

A Survey of Iowa and Pennsylvania Fruit and Vegetable Growers: Identifying Barriers to Serving Schools

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Research Objectives

Document farmers': 1) demographic variables and farm characteristics; 2) experiences selling fruits and vegetables to schools; and 3) perceived and real barriers preventing growers from selling fruits and/or vegetables to schools.

Methods

A 20-minute Internet survey was administered April through October 2014 using industry listservs managed by regional agricultural associations. Respondents provided information about themselves and their farms, whether they currently sold produce to schools, what barriers they encountered or perceived exist and future plans to increase production and/or investments to expand farm-to-school business.

Results

Of the 148 participants, 60.7% were located in Iowa and 39.4% in Pennsylvania. The most common responses to demographic questions were: Participant was female (56.3%), between age 55 and 64 years (31.0%), had no other full-time (84.6%) or part-time (50.8%) employees working on the farm's fruit and vegetable production and primary source of income was earned off the farm (68.6%). Average size farm was 50 acres, and the mean acreage of farmland used for fruit and vegetable production was approximately 12.5 acres. Fifteen (12.8%) respondents were currently selling produce to schools. Of these participants, nine responded; six sold directly to schools, two through an intermediary and one through both. Only two participants sold fruits and vegetables to schools through the entire school year. When asked if opportunities existed to sell/sell more produce to schools, 40.2% of all participants selected "yes." Less than half (43.6%) indicated "conflicts of harvest and school schedules" was a barrier to selling, while 28.2% identified "limited season," "price for product" (24.8%) and "transportation/delivery requirements" (16.2%).

Application of Results

This study provides insights into what has prevented farmers from selling to schools. Information can be used by foodservice managers to identify solutions or strategies to reduce perceived risks and increase involvement of local growers in selling to schools.

Best Practices in Four Summer Food Service Programs in Three USDA Regions

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Research Objectives

To describe best practices in operating the Summer Food Service Program (SFSP) through observations and interviews with key personnel in three districts and a food bank.

Methods

This was a case study of four SFSP sites in three USDA regions. Structured interviews were conducted with SFSP directors and staff in three school districts and a food bank. Observations were made in central kitchens and at lunch locations.

Results

The SFSP is a favorite federal program among school nutrition directors because they are meeting a need in their communities, and they can see the impact of the SFSP. Reaching even more children who are food insecure was a priority for the directors. Planning begins as soon as the SFSP ends, but in January through March, plans are firmed up for summer. Two of the districts were using converted school buses, and one of them had a library inside. One of the districts had weekend visits to a migrant camp and had partnered with the local health system for immunizations. The food bank sponsor served lunches in parks and had an innovative community café that was open for dinner. The four programs had many partnerships including the YMCA, mobile home parks, public libraries, churches and Boys and Girls Clubs. Directors were creative in using vendor reward points, community foundation support, Dairy Council and Team Nutrition resources. The support of district administration and community partners was a key to success.

Application of Results

School nutrition directors are uniquely qualified to operate SFSPs because they are experienced in running federal nutrition programs, planning appealing menus and providing meals in many locations. These best practices can be used by current SFSP sponsors, as well as school districts or agencies interested in becoming sponsors.

Determining Fruit and Vegetable Preparation Preferences of Students to Inform School Lunch Menu Development

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Research Objectives

The Healthy, Hunger-Free Kids Act required increased fruit and vegetable (FV) availability in schools. Consumption of FV remains low, and FV waste is a concern. Increasing FV intake could benefit students' health and decrease waste for school lunch programs. Understanding students' FV preparation preferences is critical to serving acceptable meals. The purpose of this study was to determine which FV preparation practices would increase appeal and palatability for FV commonly served to fifth- and sixth-grade students.

Methods

A 37-item survey was developed using icons representing commonly served FV with various preparation techniques, as well as questions about social support and demographics. Descriptive data were generated using SPSS. A total of 127 fifth-grade students in a rural school district participated in the electronic survey.

Results

Participants included Caucasian (48%), female (52%) and 11-year-old (68.5%) students. Fresh fruit was chosen over canned fruit 4 out of 4 times. The preparation preference of fresh fruit depended on the type of fruit, as bananas, peaches and strawberries were preferred whole (72.4%, 48.8%, 72.4%, respectively), and oranges and pears were preferred in slices (70.1% and 41.7%, respectively). Vegetables were most often preferred with additions or toppings (i.e., carrots with dip, broccoli with cheese). Many students (78%) reported eating school lunch most days over bringing lunch from home (23.6%). Families offered stronger social support for eating FV than friends (17.6 vs. 10.9, $p < .001$, respectively).

Application of Results

School meals strongly influence student exposure to and selection of FV. Short lunch periods, peer pressure and difficulty peeling or chewing may be reasons why students do not consume FV at school. Offering appealing and preferred FV may increase acceptability and satisfaction. Including family members in taste tests and menu development may be beneficial. Standardized, reliable plate waste assessments are needed to determine if changing preparation techniques decreases FV waste.

Effect of Form on Fruit Consumption in Elementary Students Participating in the NSLP

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Research Objectives

The purpose of this study was to determine if the form of apples (whole, sliced, puréed) affects consumption by elementary school children across the United States participating in the National School Lunch Program (NSLP). Additionally, the study aimed to determine if an effect of accessibility on apple consumption depends on grade level, type of area where the school is located or state. Accessibility refers to whether fruit is available in a form, location and time that facilitate consumption.

Methods

This study is a secondary analysis of previously collected quantitative data from 61 elementary schools, participating in the NSLP, located in Arkansas, Iowa, New York, Texas and Washington. The area where each school was located, termed Core Based Statistical Area (CBSA), was labeled as either large city, suburban, small town or rural. Data was collected during the 2010-2011 and 2011-2012 school years and included students in 1st through 4th grade. Cameras were used to photograph students' food trays before and after consumption during lunch time. All photographs were analyzed using the School Food Imaging Analysis system (SFIA) developed by the Social and Health Research Center, which identifies type and quantity of food. As part of image analysis, the SFIA used an edge detector, geometric and pattern recognition, image threshold capability, surface area and volume (3D) calculation, which allowed for the accurate conversion of image measurements into food volumes. Apples were selected to be analyzed due to being served in three different forms within the data set. An n-way ANOVA was used to analyze data in order to determine the interaction between independent variables (form, grade level, state, CBSA) with the dependent variables (either grams or percent consumed). Tests for apples were split into two comparisons; whole and sliced apples were compared using grams consumed, while sliced and puréed apples were compared using percent consumed. The significance level was set at $p=0.05$. Secondary analysis of significant associations was conducted using a one-way ANOVA.

Results

Elementary school children consumed a significantly greater amount of grams of sliced apples than whole apples ($p<0.001$), and a significantly greater amount of percent consumed sliced apples than puréed apples. Children consumed 136.87 mean grams of sliced apples versus 75.11 mean grams of whole apples and 80% of sliced apples versus 65% of puréed apples. Significant associations were also found between form and state, CBSA and grade level; however, these secondary associations must be interpreted with caution as some of the subsets had low sample sizes.

Application of Results

This study suggests that apples should be served in slices rather than whole or puréed in order to increase consumption by elementary students participating in the NSLP. The purchase of a commercial fruit slicer for school cafeterias may help facilitate such efforts.

Evaluation of the Team Up for School Nutrition Success Workshop

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Research Objectives

To assist school food authorities (SFAs) in overcoming some of the challenges associated with implementing the Healthy, Hunger-Free Kids Act of 2010, the Institute of Child Nutrition (ICN) in conjunction with the United States Department of Agriculture (USDA) conducted the Team Up for School Nutrition Success Pilot Workshop in the Southeast USDA Region. Fifty-two SFAs attended a two-day peer-to-peer mentoring workshop to support the development of goals and action plans. The purpose of this project was to evaluate the application of the workshop on achieving SFAs' goals and action plans established during the workshop.

Methods

Participants were asked to provide written consent from their superintendent and their personal consent for participating in the follow-up evaluation. Data were collected three, six and 12 months after the workshop using structured telephone interviews and electronic surveys.

Results

Twenty-five SFAs (48%) agreed to participate in the study and were interviewed at three months. Fourteen SFAs (27% of those that agreed to participate) completed the six-month survey, and 15 (29%) completed the 12-month survey. The low participation rate was a limitation of the study. The evaluation results showed that many SFAs were able to achieve some outcomes from their action plans. Unfortunately, time and finances were significant barriers. Overall, the SFAs were very positive about the workshop and wanted to see the program made available to all SFAs.

Application of Results

The results of this project were communicated to ICN and USDA as they began to expand Team Up for School Nutrition Success Initiative to each of the remaining six USDA regions. To reach even more SFAs, the next expansion step made customized Team Up trainings available at the state level to benefit all SFAs in each state.

Free and Reduced-Price Meal Application and Income Verification Practices in School Nutrition Programs in the U.S.

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Research Objectives

This study was conducted to assess the current practices and attitudes of school nutrition program (SNP) directors regarding certifying students' free and reduced-price (F-RP) meal eligibility in SNPs.

Methods

The survey instrument was developed based on in-depth interviews of 25 SNP directors and pilot-tested prior to data collection. Emails with the online survey link were sent to a stratified random sample of 1,500 SNP directors. Additionally, 500 printed questionnaires were sent to 1/3 of the sample to increase participation. SPSS was used for data analyses.

Results

Of 464 SNP directors (30.9%) who accessed and agreed to participate, 313 (20.9%) provided usable data. The majority of districts (n=178, 56.9%) received only paper-based F-RP meal applications; 104 (33.2%) accepted both paper-based and online applications, and 15 (4.8%) received only online applications. A variety of staff processed the applications, but district directors (41.8%) or assistants of the directors (27.2%) processed the most. Some SNPs hired temporary employees (n=19, 6.1%) or had other secretarial or accounting staff (n=99, 31.6%) to process applications. To verify the household income, directors selected 3% of applicants using electronic point-of-service systems (79.5%) or Error Prone software (7.4%). The majority (92.9%) of participants accepted pay stubs as an acceptable documentation for income verifications, and 88.4% accepted two or more forms of documentation for income verification. While the majority (70.2%) of participants reported the current verification process was adequate when determining eligibility, 29 (9.8%) participants indicated it was inadequate because parents might omit some of the income documentation (n=21), the verification process is too cumbersome (n=5), the 3% random checking is insufficient (n=4) and parents' response rate is low (n=6).

Applications of Results

Results revealed that application and verification processes take a significant number of personnel and their efforts. Using more stringent application requirements or Supplemental Nutrition Assistance Program award letters may reduce resource needs of SNPs.

Making It Count: Building Confidence and Knowledge of the National School Lunch Program

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Research Objectives

Through a U.S. Department of Agriculture Administrative and Training grant, Massachusetts School Meal Accountability and Responsibility Training Tools created two professional development programs for school nutrition professionals (SNP): an online multilingual program called Making It Count (MIC) related to the nutrition and administrative requirements of the National School Lunch Program (NSLP) and the Massachusetts Training Evaluation Research Initiative (MassTERI), which focuses on foundation skills of communication and leadership, computer literacy, kitchen numeracy and English as a Second Language. The aim of this study was to determine if participating in MassTERI programs increased knowledge and self-efficacy of participants in the MIC pilot.

Methods

MIC was piloted in ten Massachusetts school districts. Pre-/post-test surveys to assess NSLP knowledge were conducted before and after each session. Ten NSLP knowledge-related questions were scored and tallied to create an overall score. Post-tests also included three self-efficacy-related questions rated on a four-point scale (1=very confident, 4=not at all confident). Self-efficacy questions were added for an overall score. McNemar's test and paired t-tests were used to determine within group (WIG) pre-/post-tests knowledge-related differences. Independent t-tests were used to assess between group (BG) differences for knowledge and self-efficacy-related questions.

Results

The overall pre-test knowledge score of MassTERI participants (n=30) was .50 points higher than non-MassTERI (n=134) participants (6.43 and 5.93, respectively). Post-test knowledge scores increased significantly WIGs ($p < 0.0001$); however, BG differences were not significant. Overall self-efficacy was more positive for MassTERI (4.43) than Non-MassTERI (4.79) participants, but not significant BG.

Application of Results

SNPs play a key role in ensuring that all students have access to nutritious meals. MassTERI's approach for addressing foundation skills resulted in a higher overall knowledge score and more positive self-efficacy of participants. Information from this pilot was used to refine and expand the MIC website (<http://www.makingitcount.info>) and develop additional materials to better meet the diverse needs of SNP.

Managing Generational and Ethnic Diversity in the School Nutrition Setting: Results of a Modified Delphi Process

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Research Objectives

The purpose of this study was to assess school nutrition (SN) management beliefs and behaviors toward managing a diverse workforce.

Methods

The modified Delphi process was used for collecting data. A virtual expert panel (EP) of 17 SN directors participated in two rounds of discussion, with Round One consisting of 16 open-ended questions and Round Two consisting of thematically coded Round One responses. In Round Two, the EP established agreement and identified gaps within themes.

Results

All participants of the EP were SN directors with the majority having more than 10 years of experience in school settings (n=13; 88%). The thematically coded responses provided insight into the management of a diverse workforce. The themes identified for barriers to managing a diverse SN workforce were cultural sensitivity and competence, generational competence, literacy and language barriers, limited applicant pool, work ethics, retention, economic issues and changes and training and staff development. The themes for the advantages were cultural awareness and acceptance, learning opportunities, menu development, student acceptance and familiarity and professional growth and development. The optimal methods for staffing diverse work-groups included demographics, economy, leadership that supports diversity, recruiting methods and outlets, applicant pool/application process, management and retention. The optimal methods for leading were communication and staff satisfaction. The optimal methods for training were cross-training staff and training/professional development.

Application of Results

The results provide insight into the diversity climate of SN programs, an area which has not been explored to a great degree. The results also provide preliminary information that can be used to develop structured interview questionnaires or survey instruments to assess best practices for managing diverse organizations.

Marketing Practices and Innovations in Successful Summer Food Service Programs

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Research Objectives

To explore marketing practices and innovations in operating Summer Food Service Program (SFSP) through observations and interviews with key personnel.

Methods

This study was an embedded, replicable, multiple-case, case study design. Site visits (n=25) were conducted in representative and innovative SFSPs in five USDA regions. Structured interviews were conducted with SFSP directors and staff in an array of sponsored program formats (n=16), including school districts, local government agencies, religious organizations and non-profit organizations (n=6 rural/suburban, n=10 urban). Program-level characteristics were collected, and practices and procedures were observed.

Results

Results indicated that SFSP managers market their programs involving and targeting three distinct shareholders: families with children, media and other community organizations. Promoting SFSP to families and children included traditional promotional channels such as signage, posters/flyers and word of mouth and non-traditional promotional channels including websites, social media and apps. Media was also involved through news releases of kickoff events, site visits and human interest stories. Managers of SFSP engage in marketing efforts with community organizations such as receipt promotional “taglines” with local retailers. Despite the USDA providing outreach and marketing toolkits for SFSP sponsors, challenges of marketing the program exist, including lack of funding for marketing, lack of marketing knowledge and time for marketing.

Application of Results

Marketing is essential to a successful SFSP. This research provides an integrative framework for marketing of SFSP based on the respondents’ examples. Specifically, this research provides insight and tactics for current SFSP sponsors, as well as schools or agencies interested in becoming sponsors, for the marketing of SFSP.

Perceptions and Practices of SN Professionals Toward Generational and Ethnic Diversity

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Research Objectives

The purpose of this project was to explore issues and challenges associated with managing an ethnically and generationally diverse school nutrition (SN) workforce.

Methods

A holistic, multiple-case study design with a literal replication format was used during visits to six school districts in five states (two pilot visits and four case study sites). The structured interview transcripts, observation reports and diversity documents from the site visits were analyzed using constant comparison methods to identify similarities and differences among sites. A national panel of SN professionals (n=17) participated in a virtual expert panel to aid in the development of the case study structured interview instrument utilized in the case study design.

Results

Results from the site interviews provided similar themes among sites. The emerging themes for the overall climate of diversity were respectful, friendly, cooperative, supportive and welcoming environments for all staff. In all sites, the SN management reported experiencing issues or biases based on generational or ethnic differences while SN staff did not. The emerging themes for the advantages of managing diverse staff included wisdom and knowledge gained from working with older staff and team work. The themes for the disadvantages of diverse staff included the need to provide additional training and supervisory oversight for younger employees and the need to mediate language barriers among ethnically diverse staff. The optimal methods for managing/leading diverse staff included increased awareness of diversity within the SN program, creating and maintaining a diversity plan for the SN program, providing leadership with tools for effectively communicating across cultures and ethnicity and practicing patience and fairness among staff. The optimal methods for training diverse staff include offering training materials in different languages, utilizing multilingual staff for training, understanding staff ethnicity and cultures and being patient with multi-ethnic and multi-generational staff.

Application of Results

Results from this study can be used to assist in developing best practices, training and resources for SN professionals interested in creating a diversity plan for their SN program.

Pulse on Health: Opportunities for Serving Pulses in School Meals in Washington Schools

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Research Objectives

Identify the barriers and opportunities of serving menu items made with pulses so that schools can target increased awareness and consumption of pulses in the cafeteria.

Methods

A survey questionnaire incorporating qualitative and quantitative questions was completed by school foodservice personnel and nutrition specialists to describe the current methods, opportunities and barriers for pulse preparation in K-12 schools in Washington State, as well as methods used to promote healthy foods to students in the cafeteria.

Results

Responses were received from 12 counties and 22 school districts, representing 30% of Washington counties and 7% of Washington school districts. Of the respondents, two did not know what a pulse was, while 19 were familiar with the term. The most significant issues regarding serving menu items made with pulses procured in dry form included time constraints (n=19), lack of student preference (n=16), and lack of processing equipment (n=14). The most significant perceived issues regarding serving canned pulses included lack of student preference (n=18) and insufficient processing equipment (n=9); seven respondents perceived time constraints as an issue.

Application of Results

The Healthy, Hunger-Free Kids Act requires that schools offer one-half cup pulses per week for each student participating in the National School Lunch Program (NSLP). Pulses are nutritionally important grain legumes that include dry beans, dry peas, garbanzo beans and lentils. There is an opportunity to offer pulses as a protein in school meals, but ready-made, pulse-based products and/or recipe development for pulses as a main dish are needed for this to succeed. Barriers to serving pulses included lack of equipment and time, especially for dry beans. Recipes and knowledge on how to prepare pulses were identified needs of the respondents. The survey findings will be useful to school foodservice directors to improve student acceptance and consumption of pulses.

School Fruit and Vegetable Production Changes Following a Student Participatory Marketing Project

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Research Objectives

Federal guidelines require schools participating in school meal programs to complete food production records. Production records demonstrate how meals contribute to the requirements of food components, food items or menu items. The purpose of this study was to evaluate how student involvement in the design of fruit and vegetable (F&V) promotional materials in schools influences production of F&V on school salad bars.

Methods

Four elementary schools participated, including one control school (CON). Students at an Involvement and Marketing (I&M) school and Involvement Only (IO) school designed materials to promote F&V. Materials from the I&M school were subsequently posted in the I&M and a Marketing Only (MO) school. F&V production was determined by the number of servings prepared on salad bars during lunch periods. Production records data were recorded by school cafeteria staff on a standardized template and were collected four times throughout the year. Production records were compared between schools and time periods to determine changes in production and production waste during the student participatory marketing of F&V.

Results

Data on servings prepared per person served showed an increase in all intervention schools during the intervention period compared to baseline and a decrease in the control school (CON = -5.0%, IO = 3.6%, MO = 0.3% and I&M = 4.5%). During a follow-up period, all schools had an increase in production (CON = 12.0%, IO = 12.2%, MO = 20.5% and I&M = 6.0%).

Application of Results

A focus on F&V marketing in schools shows an increase in provided amounts of F&V, which may lead to more opportunities for F&V consumption by students. Production records are used by school districts and states to analyze the nutritional content of meals served and to plan for future purchases. However, the lack of accurate production waste data may make the data unusable to examine changes in F&V served and possibly consumed.

Time and Temperature Control of Foods in the Summer Food Service Program

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Research Objectives

Determine effectiveness of practices related to time and temperature control for safety (TCS) foods served in the Summer Food Service Program (SFSP).

Methods

A convenience sample of 28 SFSP sites, four in each of the seven USDA Food and Nutrition Service regions, was observed during July and August of 2015 to determine the effectiveness of food safety practices for serving TCS foods. Observations of procedures for thermometer usage and temperature monitoring of foods during cooking, cooling, serving, storage and transportation were recorded over a single day. Additionally, digital thermocouple data loggers were used to record temperatures of hot and cold food items served in lunches. Temperatures of 23 hot and 26 cold food items were recorded at five-minute intervals from the end of meal preparation through service.

Results

Observations for TCS food practices ranged from 3 to 26 depending on the food served and style of service. SFSP practices were in compliance most often with checking internal temperatures (68%) and checking end-point cooking temperatures (62%) and least often with thermometer calibration (27%) and proper cleaning/sanitizing of thermometers (40%). The most commonly followed transportation TCS food practices were delivering hot meals at proper temperatures (79%) and checking food temperatures at delivery (50%). Least common practices were using refrigerated trucks (16%) and recording food temperatures at delivery (31%). Hot foods were more likely to be served at the correct temperatures (75%) than cold foods (50%). Hot foods were held below 135° F for 45 minutes on average, and cold foods were held above 41° F for an average of 90 minutes. Of the 53 foods tracked, only one item did not meet Food Code 2013 guidelines.

Application of Results

Diverse food preparation and delivery systems are used in the SFSP, but all are subject to higher summer ambient temperatures. Overall, SFSP TCS food practices met Food Code standards. Minor improvements in thermometer usage and monitoring food temperatures while cooking, cooling, transporting and storing are important areas for training. Attention should be paid to cold foods that are particularly vulnerable to higher temperatures. While only 3.8 million children participate in the SFSP, expansion of the SFSP requires increasing staff capacity and targeting specific food safety training needs.

School Nutrition Program Leaders Define the Ideal HACCP Workshop

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Research Objectives

To identify the specific content, structure and feasibility of a HACCP workshop intended to improve on-site food safety plans and training in school nutrition programs.

Methods

Structured discussions were conducted via online videoconferences or telephone calls with directors and managers of school nutrition programs and state agency staff. The participants were recruited from graduates of Serving up Science, a food safety immersion course offered by the Center of Excellence for Food Safety Research in Child Nutrition Programs. Each session included two to six participants and was guided by a research facilitator using a predetermined script. Audio recordings of the sessions were transcribed; key points and themes were identified and prioritized by the research team.

Results

The discussions included 14 participants representing 11 states. There was unanimous agreement that an in-depth on-site HACCP workshop would be valuable for school nutrition personnel. The most frequently mentioned topics that a workshop would need to address included monitoring and documentation of Standard Operating Procedures (SOPs), reiterating the concept and specific purposes of HACCP-based food safety plans and developing SOPs into functional HACCP programs. Some discussion entailed the use of computer software for food safety programs. Participants also indicated factors that would encourage workshop attendance, such as paid expenses, professional networking opportunities and improved food safety training acumen. Perceived barriers to attending included excessive time away from work, with two to three days indicated as an ideal length of time.

Application of Results

School nutrition leaders often express the desire to customize their HACCP plans and to enhance their internal training methods to motivate positive employee behavior change. This project provided specific insight about ideal and specific forms of HACCP education, which can be bridged directly into operations. Collaboration among stakeholders in the development of a focused HACCP workshop could enhance existing school food safety programs.

Use of Point-Of-Service (POS) Systems in School Nutrition Programs (SNPs): Types, Challenges and Training

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Research Objectives

This study investigated the use of paper-based and electronic POS systems in SNPs, including the associated challenges, desired skills and training practices for personnel handling POS systems.

Methods

The survey instrument was developed based on interviews with 25 child nutrition professionals (CNP) and pilot-tested before emailing the link for an online questionnaire to 1,500 CNPs. An additional 500 paper-based questionnaires were mailed to 1/3 of the sample to increase participation. Descriptive statistics were calculated using SPSS.

Results

Of 313 CNPs (20.9% response rate) who provided usable data, 288 participants (92.0%) used an electronic POS system and encountered some challenges including difficulty in customizing reports (n=28, 9.7%) and problems with software (n=25, 7.6%). Available technical support (n=218, 75.7%) and ease of training (n=206, 71.5%) affected CNPs' selection of electronic POS systems. Forty-one CNPs (13.1%) used a paper-based system because their district was too small for an electronic system (n=28, 8.9%) or lack of funding (n=22, 7.0%). Users of paper-based POS systems faced the following challenges: reporting accurate number of reimbursable meal counts (n=26, 8.3%) and time lag in data processing (n=25, 8.0%). CNPs perceived that individuals operating an electronic POS system should have good customer service skills (n=183, 58.5%) and computer literacy (n=160, 51.1%). The district directors (n=157, 54.0%) or POS system providers (n=120, 41.2%) provided POS training when the staff was newly assigned as cashier (n=222, 70.9%) or at the beginning of each academic year (n=164, 52.4%). On-job training was widely used but mostly for <2 hours/session.

Application of Results

Considering challenges with POS systems and selection criteria identified, POS system providers may need to offer routine training and technical support to CNPs. To improve the accuracy of data reporting for paper-based POS system, CNPs in small districts may need to understand the workflow and identify ways to streamline the process. POS training should be provided regularly to improve employees' skill levels.

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Views of Iowa and Pennsylvania School Foodservice Directors on Local Food Purchasing

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Research Objectives

1. Identify characteristics of local fresh produce purchases by nutrition programs in Iowa and Pennsylvania 2. Assess importance of factors in decisions to purchase/use local produce in programs.

Methods

An Internet survey was sent to populations of School Food Authorities (SFA) in Iowa and Pennsylvania in early February 2015. The cover email asked SFAs to forward the survey to the person who purchased food for the district's child nutrition program. Respondents were asked to provide information about frequency of local purchases and use, as well as characteristics about the district's nutrition program, their roles in decision-making and themselves. The survey included multiple choice, yes/no and open ended questions.

Results

A total of 174 foodservice directors provided information: 54% from Iowa and 46% from Pennsylvania. Respondents identified locally grown in a number of ways, with most using multiple definitions such as grown within the state, in school garden or within 200 miles of school. Local produce was used in 26% (n=45) of school meal programs. Reasons for not purchasing local produce ranged from lack of food safety information to growers unwilling to meet district procurement policies. Of those purchasing from local growers, 88% had no requirements related to food safety.

Application of Results

Farm to School programs are increasing in school districts as a way to engage students and help local economies. While there is interest in purchasing from local growers, findings show there is no universal definition of what the term means, and concerns with safety of product may influence foodservice directors' decisions to purchase fresh produce from a local grower. Yet, of those who do purchase, few had food safety requirements. Views from directors can be useful in developing resources to improve communications with local growers.