and a reduction in the number of students at greater risk related to not eating vegetables.

COVID-19 and Educator Technology Competency

In 2020, the COVID-19 pandemic forced Drexel EAT RIGHT PHILLY to transition to a fully virtual format for nutrition education activities. The team worked hard to create online resources and continue providing interactive lessons and cooking demonstrations. To evaluate the new technology-based skills which the coordinators developed, Drexel EAT RIGHT PHILLY conducted a study to assess the change in coordinator self-reported technology skills. The study used the Technology Proficiency Self-Assessment to compare coordinator reported technology-related skills before the pandemic to their skills one year into virtual learning. The study also asked coordinators for their thoughts on challenges, resources and training, lessons learned, and opinion about the future of SNAP-Ed programming.

Challenges with the study design resulted in a small, matched sample which caused inherent limitations in the survey data analysis. Because of these limitations, the survey will be administered again and reported on in the upcoming program year. Qualitative data was reviewed, giving light to the coordinators' opinions and thoughts. These comments may have merit in helping to shape future training and qualifications for nutrition coordinators, especially if virtual programming continues to be an option in SNAP-Ed programming.
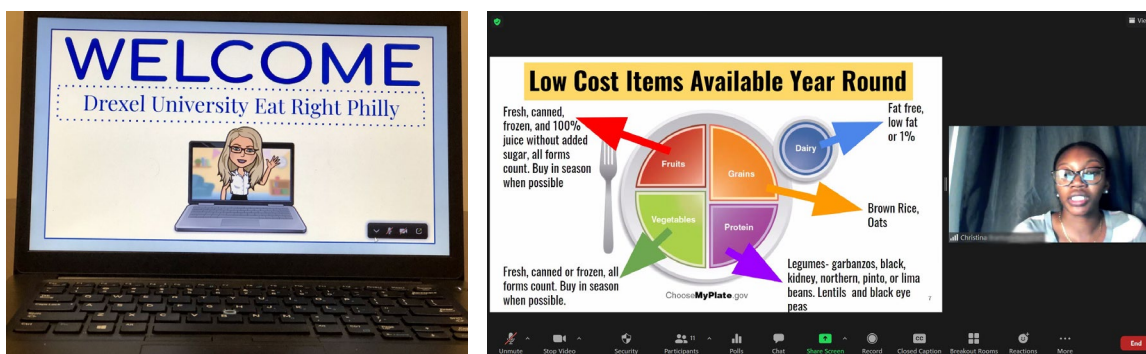
The Drexel EAT RIGHT PHILLY Team analyzed program delivery data from the first quarter of fiscal year 2020, when nutrition education was completed 100% in-person, and the first quarter of fiscal year 2021, when nutrition education was provided in a fully virtual format due to the COVID-19 pandemic. The purpose of this analysis was to evaluate the effect of COVID-19 on the number and types of lessons taught by Drexel EAT RIGHT PHILLY coordinators as well as program reach. As expected, the number of lessons provided and reach were lower during the COVID-19 quarter, but the Drexel EAT RIGHT PHILLY Team was still able to provide 579 lessons to 4787 participants and have a total of 13,885 contacts over a three-month period!

The DRAGON Project

For the past year, the EAT RIGHT PHILLY team has been working on developing the DRAGON Project, a nutrition curriculum and student engagement project. The project includes a five-lesson nutrition curriculum that incorporates the concept of mindfulness in making choices while teaching students about personal food choices, the availability of foods and sustainability. In addition to the lessons, students will be led through a process to assess the health of their school environment and to create and implement a student–driven wellness project. This year, the curriculum and project were finalized and peer reviewed. Revisions have been made in preparation of implementing the intervention and conducting an evaluation in the next fiscal year.

Publications

"Efficacy of a Five-Lesson Nutrition Education Curriculum for High School Students Administered via Pennsylvania SNAP-Ed Programming" Abigail D. Gilman, Judith Ensslin, Jessica Cullison, Ann Marsteller, Jennifer Quinlan, Stella L Volpe. Journal of Child and Adolescent Health, 2021, Volume 5, Issue 4.

SNAP-Ed Toolkit

This year, the Drexel High School Nutrition Curriculum was accepted into the SNAP-Ed Toolkit, a compilation of tested interventions that have been approved for use by SNAP-Ed implementing agencies across the country. After the impact evaluation of this curriculum was published in the Journal of Child and Adolescent Health, the curriculum was awarded a research-tested designation.

The Drexel EAT RIGHT PHILLY curricula is used across the country by educators teaching nutrition. Requests to use the curricula and materials are often made through the website. A SNAP-Ed agency in Idaho asked for assistance with training staff to conduct the Drexel Middle School Curriculum. In September 2021, the Assistant Director and a Program Manager presented to approximately twenty educators in Idaho on the Middle School curriculum, providing an overview of the lessons, tips on engaging students, and making lessons relevant for the population.

In order to promote healthy lifestyles to participants during the COVID-19 pandemic and expand their audience while all programming was virtual, the Drexel EAT RIGHT PHILLY team increased activity on social media. Through Twitter, Instagram, YouTube and a new Facebook page, content reached about 5,000 users, and YouTube videos had approximately 6,700 views. Practical nutrition information, recipes, movement/brain break activities, fruit or vegetable of the month information, as well as, hydration and gardening highlights were shared on social media.

Access all of EAT RIGHT PHILLY's social media accounts at https://linktr.ee/eatrightphilly_drx.

Drexel's EAT RIGHT PHILLY Program conducts an annual Teacher Survey which asks SDP teachers and staff who worked with us throughout the year their opinions of the programming. The feedback was reviewed and analyzed for improvement opportunities. The survey focuses on nutrition education programming, food tastings, hydration and the use of movement breaks. The feedback helps to identify challenges, trends, and successes. Highlights include:

I think EAT RIGHT PHILLY really stepped up to the plate with virtual lessons this year.

-High School Teacher

Thank you EAT RIGHT PHILLY, great work in educating students on nutrition!

-Elementary School Teacher

- "Ms. Tori was excellent with my students. She even motivated me!!!" *Elementary School Teacher*

- "The quality of instruction (was the most successful part). Ms. Christina was excellent. The information shared along with the virtual PowerPoint classes were great." *Middle School Teacher*

- "Kristin has inspired many of our 9th graders." *High School Teacher*

- "Instructor Danielle is very professional and knowledgeable. Students respond very well to her and her lessons." *High School Teacher*

- "The coordinator was very enthusiastic and informative and presented the information in a way that the students understood." *High School Teacher*

- "Vanessa was flexible and creative as we came up with content for this year. She worked with us to find ways to get our students involved from home and was always enthusiastic." *High School Teacher*

- The coordinator's "coordination and rapport is unmatched!" *High School Teacher*

- "I have been working with Kristin for the past two years and she is great with our students and faculty. We would love to work with her again next year. Thanks so much for all that you do for the students, as well as the School District of Philadelphia." *High School Teacher*

We are so grateful for this programming this year!!

-High School Teacher

Special Thanks to the EAT RIGHT PHILLY Team

The Team

Principal Investigator: Jennifer Quinlan, PhD

Program Director: Judy Ensslin, MS, RDN, LDN

Assistant Director: Jessica Cullison, MS, RDN, LDN

Administrative Coordinator: Kusuma Schofield, MSEd, MPH

Program Managers:

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Melissa Matsumura , MS, RD, LDN

Administrative Assistant: Alina Marhefka

Project Coordinator: Becky Ippolito, NDTR

Nutrition Coordinators:

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Victoria Sutton

Danielle Juristch

Allysandra Aponte

Vanessa R. Altidor

Christina Branton-McMillon

Miranda Rowe

Roselyn Zeyl, MS, RDN

Student Employees:

Danika Hoffman

Yash Kakani

Karishma Patel

Priyani Sharma

Looking to reach out? There are several ways to get in touch!

For a general program overview: drexel.edu/cnhp/eatrightphilly

For curriculum and programming materials: https://sites.google.com/view/nutred4philly/home

Via Email: nep@drexel.edu

Via Phone: 215-895-2422

Via Snail Mail: Drexel University 1601 Cherry Street, Suite 110 Philadelphia, PA 19102

We would love to hear from you!

Drexel University PA SNAP-Ed/Eat Right Philly 2020 to 2021 Program Survey Summary

The Drexel University Pennsylvania Supplemental Nutrition Assistance Program-Education (PA-SNAP-Ed)/ Eat Right Philly nutrition education program (DRX ERP) delivers an annual program survey to assess the effectiveness of programming that takes place in the School District of Philadelphia and various community sites in Philadelphia County. The Qualtrics survey program was used to collect the data through an email link. The link was sent to teachers, principals, and staff in schools and sites where programming was conducted. Response data were as follows:

- 265 total participants received the **email link**
- 100 participants **began** the survey
- 84 **completed** the survey
- The survey received a **completion rate** of 84%

The 2020 to 2021 school year saw 100% virtual programming due to the closures of the COVID-19 pandemic. While some students were able to attend school in-person towards the end of the school year, PA SNAP-Ed was restricted from participating in in-person programming for the duration of the school year. Delivering the DRX ERP program in a solely virtual setting caused a decrease in the amount of programming and reach as teachers in the schools navigated a new learning environment. Some teachers and schools chose to refrain from DRX ERP programming in this completely virtual environment.

Of the respondents, 84.5% received **virtual nutrition lessons**, 19% received **virtual food demonstrations**, 38.1% received the **Fruit and Vegetable of the Month Promotion,** 31% received **Movement Breaks/Physical Activity Promotion**, 35.7% received **online resources**, and 3.6% reported receiving **other programming**, including gardening, online activities, and support during school events.

Respondents were asked to rate their **satisfaction** on **lesson content, age-appropriateness of materials, online activities, videos, and PowerPoint presentations**. The data show that 86% to 92% of respondents were **extremely satisfied** in these areas, 8.5% to 11% were **somewhat satisfied,** and 0 - 3.8% were **neither satisfied or dissatisfied**. Only one respondent reported **extreme dissatisfaction** with online activities (Figure 1). The same respondent was somewhat or extremely satisfied in all other areas.

Figure 1: Teacher Satisfaction of Virtual Nutrition Lessons
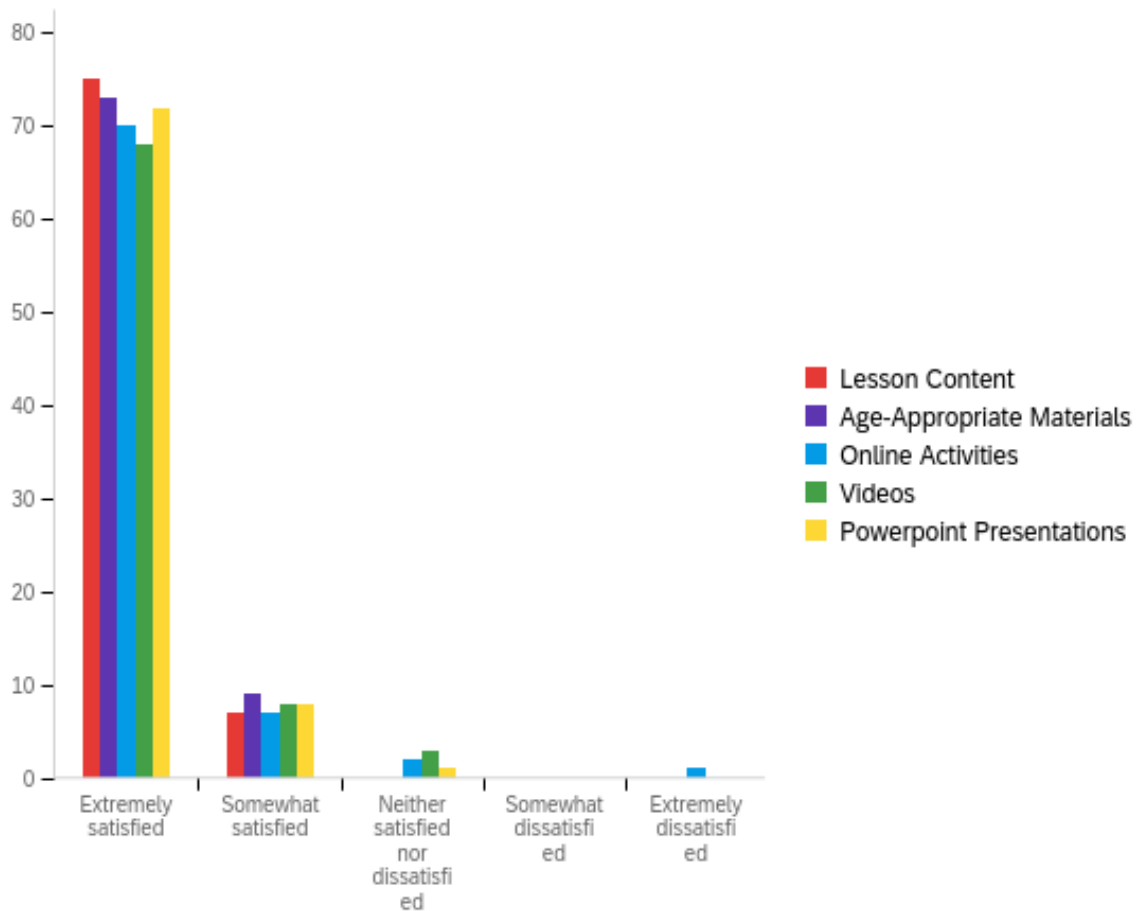
The survey also asked teachers to rate their **nutrition coordinator**. 98.75% of respondents reported that their nutrition coordinators were **punctual, prepared,** and **enthusiastic**. 97.5% reported that they were **communicative**. One respondent reported the nutrition coordinator was **sometimes enthusiastic** and **communicative**. The remainder did not respond.

Participant engagement is important to the success of the DRX ERP program, especially this year, since it was the first time all programming was conducted virtually. Engagement, as reported by respondents, remains high as reported in previous years. 93.8% of respondents felt that students were **mostly or completely engaged.** The remainder felt the students were **somewhat engaged**.

Quality of Programming was also highly rated. Seventy-one percent of respondents reported that the quality of programming was **excellent**, while 22% reported that the programming was **good** (Figure 2). When asked about the quality of the **virtual food demonstrations**, 93% of teachers who used them responded that they were **good or excellent**, 7% assessed them as **average.**

Figure 2: Teacher Rating of the Overall Quality of Virtual Programming
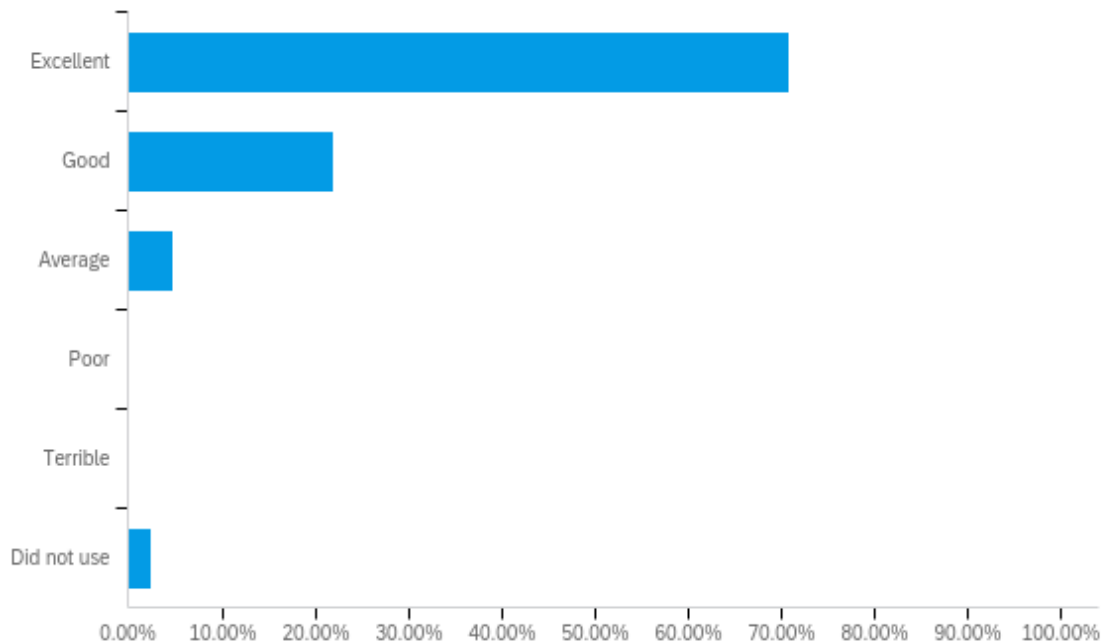
The DRX ERP team shared a variety of **online resources** with school staff for use in the virtual classroom. Online education materials, recipe videos, activities, and movement break resources were some of the online resources that were used with students. When asked about the quality of these resources, 64.4% of teachers who used them rated them as **excellent**, 31.5% as **good,** and 4.1% as **average.**

Policy, Systems, and Environment (PSE) interventions are used in schools to facilitate widespread changes that influence a greater proportion of students, teachers, faculty and staff, families, and community members. The virtual environment limited the implementation of PSE interventions, but DRX ERP coordinators worked with classroom teachers to include **Movement/Brain Breaks and Healthy Hydration Promotions** as a part of PSE interventions throughout the school year.

Movement/Brain Breaks allow for a physical and mental release during the demanding school day. DRX ERP nutrition coordinators brought movement/brain breaks into the virtual setting in many of our direct education lessons. We also encouraged teachers to use movement/brain breaks as part of their typical day to allow students the time to move their bodies and allow their brains a quick break. Online movement/brain break videos were posted and shared with teachers for use in their virtual classroom. When asked, "Do you use movement/brain breaks with your students?" 83% of teachers/staff responded **some use of movement breaks** and 17% reported **not using movement breaks** with their students (Figure 3).

Figure 3: Teacher Reported Use of Movement Breaks with Students
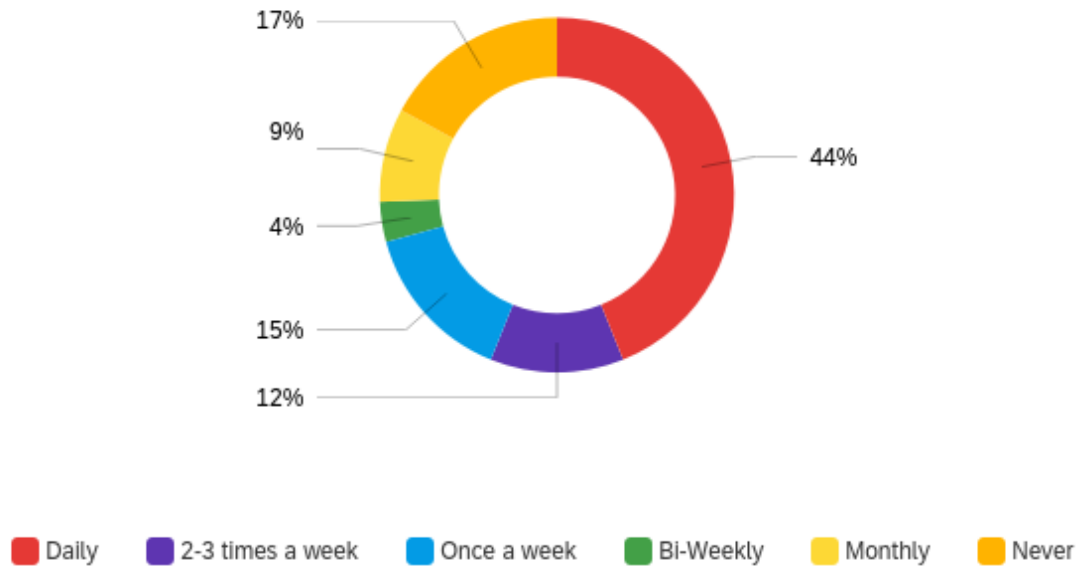
Respondents also noted that 55.3% of DRX ERP coordinators used **Movement/Brain Breaks** during **most lessons,** 22.4% used them during a **few lessons,** and 22.4% reported that their DRX ERP coordinator **never used movement breaks** during lessons, thus identifying an opportunity to continue to expand our work in this area. When asked if they believed their students were **interested** in participating in movement/brain breaks, 93.6% of respondents also reported that students are **mostly or sometimes interested** in participating in Movement/Brain Breaks.

Promoting Healthy Hydration continues to be a priority for the DRX ERP team. Throughout the year, coordinators encouraged students to sip water and show themselves drinking water during lessons and after participating in movement/brain breaks. Some coordinators also held hydration challenges where students were acknowledged and/or rewarded for drinking water as their primary beverage and encouraged the use a reusable bottle or glass filled with water during the school day. To assess teacher participation in this intervention, survey respondents were asked "Do you encourage students to drink water throughout the school day?" The results show that 76.8% of respondents **do encourage** their students to drink water **daily** (Figure 4). Almost 9% encourage water consumption **more than half of the time** and 7**% less than half the time**. Seven percent reported that they **do not encourage** their students to drink water throughout the school day.

Figure 4: The percentage of teachers/staff who reported that they encourage students to drink water during the 2020 to 2021 School Year

Legend: 🟥 Yes 🟪 More than half of the time 🟦 Less than half of the time 🟩 No
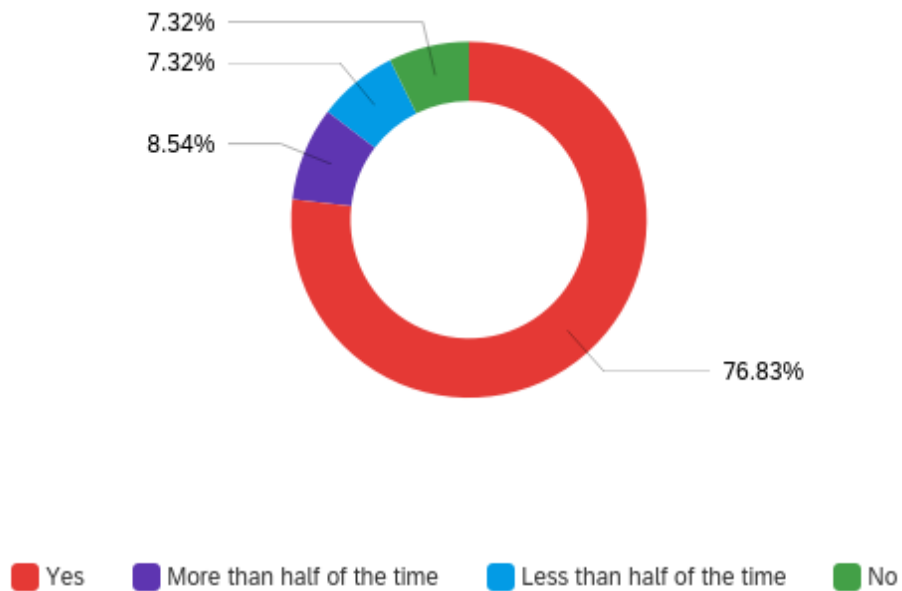
Program Successes – Teachers noted a variety of aspects as the **most successful part** of the DRX ERP program. **Movement breaks, the quality of the virtual lessons, the nutrition messages, cooking demonstrations, online resources, and student engagement** were all noted as successes this year. Many teachers noted that the **most successful part** of their involvement with EAT RIGHT PHILLY could be attributed to DRX ERP **Nutrition Coordinators**.

- "Ms. Tori was excellent with my students. She even motivated me!!!" *Elementary School Teacher*
- "The quality of instruction (was the most successful part). Ms. Christina was excellent. The information shared along with the virtual PowerPoint classes were great." *Middle School Teacher*
- "Kristin has inspired many of our 9th graders." *High School Teacher*
- "Instructor Danielle is very professional and knowledgeable. Students respond very well to her and her lessons." *High School Teacher*
- "The coordinator was very enthusiastic and informative and presented the information in a way that the students understood." *High School Teacher*
- The coordinator's "skill, enthusiasm and knowledge in working with our older adults." *Community Partner*
- "Vanessa was flexible and creative as we came up with content for this year. She worked with us to find ways to get our students involved from home and was always enthusiastic." *High School Teacher*
- The coordinator's "coordination and rapport is unmatched!" *High School Teacher*

Program Challenges - A common theme throughout the free responses focused on the **virtual environment** as being the **most challenging** aspect of the program this year. Technology issues, students not using cameras, and difficulty keeping students interested and engaged were related to the **virtual setting. Food demonstrations** were challenging as students have always enjoyed helping with cooking when programming was in-person. In addition, the lack of **food tastings** was missed by many of the teachers and students. Another **significant challenge** was **scheduling**. Both nutrition coordinators and teachers have noted that the frequent district schedule changes required continual communication and flexibility in rescheduling throughout the school year.

Teachers were also asked for their **suggestions for improvement.** The primary suggestion was to return to in-person programming. Teachers and students miss the personal interaction, live demonstrations, and food tastings that are traditionally provided during in-person programming. Other suggestions included continuing with online resources and worksheets, continuing to find new ways to engage students, and of course, more frequent programming, a suggestion that comes every year.

Opportunities - In preparing for the next fiscal year, we asked respondents, "Assuming the ability to conduct in-person programming is available, what type of programming are you interested in receiving in the 2021-2022 school year? **In-person lessons, monthly food tastings, and movement breaks/physical activity promotions** were the top three requested programming items. **School wellness initiatives** and **gardening** were also requested by almost 50% of respondents (Figure 5).

Figure 5: Teacher Requested Programming for the 2021 – 2022 School Year
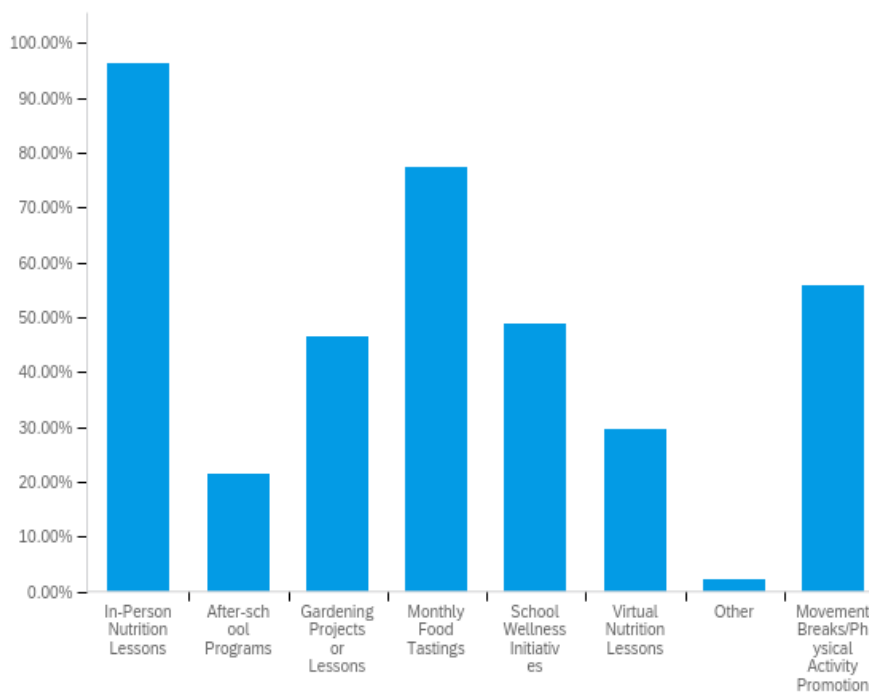
DRX ERP is always looking for feedback and comments. Here are some **highlights** from our wonderful teachers and staff members:

- "I think EAT RIGHT PHILLY really stepped up to the plate with virtual lessons this year." *High School Teacher*
- "Thank you EAT RIGHT PHILLY, great work in educating students on nutrition!" *Elementary School Teacher*
- "The coordinator was very helpful in getting student participation in the after school club." *Middle School Teacher*
- "I am looking forward to making some plans for next year when we are in person (hopefully)!!" *High School Teacher*
- "I have been working with Kristin for the past two years and she is great with our students and faculty. We would love to work with her again next year. Thanks so much for all that you do for the students, as well as the School District of Philadelphia." *High School Teacher*
- "We are so grateful for this programming this year!!" *High School Teacher*
- "Thank you!" *Elementary School Teacher*

Thank you for your continued support of Drexel University's PA SNAP-Ed/Eat Right Philly Program!

Judy Ensslin, MS, RDN, LDN
Program Director

Evaluation of COVID-19 Program Changes on the Technology Competency of PA SNAP-Ed Staff

<u>**Introduction and Background**</u>

The Drexel University Eat Right Philly Nutrition Education Program (DRX ERP), a Pennsylvania Supplemental Nutrition Assistance Program Education (PA SNAP-Ed) partner, funded by the United States Department of Agriculture (USDA), provides nutrition education programming in schools and community sites. In the 2020-2021 school year, DRX ERP served 79 schools and community sites. The goal of SNAP-Ed is to provide nutrition education to SNAP-eligible individuals to increase the likelihood that participants will make healthy food choices and choose physically active lifestyles within their budget. DRX ERP uses evidence-based, comprehensive, and multilevel interventions, including direct nutrition education delivered by DRX ERP Nutrition Coordinators and Program Managers (NC/M). Nutrition education programming typically occurs in-person within the classroom, but due to the COVID-19 pandemic, PA SNAP-Ed ceased in-person programming in March 2020 and DRX ERP programming transitioned to a 100% virtual format as of May 2020. To support virtual learning, all School District of Philadelphia school children were provided Chromebooks during the COVID-19 pandemic.

PA SNAP-Ed programming was approved to return to in-person programming in July 2021. As of September 2021, the COVID-19 pandemic is ongoing and DRX ERP has received approval from approximately 53% of DRX ERP school sites to return to in-person programming. Virtual programming in SNAP-Ed will continue as some sites will not allow in-person programming and as others temporarily close due to classroom or school-wide COVID-19 outbreaks. In addition, continued use of this virtual delivery method post-pandemic as a supplement to traditional face-to-face programming is an option.

<u>**Study Design**</u>

Despite the current need for virtual programming and future potential applications, no literature exists on technology competency in SNAP-Ed or other similar direct nutrition education providers, or how it affects virtual program delivery. The COVID-19 pandemic provides a unique opportunity to evaluate NC/M technology competency and its effect on programming. Thus, the goal of this study was to address the following <u>**research question**</u>:

1. Evaluate the change in self-reported technology competency in DRX ERP Nutrition Coordinators and Program Managers from before the COVID-19 pandemic to approximately one year into the pandemic.

Self-reported technology competency was evaluated using the Technology Proficiency Self-Assessment (TPSA), a 34-item Likert scale instrument validated to measure fundamental technology proficiencies in educators. The TPSA was administered twice to assess perceived competency before the COVID-19 pandemic as a baseline, and again, during the COVID-19 pandemic. Baseline and mid-pandemic TPSA scores were compared for each Nutrition Coordinator and Program Manager to evaluate change in technology self-competency over the pandemic.

The results of this study allow the DRX ERP program to examine the effects of SNAP-Ed employee technology competency on virtual program delivery and have the potential to shape future DRX ERP NC/M training protocols and the desired skill sets for the positions.

Methodology

Subjects included DRX ERP team members who were in the Nutrition Coordinator and Program Manager positions during both the pre-pandemic baseline quarter (October through December of 2019) and the mid-pandemic quarter (October through December of 2020) and provided direct nutrition education as a core component of their job duties. The DRX ERP team consisted of eleven NC/M during this time. The NC/M were recruited via e-mail that notified them of the study intent, procedures, and self-assessment information. Participation in the study was voluntary, and participants could refuse to be in the study or stop the study at any time without any negative effect on their position with the DRX ERP PA SNAP-Ed team. All eleven NC/M were asked to participate in the study.

Self-reported technology competency was evaluated using the Technology Proficiency Self-Assessment (TPSA). The TPSA has been validated for use measuring teacher self-efficacy as it relates to fundamental use of technology and its integration in the classroom learning environment (Christensen & Knezek, 2015). It asks educators to rate their ability to perform various technology related tasks in six established areas: E-mail, World Wide Web, Integrated Applications, Teaching with Technology, Technology Usage, and Emerging Technologies for

Student Learning. Answers for each section are averaged to find a mean score for that section. The TPSA has consistency reliabilities from .81 to .93 for each section (Christensen & Knezek, 2015).

The TPSA was adapted to reflect relevant technology and technology usage by NC/M and for relevant time frames. It was administered twice, first to assess perceived competency before the COVID-19 pandemic as a baseline, and then during the COVID-19 pandemic. The second survey also included open ended questions on the educators' experiences of transitioning to remote instruction due to COVID-19 and thoughts on future technology usage. These open-ended questions were not scored with the post-TPSA. The adapted baseline TPSA can be found in Appendix A and the adapted post TPSA with the open-ended questions can be found in Appendix B.

This study compared DRX ERP NC/M TPSA scores before and during the COVID-19 pandemic. The TPSAs were delivered in an online format using Qualtrics®. The eleven NC/M were asked to complete the TPSA twice, with each assessment representing a separate time frame: NC/M's opinions prior to COVID-19 and current (mid-pandemic) NC/M's opinions. The eleven participants received a link to the baseline TPSA via e-mail from the DRX ERP Program Director and had two weeks to complete the survey. The link to the post TPSA, which includes open-ended questions, was distributed by the Program Director via e-mail after the close of the response period for the first TPSA. Participants also had two weeks to complete the post TPSA. Answers to the open-ended questions were not scored with the post TPSA. Each TPSA was to be completed in one sitting at the participants preferred remote work location. Completion time of the TPSA was estimated to be no longer than 30 minutes for the survey on pre-pandemic technology competency and no longer than one hour for completion of current technology competency plus the open-ended questions.

Data Analysis, Results and Limitations

The study design for this project aimed to examine the results based on pre and post survey matching. Baseline and mid-pandemic TPSA scores were to be compared for each NC/M to evaluate change in technology self-competency over the pandemic. Pre and post surveys were sent to 11 SNAP-Ed NC/M. Ten individuals completed the baseline survey in full. Eleven

completed the post survey in full. Bias may affect TPSA responses on pre-pandemic technology competency as NC/M were asked to complete the self-assessment retrospectively. However, there was no way to evaluate technology competency prior to COVID-19 due to the unexpected nature of an emergency shut down of in-person activities.

IBM SPSS statistics version 26 was used to run the statistical analysis of the data. Initial primary data analysis aimed to match the pre and post responses from the 11 professional staff members. Intended matching analysis relied on the IP addresses used by the NC/M staff. Only three sets of data were able to be matched through IP addresses, indicating that users may have completed the pre and post TPSA on different pieces of equipment.

A small sample size, and inability for researchers to match pre and post data, caused inherent limitations in survey data analysis. Inferential statistics were not able to be used, as there was an inability to identify if the data can be dependent on each other. Descriptive statistics were run and total data from completed pre and post surveys were used to identify trends in perceived technological competence. However, the limitations to matching pre and post data cannot adequately produce measurable outcomes, as they pertain to the intended aim set forth in this study.

To provide a comprehensive analysis, the TPSA survey will be amended to include pre COVID and post COVID observations on the same survey, so that one survey will be administered, and data are automatically matched. The amended survey will be administered during October 2021 to match pre and post responses and survey analysis will be conducted no later than the end of Q1 of FY 22.

The responses to the open-ended questions were reviewed and the qualitative data are summarized below. NC/M were asked about challenges, resources and training, lessons learned, and opinions about the future of SNAP-Ed programming.

Challenges

Ten NC/M noted their biggest perceived challenge in conducting virtual programming. Table 1 illustrates the response themes. One NC/M reported that the greatest challenge was "Not having the abilities to implement programming to the capacity I would have if we were in-person." Two NC/M found that communication with teachers and staff was the greatest

challenge. Four NC/M reported student engagement as the biggest challenge. NC/M specified that students did not have cameras on during lessons and students would not respond to questions by unmuting or participating in the chat. These behaviors made it difficult to determine if students were understanding the lesson. Three NC/M reported that technology issues were the greatest challenge. Technology issues included their own limitations, the limitations of classroom teachers, and challenges of creating virtual programming.

Table 1: Biggest Challenge in Conducting Virtual Programming		
	Number of Responses	Percentage
Abilities	1	10%
Communication	2	20%
Student Engagement	4	40%
Technology	3	30%

Resources and Training

NC/M were asked, "What resources would improve your ability to conduct virtual program delivery?" The responses to this question were varied and are listed below:

- Resources to increase engagement or promote interaction with participants
- PowerPoint presentations that were simpler, yet more "eye-catching" to engage more students
- Better access to Google Classroom
- Peer networking to learn through others' experiences
- Training on Microsoft Suite and Excel
- Training on Zoom and Google Classroom

Two NC/M noted that they felt supervisors did a good job in training them, providing resources and preparing them for virtual program delivery.

When asked what training they would have liked to have had pre-pandemic to make the transition to virtual learning easier, NC/M noted two suggestions. The first was technology training, specifically on Google Meet, the primary platform used by the School District. One

NC/M noted that training on Microsoft Suite would be beneficial. The second suggestion was training on student engagement in a virtual setting.

Lessons Learned

NC/M were asked what they learned about virtual program delivery over the past year. Five NC/M responded and four themes emerged.

- Engagement – Two NC/M reported that they learned how to engage students, even when the cameras were off
- Communication – It is difficult to build relationships and communicate everything through email with teachers
- Teaching – There are many ways to teach a lesson to students
- Persistence, patience and consistency are what will gain both students and teacher trust in order to build relationships for education, growth and change!

Future of SNAP-Ed Programming

The last questions asked NC/M to consider their experiences from the past year and comment on how those experiences may influence future ERP programming or SNAP-Ed programming in general. Table 2 shows the answers provided by NC/M.

Table 2: How experiences may influence future ERP or SNAP-Ed programming
Could open the door for more teachers wanting virtual programming in addition to in-person.
I think we will be grateful to see students in person, and so will they, so student engagement will likely increase once we are in person.
I think our team has developed some amazing virtual resources that teachers will love to utilize post-pandemic.
I think it will bring a lot more creativity to our work. We will continue to think outside of the box to implement and complete programming.
I think we have all, meaning staff and students, become more comfortable using technology that can really add something to our work, in a positive way. We can incorporate the technology in our work even when we are back in person.

More than anything, this past year has shown that there is a lot going on in students' lives. This year we have seen that through what is happening behind the screen (loud music when students unmute; family chaos in the video background), but it will be extremely important to bring the empathy and understanding we were forced to learn this year back into the school building next year. Just because we cannot see the students' home life anymore does not mean things are less chaotic. I think this will really frame how I interact with students and my understanding of how they will/can use the nutrition information when they leave the school building.

I think we have proved that we can complete a large majority of our responsibilities from a remote setting. While the virtual setting is not ideal for some classrooms it is ideal for others. Moving forward I think this should be taken into account when planning programming.

Providing teachers, students and staff with more options for virtual learning even when things are back to face to face instruction.

Allowed for creativity in our programming, creating videos, digital worksheets and so on also allows for teachers to easily present these materials. Having a more social media/virtual platform also allows for more interaction with individuals who may not see us in the schools or may miss us when we are in the schools. I feel it took us to the next step that we need to be at in this ever changing world that I am not sure we would of go to so soon if the pandemic did not happen. I also feel it really tested us as a group to see how well we can adapt to change and maybe open our eyes to new ideas.

Conclusions

Virtual SNAP-Ed programming has the potential for continued use for both the duration of the pandemic as well post-pandemic as a supplement to traditional face-to-face programming to improve accessibility and outcomes. Despite the current reliance on virtual programming and future potential applications, no literature exists on technology competency in SNAP-Ed or other similar direct nutrition education providers and how it affects virtual

program delivery. The COVID-19 pandemic provided a unique opportunity to evaluate NC/M technology competency and its effect on programming.

The results of this study intended to evaluate perceived technology competency in a group of SNAP-Ed direct education providers. Qualitative data provides some insight into training needs of SNAP-Ed staff and future SNAP-Ed staff. The data also suggests that the transition to virtual programming was a learning opportunity for NC/M. In addition to learning new technology skills, they built on their creativity, learning new ways to conduct programming and engage students. Student engagement in a virtual environment, though, is an area for continued growth. Understanding the barriers and exploring new techniques to engage students will be important in conducting effective virtual nutrition education programming.

An additional, progressive strategy for this study could be to extend the participation to nutrition educators employed by other PA SNAP-Ed partners in the Philadelphia region, or possibly the state. Results can be applied to identify gaps in current skills and training in the SNAP-Ed staff who conduct education, and it can be used to develop future training protocols and employment qualifications.

Appendix A

Baseline TPSA

Instructions: Please answer the following questions on your comfort and confidence using technology BEFORE PA SNAP-Ed transitioned to virtual programming in the spring of 2020.

Select only one answer for each question.

Likert Scale (All Questions)

Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree

Email

As of March 2020, I felt confident I could…

1. Send an email to a friend.

2. Subscribe to a discussion list.

3. Create a distribution list to send e-mails to several people at once.

4. Send a document as an attachment to an e-mail message.

5. Keep copies of outgoing messages that I send to others.

World Wide Web

As of March 2020, I felt confident I could…

6. Use an Internet search engine (e.g., Google) to find website pages related to my subject matter interest.

7. Search for and find the SNAP-Ed Connection website.

8. Create my own OneDrive folder with educational resources to send to teachers.

9. Keep track of websites I have visited so that I can return to them later (e.g., using bookmarks).

10. Find approved sources of nutrition education materials and information on the Internet that I can use in my teaching.

Integrated Applications

As of March 2020, I felt confident I could…

11. Use a spreadsheet to compile data and calculate the sum, average, etc.

12. Create a Word document in outline format with headings, numbering and bullet points.

13. Save documents in formats so that others can read them if they are using different programs (e.g. Word, PowerPoint, Google Slides/Sheets, PDF).

14. Use PowerPoint to make presentations for in-person and virtual use.

15. Use Google Slides to make a presentation for virtual use.

16. Create an Excel workbook with multiple tabs to organize a curriculum.

17. Use Canva to create a flyer.

Teaching with Technology

As of March 2020, I felt confident I could…

18. Explain to a new employee how I use technology in my classrooms/community sites.

19. Create materials or resources for an in-person lesson.

20. Use technology to collaborate with teachers, students or others who are distant from my classroom.

21. Describe 5 software programs that I could use in my teaching.

22. Use Zoom to conduct a classroom lesson.

23. Use Google Classroom to conduct a lesson.

24. Use breakout rooms in Zoom.

25. Create materials or resources for a virtual lesson.

26. Use online tools to teach my students/learners from a distance (e.g. Zoom, Google Meet).

27. Use Google Suite to create interactive activities for virtual lessons.

Technology Usage

As of March 2020, I felt confident I could…

28. Use mobile devices to connect to others for my professional development.

29. Send and receive text messages.

30. Save and retrieve files in a cloud-based environment.

31. Use Zoom to conduct a meeting.

32. Create content for use on DRX ERP social media (e.g., Instagram, Twitter)

33. Transfer photos or other data via smartphone.

Emerging Technologies for Student Learning

As of March 2020, I felt confident I could…

34. Integrate mobile technologies into my lessons.

35. Use social media tools for instruction in the classroom (e.g., Instagram, Twitter).

36. Find a way to use a smartphone in my classroom for student engagement.

37. Use mobile devices to have my students access learning activities.

Post TPSA

Instructions: Please answer the following questions on your comfort and confidence using

technology at the current time. Select only one answer for each question.

Likert Scale (All Questions)

Strongly Disagree   Disagree   Neither Agree nor Disagree   Agree   Strongly Agree

<u>Email</u>

Right now, I feel confident I could…

2. Send an email to a friend.

3. Subscribe to a discussion list.

4. Create a distribution list to send e-mails to several people at once.

5. Send a document as an attachment to an e-mail message.

6. Keep copies of outgoing messages that I send to others.

 <u>World Wide Web</u>

Right now, I feel confident I could…

7. Use an Internet search engine (e.g., Google) to find website pages related to my subject

    matter interest.

8. Search for and find the SNAP-Ed Connection website.

9. Create my own OneDrive folder with educational resources to send to teachers.

10. Keep track of websites I have visited so that I can return to them later (e.g., using

    bookmarks).

11. Find approved sources of nutrition education materials and information on the Internet that I can use in my teaching.

Integrated Applications

Right now, I feel confident I could…

12. Use a spreadsheet to compile data and calculate the sum, average, etc.

13. Create a Word document in outline format with headings, numbering and bullet points.

14. Save documents in formats so that others can read them if they are using different programs (e.g. Word, PowerPoint, Google Slides/Sheets, PDF).

15. Use PowerPoint to make presentations for in-person and virtual use.

16. Use Google Slides to make a presentation for virtual use.

17. Create an Excel workbook with multiple tabs to organize a curriculum.

18. Use Canva to create a flyer.

Teaching with Technology

Right now, I feel confident I could…

19. Explain to a new employee how I use technology in my classrooms/community sites.

20. Create materials or resources for an in-person lesson.

21. Use technology to collaborate with teachers, students or others who are distant from my classroom.

22. Describe 5 software programs that I could use in my teaching.

23. Use Zoom to conduct a classroom lesson.

24. Use Google Classroom to conduct a lesson.

25. Use breakout rooms in Zoom.

26. Create materials or resources for a virtual lesson.

27. Use online tools to teach my students/learners from a distance (e.g. Zoom, Google Meet).

28. Use Google Suite to create interactive activities for virtual lessons.

Technology Usage

Right now, I feel confident I could…

29. Use mobile devices to connect to others for my professional development.

30. Send and receive text messages.

31. Save and retrieve files in a cloud-based environment.

32. Use Zoom to conduct a meeting.

33. Create content for use on DRX ERP social media (e.g., Instagram, Twitter)

34. Transfer photos or other data via smartphone.

Emerging Technologies for Student Learning

Right now, I feel confident I could…

35. Integrate mobile technologies into my lessons.

36. Use social media tools for instruction in the classroom (e.g., Instagram, Twitter).

37. Find a way to use a smartphone in my classroom for student engagement.

38. Use mobile devices to have my students access learning activities.

Open-Ended Questions

Instructions: Please answer the following questions in the space provided.

1. What was your biggest challenge in conducting virtual programming?

2. What resources would improve your ability to conduct virtual program delivery?

3. What training, if any, would you have liked to have had pre-pandemic to make the transition to virtual learning easier?

4. What have you learned about virtual program delivery over the past year?

5. Considering your experiences from the past year, how do you think these experiences may influence Eat Right Philly SNAP-Ed programming and SNAP-Ed programming in general, in a post-pandemic environment?

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DREXEL UNIVERSITY

EATRIGHT PHILLY
PA SNAP-Ed

SNAP-Ed Pennsylvania
Healthy Food. Healthy Moves. Healthy YOU.

Inspiring health, wellness, and better learning.

2020–2021 YEAR IN REVIEW

OVER 16,000

In 80 schools and community sites in the Philadelphia community.

ADULTS AND CHILDREN

NUTRITION LESSONS

2,202

Direct education lessons delivered to students in grades K-12 and adults in a 100% virtual environment due to COVID- 19 Pandemnic.

7,083

Virtual lessons included interactive games and activities to enhance learning and promote engagement.

STUDENTS RECEIVING DIRECT EDUCATION

WELLNESS INTERVENTIONS

13,891

Participants reached through Policy, Systems, and Environment interventions which address school-based wellness initiatives.

STRATEGIES AND INTERVENTIONS

- Virtual Nutrition Lessons
- Virtual Cooking Demonstrations
- Fruit or Vegetable of the Month Programming
- School Wellness Initiatives
- Healthy Hydration Promotions
- Physical Activity Promotions
- Food Access Support
- Recipe Videos
- Gardening Activities

COMMUNITY PARTNERSHIPS

- Drexel University's West Philadelphia Promise Neighborhood
- Dornsife Center for Neighborhood Partnerships
- Stephen and Sandra Sheller 11th Street Family Health Services
- City of Philadelphia Office of Children and Families
- Get Healthy Philly
- Philabundance
- Zia Food Cupboard

PROGRAM HIGHLIGHTS

SNAP–ED TOOLKIT

The Drexel University High School Nutrition Curriculum was accepted into the SNAP-Ed Toolkit as a research-tested nutrition curriculum for high school students. The Toolkit is a compilation of approved interventions for use in SNAP-Ed programs. The article "Efficacy of a Five-Lesson Nutrition Education Curriculum for High School Students Administered via Pennsylvania SNAP-Ed Programming" was published in the Journal of Child and Adolescent Health and supports the research base of the curriculum.

COVID–19 RESPONSE

Drexel's EAT RIGHT PHILLY team conducted programming in a remote environment due to the COVID-19 pandemic. Nutrition Coordinators conducted virtual programs intended to engage students and promote learning. Virtual learning posed many challenges. Throughout the year, coordinators built their skills to successfully navigate the virtual environment. When in-person programming was permitted to resume in July 2021, programs transitioned to in-person as able.

SOCIAL MEDIA PROMOTION

Drexel's EAT RIGHT PHILLY team continued to grow our social media audience in order to support programming through virtual strategies. Practical nutrition information, recipe videos, movement break videos, programming highlights, and fruit and vegetable promotions were shared on social media.

The EAT RIGHT PHILLY coordinator was flexible and creative as we came up with programming this year. She worked to find ways to get students involved from home.
High School Teacher

The quality of the instruction was the most successful part. The EAT RIGHT PHILLY coordinator was excellent. The information shared along with the virtual PowerPoint presentations were great.
Middle School School Teacher

"After last month's lesson about mango's, I shared everything I learned with my mom asked her if we could go to the store to get a mango because I really wanted to try one!"
Elementary School Student

As a class was wrapping up, a student asked the coordinator, "Aren't you forgetting something?" The student happily reminded the coordinator, "We need to do our exercise!" So the class used the last few minutes to do some movement!"
EAT RIGHT PHILLY Nutrition Coordinator

I think EAT RIGHT PHILLY really stepped up to the plate with virtual lessons this year.
High School Teacher.

Drexel Website:
https://drexel.edu/cnhp/research/centers/eat-right-philly/

Google Website:
https://sites.google.com/view/nutred4philly

@EatRightPhilly_DRX

EatRightPhilly_DRX

@EatRightPhl_DRX

EatRightPhilly_DRX

FY21 Reporting Evaluation of Emerging Curriculum/Approach

Name of Project

Effectiveness of a Training and Technical Assistance Model for Food Service Departments

Project Goals (specifically those evaluated)

Describe the goal of the evaluation and identify each impact being assessed by this evaluation.

Through providing training and technical assistance to food service and kitchen department staff, this emerging policy, systems, and environmental (PSE) initiative aims to strengthen healthy food selection practices and improve the nutritional quality of served meals at eligible Food Service Departments serving meals to SNAP-eligible populations in Philadelphia. This emerging PSE work involves several evaluation activities across two main projects – one focusing on increasing knowledge about culinary and nutritional topics through group training, and one focusing on technical assistance tailored to a site's individual needs.

Collaborative Culinary and Nutrition Trainings
1. Change in knowledge among collaborative training participants of content covered in training.

2. Satisfaction among collaborative training participants with training content and structure, facilitator, and overall experience.

3. Effect of collaborative training content upon attendees' operations, and identification of any sustained changes at their sites.

Individualized, Virtual and On-site Technical Assistance
1. Change over time at the site level, including goal setting on implementing strategies to achieve healthier meal service (e.g., using menu templates, increasing use of fruits and vegetables, eliminating deep frying as a method of food preparation) and assessment of incremental progress.

2. Improvements in food quality and choices provided to residents/clients (both existing menus and newly introduced meal options)

Evaluation Design

Describe the population being evaluated and its size.

The target audience are members of Food Service Departments serving meals to SNAP-eligible populations across the City of Philadelphia. SNAP-eligible constituents of targeted Food Service

Departments include but are not limited to families and adults experiencing homelessness, adults housed in a City-funded assisted living facility, early child education facilities, and other community centers. The training and technical assistance program is currently active in 15 sites within the city of Philadelphia.

Describe the unit of assignment to intervention and control/comparison groups.

N/A

Describe how assignment to these groups was carried out. Be explicit about whether or not this assignment was random.

N/A

Describe how many units and individuals were in the intervention and control/comparison groups at the start and end of the study.

N/A

Impact Measures

For each goal, describe the associated measure(s). Descriptions should indicate if the focus is on knowledge, skills, attitudes, intention to act, behavior or something else.

Listed below are the measures and corresponding evaluation instruments:

Collaborative Culinary and Nutrition Trainings
1. Pre/Post Test – individual and aggregate change in knowledge among collaborative training participants of content covered in training.

2. Satisfaction Surveys – individual and aggregate level of satisfaction ("good"/"agree" and above) among collaborative training participants with training content and structure, facilitator, and overall experience.

3. Follow-up Implementation Survey – participants' self-reported effect of collaborative training content upon site operations, and identification of any sustained changes at sites.

Individualized, On-site Technical Assistance
1. Baseline Goal Setting and Follow-Up Assessment Tool – change over time at the site level; namely, the adoption of strategies selected at baseline and tracked via follow-up assessments.

2. Meal/Menu Satisfaction Surveys – individual resident/client satisfaction ("satisfied" and above) with existing site menus and/or newly introduced menu item options.

Describe the points at which data were collected and how.

Collaborative Culinary and Nutrition Trainings
1. Pre/Post Test – administered at the outset and close of each training.

2. Satisfaction Surveys – administered at the close of each training.

3. Follow-up Implementation Survey – administered several weeks following each training.

Individualized, Virtual and On-site Technical Assistance
1. Baseline/Initial Goal Setting Assessment Tool completed during first meeting (or other proximate date/time as convenient for site)

2. Number and type(s) of strategies selected by sites through goal setting

3. Progress toward and achievement of strategies selected for adoption at initial meeting

4. Attendance recorded at each technical assistance session

5. Meal/Menu Satisfaction Surveys were not completed with residents at sites during FY21 because of visitor restrictions and low census at sites due to COVID-19.

If there were any differences in measures for intervention and control/comparison groups, describe them.

N/A

Findings

Describe the measurement results for intervention and control/comparison groups at each point data were collected.

Collaborative Culinary and Nutrition Trainings
Note: materials for virtual training (i.e., food for test cook) were funded by the American Heart Association (AHA)

HPC planned two culinary and nutrition trainings for FY21, which were conducted virtually due to COVID-19. These interactive trainings are designed and led by Connor Lightcap, MPH, Culinary Support Services Coordinator (CSSC) at HPC. Due to COVID-19, the typical agenda format for the in-person culinary and nutrition trainings was modified; the CSSC abbreviated the education component, used a PowerPoint format, and conducted the recipe demonstrations virtually. Additionally, the pre/post-test and satisfaction surveys were administered electronically through Alchemer, a secure survey platform. The virtual trainings took place on April 21, 2021 on the topic of healthy cooking methods, and June 30, 2021 on the topic of family friendly meals. The third virtual training took place in October 2021, after FY21 concluded.

Healthy Cooking Methods Training
One individual representing Women Against Abuse attended the April 21, 2021 training on healthy cooking methods: Prior to the educational session, a pre-test was circulated to measure the participant's baseline knowledge of training content. Questions spanned topics such as definitions of health cooking, different cooking methods and examples of healthier cooking methods. A post-test consisting of the same questions was disseminated at the end of the program to evaluate any changes in knowledge as a result of participation. The participant did not complete a post-test but answered all questions correctly for the pre-test.

At the conclusion of the program, satisfaction surveys were distributed to collect anonymous participant feedback on various dimensions of the training. No satisfaction surveys were completed for this training.

Several months after the healthy cooking methods training, an online follow-up survey was developed and disseminated to attendees to better understand the effect of workshop content upon their operations and identify any sustained changes at their site. The follow-up survey was completed by one attendee. The respondent reported that of the six recipes provided at the training, three were served at least twice a week, two were served once a week and one had not been served but the site planned to serve it in the future (during the fall or winter when chicken and beef stew are more often served). In the last 30 days, the site reported using information from the training topic daily about categories of healthy cooking methods and menu and meal forecasting. They reported often using information about the benefits of cooking food using one of the healthy cooking methods and ideas for incorporating healthy cooking methods at their site. The site reported that the healthy cooking methods training impacted their work by influencing the staff to spend less time around heat and to serve healthier foods. They described barriers with staff cooking quickly, with high heat and large

volume meals but did not report that COVID-19 impacted their ability to implement what they learned. The site reported that after attending the healthy cooking methods training, they shared what they learned with other staff and volunteers by conducting their own training at their site.

Family Friendly Meals Training
Two individuals representing two different sites across Philadelphia attended the June 30, 2021 training on family friendly meals: People's Emergency Center, and Stenton Family Manor. Prior to the educational session, a pre-test was circulated to measure participants' baseline knowledge of training content. Questions spanned topics such as defining a family friendly meal, modeling healthy eating, and tips for introducing new foods. A post-test consisting of the same questions was disseminated at the end of the program to evaluate any changes in knowledge as a result of participation. Matched pre- and post-test pairs were obtained for one of the two participants. In the matched pair, there was no change across pre- and post-test in the participant's assessment score of 60%.

At the conclusion of the program, satisfaction surveys were distributed to collect anonymous participant feedback on various dimensions of the training. As illustrated below, respondents (n=2) indicated high levels of satisfaction with training structure, content, and instructor.

- **100%** of respondents rated the training as excellent
- **100%** of respondents would recommend this training to others
- **100%** of respondents strongly agreed the instructor answered all participants' questions
- **100%** of respondents strongly agreed the instructor communicated clearly and effectively
- **100%** of respondents strongly agreed the instructor was well-prepared and organized
- **100%** of respondents rated the quality of training materials as excellent
- **100%** of respondents rated the organization of the information as excellent
- **100%** of respondents rated the quality of presented information as excellent
- **100%** of respondents rated the recipe used during food tasting as excellent*
- **100%** of respondents rated the training length as excellent
- **100%** of respondents agreed their knowledge increased as a result of the training
- **100%** of respondents agreed they will be able to apply what they learned to their job
- **100%** of respondents agreed they will be able to apply what they learned to their life

*Note: food tasting supplies were funded solely by American Heart Association (AHA)

Eight weeks after the family friendly meals training, an online follow-up survey was developed and disseminated to attendees to better understand the effect of workshop content on their operations and identify any sustained changes at their sites. The follow-up survey was completed by both attendees. Both respondents reported sharing what they learned from the family friendly meals training with other staff and volunteers at their site. In the last 30 days, the respondents reported sometimes or often using information from the training about strategies for picky eating, making family friendly menus and my plate. They often or daily used

kitchen communication and serving sizes and serving equipment training information; one site rarely and the other site often used training information covering hands-only CPR. The respondents reported that of the five recipes provided at the training, 20% were served once a week, 20% were served once a month, 50% had not been served but the site planned to serve it in the future and 10% will not be served. One respondent described some of the barriers to incorporating the recipes, reporting that they did not have a machine for the smoothie (though they will get one in the future), and that some of the recipes were not children friendly. Neither site reported that the family friendly menus training impacted their work at their site, but both intend to attend future collaborative culinary and nutrition trainings hosted by HPC. The respondents indicated that COVID-19 did not impact their ability to implement what they learned from the training. Both sites reported sharing materials that they attained from the training with other staff or volunteers at their site.

Individualized, Virtual and On-site Technical Assistance

The Culinary Support Services Coordinator (CSSC) provided technical assistance on a regular basis to all 15 sites throughout the fiscal year. In October, the CSSC supplied each site with examples of healthy Halloween snack ideas and information on how to serve treats safely during COVID-19. The CSSC prepared and disseminated newsletters throughout the fall and winter. The October newsletter focused on selecting and preserving fresh fruits and vegetables, as well as how to safely store food in the refrigerator. The November newsletter included information on how to safely serve Thanksgiving dinner and how to correctly take the temperature of whole poultry. The December newsletter focused on ideas for healthy holiday treats and how to safely reheat leftovers. In December 2020, the CSSC administered a needs assessment follow-up survey virtually to all 15 sites (the original needs assessment/environmental scan was administered during FY20), following up with the site for its completion in January 2021. The results of these efforts are described for each site, below. Additionally, the CSSC developed and provided all 15 sites a Cold Weather Cookbook of healthy and hearty recipes based on MyPlate guidelines that involved food preparation/cooking and food safety. During the summer of 2021, the CSSC sent the sites information about HPC's gardening program and sent links to past training recordings. In the fall, the CSSC sent the sites information about HPC's upcoming training.

<u>McAuley House</u>, <u>Center for H.O.P.E Carlisle</u>, <u>Center for H.O.P.E Tioga</u>, <u>Women Against Abuse- Carol's Place</u>, and <u>Sunday Breakfast</u> have not completed the needs assessment follow-up survey that was administered in December 2020 and the CSSC plans to continue to follow up with the site to obtain the completed assessment. <u>Randolph Court</u> and <u>Riverview/Fernwood</u> have been unresponsive thus far to requests to meet and fill out the goal setting sheet. The CSSC continues to send information and emails to the sites, but continued programming after the pandemic may need be evaluated.

Outley House and Station House completed the needs assessment follow-up survey in January and expressed interest in obtaining assistance from the CSSC to create healthier recipes and to serve more fresh vegetables. Even though the sites received fresh bar equipment, they had yet to use it and need technical assistance from the CSSC. During the summer, the CSSC introduced themselves to new staff at the sites and discussed which of the SELF Inc sites might like to participate in the gardening program. At Outley House, the CSSC completed an additional needs assessment follow-up survey and identified that the site was interested in starting a vegetable and herb garden on site and was trying to get organizations or stores to donate the pots and planters in time for a fall planting. The CSSC met with another staff person at the site to discuss the gardening program, what could be grown at Outley and how to utilize the produce. The CSSC followed up by sending the site an email with options for pots and planters. In the fall, the CSSC went to the site to tour the space for the proposed garden, talk to staff members who were interested in gardening, and ask the residents on site for examples of vegetables and herbs they'd like to see in the garden.

St. Johns Hospice completed the needs assessment follow-up survey in January and the site's new kitchen supervisor expressed interest in learning more about whole grains and how to incorporate them into the menu, as well as developing and using new recipes. The site also reported it rarely engages residents and would like to start doing so through surveys and other methods.

Women Against Abuse- Ameya's Place completed the needs assessment follow-up survey in January and the site noted a need for assistance with alternative cooking methods to replace the more commonplace method of deep frying and other food options that do not involve deep-frying. The site also noted the need for a food safety refresher for staff.

Depaul House completed the needs assessment follow-up survey in January and the new kitchen supervisor requested assistance with engaging participants on healthy eating and food preparation, including providing information on low-salt diets, healthy menu options, and other topics. In august, the CSSC met with the directors of Depaul and St. Raymond's to update them on HPC's programming and learn how HPC could help. The CSSC met with the kitchen supervisor, introduced them to the program and completed an additional needs assessment follow-up survey. They expressed interest in creating a "cookbook" for clients, as well as introducing some of HPC's recipes to the sites. The CSC sent the kitchen supervisor variety of recipes and gave them an introduction to the types of recipes HPC has in its library.

Our Brothers Place completed the needs assessment follow-up survey in January. The site had achieved their previously selected goal at baseline of having standardized recipes for their meals but wanted to update and maintain the goal in FY21 as more recipes can be added to their records. During the follow-up assessment, they also selected the follow-up goal of maintaining healthfulness and menu quality between

cooks. The CSSC visited the site to make a meal with the cook who expressed a lack of confidence in the kitchen. CSSC taught this cook a new recipe and helped them with service and cleanup. CSSC plans to check in with kitchen supervisor in the future to see if this cook needs any additional help. During a February check-in, the site contact reported using ~2-3 of the recipes provided by the CSSC per week at their site. The contact also reported receiving the Cold Weather Cookbook and was looking forward to incorporating more of the soups and stews at the site during the winter months.

Open Door Clubhouse completed the needs assessment follow-up survey in January and expressed interest in helping participants make healthier meal choices, and in operationalizing this through participant meetings or creating a recipe booklet for both the site and participants so that participants can take recipes home with them. They also noted they were interested in creating a structured cleaning schedule. The CSSC provided the site with information and resources on nutrition trainings in response to a request from a site case manager. During the summer, the CSSC introduced the gardening program and discussed with the site the different types of vegetables and herbs they could plant in their space. The CSSC completed an additional needs assessment follow-up survey in June and identified that there were staffing changes and that the site was now interested in establishing a vegetable and herb garden and wished to purchase planters/pots to start the garden before the end of the summer. The CSSC followed up by sending the site an email with options for pots and planters. The CSSC had a virtual meeting with site to see the space and introduce the gardening program to participants that were on site. In the fall, the CSSC went to the site to help them set up their garden with the help of 12 participants and 3 staff members. The CSSC gave a gardening 101 explanation and helped with planting.

People's Emergency Center- Gloria's Place completed the needs assessment follow-up survey in January and the new kitchen supervisor expressed interest in providing nutrition information to residents, as well as improving the menu with new, healthier recipes. The CSSC provided recipes and recent newsletters and followed up with the new kitchen supervisor in March who relayed they had been enjoying the recipes from the newsletter and participants had been pleased with the variety. During the summer, the CSSC introduced shared information about HPC's gardening program, conducted a virtual meeting with the site to tour the garden space and observe the conditions to determine what veggies and herbs can grow. The CSSC completed an additional needs assessment follow-up survey in June and identified that the site was interested in establishing a vegetable and herb garden. The CSSC followed up by sending the site an email with options for pots and planters. In the fall, the CSSC went to the site and helped set up an herb and veggie garden with the Kitchen supervisor and four participants. The CSSC also led a training on caring for the garden and proper watering and harvesting. The CSSC sent the site the Fall/Winter CACFP menu and the site reported they may be transitioning away from the CACFP program and family sheltering, and instead changing more to a transitional housing structure. The kitchen service will remain, however, so the CSSC plans to continue the training and TA program in this altered setting.

During this fiscal year, the site-based training and technical assistance program continued predominately in a virtual format due to the COVID-19 pandemic. The CSSC remained in contact with sites through monthly check-in emails and phone calls to ascertain their areas of greatest need and performed several in-person site visits in August and September. Multiple sites noted being short-staffed or having high staff turnover, creating barriers to achieving goals set in the initial goalsetting tool and maintaining frequent communication and responsiveness. To provide support to sites as they adapted to the challenge of service provision during COVID-19, the CSSC created a "cold weather cookbook" booklet of 10 recipes that can be made in advance and frozen, require minimal culinary skills, and are filling and delicious. The CSSC also connected sites to a free opportunity through ServSafe for employees to obtain food safety training. The CSSC also participated in two different OHS-sponsored phone calls, during which topics such as best practices for socially distant food service, how to request food donations during quarantine, the role of anti-racism in food service, and food procurement issues and achievements during the pandemic have been discussed. These calls were also used as a vector for updating sites on the work of their peers and connecting OHS providers with the Department of Public Health.

Description of how evaluation results will be used:

These evaluation results will:
- Inform individual sites of areas of strength and growth in promoting the preparation, serving, and consumption of healthier meals; coordinate and provide sites with useful insight, directly from clients and residents, on their menus and meals served.
- Equip Food Service Departments of Philadelphia agencies with knowledge and skills to improve food selection and distribution practices.
- Assess the effectiveness of training and technical assistance for Food Service Departments to adopt healthier meals and food preparation practices.
- Determine the feasibility of expanding the training and technical assistance model to improve the adoption of the Philadelphia nutrition standards and/or healthy food selection practices at eligible Food Service Departments serving meals to SNAP eligible populations.

Point of Contact
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Relevant Journal References
N/A

HPC Curriculum-Specific Evaluations | **FY2021**

Background

The following sections analyze respondent data from participants of nutrition education curricula *A Taste of African Heritage*, *Cooking Matters at the Store*, and *Seniors Eating Well*, taught virtually by Health Promotion Council (HPC) for community and food retail settings between October 1, 2020 and September 30, 2021.

A Taste of African Heritage (ATOAH)

Self-reported changes in ATOAH participants' food preparation and consumption behaviors, perceptions of African Heritage Foods, challenges to cooking and eating healthily, and feedback on curriculum content were assessed through the curriculum's entrance and exit surveys. Between October 2020 and September 2021, HPC taught eight ATOAH series at health center and food retail sites. Across these series, 22 entrance surveys and 24 exit surveys were completed, of which 13 were matched pairs. The below sections contain analyses of behavioral changes for matched pairs, as well as summaries of qualitative free-response data across all respondents.

Behavior Change among Matched Pair Respondents

Prior to participating in their first ATOAH lesson (entrance) and following the final ATOAH lesson (exit), participants were asked to provide the frequency with which they performed the following behavioral indicators: cooking at home; eating home-cooked meals; cooking with herbs and spices; exercising; and consuming greens, whole grains, beans, tubers (e.g., sweet potatoes or yams), vegetables, fruits, and vegetarian-based meals. It is possible to evaluate behavioral change through participants who completed both the entrance and exit surveys; the below heatmap presents these data across various vantage points.

Columns A-M show each de-identified respondent's *level of individual change* across behavioral indicators by comparing their responses from entrance to exit; a more saturated color denotes a stronger degree of improvement or regression. The last row presents each respondent's average *level of overall change*. The right column contains average *level of change per behavioral indicator*. Degree of change was calculated by the differences in frequency for each question between entrance and exit. For example, if a participant indicated they eat whole grains 1-2x/week at entrance and 3-4x/week at exit, then the individual improved by +1, or "slightly more frequent," illustrated by a light green.

As demonstrated by the heatmap, just over half of respondents improved their own behaviors across the indicators of cooking at home, eating home-cooked meals, cooking with herbs and spices, eating various healthy foods, and exercising. The individual whose behaviors improved the most upon exit was participant L; the individual with the greatest negative overall change was participant A, who self-reported performing several healthy behaviors less frequently after completing ATOAH. As the behavioral questions' response options are solely quantitative, an understanding of the deeper nuances why negative behavior change may have occurred is lacking.

When analyzing the average level of change per topic, the behaviors of cooking with herbs and spices and eating tubers occurred much more frequently among respondents after participating in ATOAH; conversely, eating vegetarian-based meals occurred much less often. The frequency of cooking at home, eating greens, and eating vegetables did not change.

	Participant ID													Average Level of Change per Topic
	A	B	C	D	E	F	G	H	I	J	K	L	M	
1) How many times a week do you cook at home?														No change
2) How many times a week do you eat home-cooked meals?														More frequent
3) How may times a week do you cook with herbs and														Much more frequent
3a) Eat greens?														No change
3b) Eat whole grains?														More frequent
3c) Eat beans?														More frequent
3d) Eat different tubers, like sweet potatoes or yams?														Much more frequent
3e) Eat vegetables?														No change
3f) How about fruits?														Slightly more frequent
3g) Eat vegetarian-based meals?														Much less frequent
4) How often do you exercise a week (including walking)?														Less frequent
Average Level of Change per Individual	Worsened	No change	Improved	Worsened	Worsened	Improved	Worsened	Worsened	Improved	Improved	Improved	Improved	Improved	

Key:

2 points more frequent	1 point more frequent	No Change	1 point less frequent	2 points less frequent

Qualitative Responses

At entrance, participants were asked what came to mind when they heard the phrase "African Heritage Foods." After completing ATOAH, participants were asked how they would describe African Heritage Foods to someone unfamiliar with this term. All respondents' submissions to these questions, regardless of matched pairing, were categorized into the themes listed below. Each theme is followed by a sample of responses from which the themes emerged. When a concept was raised by more than one respondent, the number (*n*) is noted.
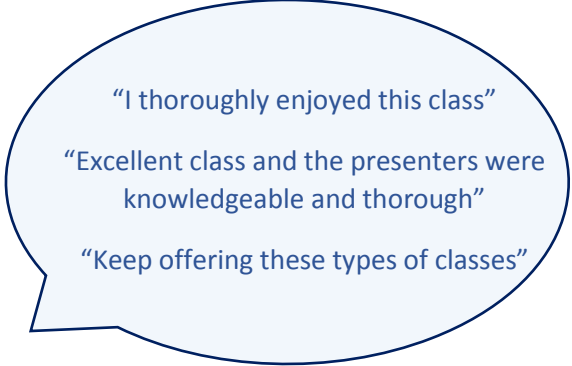
Entrance Survey (*n*=21)	Exit Survey (*n*=19)
Taste: good food (*n*=2); delicious; tasty	*New Knowledge:* improve eating habits; learning about fruits and vegetables that we may not have known; structured way to eat healthy; ways of cooking vegetarian recipes

Health/Nutrition: healthy (*n*=2); healthy eating/foods (*n*=2); nutrition class	*Health/Nutrition:* Foods full of nutrients that are very healthy and that one can be creative with; importance of eating healthy with different foods; healthy, easy and quick; cooking what you are used to in a different way; health/healthy eating (*n*=3); opportunity to learn about healthy eating in any heritage; improve health
Types: sweet potato leaves and taro; lots of vegetables and spices; cooking from scratch using root vegetables; high in fat	*Types:* Yams, sweet potatoes, black eyed peas, grits, and stews; super soul food that's healthy
Geography – Africa and the Diaspora: food from South Africa; foods unique to Africa; African spices; Jamaican; African nutrition; typical foods eaten by African Americans	
Tradition: foods that are traditional foods from the earth; food of my ancestors; soul food (*n*=3); Southern cooking	*Tradition:* African Heritage Foods already consumed by African Americans, especially during the holidays; foods that are and have been traditionally used and prepared by people of African descent
	Appearance: Colorful, hardy, and pleasing to the taste buds; looks good

After completing ATOAH, participants were asked through the exit survey what surprised them most about the class, the recipes, or African heritage foods. Of 21 total responses, participants most commonly mentioned learning about new foods, discovering the types and variety of African Heritage Foods, and learning new, easy, and healthy recipes. Others touched upon using ingredients such as herbs to improve flavoring, learning how to incorporate certain foods into daily meals, and the importance of the culture and history of explored foods.

At exit, participants were also asked which curriculum recipes were the most interesting. Of the 20 responses, six individuals found all recipes enjoyable, and four favored the braised cabbage. Lentils, greens, yams, beans, couscous, tubers and stews, fruits, and vegetables were noted as interesting at least once. Eight individuals reported preparing in-class recipes at home. Of the 13 respondents who did not cook any of the curriculum recipes, just over half indicated a desire to cook them in the future.

Lastly, upon finishing the curriculum, participants were asked to share what content they would modify, and were invited to share any additional information about their experience with ATOAH. Almost all respondents indicated they would not change the curriculum (*n*=15), and one participant expressed a desire for longer or more classes within ATOAH. When asked if/how the program changed their eating patterns, all respondents (*n*=20) indicated a change. Several respondents reported ATOAH had led to eating more vegetables (*n*=7) and fruits (*n*=4). Two participants reported ATOAH had enhanced healthy eating and led them to try new foods or recipes. Others touched on an overall enhancement in their food, being more mindful of what they are eating, increased creativity with foods, and improving taste without using fat or sodium. All respondents who elected to share more feedback about their participation in ATOAH expressed a positive experience (*n*=13). Respondents noted their enjoyment of the class, described the content as "enlightening," "beneficial," and "educational," shared an appreciation for the "personal" and "considerate" HPC nutrition educators, and expressed a desire to attend similar classes in the future as well as recommend ATOAH to others.

"I thoroughly enjoyed this class"

"Excellent class and the presenters were knowledgeable and thorough"

"Keep offering these types of classes"

Motivators and Barriers

At entrance, participants who were not presently cooking and eating healthily were asked their biggest obstacles to these behaviors. Junk food/sweets was the most-selected barrier, followed closely by time, then not enjoying cooking, and finances. At exit, almost all respondents (96%) believed that history and heritage were positive motivators for living and eating well. For those respondents who reported not being able to cook in-class recipes at home, the most frequent barrier was not having the involved ingredients at home, or inability to shop for them. Several others reported not having time to cook, while three respondents cited not enjoying the recipe, a lack of funds, and not yet planning their grocery shopping as barriers to cooking the recipes.

Cooking Matters at the Store (CMATS)

Due to a low number of completed post-surveys (n=3), and the high frequency of skipped questions within those surveys, the data are not sufficient for analysis.

Seniors Eating Well (SEW)

Self-reported changes in SEW participants' knowledge, behavior, and self-efficacy relating to diet and physical activity practices were assessed through the curriculum's brief post-surveys (e.g., 4-8 questions), which are discrete and tailored to each of the nine lessons. Between October 2020 and September 2021, HPC taught five SEW series at senior center, health center, and food retail sites. Across these series, a total of 44 post-surveys were completed; aggregate results for each lesson's post-survey are summarized below.

Lesson 1 *Great Grain Discoveries*

After participating in Lesson 1, post-survey respondents (n=5) indicated increases in:

Ability to identify an ounce portion of most grain foods eaten

Intent to eat three or more ounces of whole grains during most days

Intent to read the fiber content on grain food labels

Lesson 2 *All-Star Snacks*

After participating in Lesson 2, post-survey respondents (n=6) indicated increases in:

Intent to use MyPlate to plan snacks

Intent to select snack foods from fruits, vegetables, and whole grains

Intent to try recipes that contain a good source of fiber

Lesson 3 | *Heart Healthier Meals*

After participating in Lesson 3, post-survey respondents (*n*=6) indicated if they performed the following behaviors prior to the workshop, or if they intended to do so within the month:

	Action performed before the workshop	Intend to do action within month
Plan menus based on MyPlate	50%	50%
Store food safely: use leftovers within 3 days, freeze, or throw out	67%	33%
Stock up on heart healthy staples such as fruits and vegetables	50%	50%
Plan to use a new lower-fat cooking method (stir-fry, steam, poach, crock-pot)	33%	67%
Try a new heart healthy recipe	17%	83%
Eat 2 or more cups of fruits and 2.5 cups of vegetables a day	67%	33%

Lesson 4 | *Cooking/Seasoning with Herbs*

After participating in Lesson 4, half of survey respondents (*n*=3) indicated an increased familiarity with many types of herbs used to season foods, and the intent to use herbs when cooking or seasoning food at home to help decrease salt intake increased in 67% of respondents (*n*=4).

Lesson 5 | *Savory Soups*

After participating in Lesson 5, half of survey respondents (*n*=2) showed an increased ability to identify the main sources of salt in their diet, with one self-reporting a noteworthy change of initial

unfamiliarity to strongly agreeing they are aware of their dietary salt intake. As a result of the *Savory Soups* workshop, all respondents (*n*=4) reported they could now identify two foods that will help prevent or lower high blood pressure. The majority of respondents (*n*=3) were already reading food labels to facilitate choosing items lower in sodium, but one respondent who did not consistently read food labels indicated an intention to always read them in the coming month in order to evaluate sodium content and select lower sodium foods. All respondents planned to try one or more new reduced salt recipes within the next month.

Lesson 6 | *Fitness Fun*

After participating in Lesson 6, 40% of respondents (*n*=2) reported an increased confidence in their ability to safely perform physical activities. All five respondents were already exercising on a daily basis, with total time spent ranging from 30 minutes to two hours, and planned to increase their daily level of physical activity in the future. Prior to participating in the workshop, all respondents had tried one or more novel ways of increasing their daily hydration, and planned to continue trying at least one new method of increasing daily liquid intake within the next month.

Lesson 7 | *Evaluating Dietary Supplements*

After participating in Lesson 7, 50% of respondents (*n*=2) reported an increased confidence in their ability to identify the percent Daily Value (DV) on dietary supplement labels, with one self-reporting the greatest possible change (from no to high confidence). As a result of participating in the workshop, three-fourths of respondents were able to identify at least one safety issue with dietary supplements, and all respondents were able to identify one or more safety issues with dietary supplements.

Lesson 8 | *Dietary Fat*

After participating in Lesson 8, all respondents (*n*=4) noted an increased confidence in their ability to identify at least two health concerns with a higher fat diet. All respondents were already able to

identify two or more foods high in saturated or trans fat before the workshop. As a result of participation, 75% of respondents (*n*=3) planned to decrease the amount of higher saturated or trans fats in their diet, and 50% planned to increase consumption of foods with healthy fats.

Lesson 9 *Weight Control – Energy Density*

After participating in Lesson 9, all respondents (*n*=4) reported an increased confidence in their ability to identify foods with lower energy density for weight control. The following chart depicts respondents' self-reported performance of certain behaviors; those involving a level of self-introspection were the only actions respondents indicated no intention to attempt.

	Action performed before the workshop	No intention to do action	Intend to do action within 3 months
Eat two or more cups of fruits most days	100%	--	--
Eat two or more kinds of fruits most days	75%	--	25%
Eat two or more cups of vegetables most days	100%	--	--
Eat two or more kinds of vegetables most days	50%	--	50%
Read Nutrition Facts labels	50%	--	50%
Determine the Energy Density of some foods the participant often eats	25%	--	75%
Vary the taste, color, or texture of meals the participant eats	25%	--	75%
Choose lower energy density foods more often	--	--	100%
Document emotions while eating	--	50%	50%
Rate level of hunger while eating	--	25%	75%

HPC Partnership Assessment Results | **FY2021**

Background

Health Promotion Council (HPC) circulated its FY21 partnership tool to SNAP-Ed delivery sites with which HPC maintains an active partnership and provides nutrition related services to clients. Through the tool, HPC sought to learn about partner sites' experiences working with HPC during the program year spanning October 1, 2020 to September 30, 2021. While the tool had historically been administered on paper, the FY21 tool was conducted through an online survey link due to COVID-19.

Respondents

Seven individuals representing six partner sites completed the online partnership tool, thereby meeting HPC's goal of 5-10 sites. The majority of respondents (71%, *n*=5) were from schools, followed by shelters or transitional housing (29%, n=2). The length of time respondents' organizations partnered with HPC varied, with most reporting their organization had been working with HPC for more than four years (43%; *n*=3). Two respondents reported their organization had worked with HPC more than 2-4 years (29%, *n*=2*)* and two other respondents reported working with HPC for more than 1-2 years (29%, *n*=2). When asked how long the respondent had worked with HPC in their current role, only one respondent had more than four years' experience collaborating, with the remaining six respondents reporting collaborating with HPC for more than 1-2 years (71%, *n*=5) or 6 months to 1 year (14%, n=1).
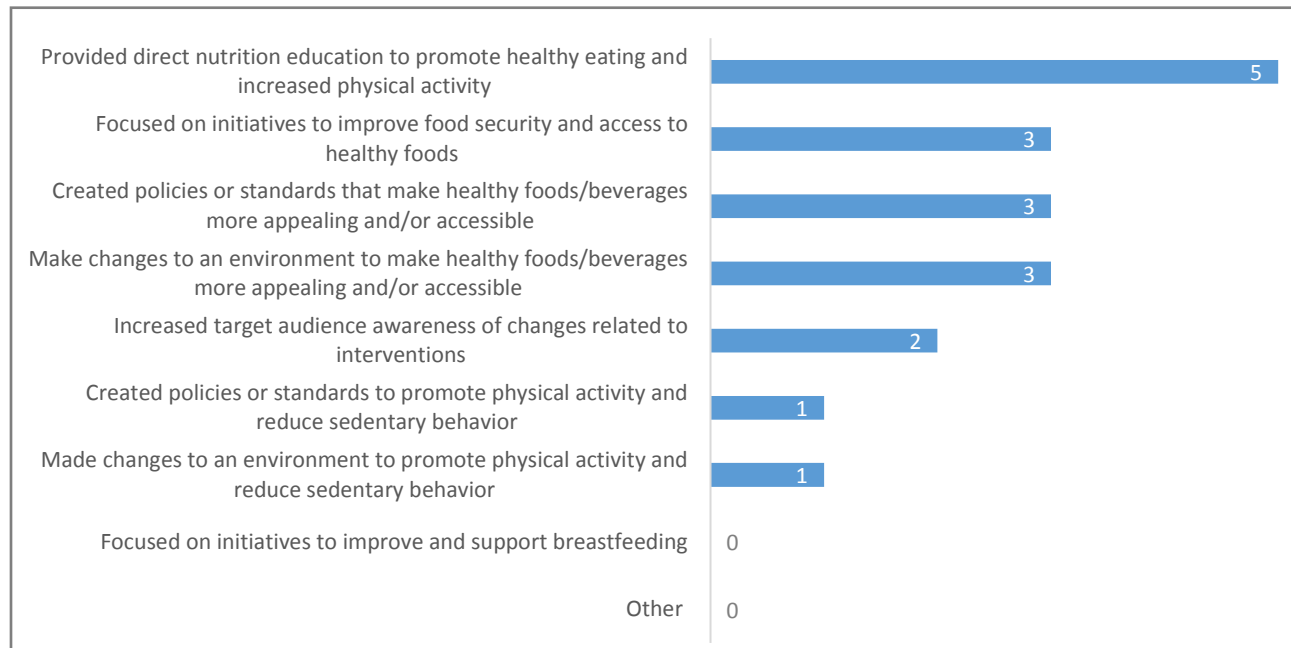
Site Partnership

The majority of respondents (71%, *n*=5) agreed or strongly agreed that they had a clear understanding of what the collaboration between their site and HPC is striving to accomplish; 29% (*n*=2) neither agreed nor disagreed.

As illustrated by Figure 1, the most prevalent partnership focus was the provision of direct nutrition education for the promotion of healthy eating and increased physical activity (71%, *n*=5). Other top focuses included initiatives to improve food security and access to healthy foods, creating policies/standards to make foods and beverages more appealing/accessible, and making environmental changes to make healthy foods and beverages more appealing/accessible (43%, *n*=3).

Figure 1. Areas in which partner sites worked with HPC

Note: Respondents could select all answer options that applied to their partnership.

As a result of working with HPC, respondents noted their site acquired useful knowledge about services, programs, and/or people in the community (57%, *n*=4); their site was able to have a greater impact with their community (57%, *n*=4); their site formed or developed valuable relationships in the community (14%, *n*=1); and their organization was able to have a greater impact with clients (14%, *n*=1).

When asked how the partnership between their organization and HPC could be improved or strengthened, respondents suggested:

- 🗨 More structured schedule for nutrition lessons.
- 🗨 School-wide programming—we had a great partnership with Eat.Right.Now when it was run through the Dairy Council.
- 🗨 Having students create a cultivating end-of-unit project will be great to allow students to demonstrate their learning throughout our time with HPC.

Site Goals

When asked if the partnership between their organization and HPC has helped them identify additional resources and/or programs to meet their organization's goals, 57% (*n*=4) of respondents strongly agreed or agreed; 29% (*n*=2) neither agreed nor disagreed, and 14% (*n*=1) disagreed. Through the partnership with HPC, respondents identified the following resources and/or programs: nutrition lessons and resources, and a multitude of online videos and lessons through Eat Right Now.

When asked about the success of the collaboration with HPC at reaching its goals, over half found the collaboration very or completely successful (57%, *n*=4*)*, 29% reported it was successful (*n*=2*)*, and 14% reported it was somewhat successful (*n*=1). The respondent reporting a somewhat successful collaboration did not provide recommendations for what would need to change in order for their collaboration with HPC to be successful in reaching its goals.

Respondents identified the following as top areas of assistance provided by HPC in support of their sites' goals: fostering community, resident, and/or parent support or engagement (43%, *n*=3); funding or providing planning, advice, or guidance (43%, *n*=3); funding or providing training related to policy, system, and environmental change (PSE) efforts (29%, *n*=2); and initiating the effort and bringing stakeholders together (14%, *n*=1).

Barriers

The COVID-19 pandemic was identified by respondents as the top barrier (86%; *n*=6) to their site's ability to successfully work with HPC during FY20. The second barrier was time constraints (29%, *n*=2). Other barriers identified included poor engagement of local people and use of services, poor morale, lack of skills and training, different ways of working, and virtual learning (14%, *n*=1).

When asked how HPC's programing helped support sites during the COVID-19 pandemic, respondents shared the following feedback:

- 🗨 They provided virtual classes and health lessons.
- 🗨 HPC dedicated time each week to inform students about ways to eat healthy throughout the pandemic. They allowed students opportunities for voice which aligned with our SEL support for students.
- 🗨 They provided live online instruction for all of my classes.

Accomplishments

Respondents shared examples of accomplishments from their collaboration with HPC. One reported their students have a much clearer understanding of healthy food choices. Another described how exciting it was to witness students during their lunch time discussing the benefits of eating certain foods, based on a discussion with HPC.

HPC PSE Evaluations | **FY2021**

Lactation Support Goal Setting Tool

Through the Lactation Support in Family Shelters project, HPC contacted family shelters and assessed interest in receiving training and technical assistance related to supporting the breastfeeding friendly shelter environment policy at their site. HPC identified and provided continued support to key champions at each family shelter who could maintain PSE implementation at their site. During FY21, HPC liaised with identified breastfeeding champions at Families Forward, St. Barnabas Mission, People's Emergency Center, Women Against Abuse, and Woodstock Family Center to complete goal setting for each site. In addition to site-specific priorities identified through the goal setting tool, HPC provided champions with SNAP-Ed approved educational materials on breastfeeding. The top two goals identified by champions through the tool were raising awareness via posting breastfeeding flyers and/or posters in strategic areas (n=5), and incorporating or adapting a written breastfeeding support policy at their site (n=3). HPC assisted sites by providing the approved "Know Your Rights" breastfeeding poster and a resource book, and delivering technical assistance to champions as they worked to include a written breastfeeding policy into their manuals.

Breastfeeding Champion Pre/Post-test

As a component of the Lactation Support in Family Shelters project, HPC conducted a virtual training with champions from participating sites Families Forward, St. Barnabas Mission, People's Emergency Center, Women Against Abuse, and Woodstock Family Center. Training content included breastfeeding benefits, a background on baby-friendly hospitals, and breastfeeding policies at local, state, and federal levels. A pre/post-test format assessed champion knowledge before and after the training. Of the participating champions from each site, 40% (n=2) demonstrated an increase in knowledge of training content (improved score from 86 to 100). The other three champions sustained

a score of 100 on both the pre-test and post-test.

School Health Index

HPC identified and worked with four SDP schools and four non-SDP schools to complete the School Health Index (SHI) self-assessment created by the Centers for Disease Control and Prevention. The SHI is a tool through which HPC can assist schools in assessing their nutrition and physical activity needs, and help guide schools in the development of School Wellness Action Plans (e.g., development of school wellness committees) and PSE efforts. Throughout FY21, COVID-19 continued to fuel uncertainty within school settings, as frequent adjustments to schedules and instructional platforms affected both SDP and non-SDP schools. Within the SDP schools, the SHI assessment was fully competed at Joseph W. Catharine, and significant efforts were made with the other three schools; however, due to substantial staffing changes at two schools and non-response from the third, HPC is actively building collaborative relationships with new staff and working towards SHI completion in FY22. Within the non-SDP schools, the majority of the SHI assessment was completed by Inquiry Charter, and fully completed by Our Mother of Sorrows/St. Ignatius Catholic School. HPC is liaising with contacts at the remaining two schools, which had low engagement despite frequent and significant attempts with staff, and aims to continue building these relationships to complete the SHI in FY22.

Pennsylvania
Nutrition Education Network
(PA-NEN)

Year-End Report

FISCAL YEAR 2021
OCTOBER 1, 2020 TO SEPTEMBER 31, 2021

INTRODUCTION

The Pennsylvania Nutrition Education Network (PA-NEN) promotes communication among individuals and organizations engaged with improving nutrition in our communities. We work to ensure that effective, evidence-based, appropriate nutrition resources primarily for low-income populations are available across the state. First conceived in November 1996, PA-NEN provides a forum for public and private agencies and other groups working with Pennsylvanians eligible for the Supplemental Nutrition Assistance Program (SNAP) to share information about current nutrition education efforts and to plan and carry out creative approaches.

PA-NEN's role as a statewide provider of technical assistance and social marketing is more important than ever; the COVID-19 pandemic altered life for many Pennsylvanians and increased issues of food insecurity. To that end, PA-NEN remains committed to a robust social marketing campaign that reaches SNAP-eligible adults and families across the commonwealth. Additionally, PA-NEN continues to be a critical technical assistance and professional development provider to other PA SNAP-Ed organizations. Finally, PA-NEN also launched a new mobile app, PAVeggieBook, to ensure individuals can easily access information on how to build healthy meals with their benefits.

Thank you for taking the time to review this report and the progress made over the last year in delivering high quality support and content across the state of Pennsylvania.

Sincerely,
PA-NEN Team

SOCIAL MARKETING CAMPAIGN

Be Healthy PA is a social marketing campaign designed to improve nutrition and boost physical activity among SNAP-Ed eligible Pennsylvanians through a core message: "healthy food, "healthy moves, healthy you." Be Healthy PA is primarily an online campaign, focused on connecting people and nutrition education through social media.

In FY21, PA-NEN continued to provide the best content possible to our viewers to make sure they were connected to resources even when practicing social distancing and no longer able to participate in SNAP Ed events in-person. PA-NEN posted five times a week on a variety of topics related to nutrition, free or low-cost movement opportunities, and obesity prevention. All these posts encouraged the target audience to go to PA-NEN's website, which highlights current, credible, and evidence-based information related to nutrition and physical activity topics.

On the following page are some of PA-NEN's most successful pieces of content, demonstrating their reach and how it connected Pennsylvanians to critical nutrition education information.

Top Social Media Posts of FY21

Posted: January 14, 2021

Reach: 4.2k People

Caption: Do you have a special occasion coming up and looking for ideas to celebrate?
Create a healthy meal utilizing the items in your pantry.
Visit our "What's in Your Fridge" section of our website to ideas to serve your family a healthy meal!
https://behealthypa.org/recipes

Posted: February 1, 2021

Reach: 2.9k People

Caption: Visit our website to view a listing of produce that is "in season"
https://www.behealthypa.org/
#InSeasonProduce #Veggies #HealthyLiving

Posted: December 31, 2020

Reach: 2.8k People

Caption: Visit our website to view a listing of produce that is "in season!"
https://www.behealthypa.org/

EDUCATION & TRAINING

PA-NEN supports SNAP-Ed providers across the commonwealth through high-quality professional development opportunities. In FY21, all our training sessions were offered virtually, including the annual conference. PA-NEN's annual conference engaged a total of 248 attendees and covered topics ranging from health literacy, food insecurity on college campuses, evidence-based physical activity interventions, and the social determinants of health.

REPORTED SATISFACTION AT CONFERENCE
4.1/5
⭐⭐⭐⭐☆

TOTAL CONFERENCE ATTENDANCE
248
PEOPLE

In addition to the annual conference, PA-NEN hosted webinars throughout the year that provided additional touch points for SNAP-Ed providers to grow their skills. Webinars included: A Closer Look at SNAP-Ed National Policy and Evaluation, SNAP-Ed in a Virtual Environment, and Legislative Advocacy 101: Helping You Advocate for Your SNAP-Ed Program. PA-NEN made sure that all these webinars were recorded and made available to the PA SNAP-Ed community for future trainings.

NUMBER OF WEBINARS OFFERED
5
SESSIONS

TOTAL WEBINAR ATTENDANCE
156
PEOPLE

PAVeggieBook SMART PHONE APP

In May 2021, PA-NEN launched PAVeggieBook, a mobile application (app) that is designed to help users choose approved recipes and healthy eating tips which ultimately lead to increased vegetable-based preparation for meals at home. Based on research and implementation done at the University of Southern California, PA-NEN brought this innovative intervention to Pennsylvania, piloting it as a tool offered during nutrition education classes at the Salvation Army of Harrisburg. The app received positive feedback, and in October 2021, PA-NEN began to roll-out the app across the state making the app available for free download in the Apple and Google online stores. In FY22, PA-NEN will be making even more upgrades to the app based on feedback from end-users, SNAP-Ed partners, and User Interface (UI) specialists. These upgrades with improve app functionality and customization while adding features that make the overall app experience easier and more useful. This app is helping connect people to more educational resources, increase digital engagement, and make it a tool that families can use to make informed decisions about cooking healthy meals at home.

OTHER NOTABLE ACCOMPLISHMENTS

In order to help promote healthy recipes and eating/moving together as a family, PA-NEN provided recipe and rack cards in both English and in Spanish language for use by recipients of SNAP-Ed.

6,550
TOTAL RECIPES CARDS DISTRIBUTED

1,850
TOTAL RACK CARDS DISTRIBUTED

An Expanding Team

PA-NEN welcomed new team leadership this year. Josh Miller-Myers was brought on board as PA-NEN's new director, who brings a wealth of expertise in project management, strategy, and program policy compliance. PA-NEN also brought on a new Communications Manager, Eli Steiker-Ginzberg who is building on the successes of the social marketing campaign and deepening relationships within and between PA SNAP-Ed partners. They join PA-NEN's Program Manager, Adelaide Wolfe, who continues to build out strong program management and technical assistance grounded in her background in health and wellness.

CONCLUSION

PA-NEN is committed to creating a healthier Pennsylvania through a strong SNAP-Ed community: we believe that when individuals and organizations have access to the right tools and knowledge, we can create individual behavior changes and systems-level impact to address food insecurity and improve the nutrition of under-served communities. Looking ahead in 2022, PA-NEN will build on its successes in FY21 by deepening its relationships with PA SNAP-Ed partners, improving its offerings for clients, and maintaining the highest standards of compliance with state and federal guidance. PA-NEN is committed to expanding the reach of the BeHealthyPA campaign, offering more technical assistance and professional education to PA SNAP-Ed partners, and making sure PAVeggieBook is a more powerful tool for families across the commonwealth.

The Food Trust
FY'21 Annual SNAP-Ed Evaluation Report

October, 2021

Contents

EXECUTIVE SUMMARY

The Food Trust's (TFT) PA SNAP-Ed program employs a comprehensive approach to behavior change combining direct education and Policy Systems and Environmental (PSE) efforts with non-SNAP-Ed funded financial incentives in a variety of settings. Through partnered efforts, TFT works towards shared responsibilities with public and private partners to achieve strong outcomes. This report highlights our Community-based Participatory Research (CBPR) in the greater Philadelphia area.

In FY'21, our CBPR work focused on three objectives: 1) measuring multi-sector partnerships and establishing and increasing readiness and engagement partner organizations working in the Harrowgate-Kensington-Fairhill (HKF) neighborhoods of Philadelphia, which have some of the highest rates of obesity and poverty in the city; 2) identifying and gathering information to support three community champions in the region; and 3) gaining input from SNAP eligible persons in the greater Philadelphia area through surveys and focus groups. To achieve the first objective, we continued to use Social Network Analysis, an approach that we began in FY'19. The Social Network Analysis (SNA) in FY'19 established a baseline in network connectivity and strength from which changes over the last two years were measured. Twenty-eight organizations took part in the FY'21 survey, an increase in 13 from the number that participated in FY'19. SNA results are positive, with statistics indicating an increase in both network strength and efficiency as well as overall awareness between partner organizations from our FY'19 results. This is all the more significant given the severe limitations on in-person events and networking created by the COVID-19 pandemic.

To achieve our second objective, we used SNA and partner organization survey results, partner participation in monthly HKF community meetings, and sought SNAP eligible person's input to identify and gather information to support community champions in the HKF region. Using this data, we identified three organizations as community champions working in the area. This process will allow us to now continue to collaborate with these organizations by providing additional networking opportunities.

To achieve the third objective, participants for surveys and focus groups were recruited from TFT SNAP-Ed programming sites in the greater Philadelphia area. This resulted in 45 survey participants and three focus groups, with questions focused on nutrition education, Food Bucks (non-SNAP-Ed funded nutrition incentives from public and private funding sources), food distribution, and vision and assets. Collected responses elevate community voices to help identify both deficits and assets in neighborhoods across the region and provide needed community input from which partner organizations can work to better serve—and be known to—the communities they work within.

We plan to take the lessons and best practices learned from our CBPR to inform future work. By combining our partner resources and potential to work together, we anticipate that this will increase our collective capacity to facilitate adoption of food and activity choices and other nutrition-related behaviors that support the health and well-being of SNAP eligible persons.

1. OVERVIEW OF COMMUNITY-BASED PARTICIPATORY RESEARCH APPROACH

Community-based Participatory Research (CBPR) is an alternative to traditional research methods that emphasizes engagement and input from the community through all aspects of a research or evaluation program[1]. In FY'21, CBPR is the evaluation approach TFT utilized within our Community Participatory Program (CPP). The purpose of the CPP is to be more inclusive of those most impacted by PA SNAP-Ed and ensure a high level of impact and sustainability. TFT is achieving this by increasing its community engagement and expanding PSE efforts by implementing a participatory approach in four communities in southeastern Pennsylvania. In addition, this approach is designed to lead to increased opportunities for collaboration and benefits to participants and communities for strong outcomes. With these goals in mind, the evaluation objectives for our CBPR work in FY'21 were as follows:

1) Identify and collaborate with community champions (ST6).
2) Measure strength and depth of partner organization relationships (ST7).
3) Measure depth of multi-sector partnerships (ST8).

To measure strength and depth of organization and multi-sector partnerships, we performed a Social Network Analysis (SNA) and gathered partner organization feedback through an associated survey (Sections 2). We then used the SNA and survey results, participation in monthly HKF community organization meetings, and SNAP eligible persons input to identify community champions for collaboration in the HKF region (Section 3). To gain community input on issues surrounding food access, we recruited participants for surveys and focus groups from TFT SNAP-Ed programming sites in the greater Philadelphia area (Section 4).

2. MEASURING MULTI-SECTOR PARTNERSHIPS USING SOCIAL NETWORK ANALYSIS

Measuring connections between organizations and identifying ways to strengthen partnerships within a network facilitates resource sharing and collaboration, and ultimately increases potential reach. We initiated this process in our Emerging Evaluation work in FY'19, where we examined connections and relationships between food access and nutrition education partner organizations working in the HKF neighborhoods of North Philadelphia. To do this, we used a Social Network Analysis (SNA), which is a tool for identifying the connectedness of individuals (or organizations) to each other and quantifying the strength of that network as a whole. The SNA participant survey was designed using an online survey platform and distributed in March, 2019, via email to individuals who had registered for a Healthy HKF community convening event. Results from this first analysis formed a baseline from which later SNA results could be compared and used by TFT to strengthen multi-sector partnerships that promote healthy foods and nutrition education in the HKF area.

In FY'21 the central objective of our CBPR evaluation work was to: 1) continue to measure partner organization awareness and collaboration and the strength of the multi-sector partnership in the HKF area; and 2) measure how the strength and depth of the network has changed over three program years. To achieve this, we again used SNA and the survey approach that was used in FY'19.

Our follow-up to the FY'19 SNA was slated for FY'20, but the COVID-19 pandemic prevented this from taking place. Despite this setback, other network-building activities continued to take place during FY'20–FY'21, including an HKF newsletter and a series of bi-monthly and then monthly virtual community meetings for partner organizations. We re-initiated the SNA survey in FY'21, reaching out to

the organizations that took part in FY'19 and also new organizations that we have become connected to in the past two years.

The results from this analysis will be disseminated to all partner organizations involved, with the intention of both informing them of the status of the network and providing a platform from which future networking and collaboration can take place.

I. Evaluation Design

Method and Sample Description and Size: A total of 52 organizations were invited to complete the FY'21 SNA survey (See Appendix A for full list). This is more than twice as many organizations as in FY'19, when 25 organizations were invited to complete the baseline survey. We explicitly asked for one respondent per organization, and, if possible, the same respondent from FY'19. Where more than one person was available to complete the survey, we asked that the person with the best knowledge of local organizations complete it. This is a different approach to the FY'19 survey when more than one person from each organization may have submitted a response and answers were averaged during the analysis. We took this approach to reduce the variability arising from multiple participants (which is more likely to reduce rather than increase organizational relationship scales) and to streamline communications for future surveys. Participants were asked about the depth of organizational relationships, which were measured on a 5-point scale from Unaware (0) to Collaborating (4). Figure 1 shows the full relationship scale, including definitions, that was used to determine the strength of the HKF network. Each survey respondent was asked to identify their organization's level of relationship, in connection to their food-related work in the past year, with all other organizations invited to take the survey.
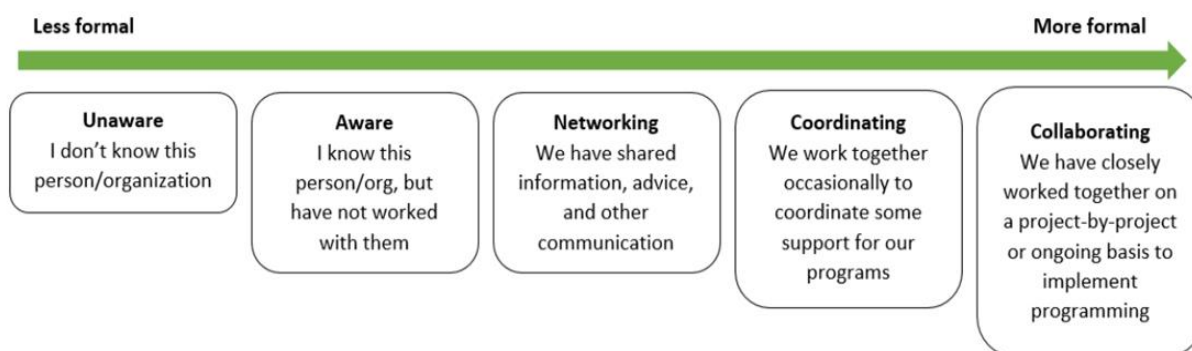

Figure 1. SNA Relationship Scale

Twenty-eight organizations out of 52 completed the survey for a 53% organizational response rate. By comparison, 15 out of 25 (60%) that were invited in FY'19 completed the survey that year. Among the FY'19 organizations, 11 completed it again in FY'21 (73%). Following the initial email inviting organizations to take part in the survey, up to two follow-up emails were sent out as needed. For those organizations that took part in the survey in FY'19 but not in FY'21, there were a variety of reasons including one organization being incorporated into another parent organization.

Prior to analysis, organizations that were included in the survey relationship list but did not complete the survey were removed from the dataset along with any connections made to them by other organizations. This is a different approach to that taken in FY'19 where these organizations' data were left in the subsequent analysis. The decision to remove them for the present analysis was made because

leaving them in created an incomplete dataset. For comparison of the FY'21 results to the FY'19 data, those organizations that did not respond in FY'19 were also removed prior to comparison with the FY'21 results. This changed the *Density*, *Average Degree*, and *Stage Level Distribution* values from those reported in TFT's PA SNAP-Ed FY'19 End of Year Report, but made comparisons to the FY'21 data reliable.

To determine the *Stage Level Distributions*, the average level of relationships between organizations was used (Fig. 2). In partnerships where the average value was not a whole number (i.e., two organizations were respectively "Unaware" [0] and "Aware" [1] of each other), the value was rounded up, e.g., where (0 + 1)/2 = 0.5, this was rounded to "1". This also means that all one-sided relationships (i.e., where one group was "Unaware" and the other was "Aware") became mutual.
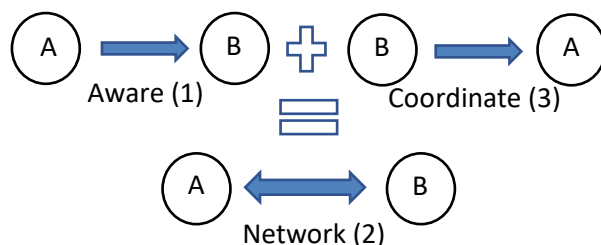

Figure 2. Example of Average and Mutual Relationships

SNAP-Ed Evaluation indicators: SNAP-Ed Evaluation Framework indicators that were measured through the SNA are as follows:

- The number and depth of organizational partnerships (ST7a–b).
- Types and number of sectors represented in the multi-sector partnership (ST8a)
- Number of partner agencies within each sector, and the roles and resources contained within the partnership or coalition (ST8b)
- Stage of coalition or partnership maturity, as measured by the documented level of active engagement (ST8c)
- Network analytics documenting integration and participation within the partnership, including collaboration network density, average degree, and centrality (ST8a-d)

II. Results

Network Representation (ST8a–b): Although all survey respondents were connected in some way to food access and nutrition education work in the HKF neighborhoods, they also represented organizations working at different levels within the government and community on other social determinants of health including homelessness, healthcare, community development, public health, urban agriculture, and public services.

In total, respondents represented:

- 15 non-profit organizations
- 7 city agencies or departments
- 4 academic institutions

- 1 health agency
- 1 school district
- PA SNAP-Ed (not included in non-profit category above)

Stage of Relationships (ST8c): Respondents were asked to report their partnerships on food-related work on a scale from 0 (Unaware) to 4 (Collaborating). Figure 3 shows the overall HKF network. At baseline, the network had 88% of all possible ties with no isolates who were completely unconnected to the network. The thickness of each tie in the network represents the strength of the partnership, with thicker lines being deeper relationships. Organizations located closer to the center of the network had the highest number of reported ties with other organizations. For comparison, the FY'19 SNA results are presented in Figure 4 after having been updated to fit the methods used for the FY'21 survey (for explanation, see *Method and Sample Description and Size*).

Table 1. Distribution of FY'19 and FY'21 Partnership Stages (after averaging).

Stages	FY'19 Partnerships (n = 99)	FY'21 Partnerships n = 330)
Aware	41 (41%)	189 (57%)
Networking	35 (35%)	69 (21%)
Coordinating	14 (14%)	42 (13%)
Collaborating	9 (9%)	30 (9%)

Organizational Awareness (ST7b): Table 1 shows the distribution of Partnership States in FY'19 and FY'21. The distributions between the program years are significantly different (t-test, α<0.05), with the biggest percentage difference lying at the Aware stage. Because the averaging approach toward relationships reduces or removes the number of "Unaware" responses, it is helpful to also look at the raw survey values to get a sense of the overall awareness level within the network. Looking at the number of "Aware" (n = 575) versus "Unaware" (n = 479) survey responses in the FY'21 dataset, the relative percentages are close (55%/45%, respectively), which indicates that there is still room for growth in terms of increasing organization awareness.

Network Statistics (ST8a–d): Another statistic, *network density*, was used to measure the number of lines in a network, out of all possible lines. This allows us to determine the overall strength of the network. The baseline network density of the FY'21 HKF network was 0.84 or 84%. By comparison, the baseline network density of the HKF network in FY'19 was 0.88 or 88% (after the dataset was adjusted to match the FY'21 methods). Network size influences a network's density and larger networks will have lower density because the number of possible lines increases as the number of organizations in your network increases. Therefore, considering that the FY'21 network is larger than the FY'19 network, the network density value calculated for the FY'21 network indicates a strong network.
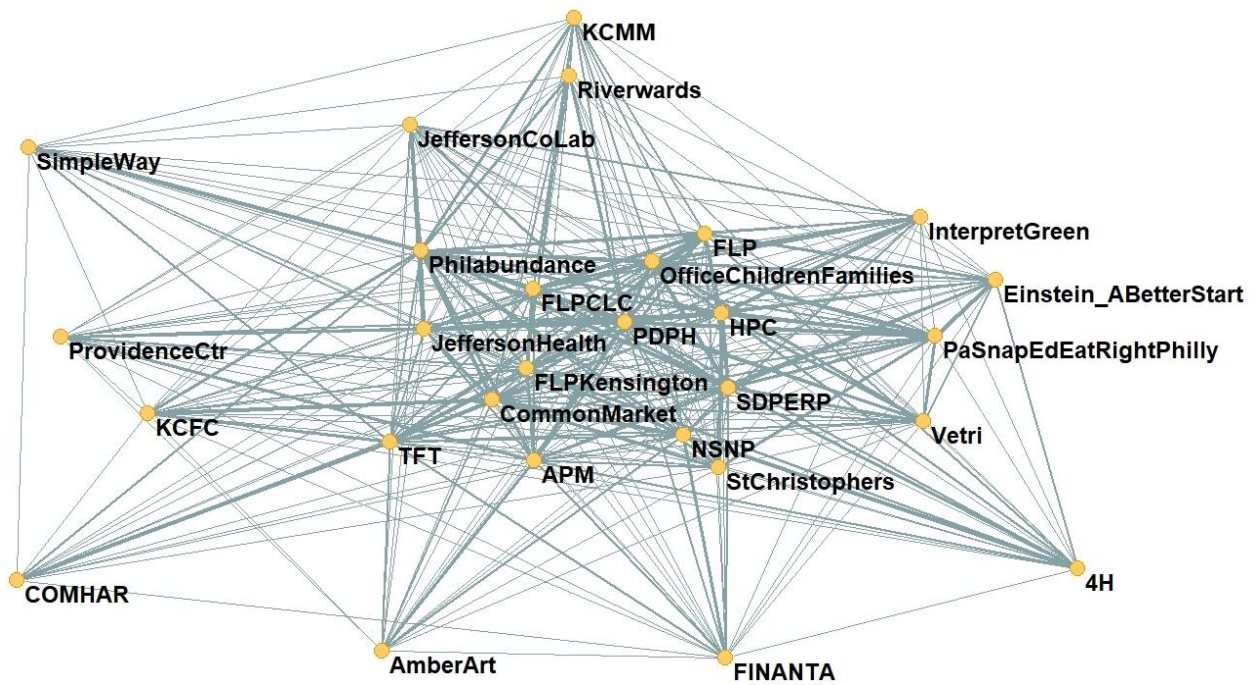
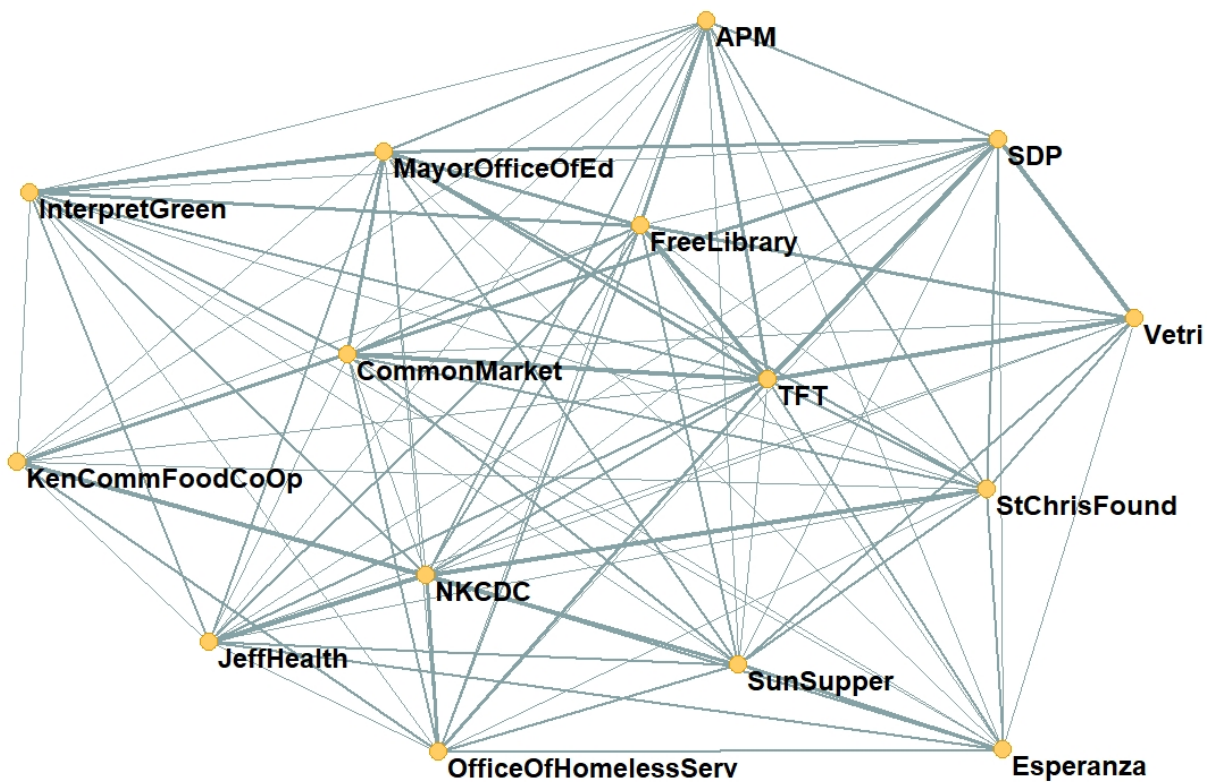**Figure 3. Results from the 2021 HKF Social Network Survey (N = 28).**[1]

Figure 4. Results from the 2019 HKF Social Network Survey (N = 15).[2]

Additionally, we can measure the baseline *average degree* value, which is a useful metric for comparing different networks. This is the main statistic that is used to assess change in our overall network over

time because it can be used to compare the network cohesion regardless of whether or not the network size changes. Because there was an increase in the total number of organizations in the FY'21 survey (N = 28) compared to the FY'19 survey (N = 15), this is an important consideration. The average degree value of the HKF network was 23.33, which represents the structural cohesion of the network. By comparison, the average degree of the FY'19 HKF network was 13.12. This indicates that in the two years since the first HKF SNA survey, there has been a substantial increase in network cohesion.

Lastly, we measured *all degree centralization*, where a higher level of centralization represents a more efficient network, or one in which information and communication can travel most efficiently and reach a greater number of organizations. The all-degree centralization of the FY'21 HKF network was 0.14, which represents a low level of variation. By comparison the baseline all degree centralization value of the FY'19 HKF network was 0.07, roughly half that of the '21 value. Hence, despite relatively low values overall we can say that the FY'21 HKF network is more efficient than the FY'19 HKF network.

Partner Organization Feedback Survey: As part of the HKF SNA survey, we asked partner organizations for information on which age groups they work with (Fig. 5), their perspective on other groups doing work in the HKF area, and what they felt the biggest issues are in the HKF area.
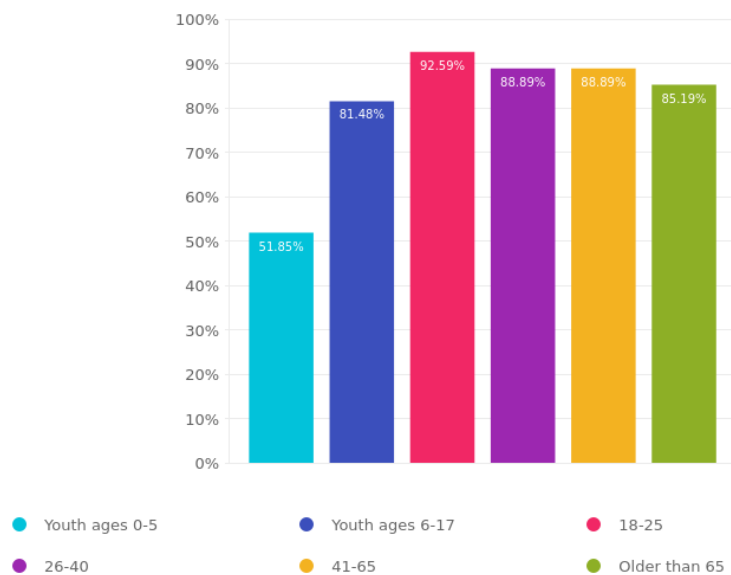

Figure 5. Age groups reached by partner organization food access/nutrition education services.

For responses to the response to the question, *Who are the leaders in food-related work within the HKF community?* 21 organizations were mentioned, with The Food Trust and Philabundance being mentioned most often, followed by Urban Creators and the Greater Philadelphia Coalition Against Hunger. In response to the question, *Who are the most influential people or groups within the HFK areas?*, 23 organizations were mentioned, with APM, Congresso, and NKCDC receiving the most mentions, followed by Impact Services, Philabundance, and the Mayor of Philadelphia's Office of Homelessness. For responses to the question, *What other food-related local collectives/coalitions/networks do you or your organization currently participate in?*, see Appendix B.

We also asked the partner organizations, *What are the three biggest issues facing the HKF areas right now?* Organizations could choose up to three topics including food access and insecurity and other

social determinants of health. The results are presented in Figure 8. They are similar to the results gathered from the FY'19 SNA survey in that *Drug & Alcohol Use* and *Poverty* are the top two issues mentioned. However, in FY'21 *Food Access and Food Insecurity* replaced *Employment* as the third most cited issue.
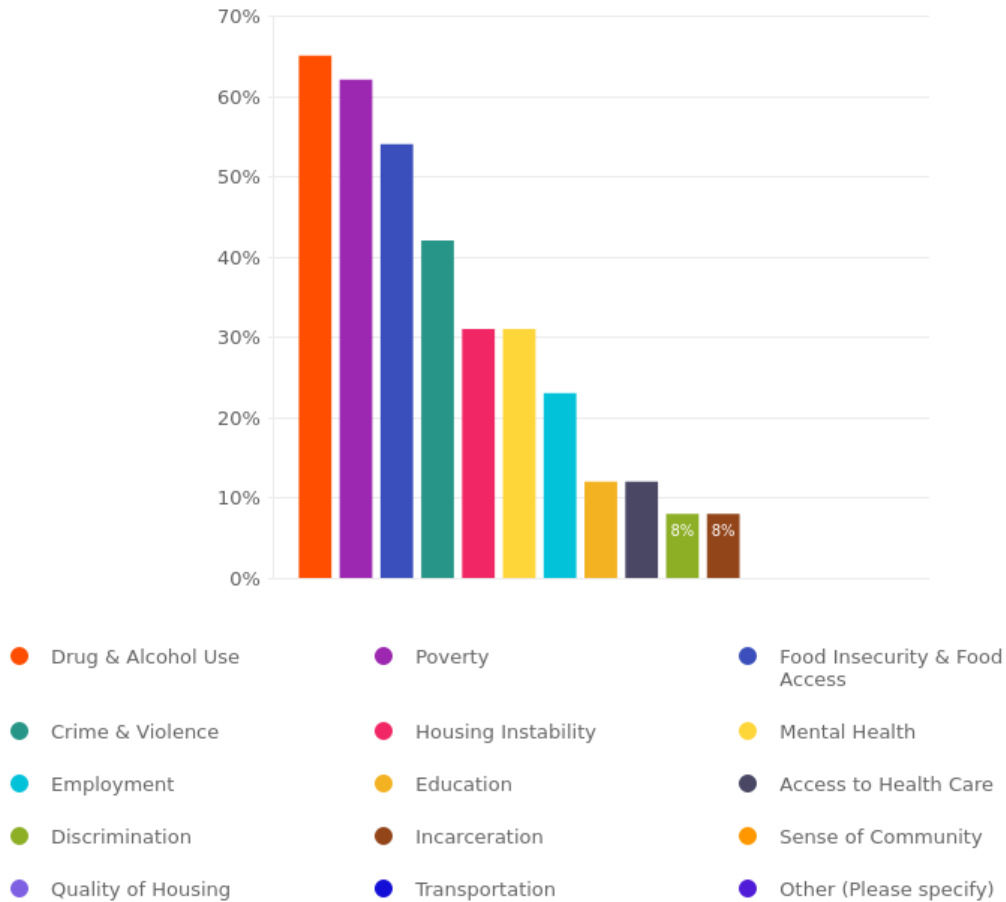

Figure 8. The biggest issues in the HKF area according to partner organizations.

III. Discussion

The similar network density values and marked difference in the average degree value between the FY '19 and FY'21 surveys is significant, particularly in light of the COVID-19 pandemic, which drastically reduced or ended in-person outreach and networking activities for more than a year and a half. The increase in survey participants alone cannot account for the increased average degree value, and it may be due to the monthly HKF community partner organization meetings organized by TFT that began in summer, FY'20, and continued through FY'21. The larger proportion of "Aware" stages compared to FY'19 suggests that many organizations became aware of each other during this timeframe, and monthly virtual meetings provided a platform for that networking to take place. This increase in awareness appears to have increased network density and overall network strength. The network strength and awareness between groups sets the stage for increasing coordination and collaboration in the future.

3. IDENTIFICATION AND SUPPORT OF COMMUNITY CHAMPIONS IN THE HARROWGATE-KENSINGTON-FAIRHILL AREA OF NORTH PHILADELPHIA

One of our three objectives for our CBPR work in FY'21 was to identify community champions that specifically advanced SNAP-Ed activities and mission in the HKF area, so as to be able to foster collaboration with them (ST6). To achieve this, we utilized input and participation during HKF partner community meetings, SNA results, responses to our partner and SNAP eligible persons surveys, and TFT's interactions with various groups and individuals. Through these various activities, we identified three groups that are champions in carrying out nutrition education and supporting food access/distribution in this region.

Urban Creators: Urban Creators is an urban farm and market site located in North Philadelphia in the HKF region. Urban Creators were regular contributors to the HKF monthly meetings in FY'21; they presented on their work during the first meeting. Urban Creators took part in the SNA in FY'19 and although they did not take part again in FY'21, review of FY'21 survey responses from other partner groups indicated that many groups are aware of, and working with them: among the 18 groups that reported being connected to them, six were "collaborating" with them. Urban Creators was also ranked as one of the top four leaders in food-related work within the HKF community by partner organizations.

Congresso: Congresso is a multiservice non-profit whose mission is to strengthen underserved Latino communities in the HKF area. Congresso presented their Utility program at an HKF community meeting in FY'21 and were also among the top three organizations cited by other partner organizations as the most influential people or groups within the HFK area.

The Simple Way: The Simple Way is an organization located in the HKF areas started by a group of friends who wanted to support the growth and flourishing of individuals who are traditionally marginalized. The Simple Way operates a choice-based food pantry for local SNAP eligible persons and allocates points for individuals to "pay" for their groceries. The Simple Way presented at an HKF community meeting and participated in the FY'19 and FY'21 SNA surveys. Results from the latter indicate that they have a number of connections including at least one "collaboration" with other partner organizations operating in the HKF area.

4. RESIDENT INPUT THROUGH SURVEYS AND FOCUS GROUPS

The second part of our CBPR work in FY'21 revolved around soliciting direct input from SNAP eligible persons living in the greater Philadelphia area of southeast Pennsylvania, including Reading. Surveys and focus groups were designed to get comprehensive input from individuals on their everyday nutrition education and Food Bucks experiences as well as their broader vision on these issues and community assets.

I. Methods

Covid severely limited TFT's ability to carry out all planned in-person surveying and focus groups, and so these were done virtually. Survey questions are listed in Appendix C. Participants for surveys and focus groups were recruited from TFT SNAP-Ed programming sites in regions of Philadelphia and the greater Philadelphia area. This resulted in 45 survey participants from 16 Philadelphia zip codes, including six

from HKF zip codes, and three focus groups with five participants, including one in the north Philadelphia area. When possible, one-on-one phone calls were conducted to review survey questions and get more detailed information. The focus groups sought to gain more detail through direct conversations with SNAP eligible persons.

II. Results

Survey responses and focus group discussions explored the following: nutrition education, non-SNAP-Ed funded Food Bucks (nutrition incentives from public and private funding sources), food distribution, and vision and assets. The percentages reported are based on the number of people who answered a given question (sample size varied for each question). Summarized responses are as follows:

Nutrition Education: exploring interests in virtual and/or in-person nutrition education and comfort with technology
- Most individuals (36%) were interested in learning about nutrition, either directly or virtually; seven (16%) responded "Maybe", and only one person responded "No".
- All respondents had access to technology, either as a smartphone, a laptop, or both, and most indicated that they had some level of comfort using technology for virtual learning discussions, Only 5% indicated they were not comfortable using technology for lessons at all.
- 19%) respondents indicated that they were only interested in in-person lessons; the remainder indicated that they were comfortable with virtual lessons or virtual/in-person lessons.

Food Bucks (nutrition incentives): exploring awareness of and access to nutrition incentives
- Most respondents (58%) had not heard of Food Bucks in their communities and only two recalled using them.
- Respondents noted a number of locations where they would like to see Food Bucks being accepted, including major chain supermarkets and farmer's markets. This suggests there are opportunities to tie SNAP-Ed programming with the Food Bucks incentive program.

Food Distribution: exploring awareness and availability of food pantries, community refrigerator programs and other distribution points
- 70% of respondents were aware of food distributions happening in their area.

Vision and Assets: exploring additional opportunities for listening to the community and programming
- Vision responses varied, but one consistent theme was an interest in having more healthy food options and equitable access in their neighborhoods.

5. CONCLUSION

The Food Trust's CBPR work in FY'21 focused on addressing regional food access and nutrition education-related issues by focusing on the connections between partner organizations and the voices of individuals in the communities in which they work. Through the SNA and associated surveys and meetings, TFT provided a platform for those doing food-related work in the HKF communities to come together, identify goals, needs and assets and discuss ways that we can collectively better reach and impact SNAP eligible persons. Because the SNA spans three program years, it proved to be a valuable method for evaluating multi-sector partnerships over time, and we were able to document TFT's progress in encouraging connections and supporting organizations in establishing collaborative

relationships. This is all the more notable given the limitations on in-person events created by the COVID-19 pandemic.

Combined with the results gleaned from the resident surveys and focus groups, this two-pronged CBPR evaluation approach provides an overview of community needs and assets at both the organizational and residential level, and demonstrates the value of, and need for, working closely with communities in order to increase potential opportunities for networking that lead to increased food access and nutrition education opportunities. The input gathered from organizations working in HKF, and lessons and best-practices learned from SNAP eligible persons living in the greater Philadelphia area, will inform future SNAP-Ed work. We anticipate that this CBPR-focused approach will increase our collective capacity to improve nutrition-related behaviors conducive to the health and well-being of SNAP-eligible persons.

6. Endnotes

[1] Barbara A. Israel [and others], editors; foreword by David Satcher. Methods for Community-Based Participatory Research for Health. San Francisco, CA: Jossey-Bass, 2013.

[2] Network visualization was performed using Kamada-Kawai Free Energy, Fruchterman-Reingold 2D, and manual manipulation to separate partner nodes within Pajek64 (ver. 5.13; Mrvar and Batagelj, 2021).

Appendix A

List of Partner Organizations in the FY'21 SNA

4-H Penn State Extension
Amber Art and Design
APM
COMHAR
Community First Fund/FINANTA
Eat Right Philly
Einstein/ A Better Start
Free Library of Philadelphia
Free Library of Phila. - Culinary Literacy Center
Free Library of Philadelphia, Kensington Branch
Health Promotion Council (HPC)
Interpret Green
Jefferson Health
Jefferson Co-Lab
Kensington Community Food Co-op
Kensington Community Meals Meetings
Kensington Library
Norris Square Neighborhood Project
Office of Children and Families
PA SNAP-Ed/ Eat Right Philly
Philabundance
Philadelphia Department of Public Health
Providence Center
St Christopher's Foundation for Children
The Common Market
The Food Trust
The Simple Way
Vetri Community Partnership

Appendix B

Partner organization responses to the Social Network Partner Organization Survey question, *What other food-related local collectives/coalitions/networks do you or your organization currently participate in?* **Organizations mentioned more than once by different respondents are in bold.**

- Friends of McPherson/McPherson Action Group, El Barrio Es Nuestro
- **Coalition Against Hunger**
- Philadelphia Area Cooperative Alliance, **Weavers Way Co-op, South Philly Food Co-op**, **Mariposa Food Co-op**
- Promise Zone and Promise Neighborhood Groups
- PCA Produce voucher program
- Philly Food Educators and the Teaching Kitchen Collaborative (not local, but we're pretty active there)
- **Philadelphia Food Policy Advisory Council**
- FPAC appointed member - Anti-hunger subcommittee, food procurement subcommittee, MANNA,
- **FPAC**, Food Buying Club Advisory Committee, Philadelphia Food Justice Initiative
- **Anti-Hunger Coalition,**
- Passaic County food policy coalition, good food purchasing initiatives
- **Food Policy Advisory Council (FPAC)**
- **School District, Eat Right Philly**, Virtual workshops.
- Teaching Kitchen Collaborative (through the Free Library of Philadelphia)
- **Weavers Way Co-op**, **Philadelphia Schools**, PHS Philadelphia, Office of Children and Families

Appendix C

Greater Philadelphia Area Resident Survey Questions

Nutrition Education
1. Are you interested in learning about nutrition?
2. Do you have access to the following? Check all that apply.
3. Are you comfortable using technology for virtual learning discussions?
4. What is your language preference for printed materials and/or lessons?
5. How would you prefer to attend nutrition education lessons?

Food Bucks
1. Have you heard of Food Bucks?
2. Do you use Food Bucks?
3. Where do you currently shop?
4. What gaps are there in grocery shopping options?
5. What places are missing for purchasing?
6. Can you suggest a store that could add Food Bucks?
7. Are certain healthy options unavailable or not affordable? If so, what are they? Tell us what you think is missing?

Food Distribution
1. Are there food distributions happening in your neighborhood?
2. If yes where?
3. Have you heard any feedback about them or the foods in them?

Vision and Assets
1. What kind of foods do you and your family enjoy?
2. What questions would be useful for us to ask, and what else should we keep in mind when surveying community members from vulnerable populations?
3. Are there any places, meetings, or associations that you see as an asset to your community such as a library, a bank that has fair and equitable loan processes, a community garden or a civic association? Please list them here:

FY 2021 Pennsylvania SNAP-Ed Plan
Abbreviations List

AAA	Area Agency on Aging
AHI	Adagio Health, Inc.
AND	Academy of Nutrition and Dietetics
APHA	American Public Health Association
ASN	American Society for Nutrition
ASNNA	Association of SNAP Nutrition Education Administrators
ATOAH	A Taste of African Heritage
ATOLAH	A Taste of Latin American Heritage
BASICS	Building and Strengthening Iowa Community Support
BLAST	Breakfast Learning Activities for Students and Teachers
BMI	Body Mass Index
BRFSS	Behavioral Risk Factor Surveillance System
C3	Choice, Control, and Change
CACFP	Child and Adult Care Food Program
CAO	County Assistance Office
CAP	Community Action Partnership of Lancaster County
CATCH	Coordinated Approach to Child Health
CCOR	Penn State Center for Childhood Obesity Research
CDC	Centers for Disease Control and Prevention
CEC	CATCH Early Childhood
CED	County Extension Director
CEO	Commission on Economic Opportunity
CHHD	Penn State University College of Health and Human Development
CHNA	Community Health Needs Assessment
COM	Common Threads
CSFP	Commodity Supplemental Food Program
CX3	Communities of Excellence in Nutrition Physical Activity and Obesity Prevention
DHS	Department of Human Services
DOH	Department of Health
DRX	Drexel University
EARS	Education and Administrative Reporting System
ECE	Early Childhood Education
EFNEP	Expanded Food and Nutrition Education Program
ERP	Eat Right Philly
F.U.N.	Families Understanding Nutrition
F/R	Free/Reduced Price Meal Program Enrollment
FAY	Fayette County Community Action Agency
FMNP	Farmers' Market Nutrition Program
FNCE	Food and Nutrition Conference & Exhibition
FNS	Food and Nutrition Service
FQHC	Federally Qualified Health Center

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FTE	Full Time Equivalent
FUL	Fulton County Food Basket, Inc.
FUN	Albert Einstein Medical Center
FY	Fiscal Year
GHP	Get Healthy Philly, Philadelphia Department of Health
GIS	Global Information Systems
HAES	Health At Every Size
HEAT	Healthy Eating, Active Time
HPA	Penn State Department of Health Policy and Administration Project
HPC	Health Promotion Council of Southeastern Pennsylvania, Inc.
JSY	Just Say Yes to Fruits and Vegetables
LAF	Penn State Francis Project
LOA	Letter of Agreement
LP	Local Partner
LT	Long Term
ME	Management Entity
MOU	Memorandum of Understanding
MRFEI	Modified Retail Food Environment Index
MT	Medium Term
NAPSACC	Nutrition and Physical Activity Self-Assessment for Child Care
ne/Frames	Digital photo frame programs
NEA	Nutrition Educator Assistant
NEMS	Nutrition Environment Measure Survey
NEN	Pennsylvania Nutrition Education Network
NEPA	Northeast Pennsylvania
NIFA	National Institute of Food and Agriculture
NIH	National Institutes of Health
NLA	Penn State Extension Nutrition Links
ORE	Office of Research and Evaluation
ORIC	Organizational Readiness for Implementing Change
OST	Out of School Time
PA	Pennsylvania
PDE	Pennsylvania Department of Education
PDS	Program Delivery Sites
PEARS	Program Evaluation And Reporting System
PHMC	Public Health Management Corporation
PPT	Pregnant and Parenting Teens
PreK	Preschool
PS	Purchased Service
PSE	Policy, Systems, and Environmental
PSU	Pennsylvania State University

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RD, LDN	Registered Dietitian, Licensed Dietitian Nutritionist
SAH	The Salvation Army Harrisburg Capital City Region
SBPI	School Breakfast Policy Initiative
SDP	School District of Philadelphia
SEM	Socio-Ecological Model
SEPA	Southeast Pennsylvania
SFSP	Summer Food Service Program
SHI	School Health Index
SNAC	State Nutrition Action Coalition
SNAP	Supplemental Nutrition Assistance Program
SNAP-Ed	Supplemental Nutrition Assistance Program Education
SNEB	Society for Nutrition Education and Behavior
SPAN	School Physical Activity and Nutrition Survey
SRC	Survey Research Center
SSI	Supplemental Security Income
ST	Short Term
STARtracks	Statewide Technical & Administrative Reporting system
TANF	Temporary Assistance for Needy Families
TBD	To be determined
TEFAP	The Emergency Food Assistance Program
TFT	The Food Trust
UNI	Agatston Urban Nutrition Initiative
USDA	United States Department of Agriculture
VCP	Vetri Community Partnership
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children
YRBS	Youth Risk Behavior Surveillance System