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Mary Caskey
University of Minnesota

Bonnie Christiansen
University of Minnesota

Stephanie Hakes
University of Minnesota

Patti Held
Software Touch Corp.

Hyunjun Kim
University of Minnesota

See next page for additional authors



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Authors

Mary Caskey, Bonnie Christiansen, Stephanie Hakes, Patti Held, Hyunjun Kim, and Carolina De La Rosa Mateo

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Abstract

Reporting requirements for capturing data on the delivery of Supplemental Nutrition Assistance Program Education (SNAP-Ed) have evolved. University of Minnesota (U of M) Extension developed the SNAP Education Evaluation and Database System (SEEDS) to capture unduplicated participant information for SNAP-Ed programming conducted by U of M Extension across the state of Minnesota. The data collected in SEEDS have utility related to both managing programs and measuring the success of programs at local, regional, and state levels. Extension professionals in other states may benefit from developing a similar centralized database for collecting SNAP-Ed data.

Keywords: [Supplemental Nutrition Assistance Program Education](#), [evaluation monitoring system](#), [relational database](#), [evaluation software](#)

Mary Caskey

Associate Program Director, Health and Nutrition Programs
University of Minnesota Extension
St. Cloud, Minnesota
caske002@umn.edu
@UMNExtFD

Bonnie Christiansen

Regional Coordinator, Health and Nutrition Programs
University of Minnesota Extension
Marshall, Minnesota
chri2349@umn.edu

Stephanie Hakes

Regional Coordinator, Health and Nutrition Programs
University of Minnesota Extension
Brainerd, Minnesota
hakes006@umn.edu

Patti Held

Software Touch Corp.
Cambridge Springs, Pennsylvania
pheld@softwaretouch.com

Hyunjun Kim

Graduate Research Assistant, Health and Nutrition Programs
University of Minnesota Extension
Saint Paul, Minnesota
kimx3739@umn.edu

Carolina De La Rosa Mateo

Graduate Research Assistant, Health and Nutrition Programs
University of Minnesota Extension
Saint Paul, Minnesota
delar056@umn.edu

Introduction

Supplemental Nutrition Assistance Program Education (SNAP-Ed) is an evidence-based nutrition education and obesity prevention program funded by the U.S. Department of Agriculture (USDA). Individuals who are eligible for the Supplemental Nutrition Assistance Program (SNAP) or other means-tested federal assistance programs are able to participate in direct education and multilevel interventions designed to educate low-income families about good nutrition, physical activity, and making healthful choices on a limited budget (USDA National Institute of Food and Agriculture, n.d.).

University of Minnesota (U of M) Extension is one of seven agencies in Minnesota that deliver SNAP-Education; the others are six of the Anishinaabe Tribes. The SNAP-Education team at U of M Extension provides SNAP-Education programming for low-income individuals and families across the state. Currently, U of M Extension has 75 educators delivering SNAP-Education programs, including SNAP-Education educators, Extension educators, and regional coordinators.

As implementation of SNAP-Education has increased over time, federal reporting requirements for the program have evolved (Nichols, Blake, Chazdon, & Radhakrishna, 2015). Currently, those involved in implementing SNAP-Education use the Education and Administration Reporting System (EARS) to provide uniform types of data and information about their states' SNAP-Education activities to the USDA (USDA SNAP-Education Connection, 2018). The EARS report is a tool used by SNAP-Education's federal partners to report participant demographics; number of people reached directly and indirectly through direct education and policy, systems, and environmental (PSE) changes; types of partners and their contributions; and programming settings. SNAP Education Evaluation and Database System (SEEDS) is a database system used by Minnesota SNAP-Education staff for gathering programmatic information for the EARS report and for managing SNAP-Education activities.

In 2014, federal reporting requirements changed so that unduplicated individuals rather than aggregate data would be reported in EARS. The custom SNAP-Education database system used at the time in Minnesota was insufficient for such reporting. Thus, we worked with a software and database designer and developer to develop SEEDS, a database that captures unduplicated participant information and evaluation data for all SNAP-Education initiatives executed by U of M Extension (Gold, Adler Barno, Sherman, Lovett, & Hurtado, 2013). Extension SNAP-Education implementing agencies in other states may find it useful to have a centralized database system, similar to SEEDS, to capture their SNAP-Education data.

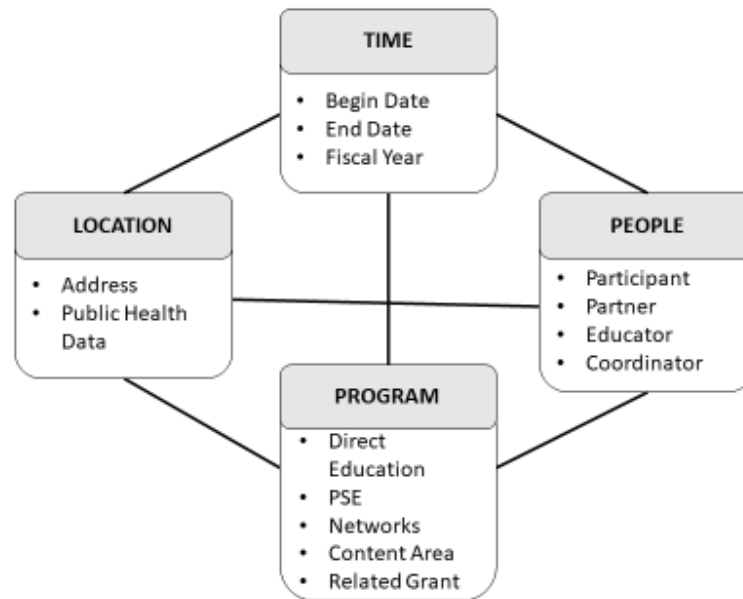
Use of SEEDS

SEEDS is both a reporting tool and a management tool. U of M Extension has used SEEDS data in reporting to funders such as USDA, the Minnesota Department of Health and Human Services Office of Economic Opportunity, county departments, county boards, county Extension committees, and Extension partners. The data have many uses, including uses related to managing programming efforts and staff at local and regional levels, measuring whether programmatic goals are being met, and helping shape future program goals and direction at the state level.

SEEDS Data Structure

SEEDS comprises four major interconnected data components—time, location, program, and people (see Figure 1)—in a Structured Query Language (SQL) relational database system. A relational database is a collection of related data sets. These related data sets are downloadable in formats readily available for a data analyst. For example, if a data analyst wanted to create a direct education participant table using data collected on partner, curriculum, educator, and county, a relational database would create the table by combining participant, partner, curriculum, educator, and location data sets. Similarly, if an analyst wanted to create a table of the number of PSE partners by county and by PSE content area, the relational database would combine partner, county, and PSE content area data sets. Compared to a static database, which contains data in a fixed format, a relational database provides better flexibility for examining data from different perspectives.

Figure 1.
Data Structure of SEEDS for Data Analysis



Note: SEEDS = SNAP [Supplemental Nutrition Assistance Program] Education Evaluation and Database System. PSE = policy, systems, and environment.

SEEDS offers several benefits for data analysis and evaluation. It allows users to acknowledge and analyze the multilevel nature of SNAP-Education programming. Users can document and analyze changes at individual, organizational, network, and geographic area levels. SEEDS also includes data for individual participants across fiscal years. This feature allows users to analyze the impact of SNAP-Education direct education course participation across fiscal years on individual behaviors. In addition, SEEDS provides users with the ability to count unduplicated participants within a fiscal year for the EARS report. Because location data are connected to the other components of SEEDS, data analysts can conduct location-based analyses of SNAP-Education programs. Another benefit of using a relational database in which partner data are connected to program, time, and location data is the ability to conduct social network analyses and visualize SNAP-Education partner networks. Within those networks, multiple attributes are mapped, including program type, geographical area, content area, and number of direct education courses and/or PSE projects.

The Database Team

Integral to the effectiveness of SEEDS is a database team consisting of a SNAP-Education leader, educator supervisors, SNAP-Education educators, support staff, a software and database designer and developer, a program evaluator, and a data analyst. Our team meets monthly in order to make improvements and revisions as programming needs evolve. A documentation subcommittee maintains an online resource containing short videos documenting how to enter data in SEEDS.

Future of SEEDS

The database team continues to advance SEEDS to further facilitate the capture of SNAP-Ed data. SEEDS was designed through iterative development, and fine-tuning is ongoing. All six of the Minnesota tribal implementing agencies are now using SEEDS. U of M Extension is working to discover better ways to share SEEDS-based information with stakeholders and to determine how to use the information more effectively to shape the future of SNAP-Ed programming in Minnesota. Involving experts in database management and analysis will be key to ongoing and future success. In addition, U of M Extension is exploring the role data visualization technology can play with regard to a relational database such as SEEDS, perhaps allowing for better communication about SNAP-Ed efforts to SNAP-Ed stakeholders, including participants and the general Minnesota population.

With continued federal funding always a concern for SNAP-Ed implementing agencies, having rigorous and detailed monitoring and reporting tools, such as SEEDS, can help agencies better report the value SNAP-Ed programming adds to the lives of low-income families. Such tools allow for continuous study and improvement processes, which encourage program personnel not only to maintain effective programming but also to continue to improve their impact and reach.

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