

California SNAP-Ed Direct Education and PSE Aggregation

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Abstract

Background

The Agriculture Improvement Act of 2018 (Farm Bill) has refocused SNAP-Ed reporting to include and prioritize aggregation of direct education and policy, systems, and environmental (PSE) reporting. The Foundations for Evidence-Based Policymaking Act of 2018 (Evidence Act) is currently in implementation and additionally sets high standards for reporting on federal programs. In federal fiscal year 2016, the USDA Food and Nutrition Service (FNS) Western Region Office instructed CalFresh Healthy Living (CFHL) (California's SNAP-Ed program) to synthesize results from its four state implementing agencies (SIAs) and 138 local implementing agencies while reducing the report's overall length. Under the leadership of California's SNAP-Ed control agency, the Department of Social Services (CDSS), CFHL now reports all SNAP-Ed work from a state perspective by aggregating all data.

Objective

Synthesize and communicate the methods used by CDSS and its SIAs to aggregate and report their SNAP-Ed data in accordance with the Farm Bill. Outline California's process to inform other states that are adapting their programs and to address new federal guidelines.

Study Design, Settings, Participants

PSE: CFHL used an online reporting system to collect data on PSE sites, ensuring that all SIAs were collecting the same information which could then be aggregated at the state level.

Direct education: The Public Health Institute Center for Wellness and Nutrition (PHI CWN) reviewed all surveys used by SIAs and identified common questions that could be aggregated. Participants in Federal Fiscal Year (FFY) 2018 were 3,641 adults and 3,988 children who participated in CFHL programs and completed matched pre-post surveys whose questions could be aggregated. Statistical analyses were selected that were appropriate for the data and permitted computation of effect sizes to measure the magnitude of reported changes.

Measurable Outcome/Analysis

A review of the shifts in methodology CFHL enacted to aggregate analyses and improve overall research methods to be in line with the Farm Bill and Evidence Act.

Results

Review of outcomes from CFHL's 2018 aggregated analyses, which includes 12 statistically significant direct education findings for MT1 and MT2 indicators.

Conclusion

CFHL has a process for aggregating data that is in line with the Farm Bill may inform other states' aggregation efforts.

Background

The Agriculture Improvement Act of 2018 (Farm Bill), along with the Evidence Act of 2019, have emphasized the need for using an electronic data recording system, aggregating data and improving data quality^{1,2} of the nation's Supplemental Nutrition Assistance Program—Education (SNAP-Ed) programs. In California, the SNAP-Ed program is known as CalFresh Healthy Living (CFHL) and is overseen by the California Department of Social Services (CDSS). CFHL improves the health of Californians through education and healthy community changes and is implemented by four state implementing agencies (SIA). In 2016, the USDA Food and Nutrition Service Western Regional Office asked the CFHL program to synthesize the statewide results using aggregated data. In FFY 2016, California piloted the Program Evaluation and Reporting System (PEARS), developed by Kansas State University Research Foundation (KSURF) to track policy, system and environmental change (PSE) reporting³.

Prior to 2016, SIAs reported their results separately, using a mix of surveys, data entry technologies, and analyses. Since then, CDSS has partnered with the Public Health Institute Center for Wellness and Nutrition (PHI CWN) and has fully implemented PEARS for all process reporting, developed customized templates for outcome data, and created a fully aggregated annual report that showcases statewide impact instead of agency specific results.

Study Design, Setting, and Participants

PHI CWN worked with CDSS and its SIAs to aggregate CFHL data. For Direct Education, PHI CWN reviewed seven surveys used by SIAs and identified three surveys with common questions that could be aggregated. Statistical programming language was written to clean and merge the data. Participants in Federal Fiscal Year (FFY) 2018 were 3,641 adults and 3,988 children who participated in CFHL programs and completed matched pre-post surveys whose questions could be aggregated⁴. Statistical analyses were selected and allowed for effect sizes to be calculated to measure the magnitude of reported changes. For PSE, CFHL used the PEARS online reporting system to collect data on PSE sites, ensuring that all SIAs were collecting the same information which could then be aggregated at the state level.

Measurable Outcome/Analysis

Switching to a centralized and electronic reporting system like PEARS and aggregating data is not an easy task, nor one that happens quickly. Given the size and complexity of CFHL, it was important to phase in the SIAs to start reporting their program data in PEARS. Substantial coordination was required in order to successfully pilot PEARS, and CFHL's evaluation work group (EWG) was requested to assist in this process. The EWG consists of at least one representative from each SIA and was originally created to develop a plan for using shared indicators and to synthesize statewide data. EWG meetings were used to plan the implementation of PEARS and to troubleshoot issues during PEARS adoption⁵. The EWG provided a venue for SIAs to discuss how they defined their work and how they recorded it into PEARS. Therefore, EWG not only aided in the implementing of PEARS, but it also helped to improve the quality of the data being entered. EWG was able to operationally define concepts such as sites (a unique address at which a PSE occurs) and PSEs (a unique combination of a site and setting such as a preschool at 123 Main Street or an elementary school at the same address).

In 2016, two of the four SIAs, participated in the pilot of using PEARS to record some of their PSE program data. In 2017, the remaining two SIAs began using PEARS to record some of their PSE data⁴. The ability to aggregate PSE data in 2017 was facilitated by the work done by CDPH (2016) in CA's first-ever aggregation of CA PSE data. The work done by CDPH relied on extensive consultation by EWG and substantial coordination to define concepts like sites, what constituted a PSE (site/setting combo), and identify variables of interest for reporting.

Two challenges for aggregating the pre/post survey data from direct education collected by the SIAs were discovered. The first challenge was that each SIA used a mix of different surveys and up until 2018, no assessment had been done to determine which of the surveys were used by multiple SIAs in order to combine the data. PHI CWN and CDSS conducted an extensive review of DE surveys used by the SIAs resulting in CFHL identifying those pre/post survey items that the SIAs used in common and addressed a SNAP-Ed Evaluation Framework indicator for the 2018 SNAP-Ed annual report⁶. The second challenge was the different methods used to record the pre/post survey data. In 2018, all SIAs used PEARS to record their DE process data, but only one SIA used PEARS to record their pre/post survey data, while the remaining three SIAs used custom templates outside of PEARS to record their pre/post survey data. In order to combine the data, PHI CWN used a statistical programming language to clean and merge the data. This use of the raw data in combination with PEARS required an advanced programming and data manipulation skillset that may not be appropriate for all SNAP-Ed implementers seeking to aggregate. However, this approach is consistent with contemporary thinking in the SNAP-Ed evaluation community that construes "electronic systems" broadly.

The final important step was to ensure that all users were entering data into PEARS the same way. Starting in the fall of 2018, CDSS facilitated the development of a PEARS user manual that would provide all data entry users with the same instructions providing definitions for the data and how it should be entered into PEARS. Over the course of eight months, the SIAs met to discuss how their agencies entered data into PEARS and came to agreement on methodology. In instances when discrepancies existed, instructions were included to identify how data should be entered by each of the SIA's local data entry staff⁶. Finally, the SIAs developed and CDSS and PHI CWN implemented in-person, statewide trainings in 2019 to ensure a baseline standard, skill set, and understanding of shared definitions among the state's diverse and geographically dispersed local agencies. Together, these technical assistance efforts were a huge improvement to data quality and ensured that all data were consistent and that the results of analyses were meaningful.

Results

Starting in 2018, all of California's SIAs have fully implemented PEARS for their SNAP-Ed reporting, satisfying the requirement of using an electronic data reporting system and providing a process for data aggregation. This accomplishment required multiple years and incremental improvements. This process not only brought California into compliance with the Farm Bill, but it also drastically improved data quality and it ensured consistency in analyses, including consistent selection of analyses that are appropriate for the data collected. Additionally, ongoing technical assistance through training and tools provided to users ensured consistency in data entry. These improvements have enhanced the interpretation of results, improved the overall quality of SNAP-Ed reporting, and allowed CFHL to report results from a statewide perspective.

Conclusion and Implications

Satisfying the requirements of the Farm Bill required intentional planning and support and leadership from CDSS. For CFHL it took an intensive, coordinated, strongly led effort over a period of three years. Agencies that are working to meet new guidelines should develop an implementation timeline that will consider the size and complexity of the state's program. In addition to adopting an electronic reporting system, it is important to focus on the business processes necessary for improving data quality and ensuring that a systematic process is in place for consistent and accurate reporting. While the process is sizable and complex, it is ultimately a tractable process that results in better data reporting, quality, and interpretability of results from a statewide perspective.

Figure 1. 2016 Pre-Data Aggregation PSE Annual Reporting V.S. 2018 Post-Data Aggregation PSE Annual Reporting.

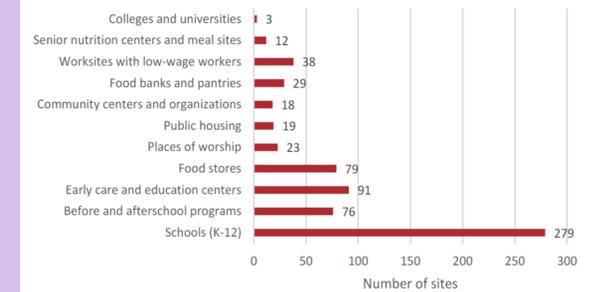
Policy, Systems, and Environmental (PSE) Reporting

Pre-Data Aggregation

- At CDPH, SNAP-Ed PSE reached 902 sites statewide. Most sites complemented their PSE work with evidence-based nutrition education (69%), marketing (50%), community involvement (49%), and/or staff training (57%). Nearly all sites (95%) incorporated at least one complementary strategy with an average of two complementary strategies per site.
- UC CalFresh county programs exceeded objective 4 with 27 (87%) of 31 counties having environmental setting nutrition and/or PA PSE change supports being successfully implemented in at least one SNAP-Ed site.

Post-Data Aggregation

Figure 3.3 PSEs by Setting



*Not all settings are depicted on graph (total settings = 742).

Figure 2. 2016 Pre-Data Aggregation Direct Education Annual Reporting V.S. 2018 Post-Data Aggregation Direct Education Annual Reporting.

Direct Education Reporting

Pre-Data Aggregation

- Among adults participating in interventions through the CDPH SNAP-Ed program:
 - 0.27 cup/day increase in fruit consumption.
 - 0.35 cup/day increase in vegetable consumption.
 - 0.64 cup/day increase in total fruit and vegetable consumption.
 - 45.6% increase in consumption of more than one kind of fruit each day.

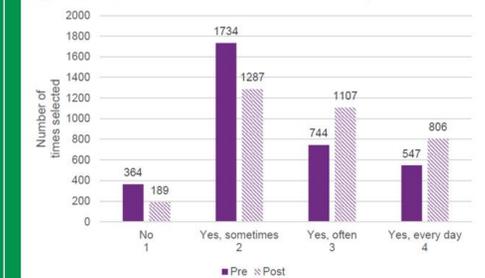
- As part of a statewide evaluation by the CDA SNAP-Ed program, using the Food Behavior Checklist and/or the Fruit and Vegetable Checklist, identified significant increases (p-value <0.05) among SNAP-Ed participants in daily fruit (0.31 cups per day) and vegetable consumption (0.28 cups per day).
- UC CalFresh evaluation results show that over half of adults increased their frequency of eating fruit and vegetables among adults from pre to post with an overall statistically significant gain (p<.001) of over two-thirds of a cup of fruits and vegetables per day among UC CalFresh participants (N=991; Food Behavior Checklist (FBC)).

Post-Data Aggregation

MTic. Ate More Than One Kind of Fruit

Only one question addressed this indicator. The question asked whether participants ate more than one kind of fruit each day. Figure 4.3 shows a large decrease in the number of participants indicating "yes, sometimes" and a large increase for "yes, often." Results showed a significant increase in adults consuming more than one kind of fruit as measured from pre to post.

Figure 4.3 "Do you eat more than one kind of fruit each day?" (Adults)



A Wilcoxon signed-rank test revealed a significant increase in reports of eating more than one kind of fruit each day. (z = 18.40, p <0.001, r = 0.22).

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