

USE OF THE COMMUNITY READINESS MODEL TO
DEVELOP AND EVALUATE *COOKING FOR KIDS*:
CULINARY TRAINING FOR SCHOOL NUTRITION
PROFESSIONALS

By

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Abstract: The purpose of the study was to assess the impact of a pilot chef-based culinary skills training program on school nutrition staffs' readiness to integrate new food preparation skills into meal planning and preparation practices that meet new federal requirements. The training was conducted in 6 Oklahoma school districts in summer 2014. Focus groups using the Community Readiness Assessment model were conducted pre and post-training. Six unique dimensions were discussed using guided questions, followed by participants agreeing on scores using an anchored rated scale. Dimension scores were averaged to calculate the overall readiness score. Change in readiness was calculated by subtracting overall pre-training from post-training scores. Two researchers familiar with the project independently reviewed recorded transcripts to identify emergent themes. The pilot training moved schools from the vague awareness stage to the preparation stage for making changes to food preparation practices. Staff reported increased skills, awareness of efforts and reason for making changes. However, training specific to individual school programs is needed. The pilot chef-based culinary training program had a positive impact on school nutrition staffs' readiness to adopt new food preparation skills. Future efforts should focus on customizing training to individual programs and school-wide nutrition interventions.

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CHAPTER I

INTRODUCTION

The health of the United States (U.S.) has been greatly declining over the past several years. As a result, national healthcare costs have steadily increased, with 75% of healthcare costs due to chronic health conditions, which causes 7 in 10 deaths alone each year (Centers for Disease Control and Prevention, 2009). Obesity is a leading cause of preventable deaths in the U.S. causing an estimated 200,000 deaths per year, thus making its reduction a national public health priority (America's Health Ranking, 2013).

Oklahoma's health status has dropped over the last decade compared to other states. In one decade (2003 to 2013), Oklahoma dropped from 29th to 45th in a national report by the United Health Foundation (America's Health Rankings, 2013). Oklahoma's death rate is one of the highest in the nation, with unhealthy lifestyles and behaviors being major contributors. Similar to the national health goals (America's Health Rankings, 2013), five modifiable risk factors have been identified to help prevent these chronic diseases: 1) Smoke-free environments, 2) increased physical activity, 3) better food choices, 4) improved food labeling, 5) and decreased salt content of foods (Oklahoma State Department of Health, 2011).

In response to the detrimental health and economic impacts of obesity, in 2002 the Institutes of Medicine (IOM) began investigating health strategies that showed promise in accelerating obesity prevention efforts when implemented individually and collectively. The IOM

Recommended the strategies be conducted in five unique environments: 1) physical activity; 2) food and beverage; 3) message; 4) healthcare and work; and 5) schools (Institute of Medicine, 2012). To be effective, obesity prevention initiative should address multiple levels of the environment and engage multiple sectors of society in order to affect social change and achieve the desired health impact (Center for Disease Control and Prevention, 2011).

Schools play a key role in establishing a safe and supportive environment with practices and policies that promote healthy behaviors (Centers for Disease Control and Prevention, 2013). The school food environment has the potential to have an important impact on the diets of children and adolescents, since they consume between 19% to 50% of their total daily calories while at school (Story, Nanney, & Schwartz, 2009). For this reason, it is logical that the IOM identified schools as a national focus for obesity prevention.

The School Nutrition Dietary Assessment III (SNDA-III), conducted in SY 2004-05 revealed that the majority of students' choices favored the less healthy competitive food options that were offered in the broader school environment. As a result, Congress passed the Health and Hunger-Free Kids Act, 2010, authorizing the U.S. Department of Agriculture (USDA) to update Child Nutrition regulations, including both school meals (i.e., breakfast and lunch), and foods sold in competition to these meals. The final rule was released in January 2012. To minimize burden to state agencies, school districts and the industry effective dates for implementation of the new rule was phased in over a three-year period.

As the schools in the U.S. work to implement the updated USDA standards for the National School Lunch Program (NSLP) and School Breakfast Program (SBP), the changes in the menu require changes to all aspects of the food service operations (i.e., purchasing, receiving, storing food, preparing and serving meals) (The Pew Charitable Trust, 2013a). In turn, the USDA has responsibility to support the schools by ensuring that they have the needed training and technical assistance to implement the updated school meal requirements (French, & Story, 2013).

Because there is great diversity in resources among local school districts, it is estimated that not every local school food authority (SFA) is equipped with the capacity to comply with healthier meal and food preparation standards (The Pew Charitable Trust, 2013c). Hence, for implementation efforts to be successful, it is important to gage the readiness of the school cafeteria staffs' readiness to change food preparation techniques to meet the new requirements.

Community Readiness Model

Communities are defined in a number of ways, the most common of which is a geographical area. Other communities include organizations, school districts, or a related group of people. These communities frequently face issues that need to be addressed to improve quality of life. However, communities are frequently at different stages of readiness to bring about needed change. A key and successful method used to assess the readiness of a community is the Community Readiness Model (CRM) developed by the Tri-Ethnic Center for Prevention Research at Colorado State University (Findholt, 2007). The assessment of community readiness is an increasing and innovative method for planning community based interventions targeted at improving health concerns (Plested, Jumper, Edwards, & Oetting, 1998). Researchers who developed the model discovered that communities vary greatly based upon their ability to implement change programs, and unless the community was invested in and prepared for the intervention, it would not succeed (Findholt, 2007). The CRM is based on 4 fundamental assumptions: 1) communities are at different stages of readiness for dealing with a specific problem; 2) the stage of readiness can be correctly assessed; 3) communities can be moved through a series of stages in order to develop, implement, maintain, and improve effective programs; and 4) it is important to identify the stage of readiness because interventions to move communities to the next stage differ for each stage of readiness (Edwards et al., 2000).

The readiness model was developed based upon the principles of the Transtheoretical Model of behavior change (TTM) (Prochaska, 1994). Based upon the stage of change that the individual was currently in, stage matched strategies or processes of change were utilized to facilitate change and move to the next stage (Prochaska, 1994). The progression through the stages was the goal, due to the fact that it increased the likelihood of permanent behavioral change (Prochaska & Velicer, 1997).

The CRM is designed to assess community readiness with either a key informant survey or focus group format (Oetting et al., 2001). Participants should be knowledgeable of: 1) the community problem being examined; 2) existing programs aimed at the problem; and 3) various segments of community leadership (Plested et al., 1998).

The interviews/focus group question line consists of a series of 36 general questions addressing 6 dimensions of readiness. The dimensions are key factors that end up influencing the community's preparedness to take action on the issue, with questions specific to each dimension (Plested et al., 2006). The dimensions include: A) Community Efforts, B) Community Knowledge of the Efforts, C) Leadership, D) Community Climate, E) Community Knowledge about the Issue, and F) Resources Related to the Issue (Plested et al., 2006). There are also nine stages of change in the CRM. The stages of change include: 1) no awareness, 2) denial/resistance, 3) vague awareness, 4) pre-planning, 5) preparation, 6) initiation, 7) stabilization, 8) confirmation/expansion, and 9) high level of community ownership. After completing the community readiness assessment, strategies are then developed for the community based upon their indicated stage of readiness.

Problem Statement

In compliance with the Health and Hunger-Free Kids Act, 2010, the USDA released updated nutrition standards for school meals, which went into effect SY 2012-13. The new requirements were designed to align school meals with the Dietary Guidelines for Americans, 2010 (U.S. Department of Agriculture, 2012). Yet, there are many SFAs who do not have the capacity (i.e., knowledge, skills, equipment) to prepare meals to meet the requirements. The Academy of Nutrition and Dietetics (AND) recommended that a chef-based model be used to provide training to cafeteria staff to improve the school menu's dietary quality and palatability (Cohen, Smit, Parker, Austin, Frazier, Economos, & Rimm, 2012). The Oklahoma State Department of Education Child Nutrition Services has contracted with the Oklahoma State University Department of Nutritional Sciences to develop and implement a chef-based culinary training program for school nutrition personnel. Pilot training was conducted with six SFAs across Oklahoma in 2014. They represented different school sizes and preparation systems (i.e., central kitchen versus on-site) and rural/urban communities. However, as posited by the CRM, the training program may not be successful or sustainable in achieving the desired outcomes if strategies are not matched to school food service personnel's readiness to change food preparation practices.

Purpose and Objectives

The purpose of this study was to assess the impact of a chef-based culinary skills training program on Oklahoma SFAs' readiness to integrate new food preparation skills into meal planning and preparation practices. Findings will be used to guide further development of the Cooking for Kids Culinary Training for School Nutrition Professionals. Specific objectives include:

1. Measure baseline overall readiness and dimension of pilot SFAs prior to the chef-based training intervention for individual SFAs and aggregated schools.
2. Determine if there was a change in SFA's overall readiness and dimension scores after the chef-based skills training intervention for individual SFAs and aggregated schools.

Hypotheses

1. **Null:** There will be no change in SFAs' readiness to change food preparation skills after participation in a chef-based culinary training program.

Alternate: There will be an increase in the SFAs' readiness to change food preparation skills after participation in a chef-based culinary training program.

Limitations

Due to focus groups, group score may only reflect the thoughts of group leaders, as quiet individuals may not speak up. However, this strategy best meets the OSDE timeline for conducting the pilot training. Further, it provides the researchers with a first-hand experience to observe the atmosphere and attitude of the participants involved.

Terms and Definitions

- **Academy of Nutrition and Dietetics (AND):** The world's largest organization of food and nutrition professionals founded in Cleveland, Ohio, in 1917, by a visionary group of women dedicated to helping the government conserve food and improve the public's health and nutrition during World War I. Today, the Academy has over 75,000 members: registered dietitian nutritionists, dietetic technicians, registered, and other dietetics professionals holding undergraduate and advanced degrees in nutrition and dietetics, and students. The Academy is committed to improving the nation's health and advancing the profession of dietetics through research, education and advocacy (Academy of Nutrition and Dietetics, 2015).
- **Community Readiness Model (CRM):** Developed at the Tri-Ethnic Center to assess the extent to which a group of people is willing and prepared to address an issue. The basic premise is that matching an intervention to a community's level of readiness is absolutely essential for success. Efforts that are too ambitious are likely to fail because community members will not be ready or able to respond. To maximize chances for success, the Community Readiness Model offers tools to measure readiness and to develop stage-appropriate strategies (Colorado State University, 2011).
- **Healthy Hunger – Free Kids Act, 2010:** Authorizes funding for federal school meal and child nutrition programs and increases access to healthy food for low-income children. The bill that reauthorizes these programs is often referred to by as the child nutrition reauthorization bill. This particular bill reauthorizes child nutrition programs for five years and includes \$4.5 billion in new funding for these programs over 10 years (White House, 2010).

- **Institute of Medicine (IOM):** An independent, nonprofit organization that works outside of government to provide unbiased and authoritative advice to decision makers and the public. Established in 1970, the IOM is the health arm of the National Academy of Sciences, which was chartered under President Abraham Lincoln in 1863 (Institute of Medicine, 2015).
- **National School Lunch Program (NSLP):** A federally assisted meal program operating in public and nonprofit private schools and residential child care institutions. It provides nutritionally balanced, low-cost or free lunches to children each school day. The program was established under the National School Lunch Act, signed by President Harry Truman in 1946 (U.S. Department of Agriculture, 2014b). The USDA Food and Nutrition Service administer the program at the federal level. At the state level, the National School Lunch Program is usually administered by state education agencies, which operate the program through agreements with school food authorities (U.S. Department of Agriculture, 2014b).
- **School Breakfast Program (SBP):** Provides cash assistance to states to operate nonprofit breakfast programs in schools and residential childcare institutions. The Food and Nutrition Service administers the SBP at the federal level. State education agencies administer the SBP at the state level, and local school food authorities operate the program in schools (U.S. Department of Agriculture, 2014a).
- **School Food Authority (SFA):** Is a governing body that is responsible for the administration of one or more schools; and has the legal authority to operate the Program therein *or* be otherwise approved by Food and Nutrition Services to operate the Program (U.S. Government Posting Office, 2015).

- **Transtheoretical Model (TTM):** A behavior change model that posits individuals to move through six stages: pre-contemplation, contemplation, preparation, action, maintenance, and termination. For each stage of change, different intervention strategies are most effective at moving the person to the next stage of change and subsequently through the model to maintenance, the ideal stage of behavior (Boston University School of Public Health, 2013).
- **United States Department of Agriculture (USDA):** A cabinet-level agency that oversees the American farming industry. It administers programs to help American farmers and ensure food safety for consumers. USDA aid includes: distributing price supports and other subsidies to farmers, inspecting food processed at agricultural facilities, working to expand overseas markets for U.S. agricultural products, providing financing to expand job opportunities and improve housing, utilities, and infrastructure in rural America, and providing food assistance and nutrition education (U.S. Department of Agriculture, 2015).

CHAPTER II

REVIEW OF LITERATURE

National Health

The nation's health continues to decline. Seven of ten deaths are due to chronic health conditions, accounting for 75% of the healthcare costs (Centers for Disease Control and Prevention, 2009). The number one cause of death is heart disease, with obesity being a main contributor (Centers of Disease Control and Prevention, 2013). By preventing obesity, approximately 200,000 deaths per year could be avoided (America's Health Ranking, 2013). Obesity has been found to increase the risk of not only developing heart disease, but also cancer and diabetes. It has been estimated that more than 35% of U.S. adults are overweight and obese, with the rate of being overweight and obese among children and adolescents ages 2-19 years being 31.5%. Most alarmingly, obesity is expected to exceed 44% in every state by 2030 according to its current trajectory, if changes are not made (American Heart Association, 2013). In addition, obesity has had a large economic impact in the U.S., as the estimated annual medical cost of obesity is \$190 billion (Institute of Medicine, 2012). These factors make reducing the prevalence of obesity a national public health priority.

Childhood Overweight and Obesity

The percentage of children aged 6–11 years in the U.S. who were obese increased from 7% in 1980 to nearly 18% in 2012 (Center for Disease and Control Prevention, 2013). Similarly, the percentage of adolescents aged 12–19 years who were obese increased from 5% to nearly 21% over the same period (Center for Disease and Control Prevention, 2013). Childhood obesity has both immediate and long-term effects. Immediate health risk effects include: risk factors for heart disease, pre-diabetes, bone and joint problems, sleep apnea, and social/psychological problems as stigmatization and poor self-esteem (Center for Disease and Control Prevention, 2013). Over the long-term, children and adolescents who are obese are more likely to be obese as adults. After an obese child reaches 6 years of age, the probability of obesity persisting exceeds 50%, and 70% to 80% of obese adolescents will remain so as adults (The Center for Child Obesity, 2013). As a result, they are more at risk for adult health problems (i.e. heart disease, type 2 diabetes, stroke, several types of cancer, and osteoarthritis). Hence, the children of America are our key investment for the leveling the current trajectory of obesity and related diseases (Center for Disease and Control Prevention, 2013).

Oklahoma's Health

Oklahoma's health status has declined over the last decade compared to other states. A national report released by the United Health Foundation showed Oklahoma had fallen from 29th poorest in health status to 45th poorest in health rankings from 2003 to 2013 (America's Health Rankings, 2013). Oklahoma's death rate is one of the highest in the nation, with unhealthy lifestyles and behaviors being major contributors. In 2007, more than 36,000 Oklahomans died, resulting in a mortality rate 23% higher than the national rate (Oklahoma State Department of Health, 2011). In Oklahoma, heart disease is the leading cause of death, and is 27% above the U.S. rate. Diabetes is the 6th leading cause of death in Oklahoma, resulting in the 4th highest

diabetes death rate in the nation. In addition, cardiovascular disease is the major complication and the leading cause of premature death among people with diabetes (Oklahoma State Department of Health, 2011). Two-thirds of Oklahomans are overweight or obese, ranking Oklahoma as the 6th worst state in adult obesity (Oklahoma State Statistics, 2015).

Overweight and obesity result from an energy imbalance, which includes not getting enough physical activity and eating too many calories. An adult who has a Body Mass Index (BMI) between 25 and 29.9 is considered overweight and an individual with a BMI of 30 or higher is considered obese. Other than genetics, contributing modifiable factors to body weight include: behavior, environment, culture, and socioeconomic status (Centers for Disease Control and Prevention, 2012).

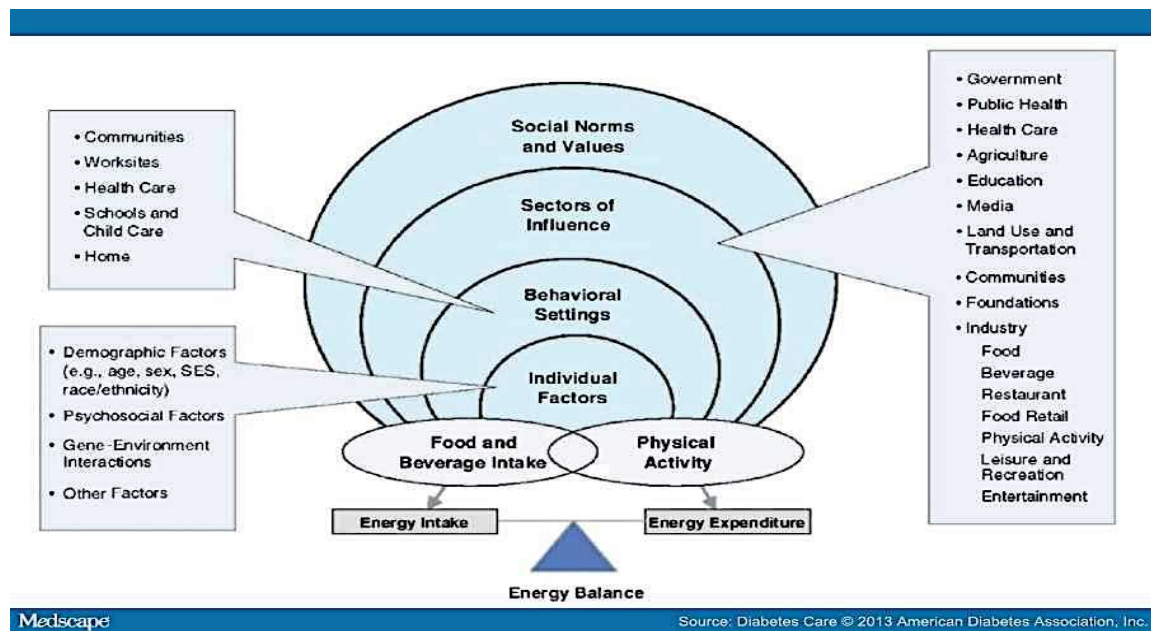
Strategies to Address the Prevalence of Obesity

In response to the detrimental health and economic impacts of obesity, in 2002 the Institutes of Medicine (IOM) began investigating health strategies that showed promise in accelerating obesity prevention efforts when implemented individually and collectively. The strategies were categorized into five goals: 1) make physical activity an integral and routine part of life, 2) create food and beverage environments that ensure that healthy food and beverage options are the routine, easy choice, 3) transform messages about physical activity and nutrition, 4) expand the roles of health care providers, insurers, and employers and, 5) make schools a national focal point (Institute of Medicine, 2012). The strategies to achieve these goals should be conducted in five unique environments: 1) physical activity; 2) food and beverage; 3) message; 4) healthcare and work; and 5) schools (Institute of Medicine, 2012).

Each of these environments represents different levels of the social ecological model and is displayed in Figure 2.1 (Institute of Medicine, 2012). The model is based on the assumption

that changes in individual behavior will come about through a combination of efforts at the societal, community, organizational, interpersonal, and individual environments (Center for Disease Control and Prevention, 2011).

Figure 2.1 - Social-Ecological Model for Obesity Prevention



Source: Center for Disease Control and Prevention, 2011

As such, an effective obesity prevention initiative should address multiple levels of the environment and engage multiple sectors of society in order to affect social change and achieve health impact (Center for Disease Control and Prevention, 2011). According to the U.S. Department of Agriculture, “We can impact childhood obesity using an ecological approach, learning as we go, documenting our success, teaching other communities and over time we can make a difference” (Center for Disease Control and Prevention, 2011). Thus, the ecological approach takes the focus off of the individual and places it on the environment.

School Environment

Schools play a key role in establishing a safe and supportive environment with practices and policies that support healthy behaviors (Centers for Disease Control and Prevention, 2013). In the U.S. more than 95% of young people are enrolled in schools and spend about 50% of their day in schools (Institute of Medicine, 2012; Center for Disease and Control, 2005). Because students spend a majority of time at school, the school food environment has the potential to have a huge impact on the diets of children and adolescents. It is estimated students consume between 19% to 50% of their total daily calories while at school (Story, Nanney, & Schwartz, 2009). For this reason, it is logical that the IOM identified schools as a national focus for obesity prevention.

In Oklahoma, several school-based programs have been implemented for improving health outcomes. For example, Oklahoma was one of 21 states with a state-level policy for Farm to School programs. Farm to school enables students to gain access to healthy, local foods, as well as education opportunities such as: school gardens, cooking lessons, and farm field trips (National Farm to School Network, 2014). These programs compliment the National School Lunch Program (NSLP), administered in Oklahoma by the Oklahoma State Department of Education.

The USDA and Food and Nutrition Service (FNS) regulates and funds the SBP and NSLP to make sure that the children of the U.S do not go hungry, and that they have access to nutritious meals that support normal growth and development (Mathematica Policy Research, 2012). The National School Lunch Act was created in 1946 “as a measure of national security, to safeguard the health and well being of the nation’s children” (Story, 2009; U.S. Department of Agriculture, 2010). On an average school day, more than 19 million children in the U.S. receive free or reduced price lunches through the NSLP, with 36.4% of the children being food insecure, 19.3% obese, and 7.2% being in poor or fair health (Gundersen, Kreider, & Pepper, 2012).

Oklahoma's participation in NSLP for FY 2014 was 436,366 students (U.S. Department of Agriculture, 2014c).

In 1995, the federal government implemented regulations requiring all school lunch programs to be consistent with the Dietary Guidelines for Americans (U.S. Department of Agriculture, 2012). However, the School Nutrition Dietary Assessment III (SNDA-III), conducted in SY 2004-05 revealed that the majority of students' choices were bent towards the less healthy competitive food options that were offered in the broader school environment. Competitive foods are available or sold outside of the federally reimbursed school meal programs (e.g., widely available in U.S. public schools) (Food Research and Action Center, 2010). They are commonly sold in vending machines, cafeteria à la carte lines, school stores, and snack bars. Competitive foods are often energy-dense, nutrient-poor items (Food Research and Action Center, 2010). The top five competitive foods purchased were: desserts (20.3%), sodas and fruit drinks (19.5%), salty snacks (12.1%), pizza and other entrees (11%), and candy (11.1%) (Mathematica Policy Research, 2007). In response to this report, the IOM was charged with making recommendations for revising the meal requirements. The resulting report, *School Meals: Building Blocks for Healthy Children* stated two types of standards: 1) standards for menu planning and 2) standards for meals as selected by the student (Institute of Medicine, 2009). To better meet the *Dietary Guidelines for Americans* the report recommended menu planning standards include: 1) increased amounts and variety of fruits, vegetables, and whole grains, 2) limit milk to fat-free or low-fat varieties, 3) reduce the sodium content over time, 4) control saturated fat and calorie level, and 5) eliminate trans fat (Institute of Medicine, 2009).

The USDA utilized the report to update school nutrition meal regulations with the final rule released in January 2012. To minimize burden to state agencies, school districts and industry effective dates for implementation were phased in over a three-year period. The NSLP meal pattern was effective July 1, 2012, and SBP meal pattern was effective July 1, 2013. The sodium

reduction targets were divided into three phases, with the first being July 1, 2014 and the third set as July 1, 2022 (U.S. Department of Agriculture, 2012) to allow school districts time to revise recipes and industry to revise food product formulations. The current guidelines for NSLP and SBP are summarized in Table 2.1.

Table 2.1 - Final Rule Nutrition Standards for NSLP and SBP – January 2012

	Breakfast Meal Pattern			Lunch Meal Pattern		
	Grades K-5 ^a	Grades 6-8 ^a	Grades 9-12 ^a	Grades K-5	Grades 6-8	Grades 9-12
Meal Pattern	Amount of Food^b Per Week (Minimum Per Day)					
Fruits (cups)^{c,d}	5 (1)^e	5 (1)^e	5 (1)^e	2½ (½)	2½ (½)	5 (1)
Vegetables (cups)^{c,d}	0	0	0	¾ (¾)	¾ (¾)	5 (1)
Dark green^f	0	0	0	½	½	½
Red/Orange^f	0	0	0	¾	¾	1¼
Beans/Peas (Legumes)^f	0	0	0	½	½	½
Starchy^f	0	0	0	½	½	½
Other^{f,g}	0	0	0	½	½	¾
Additional Veg to Reach Total^h	0	0	0	1	1	1½
Grains (oz eq)ⁱ	≥7 (1)^j	≥8 (1)^j	≥9 (1)^j	≥8 (1)	≥8 (1)	≥10 (2)
Meats/Meat Alternates (oz eq)	0^k	0^k	0^k	≥8 (1)	≥9 (1)	≥10 (2)
Fluid milk (cups)^l	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Other Specifications: Daily Amount Based on the Average for a 5-Day Week						
Min-max calories (kcal)^{m,n,o}	350-500	400-550	450-600	550-650	600-700	750-850
Saturated fat (% of total calories)^{n,o}	< 10	< 10	< 10	< 10	< 10	< 10
Sodium (mg)^{n,p}	< 430	< 470	< 500	< 640	< 710	< 740
Trans fat^{n,o}	Nutrition label or manufacturer specifications must indicate zero grams of trans fat per serving.					

^aIn the SBP, the above age-grade groups are required beginning July 1, 2013 (SY 2013-14). In SY 2012-2013 only, schools may continue to use the meal pattern for grades K-12 (see § 220.23).

^b Food items included in each food group and subgroup and amount equivalents. Minimum creditable serving is ⅛ cup.

^cOne quarter-cup of dried fruit counts as ½ cup of fruit; 1 cup of leafy greens counts as ½ cup of vegetables. No more than half of the fruit or vegetable offerings may be in the form of juice. All juice must be 100% full-strength.

^dFor breakfast, vegetables may be substituted for fruits, but the first two cups per week of any such substitution must be from the dark green, red/orange, beans and peas (legumes) or “Other vegetables” subgroups as defined in §210.10(c)(2)(iii).

^eThe fruit quantity requirement for the SBP (5 cups/week and a minimum of 1 cup/day) is effective July 1, 2014 (SY 2014-2015).

^fLarger amounts of these vegetables may be served.

^g This category consists of “Other vegetables” as defined in §210.10(c)(2)(iii)(E). For the purposes of the NSLP, “Other vegetables” requirement may be met with any additional amounts from the dark green, red/orange, and beans/peas (legumes) vegetable subgroups as defined in §210.10(c)(2)(iii).

^hAny vegetable subgroup may be offered to meet the total weekly vegetable requirement.

ⁱAt least half of the grains offered must be whole grain-rich in the NSLP beginning July 1, 2012 (SY 2012-2013), and

in the SBP beginning July 1, 2013 (SY 2013-2014). All grains must be whole grain-rich in both the NSLP and the SBP beginning July 1, 2014 (SY 2014-15).

^jIn the SBP, the grain ranges must be offered beginning July 1, 2013 (SY 2013-2014).

^kThere is no separate meat/meat alternate component in the SBP. Beginning July 1, 2013 (SY 2013-2014), schools may substitute 1 oz. eq. of meat/meat alternate for 1 oz. eq. of grains after the minimum daily grains requirement is met.

^lFluid milk must be low-fat (1 percent milk fat or less, unflavored) or fat-free (unflavored or flavored).

^mThe average daily amount of calories for a 5-day school week must be within the range (at least the minimum and no more than the maximum values).

ⁿDiscretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, trans fat, and sodium. Foods of minimal nutritional value and fluid milk with fat content greater than 1 percent milk fat are not allowed.

^oIn the SBP, calories and trans fat specifications take effect beginning July 1, 2013 (SY 2013-2014). ^pFinal sodium specifications are to be reached by SY 2022-2023 or July 1, 2022. Intermediate sodium specifications are established for S2014-2015 and 2017-2018. See required intermediate specifications in § 210.10(f)(3) for lunches and § 220.8(f)(3) for breakfasts.

According to Table 2.1, the new ruling for NSLP requirements includes offering fruits and vegetables as two separate meal components. Both fruits and vegetables are to be offered daily at lunch, including five specific vegetable subgroups offered weekly (dark green, red/orange, beans/peas, starchy, and other), larger amounts of these vegetables are allowed to be served. To measure dietary fiber, the pattern also requires all grains to be whole grain-rich effective SY 2014-15. To help limit saturated fat, milk varieties include fat-free (unflavored and flavored) and low-fat (unflavored) varieties. In addition, the calories are to meet specific ranges depending on the age/grade group. Lastly, the food products or ingredients used for preparing meals are to contain zero grams of *trans* fat per serving, which is best achieved by limiting use of convenience or processed foods (U.S. Department of Agriculture, 2012). These requirements marked the first major changes to the nutrition standards for school meals in more than 15 years (The Pew Charitable Trust, 2013a).

Barriers to Meeting New Meal Requirements

As the schools in the U.S. work to implement the updated USDA standards for NSLP and SBP, the changes in the menu require changes to all aspect of the food service operations (i.e., purchasing, receiving, storing food, preparing and serving meals) (The Pew Charitable Trust, 2013a). Therefore, the USDA has responsibilitiy to support the schools by ensuring that they have the needed training and technical assistance to implement the updated school meal requirements (French, & Story, 2013). To better understand the needs, the Mathematica Policy Research conducted the Kitchen Infrastructure and Training for Schools survey of the food service directors, which was nationally representative of all the public SFAs. The questionnaire addressed four main topics: 1) readiness to meet the new requirements; 2) adequacy of the need to replace or add food service equipment; 3) kitchen infrastructure needs; and 4) staff training needs (The Pew Charitable Trust, 2013a). The Pew Charitable Trust defines readiness as: SFAs expect to be able to meet the new school lunch requirements. Findings from the study for readiness to meet new requirements are presented in Table 2.2. The other three main topics are addressed and discussed afterwards.

Table 2.2 - Readiness to Meet the New Lunch Requirements by School Food Authorities

Table 1

Can the New Lunch Requirements Be Met?

Readiness to meet the new lunch requirements by SFA characteristics and school year

Characteristic	Percentage of SFAs ready by...			
	Start of the 2012-13 school year	End of the 2012-13 school year	2013-14 school year or beyond	Unknown
All SFAs	63.0	30.7	3.1	2.6
Size (number of students)				
Very small (fewer than 1,000)	59.8*	31.8	3.7	3.7*
Small (1,000 to 2,499)	60.4	34.2	3.3	1.9
Medium (2,500 to 9,999)	69.8*	27.0*	1.8*	1.2*
Large (10,000 to 24,999)	72.1*	24.5*	2.5	0.5*
Very large (25,000 or more)	80.2*	19.3*	0.0*	0.5*
Community type				
Urban	70.5*	23.8*	3.0	2.0
Suburban	69.3*	28.2	0.8*	0.9*
Rural	59.2*	33.1*	3.9*	3.3*
Food Nutrition Service region				
Northeast	63.3	34.5	0.8*	0.8*
Mid-Atlantic	74.0*	18.8*	2.6	2.3
Southeast	61.0	32.2	4.1	2.6
Midwest	65.6	27.7	4.8	1.5
Southwest	66.6	31.9	0.7*	0.4*
Mountain Plains	52.9*	35.7*	5.5*	5.7*
Western	62.2	31.7	1.1*	4.0
Poverty level[†]				
Low (fewer than 40%)	59.9*	34.0*	3.8	1.9
Intermediate (40% to 60%)	62.3	31.1	3.1	2.4
High (more than 60%)	67.6*	26.3*	2.1	3.5
Number of SFAs (unweighted)	3,372			
Number of SFAs (weighted)	13,813			

Notes:

The data are weighted to be representative of all school food authorities offering the National School Lunch Program.

* Difference between the subgroup and all other SFAs is significantly different from zero at the $\alpha = .05$ level.

† Categories based on the percentage of enrolled students approved for free or reduced-price meals.

Source: Kitchen Infrastructure and Training for Schools, 2012.

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The findings suggest 63% (almost two-thirds) of the surveyed schools expected to meet the new requirements at the start of the SY 2012-13 (when the requirements went into effect), 30.7% expected to meet the requirements by the end of the SY 2012-13, only 3.1% didn't think they would be able to achieve the goal until SY 2013-14 or beyond, and another 2.6% didn't know if they would be able to meet the new requirements (The Pew Charitable Trust, 2013a). As seen on Table 2.2, the smaller the school and community type and lower poverty level (fewer than 40 percent of students approved for free or reduced-price meals), the smaller the percentage of SFAs ready. It was estimated that smaller districts with fewer than 1,000 students were considerably less ready to meet the new lunch requirements by the beginning of SY 2012-13. Oklahoma falls in the Southwest region of the U.S. Within this region, 66% (second highest percent) of SFAs reported readiness to meet the new requirements by the start of the SY 2012-13 (The Pew Charitable Trust, 2013a). To assist schools in being ready to implement the new regulations, the Oklahoma State Department of Education and Oklahoma Cooperative Extension Service partnered to develop and conduct statewide training specific to the regulations. The efforts reached key personnel in all 558 school district during April-August, 2012 (Hildebrand, 2012). Barriers/concerns (reported by respondents on the training evaluation survey) to reaching full implementation of new regulations included: similar training for all SFA staff; concerned students won't accept meals; need for food preparation training (e.g., whole grains); positive communication with stakeholders; and concerns for food costs and waste (Hildebrand, 2012).

The concerns of the Oklahoma SFAs were also evident in the PEW study. While 94% of SFAs were confident they would be able to meet the new requirements, 91% reported one or more barriers to obtaining full implementation by the start of SY 2012-13. The perceived barriers included: cost and availability of appropriate foods (76%), needing to train staff (64%), understanding new requirements (45%), needing additional staff or labor hours (45%), needing additional equipment (31%), needing to remodel or upgrade kitchens (24%), and other (11%)

(The Pew Charitable Trust, 2013a). As a result, the USDA and other organizations are diligently working together to help the schools overcome these barriers (French, & Story, 2013).

To successfully implement the new school lunch requirements, 55% of schools had already moved or were expecting to move to cooking more from scratch (making more meals prepared from fresh ingredients), thus, schools would be in need of more equipment and space to prepare on-site and store the fresh ingredients (Kids' Safe and Healthful Foods Project, 2013). A recent report conducted by the Kids' Safe and Healthful Food Project, found that only 1 in 10 school districts nationwide had all of the needed equipment needed for scratch cooking, with 88% of SFAs still needing at least one or more pieces of equipment in order to meet the school meal requirements (Brozena, 2014). For example, schools with inadequate equipment reported that they were making do with less efficient processes, (e.g. manually chopping/slicing fruits and vegetables) and having daily and more costly deliveries of fresh produce, instead of being able to store the produce on site (Kids' Safe and Healthful Foods Project. 2013). Thus, the survey respondents admitted that because they lacked the much needed kitchen equipment, the workarounds were much more expensive, inefficient, and unsustainable (Kids' Safe and Healthful Foods Project, 2013). As a result, the bipartisan School Food Modernization Act of 2013 was established as a loan and grant assistance program within the USDA. It was created to help pay for the school kitchen and dining area upgrades, new equipment, and training and technical assistance for school food service personal (The Pew Charitable Trust, 2013b).

Another primary barrier to preparing the meals to meet new requirements was the ability to recruit staff who had the needed basic food preparation skills (Kids' Safe and Healthful Foods Project, 2011a). This has resulted in part from the fact that for the past several decades U.S. school kitchens were built to simply re-heat and hold food, which reflects general home/family food preparation patterns (Kids' Safe and Healthful Foods Project, 2011a). For example, a recently conducted survey found that almost half of the cafeteria staff still greatly rely on deep-fat

fryers. As a result, the training most needed to prepare the meals are: food safety, healthier food preparation, recipe development, food storage, cooking, and improved productivity (Kids' Safe and Healthful Foods Project, 2011b). Existing online training for nutrition services staff is provided by the National Food Service Management Institute and Team Nutrition funded by USDA.

While SFAs are making some effort to plan meals to meet the updated regulations (e.g., new equipment, food preparation training) a remaining concern of school nutrition directors is acceptability of the meals by students (Hayes & Berdan, 2013). Research published by the Academy of Nutrition and Dietetics (AND) suggest that a chef-based model can be used to join forces with cafeteria staff in order to improve the school menu's dietary quality and palatability (Cohen, Smit, Parker, Austin, Frazier, Economos, & Rimm, 2012). A 2-year pilot study conducted in Boston, Massachusetts, middle schools, called the Chef Initiative, looked at the impact that a chef can have on student participation in the school lunches. The study provided evidence that a chef-based model actually improved the menu quality, palatability, led to an increased participation of students, and ultimately had the potential to improve health (Hayes & Berdan, 2013). In addition, these programs have potential to build cafeteria staff confidence. Hence, a school can have a chef train the staff to develop recipes and menus along with techniques for preparing eye-appealing meals that follow both the nutrition standards and are popular with the children (Hayes & Berdan, 2013). Further, Wiecha et. Al., (2014) recommended that cafeteria staff who complete training receive certification, as they will be able to gain credibility within the program.

It is estimated that not every school food service employee is equipped with the expertise to comply with healthier meal and food preparation standards (The Pew Charitable Trust, 2013c). As a result, the legislation authorizes USDA to provide support on a competitive basis to highly qualified third-party trainers to develop and administer training and technical assistance (The Pew

Charitable Trust, 2013c). Donze Black, the project director for the Kids' Safe and Healthful Foods Project, said, "It will require buy-in from schools, communities, and the government to make sure that they have the right tools to serve nutritious meals efficiently and effectively, but it is a goal worth achieving." (The Pew Charitable Trust, 2013b). To assess buy-in, it is very essential to gauge the readiness of the school cafeteria staff to change food preparation techniques to meet the new requirements, in order to be successful with the project.

Community Readiness Model

The term "community readiness" simply refers to the preparedness of a group of people to take action on an issue, and as a result, seeks to create an efficient way of describing and assessing readiness (Findholt, 2007). A previously tested method used to assess the readiness of a community (i.e., group of people) is the Community Readiness Model (CRM) developed by the Tri-Ethnic Center for Prevention Research at Colorado State University created the CRM (Findholt, 2007). The assessment of community readiness is an increasing and innovative method to planning community based interventions targeted at improving health concerns (Plested, Jumper, Edwards, & Oetting, 1998). It has been used for assessing readiness for a variety of problems including health and nutrition issues (Oetting, Jumper, Plested, & Edwards, 2001). For example, the Community Readiness Model was used to initiate childhood obesity prevention in Union County, a rural county in the state of Oregon (Findholt, 2007). The purposes for which the model was utilized were: 1) to determine Union County's stage of readiness to prevent childhood obesity; 2) to identify community members with expertise or interest in children's nutrition and/or physical activity who were willing to serve on a prevention coalition; 3) to engage these community members in developing strategies to increase the county's level of readiness; and 4) to gather qualitative data on community strengths and barriers that could facilitate or hinder the development of an obesity prevention program (Findholt, 2007). The findings from the qualitative analysis were helpful in interpreting the scores and provided an insight into the community

strengths and barriers that could have an effect on the development of an obesity prevention program (Findholt, 2007). The readiness assessment led to the identification of nearly 30 people who were willing to serve on a prevention coalition, and the coalition was initiated in September 2005 (Findholt, 2007). Researchers who developed the model discovered that communities vary greatly based upon their ability to implement change programs, and unless the community was invested in and prepared for the intervention, it would not succeed (Findholt, 2007).

The CRM is not only for community analysis, but also community mobilization (Slater et al., 2005). The CRM was inspired by two solid theoretical traditions: 1) psychological readiness, and 2) factors related to community development (Plested et al., 1998). First, psychological readiness is the recognition of not pushing the group to a level of change that they are not ready to embrace; if they are pushed beyond their level of readiness, the program will fail (Plested et al., 1998). Secondly, the community development recognizes the dynamic and complex interactions that are involved in the community level, consensus-seeking, and collective action (Plested et al., 1998). Hence, the attention is put on the group process involved with the making of decisions. In addition, the CRM is based on 4 fundamental assumptions: 1) communities are at different stages of readiness for dealing with a specific problem; 2) the stage of readiness can be correctly assessed; 3) communities can be moved through a series of stages in order to develop, implement, maintain, and improve effective programs; and 4) it is important to identify the stage of readiness because interventions that move communities to the next stage differ for each stage of readiness (Edwards et al., 2000).

The readiness model was developed based upon the principles of the Transtheoretical Model of behavior change (TTM) (Prochaska, 1994). The main foundation of the TTM included individual's decisional balance, self-efficacy, and processes used to make the change. It is based on the idea that individuals move through a series of five stages, and that behavior change is a dynamic process that occurs over time. The initial personal stages of readiness for health behavior

change consist of: 1) pre-contemplation (no intention of taking action to change a behavior, 2) contemplation (thinking/planning to take action in the future), 3) preparation (intentions to take actions in the immediate future), 4) action (have made life-style modification), and 5) maintenance (working to prevent relapse of the lifestyle modification) (Marshall & Biddle, 2001). These stages ultimately served as an initial model for the community readiness. Based upon the stage of change that the individual was currently in, successful interventions were needed to use strategies or processes of change that matched according to the individual's readiness, in order to make the change and move to the next stage (Prochaska, 1994). The progression through the stages was the goal, due to the fact that it increased the likelihood of permanent behavioral change (Prochaska & Velicer, 1997). The personal stages of readiness for transtheoretical model have some similarities to community readiness, yet there were some problems (Edwards, Jumper, Plested, Oetting, & Swanson, 2000). The main difference is that communities are not individuals, but groups. Group processes and conditions do not easily translate into the five stages of individual readiness (Edwards et al., 2000). In addition, individual readiness did not include all of the different levels of community readiness (which are definitely different from one another) that needed to be incorporated into the CRM. Lastly, the individual readiness for change, in relation to a certain problem, is undimensional; whereas, community readiness is multidimensional (Edwards et al., 2000).

Studies have shown that successful, change programs are owned by the targeted community (Edwards et al., 2000). Defining community can end up being very complex. A community is defined as a group of people who experience a similar context for activity or culture in a common place (i.e., SFA staff) (Edwards et al., 2000). No community, small or large, (small school to a large city), is alike. All communities struggle with developing, promoting, implementing and maintaining change programs. The struggles are largely due to attitudes

varying across the community: attitudes about the problem, political climate, and resources varying from community to community (Edwards et al., 2000).

There are 9 stages of change in the CRM. The stages of change include: 1) no awareness, 2) denial/resistance, 3) vague awareness, 4) pre-planning, 5) preparation, 6) initiation, 7) stabilization, 8) confirmation/expansion, and 9) high level of community ownership. Table 2.3 provides a brief description of each stage. The interviews/focus group question line consists of a series of 36 general questions addressing 6 dimensions of readiness. The dimensions include: A) Community Efforts, B) Community Knowledge of the Efforts, C) Leadership, D) Community Climate, E) Community Knowledge about the Issue, F) Resources Related to the Issue: (Plested et al., 2006). Table 2.3 lists the dimensions and their definitions.

Table 2.3 - Dimensions of Readiness	
A. Community Efforts:	To what extent are there efforts, programs, and policies that address the issue?
B. Community Knowledge of the Efforts:	To what extent do community members know about local efforts and their effectiveness, and are the efforts accessible to all segments of the community?
C. Leadership:	To what extent are appointed leaders and influential community members supportive of the issue?
D. Community Climate:	What is the prevailing attitude of the community toward the issue?
E. Community Knowledge about the Issue:	To what extent do community members know about the causes of the problem, consequences, and how it impacts your community?
F. Resources Related to the Issue:	To what extent are local resources (e.g., people, time, money, space, etc.) available to support efforts?
Source: Plested et al., 2006	

The CRM is designed to assess community readiness with either a key informant survey or focus group format (Oetting et al., 2001). Participants should be knowledgeable about the problem being examined, existing programs aimed at the problem, and various segments of community leadership (Plested et al., 1998). For the survey, four to six key informants are needed in order to collect thorough information to accurately score the community, and it can be conducted in person or on the telephone (Plested, Edwards, & Jumper, 2006). The alternate method, focus groups, is best characterized as a form of group interview, which places great importance on interaction between participants (Freeman, 2006). The aim of the focus group is to promote self-disclosure among the participants. This is done by openly narrowing in on group dynamics during the discussion (Freeman, 2006). The focus group usually consists of between six to twelve participants, which are drawn from a study population of interest. The session usually lasts between one to two hours or until the topic has been thoroughly covered and the participants are satisfied as a group with the outcome of the scores. For the focus group, the moderator's purpose is to facilitate and help direct the discussion on the topic of interest, making sure that all participants are able to contribute fully to the developing discussion (Freeman, 2006). For the CRM focus group, the moderator asks a series of questions that cover the 6 dimensions of the community readiness, and the individuals discuss each question as a group. After each section, and all have shared, the participants use an anchored rating scale (9-point Likert scale, Appendix B) developed by the Tri-Ethnic Center, to decide as a group on a statement that best describes the group in relation to each dimension (Edwards et al., 2000).

This process allows for focus group participants to realize out loud what they collectively think and know about an issue. Hence, when the scoring process occurs in the end, they have a better understanding and are able to agree on the best score for each dimension that accurately describes them as a group. The scores are then averaged for each dimension, and the final score is the average across the 6 dimensions. This final score gives the specific stage of readiness for the

issue in the community. Appendix A provides the anchored scales for each dimension.

After completing the community readiness assessment, strategies are then developed for the community based upon their indicated stage of readiness. For communities in the lower stages (no awareness, denial/resistance, and vague awareness), strategies are usually aimed at raising awareness that a problem exists and that they should do something in the community (Plested et al., 1998). Strategies that can help achieve these goals and have been used effectively in the communities to raise the awareness level are: media advocacy, small activity groups, and one-on-one phone calls (Plested et al., 1998). For communities at the intermediate stages (pre-planning, preparation, and initiation), the communities should be collecting information related to achieving their goal and getting ready to take specific action. Strategies recommended include: introducing information about the issue through presentations and media, conducting community surveys, and attending meetings to provide updates on progress of the effort (Plested et al., 2006). Lastly, for communities in the advanced stages (stabilization, confirmation/expansion, and high level of community ownership), the goal of the community is to continue keeping up the momentum of efforts so that they can be successful, solicit consumer feedback, evaluate and revise efforts to meet changing needs. Strategies recommended include: planning community events to maintain support for the issue, initiating policy change through support of local city officials, and continuing re-assessment of issue and progress made (Plested et al., 2006). If there is one or more dimensions with lower scores than the others, efforts should be focused on strategies that will increase the community's readiness on that dimension or those dimensions first (Plested et al., 2006). It is also necessary to make certain the intensity level of the intervention or strategy is consistent with, or lower than, the stage score for that dimension (Plested et al., 2006). Therefore, to be successful, any effort toward making change within a community must begin with strategies appropriate to its stage of readiness (Plested et al., 2006). Table 2.4 provides an overview of stage appropriate goals and strategies.

Table 2.4 - Goals and Appropriate Strategies for Each Stage

Stage	Description	Goal
1. No Awareness	Issue is not generally recognized by the community or leaders as a problem (or it may truly not be an issue).	<ul style="list-style-type: none"> • <i>Make one-on-one visits with School leaders/cafeteria staff.</i> • <i>Visit existing and established focus groups to inform them of the issue and benefits of changing food preparation.</i>
2. Denial / Resistance	At least some community members recognize that it is a concern, but there is little recognition that it might be occurring locally.	<ul style="list-style-type: none"> • <i>Continue one-on-one visits and encourage those you've talked with to assist in changing food preparation.</i> • <i>Approach and engage school stakeholders to assist in the effort with flyers, posters, or brochures.</i> • <i>Begin to point out media articles that describe local incidents and success stories in other schools.</i> • <i>Present information to school leaders.</i>
3. Vague Awareness	Most feel that there is a local concern, but there is no immediate motivation to do anything about it.	<ul style="list-style-type: none"> • <i>Post flyers, posters, and billboards of the benefits of healthier school meals.</i> • <i>Begin to initiate your own events (taste-test table, focus groups) and use those opportunities to present information on the issue.</i> • <i>Conduct informal school surveys and interviews to assess response towards change.</i>
4. Preplanning	There is clear recognition that something must be done, and there may even be a group addressing it. However, efforts are not focused or detailed.	<ul style="list-style-type: none"> • <i>Introduce information about the issue through presentations and media to the school stakeholders.</i> • <i>Visit with school leaders to support changing school meals.</i> • <i>Conduct local focus groups to discuss issues and develop strategies.</i> • <i>Increase media exposure service throughout the school.</i>
5. Preparation	Active leaders begin planning in earnest. Community offers modest support of efforts.	<ul style="list-style-type: none"> • <i>Conduct school surveys assessing attitude towards changes in food preparation.</i> • <i>Conduct school forums to develop strategies from the students, teachers, parents, and cafeteria staff.</i> • <i>Utilize key leaders and influential people in the school to speak to students, teachers, and parents.</i> • <i>Plan how to evaluate the success of your efforts.</i>

6. Initiation	Enough information is available to justify efforts. Activities are under way.	<ul style="list-style-type: none"> • <i>Conduct in-service training with cafeteria staff led by chefs.</i> • <i>Plan publicity efforts associated with start-up of chef training.</i> • <i>Attend meetings to provide updates on progress of the effort.</i> • <i>Conduct school interviews to identify gaps, improve existing services and identify key places to post information.</i> • <i>Begin some basic evaluation efforts.</i>
7. Stabilization	Activities are supported by administrators or community decision makers. Staff are trained and experienced.	<ul style="list-style-type: none"> • <i>Plan school events to maintain support for the chef training.</i> • <i>Conduct training for cafeteria staff.</i> • <i>Introduce your program's evaluation through training and newspaper articles or on school website.</i> • <i>Conduct regular meetings to review progress, and modify strategies.</i> • <i>Hold recognition events for local supporters or volunteers.</i> • <i>Prepare and submit newspaper articles detailing progress and future plans of changing food preparation.</i>
8. Confirmation / Expansion	Efforts are in place. Community members feel comfortable using services, and they support expansions. Local data are regularly obtained.	<ul style="list-style-type: none"> • <i>Maintain a comprehensive database available to the school on the school website with news of updates on changing food preparation and events.</i> • <i>Initiate policy change through support of school leaders</i> • <i>Utilize evaluation data to modify and improve changing food preparation efforts.</i>
9. High Level of Community Ownership	Detailed and sophisticated knowledge exists about prevalence, causes, and consequences. Effective evaluation guides new directions. Model is applied to other issues.	<ul style="list-style-type: none"> • <i>Maintain school support.</i> • <i>Continue more advanced training of cafeteria staff.</i> • <i>Continue re-assessment of changing food preparation and progress made.</i> • <i>Utilize evaluations and use feedback from the school for program modification.</i> • <i>Continue progress reports for benefit of school stakeholders</i>

Source: Plested et al., 2006.

Summary

The rate of childhood obesity in the U.S. has more than doubled in children and quadrupled in adolescents in the past 30 years, with 1 out of 3 children being overweight or obese (Centers for Disease Control and Prevention, 2013). Because youth consume about 19% to 50% of their calories at school, schools play an active role in establishing a safe and supportive environment with policies and practices that support healthy eating behaviors (Centers for Disease Control and Prevention, 2013). The new USDA requirements for the NSLP and SPB are key to helping provide nutritious meals for the students (U.S. Department of Agriculture, 2012). However, SFAs face multiple challenges in implementing the regulations, including food preparation skill training (The Pew Charitable Trust, 2013c). Because adoption of new food preparation methods will require buy-in from schools, it is essential that training approaches be matched to the SFAs' readiness to participate in the training and integrate the skills into food preparation practices (The Pew Charitable Trust, 2013c).

CHAPTER III

METHODS

The methods for the study were conducted based on the procedures described in the Community Readiness Handbook, established by Colorado State University Tri-Ethnic Center (Plested et al., 2006). Within Oklahoma, six schools across the state were recruited by the OSDE Child Nutrition Program and agreed to serve as pilot training sites for the *Cooking for Kids: Culinary Training for School Food Service Professionals*. Table 3.1 provides a list of the school districts, enrollment size, and geographic description (i.e., rural or urban).

Table 3.1 - School Districts for Pilot Culinary Training

School Districts	Urban/Rural^a	Enrollment^b	% Free and Reduced^b
Chickasha	Urban	2,509	65.8%
Enid	Rural	7,289	71.1%
Sterling	Urban	425	49.2%
Lomega	Rural	213	63.4%
Mid-Del	Urban	14,527	62.3%
Coweta	Urban	3,305	45.54%

^a Source: Metropolitan Statistical Area of the U.S. Census Bureau Population Estimates, 2013

^b Source: Oklahoma State Department of Education, 2013

Figure 3.1 is an Oklahoma Map indicating where the schools are located that participated in the training.

Figure 3.1 – Map of Schools that Participated in the Pilot Cooking for Kids Training



*Green stars indicate each school town

Source: Oklahoma Tourism & Recreation Department, 2014

The Community Readiness Assessment survey was conducted using the focus group method. In spring and fall 2014, each focus group consisted of between 2 to 15 school cafeteria staff whose primary responsibility was food preparation. Focus group participation at each school is detailed in Table 3.2. The school nutrition and food service director identified the cafeteria staff that they believed were reflective of the rest of the staff in the school district. The session typically lasted between 1 to 1 1/2 hours. The moderator facilitated the discussion using the question guide revised to be specific to changing school food production practices (Freeman, 2006). Question guides are available in Appendix B. After questions for each dimension were asked and thoroughly discussed, the cafeteria staff used a 9-point anchored rating scale

(Appendix C) to decide as a group the appropriate response for each respective dimension (Edwards et al., 2000). After going to the anchored rating scale, the moderator would read the first statement and then focus group participants decided as a group if they could confidently say the cafeteria staff in their school meets and goes beyond that level. If yes, then they would continue to the next statement and do the same. When they finally reached a level that they could not confidently say yes to, they would go back to the preceding level and circle that number. For example, if they could confidently say that their school’s cafeteria staff met levels 1 & 2, but not level 3, the rank would be “2.” In addition, 1-2 members of the research team were present at every focus group interview to take detailed notes. All the conversations were digitally recorded, and recordings were kept confidential. The recordings were transcribed for qualitative data analysis and compared to field notes.

After conducting the pre-culinary training focus groups, the researcher compiled a report for each pilot site describing the overall readiness and dimension scores and appropriate strategies to create needed buy-in among the SFA community. Chefs received a copy and briefing of the report to uniform development of the training intervention.

Table 3.2 - Focus Group Participation by School

School	Pre-Assessment Participants	Post-Assessment Participants
Chickasha	7	8
Enid	5	6
Sterling	2	2
Lomega	2	2
Mid-Del	15	9
Coweta	5	6

Data Analysis

Readiness scores were calculated for individual schools districts and across school districts. After receiving the group dimension scores from each school, the scores for dimensions A through F were averaged to calculate the overall readiness score for each school district. Readiness across school districts was calculated in the same manner using composite scores. In keeping with Tri-Ethnic Center protocol, all averaged scores were rounded down to a full integer (Plested, B.A., Edwards, R.W., & Jumper-Thurman, P., 2006). Change in readiness scores was calculated by subtracting pre-training overall and dimension scores from post-training scores.

The framework for organizing and analyzing the qualitative data followed procedures established by Kruger and Casey (2000) and was based on the CRM dimensions. Two researchers independently took multiple passes at reading each transcript to identify key statements best representing the group's thoughts related to each dimensions and compared results. Similar statements across the transcripts were identified and used to establish themes. The themes were tested for adequacy by comparing to field notes.

Intervention

Readiness levels are driven by six distinct dimensions. To move nutrition professionals to higher levels of readiness to adopt new or revise existing food production practices, training efforts should address the dimensions with the lower scores. In other words, it is important to match training strategies to readiness to assure new skills and practices taught in the *Cooking for Kids: Culinary Training for School Nutrition Professionals* are adopted and sustained by school nutrition staff. For example, if one of the schools had a lower score in knowledge about issue, then the chefs would spend a greater amount of time on nutrition education. Whereas, if the school had a higher overall readiness score, then the chefs would skim through the basics of

nutrition and emphasize knife skills, cooking methods (e.g. dry/moist heat, steaming, etc) or other areas of concerns noted during the focus group (e.g. time management).

The culinary training program emphasized using fresh, locally grown fruits and vegetables (when available), knife skills, preparing whole grains, and use of herbs and spices to that enhance flavor while reducing sodium. Participants spent two days (about 7 hours a day) sharpening critical food preparation skills that could be used in new recipes and menus created by certified executive chefs. The agenda for day one was: nutrition education and how it applied to schools, taste-testing raw vegetables (e.g. kale, collards, beets, chickpeas, etc), food safety, basic knife skills, followed by cooking recipes in 2-3 groups. The agenda for day two was: educating about whole grains, basic vegetable cookery (e.g. steaming, roasting, braising, sautéing), cooking with whole grains, and finally ending with a cooking competition (30 minutes to think, 1 hour to cook and 30 minutes to present and taste, in groups of 2-3). For the competition, the participants were instructed to create vegetable recipes using vegetables/grains/ingredients available, and were to write down all ingredients used and amounts. At the end of day two of the training, all participants were each given a certificate and apron, with the “Cooking for Kids” logo on it.

CHAPTER IV

FINDINGS

The purpose of the study was to assess the impact of a chef-based culinary training program on Oklahoma SFAs' readiness to integrate new food preparation skills into meal planning and preparation practices. Focus group methods were used for the pre and post-training assessments at each of the six pilot schools. The pre-training assessment was conducted in the spring of 2014, and the post-training assessment was conducted in the fall of 2014. The focus groups consisted of 2 to 15 participants, all being women of varying ages ranging from 22 to 65 years. The work experience of the participants within the child nutrition program varied from less than a year to over 20 years. Both the pre and post-training assessment focus groups consisted of the same participants at both assessments.

Overall scores increased from pre to post-training. These scores can be found in Table 4.1. Tables 4.2 through 4.7 summarize the emerging themes with representative quotes for each dimension in the pre and post-training assessment.

Pre-Training

At pre-training, the overall composite readiness was 3 (vague awareness), with a range of 3-5 (vague awareness to preparation) across school staffs. Dimension B (knowledge of efforts) and dimension F (resources) had the lowest readiness with a score of 3 (vague awareness). Dimension E (knowledge about issue) had the highest readiness with a score of 5 (preparation).

Post-Training

At post-training, the overall composite readiness increased to 5 (preparation), with a range of 3 to 7 (vague awareness to stabilization) across school staffs. Dimension F (resources) had the lowest readiness with a score of 3 (vague awareness). Whereas, dimension B (knowledge of efforts), dimension C (leadership), and dimension E (knowledge about issue) had the highest readiness with a score of 7 (stabilization).

Change

The overall composite readiness had an increase in change of 2, from a readiness score of 3 to 5 (vague awareness to preparation). Within the composite scores, the dimension that changed the most was dimension B (knowledge of efforts) by an increase of 4 (with a range of 3 to 7). Dimensions with no change were dimension D (score of 4) and dimension F (score of 3).

Table 4.1 – Pre and Post- Training Assessment of Schools’ Readiness Scores by Dimension and Overall

DIMENSIONS														
	A Current Efforts		B Knowledge of Efforts		C Leadership		D School Climate		E Knowledge About Issue		F Resources		Overall Readiness Score^a	
Schools	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Chickasha	3	6	5	9	4	9	8	5	8	8	4	4	5 Preparation	6 Initiation
Enid	9	3	3	3	9	8	4	1	4	6	2	2	5 Preparation	3 Vague Awareness
Sterling	2	1	2	5	2	3	2	7	1	5	2	4	1 No Awareness	4 Preplanning
Lomega	5	9	8	9	2	9	8	8	9	9	4	4	6 Initiation	8 Confirmation /Expansion
Mid-Del	1	6	2	8	3	9	1	3	4	9	3	5	2 Denial	6 Initiation
Coweta	4	6	3	8	4	9	4	3	6	9	3	4	4 Preplanning	6 Initiation
Composite All Schools^a	4	5	3	7	4	7	4	4	5	7	3	3	3 Vague Awareness	5 Preparation
Change in Composite Scores	Δ+1		Δ+4		Δ+3		Δ0		Δ+2		Δ0		Δ+2	

^aMean scores rounded down

Dimensions A and B increased from pre to post-training. The change is best described by school staffs acknowledging that while they believe they are good at their jobs, there is room for improvement and that efforts are being made at the local level. They had increased awareness that the reason for change was to impact student health, not just to meet federal regulations. While knowledge and skills were gained, application needed to be individualized to the school nutrition program.

Table 4.2 – Dimension A & B - Current Efforts/Knowledge of Efforts: Pre and Post Themes and Representative Quotes

Pre-Training	
<p style="text-align: center;">Emerging Themes</p> <ul style="list-style-type: none"> • School nutrition staff believes they are good at their job. • Primary concerns are preparing meals students will eat. • School nutrition staff is aware of the changes in the federal regulations, but not aware of any local efforts. • Barriers to meeting the new regulations include time, equipment, and skills for changing food preparation practices. • School nutrition staff is not aware of any efforts to address the barriers. 	<p style="text-align: center;">Representative Quotes</p> <ul style="list-style-type: none"> • “I’d say we aren’t concerned cause we do pretty good at our job!” • “Yeah, kids are not caring, cause they aren’t eating it.” • “We don’t have the time for it.” • “No plans at the moment. There may be down the road.”
Post-Training	
<p style="text-align: center;">Emerging Themes</p> <ul style="list-style-type: none"> • School nutrition staff is highly concerned about food preparation because it impacts what kids eat – especially fruits and vegetables. • School nutrition knows local leadership is making efforts to make change to meet new meal patterns and follow their instructions. • School nutrition staff recognized the pilot training as an effort to address food preparation. It was informative and provided new skills and information. • Would like to see the chef training continued and expanded, but training needs to be more specific to schools (e.g. using skills to revise existing menus). 	<p style="text-align: center;">Representative Quotes</p> <ul style="list-style-type: none"> • “It’s time for change cause, like, the obesity rate amongst children is out of control. I’ve always pushed for fresh fruits and vegetables and I push it to my kids to at least try it.” • “Well, there were some things I didn’t know, like cuts and stuff like that. But I’m not so sure if that’s gonna help me at my job so much.” • “We have an existing menu that meets the guidelines for the federal funding. We need to know how to make that taste better.” • “They also taught us how to think on our own and what kind of stuff goes together!”

Dimension C increased from pre to post-training. The change is best described by school staff acknowledging the increased awareness of the local directors being highly interested and being proactive in planning events to build upon the chef training. While knowledge of local directors' efforts were gained, including the leaders in the training would be beneficial to raising awareness.

Table 4.3 – Dimension C - Leadership: Pre and Post Emerging Themes and Representative Quotes

Pre-Training	
<p style="text-align: center;">Emerging Themes</p> <ul style="list-style-type: none"> • School nutrition staff is aware that changes to the meal pattern were initiated at the federal level. • School nutrition staff is aware that local directors are interested and making sure new regulations are being met. Yet, kitchen staff is not aware of specific efforts. 	<p style="text-align: center;">Representative Quotes</p> <ul style="list-style-type: none"> • “Michelle Obama, it’s her law!” • “It’s hard for us not to know, cause it changes our recipes daily, and need to know how to prepare things. So we are obviously aware of things since it affects us.”
Post-Training	
<p style="text-align: center;">Emerging Themes</p> <ul style="list-style-type: none"> • School nutrition staff believes that local directors are highly interested and making sure new regulations are being met. Also, kitchen staff has increased awareness of specific efforts. 	<p style="text-align: center;">Representative Quotes</p> <ul style="list-style-type: none"> • “I think they are concerned, or they wouldn’t have brought in the chefs. You know, they want it to be better and the kids to eat it.” • “Our director put the training on the website, and some of that stuff like the pictures are on the school website.”

Dimension D had no increase from pre to post-training. There being no change is best described by school staff still acknowledging the school climate as indifferent about eating the school lunch and being vaguely aware of their efforts. Yet, the school staff has an increased understanding of the regulations and as a result seeks to have the school climate included in future training.

Table 4.4 – Dimension D - School Climate: Pre and Post Emerging Themes and Representative Quotes

Pre-Training	
<p style="text-align: center;">Emerging Themes</p> <ul style="list-style-type: none"> • Teachers are generally indifferent about children eating school lunch. • Some parents complain because kids are hungry. • School nutrition staff is frustrated. They want to meet the regulations and serve food kids will eat. Staff is not sure how to follow regulations and provide food kids will eat. 	<p style="text-align: center;">Representative Quotes</p> <ul style="list-style-type: none"> • “I’ve had teachers say, I don’t wanna do this, and I don’t want to help.” • “I think you hear of parents who say things based upon what their kids come home telling them. They’re hungry cause they don’t like what is being served.” • “Yeah, we don’t have the proper support. And we had taken out pizza, but then they boycotted us!” • “Yeah, we always use to have people talk about how good our food was, but now our numbers have really dropped this year.”
Post-Training	
<p style="text-align: center;">Emerging Themes</p> <ul style="list-style-type: none"> • Teachers are generally indifferent about children eating school lunch. • School nutrition staff acknowledges there will always be people not satisfied with school meals. • Staff understands benefits of regulations and desire for school stakeholders to be better informed about their efforts. 	<p style="text-align: center;">Representative Quotes</p> <ul style="list-style-type: none"> • “No matter what we do, there are going to be parents and kids who do complain about the food.” • “Well I think that if we could have someone from the nutrition side get together with the teachers and parents and just educate them in what we are doing. I just think they are misinformed and just saying what they hear off of the Internet and TV.”

Dimension E increased from pre to post-training. The change is best described by school staff acknowledging an increase in understanding of the new regulations and its effect on the health of the students. Due to the increase in knowledge of the cafeteria staff, focusing on building upon the skills and food preparation in a future training would be beneficial in increasing the acceptance of the students.

Table 4.5 – Dimension E - Knowledge of Issue: Pre and Post Emerging Themes and Representative Quotes

Pre-Training	
<p style="text-align: center;">Emerging Themes</p> <ul style="list-style-type: none"> • School nutrition staff knows that the meal pattern regulations have changed. However, they do not understand why the changes are needed. 	<p style="text-align: center;">Representative Quotes</p> <ul style="list-style-type: none"> • “Oh we’ve been to workshops for many of the changes that have been made.” • “It’s more about on what you’re gonna fix. You need to have so many red, orange, and yellow fruits and vegetables.”
Post-Training	
<p style="text-align: center;">Emerging Themes</p> <ul style="list-style-type: none"> • School nutrition staff has increased knowledge that the meal pattern changes are related to health. 	<p style="text-align: center;">Representative Quotes</p> <ul style="list-style-type: none"> • “Their health! And you’ve got to train them to at least try it. If they don’t like it fine, but if they do, good!” • “Yeah, I’ve heard that it helps their brains so that they can concentrate more on school.”

Dimension F had no increase from pre to post-training. There being no change is best described by school staff still acknowledging the lack of resources to assist them in the efforts the change food preparation. Even though knowledge and skills have increased overall, utilizing the products/foods that the schools use daily would be a beneficial resource.

Table 4.6 – Dimension F - Available Resources: Pre and Post Emerging Themes and Representative Quotes

Pre-Training	
<p style="text-align: center;">Emerging Themes</p> <ul style="list-style-type: none"> School nutrition staff identify time, limited staff, money, and lack of experts as barriers to making changes and not aware of available resources to overcome the barriers. 	<p style="text-align: center;">Representative Quotes</p> <ul style="list-style-type: none"> “Maybe, but we just don’t know.” “I don’t think we’ve had anyone volunteer to help, but out there in the conferences, they come and help, but they were all paid.” “We don’t have the time to do all that...cause we don’t have the man power.”
Post-Training	
<p style="text-align: center;">Emerging Themes</p> <ul style="list-style-type: none"> Acknowledge chefs as a resource. School nutrition staff identified the chefs as available experts who could assist with making food preparation changes when they needed someone to call on. 	<p style="text-align: center;">Representative Quotes</p> <ul style="list-style-type: none"> “I guess if I were to get looking, I have that one chef’s number that was here.” “I was just aggravated that I just couldn’t get her (the chef) all alone by myself and just ask questions!”

CHAPTER V

DISCUSSION & CONCLUSION

Discussion

The purpose of this study was to assess the impact of a pilot chef-based culinary skills training program on six Oklahoma SFAs' readiness to integrate new food preparation skills into meal planning and preparation practices. The pre-training readiness assessment, using the CRM, informed development of the training. The post-training assessment demonstrated schools' movement across stages from vague awareness to the preparation stage for making changes to food preparation practices. The CRM suggests that to move a group of people along the spectrum of readiness, interventions should be planned to address the dimensions with the lowest ranking score. In the pre-assessment, the dimensions with the lowest rank were dimension B (knowledge of efforts) and dimension F (resources) with a score of 3 (vague awareness). As a result, the intervention was planned to address these two dimensions specifically.

Initially, the majority of cafeteria staff felt that there was a local concern but there was no immediate motivation to do anything about it. Whereas, after the training intervention, the school cafeteria staffs' acknowledged nutrition directors efforts to provide training, and the cafeteria staff started to offer modest support of their efforts. The results support the AND recommendation to use a chef-based model (Cohen, Smit, Parker, Austin, Frazier, Economos, & Rimm, 2012).

Knowledge of Efforts

Dimension B describes the group of interest's knowledge about why efforts are conducted and their effectiveness. At pre-training assessment, the school nutrition staffs voiced concern for wanting to do a good job in meeting regulations, and, in fact, believed that they were, but did not recognize that the changes in meal pattern regulations were tied to student health. One participant commented: "We only change when the FDA tells us to." To address this dimension, the chefs reviewed meal pattern regulations and how they related to student health and academic outcomes. The change in this knowledge is best illustrated by several comments made at the post-training assessment: "Yeah, I've heard that it helps their brains so that they can concentrate more on school" and "It's time for a change cause, like, the obesity rate amongst children is out control." Hence, they are realizing just how important their job is and its impact on the students. As a result, understanding that changes in food preparation methods have a local impact on what students eat and their health, not just to meet federal regulations, increased support for making the changes.

A concern they had in making changes to meal preparation practices is that students would not eat the meals or that school meal participation would drop. This is seen in the statement: "Yeah, we always use to have people talk about how good our food was, but now our numbers have dropped this year." The nutrition education aspect of the training contributed to the increase in motivation to make changes. Similar nutrition education conducted with students (e.g., such as taste-testings and focus groups) could also be helpful for students' perception of school meals and help address the concern of participation dropping. (Fitzgerald, Bunde-Birouste, & Webster, 2009). In Fitzgerald et. al.'s study, input from students also helped identify other barriers to fruits and vegetable consumption.

Resources

The other lowest dimension was availability of local resources to support efforts (dimension F). Staffs' consistently identified lack of time (limited staff), money, and experts to provide guidance as barriers to meeting the updated meal patterns and offering meals that would be appealing to students. To address these concerns, the chefs tailored the intervention to build skills that would make their efforts more efficient (e.g., knife skills) and adding variety to menus (e.g., preparation of different types of vegetables and whole grains). In response, the cafeteria staff enjoyed the training, learned new skills, and increased familiarity with a wider variety of vegetables and whole grains. The staffs were able to apply the information at the end of the training by participating in the recipe competition. This was revealed in a participant's comment: "They also taught us how to think on our own and what kind of stuff goes together."

The participants also recognized chefs as experts that could help them make changes. They believed the training had many strengths (i.e. knife skills, exposed to new foods, and increased knowledge). As with Boston middle schools' chef training, the intervention provided cafeteria staff to practice using the food preparation techniques while preparing new recipes that focused on vegetables and whole grains (Cohen, Smit, Parker, Austin, Frazier, Economos, & Rimm, 2012). However, participants did not feel confident in applying the new information and skills to preparing school meals. For instance, at the post-training assessment, one of the cafeteria staff replied, "...It had nothing to do with the schools...I mean they knew their stuff and taught us well, but when it came to going into the school, I didn't feel like it was school related."

At the post-assessment, there was no change in the composite score for Dimension F (resources). This could be greatly due to the different types of infrastructure at each school (i.e. small kitchens, a re-heat kitchen, etc.). According to the study, Kitchen Infrastructure and Training for Schools, the perceived barriers of the food service directors included: needing

additional equipment (31%) and needing to remodel or upgrade kitchens (24%). Hence, it is believed that it will take a longer amount of time for these changes to occur, than what our study could observe.

To customize training to specific school programs, *Cooking for Kids* program planners should consider an on-site training phase that would match training chefs to schools who would evaluate local menus, make recommendations for change and then help staff implement the newly acquired skills into the revised menus. This would be consistent with the efforts reported by the discussed study conducted in Somerville, Massachusetts, that built on improvements in meal quality and staff capacity by obtaining a grant to fund hiring a consulting chef to provide on-site training (Economos et al., 2009). On-site consultations would also support school staff's desire and need for school-specific training in modifying local recipes and menus, as suggested in the following statements: " We have an existing menu that meets the guidelines for federal funding, we need to know how to make that taste better" and "We're looking forward to the training this summer!"

While new skills, information, and awareness of expert availability were acquired, there were other resources such as equipment that continued to be a barrier. This supports the need for additional efforts from school leadership to seek out opportunities for further funding. One of the schools in our study reported receiving a grant for proper kitchen equipment and cafeteria seating. A potential source for funding in Oklahoma is achieving "Certified Healthy School" status through the Oklahoma State Department of Health's Certified Healthy Program. The designation qualifies a school district to apply for incentive grants offered through Oklahoma's Tobacco Settlement Endowment Trust's office. In addition, advice from chefs during on-site consultations could help guide and support requests for funding.

In addition to resources, a second dimension with no change from pre- to post-training was school climate. One possible explanation is that the pilot training was conducted during the summer months when teachers and parents may have been less involved in and aware of the school event. With there being no change in the dimension, it becomes a dimension with the lowest scores at post-training and should be a focus of subsequent phases of *Cooking for Kids*. One strategy is to address the attitudes of teachers, parents, and students. The need for such strategies is suggested in the comment: “I think that if we could have someone from the nutrition side get together with the teachers and parents and just educate them in what we are doing. I just think they are misinformed and just saying what they hear off of the Internet and TV.” The participant had some good advice. As the cafeteria staffs have now increased their knowledge of the current efforts, they are going to need the increased knowledge of the parents and teachers in order to help support them in encouraging the students to eat the meals at school. Having a chef/nutritionist go in and educate the teachers and parents has potential to greatly benefit the school as a whole. For instance, there was a 3-year prospective study of 327 4th and 5th graders in a mid-sized school district in California, and it followed them into middle school (Wang, Rauzon, Studer, Martin, Craig, Merlo, & Crawford, 2010). Their findings strongly suggest that a comprehensive school district intervention that includes regular attendance and hands-on learning in garden and cooking classrooms, in conjunction with a changed school meal program matched to nutrition, environment, gardening, and cooking lessons can be effective in increasing preference for a variety of fresh produce and fruit and vegetable consumption (Wang et al., 2010). In addition, they integrated nutrition and food system concepts into their academic curriculum. Hence, allowing the students to be exposed to the new foods, tasting them while they cook, and learning knowledge of nutrition is an ideal strategy for: increasing their nutrition knowledge, having a positive change in attitudes toward healthy eating behaviors, and ultimately consuming more fruits and vegetables while in school. Thus, these strategies, especially if included in school wellness policies, would ultimately help reinforce eating school lunches.

It should be noted that one school's scores declined from pre to post-assessment, which did not occur in any of the other schools. They initially had an overall readiness score of 5 (preparation), but then at post-assessment it decreased to a score of 3 (vague awareness), which is a decrease of 2. The CRA model posits that readiness to make a change can increase or decrease, depending on events external to the intervention. This type of investigation was outside the scope of this report. Another explanation may be that the intervention was not appropriately matched to staff's readiness, thus creating frustration and resistance.

Further, future training should address use of basic marketing principles to promote students' selection of healthy foods. During on-site consultations, chefs should use resources from the Smarter Lunchroom program (Smarter Lunchrooms Movement, 2015) to make modifications in placement of food on the meal service line and naming of food items on menus. Other strategies might include addressing professional culinary-dress and recognition of schools completion of the *Cooking for Kids* training program through news releases and signage.

Conclusion

In conclusion, the culinary training was effective in increasing the readiness of cafeteria staff within a school to address adopting new food preparation techniques, providing evidence to fail to accept the null hypothesis. The increase in readiness was driven by increasing school staffs' awareness of local efforts to change food preparation practices and reasons why change is needed. This in turn may have resulted in the staffs' perception of the role of local leadership to initiate these efforts. Future efforts to include on-site chef consultations aimed at customizing training to local needs and coordinating efforts through comprehensive school-wide approaches may help to increase the dimensions of climate and resources.

Strengths and Limitations

Strengths

1. CRM: Proved to be the appropriate method to use to assess the pre- and post-readiness of the cafeteria staff, thus being effective in the development and implementation of the *Cooking for Kids* training.
2. School size: The OKSDE consultants strategically selected the 6 pilot schools for the training that represented variety in geographic location, enrollment and food preparation systems. They provided the researchers and chefs with good insight of the different types of kitchen infrastructure, and thus being able to adapt training to each school sight and prepare for future trainings throughout Oklahoma.

Limitations

1. Focus group dominance: There will usually be one or two individuals who dominate the conversation, thus making it difficult for the quieter ones to speak up. Thus, it will always be an issue for any researcher conducting a focus group. It is common for the younger and newer employees to be quieter, as they feel less experienced and more intimidated by the ones dominating the conversation. As a result, the researcher must do their best at making eye contact with everyone and asking them to join in as well.
2. School Nutrition Director: It is best to decide ahead of time if the researcher will allow the School Nutrition Director to join the focus group. The participants may tailor their response to the questions, to suit the presence of the director. The CRM was purposefully used to only assess the readiness of the cafeteria staff, and not the director. Yet, it greatly depends on the school size, if the researcher allows the director to attend.

3. Small focus group: It is usually desirable to have 5-12 participants in a focus group. However, there were two schools (Lomega and Sterling) where there were only 2 participants (Table 3.2) one of which was the School Nutrition Director. Yet, this reflected 100% of staff representativeness of school sites. For those schools, we used an in-depth personal interview.

Implications for Future Practice

1. *Cooking for Kids* should utilize a multi-stage, chef-based training including: 1) basic skills development; 2) marketing; and 3) on-site chef consultations. This approach is consistent with AND's recommendation for a chef-based training model to improve the school menu's dietary quality and palatability, build staffs' confidence in preparing meals that meet regulations and are acceptable to students, and allow for the customization of recipes and menus to meet local needs.

2. *Cooking for Kids* program should support comprehensive, school-wide strategies. While there was change in the attitudes of school nutrition staff, there was little perceived change in the attitudes of other stakeholders within the school climate after the training. This was best illustrated by the comment: "No matter what we do, there are going to be parents and kids who complain about the food." These efforts would include: 1) school nutrition staff collaboration with principals, teachers, and local media outlets to communicate with students and encouraged them to try different foods; 2) monthly tasting events at which students were offered samples of the fruit and/or vegetable of the month, with the items being served weekly throughout the month in school meals; 3) development of new recipes and menu using these foods for the meal programs; 4) posters with nutrition information, motivational messages, and fun facts about healthful foods displayed in the cafeteria; 5) principals and teachers promoting the program through school announcements and use of social media; and 7) invitation to families to enter healthy lunch ideas into a school-wide recipe contest. Resources to implement these strategies could be provided for schools through the *Cooking for Kids* website.

REFERENCES

- Academy of Nutrition and Dietetics. (2015). About Us. Retrieved February, 2015, from <http://www.eatrightpro.org/resources/about-us>
- American Heart Association. (2013). Facts With a Very Heavy Heart Obesity and Cardiovascular Disease. Retrieved February, 2014, from http://www.heart.org/idc/groups/heart-public/@wcm/@adv/documents/downloadable/ucm_305059.pdf
- America's Health Rankings. (2013). Oklahoma's 2013 Annual Report. Retrieved February, 2014, from <http://www.americashealthrankings.org/OK/Obesity>
- Boston University School Of Public Health. (2013). The Trans Theoretical Model (Stages of Change). Retrieved December, 2014, from <http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/SB721-Models/SB721-Models6.html>
- Brozena, C (2014, January). Cafeteria Kitchen Equipment Upgrades Can Lead to Healthier School Meals. Retrieved February, 2014, from <http://thrivingschools.kaiserpermanente.org/cafeteria-kitchen-equipment-upgrades-can-lead-to-healthier-school-meals/>
- Centers for Disease Control and Prevention. (2013). Childhood Obesity Facts. Retrieved February, 2014, from www.cdc.gov/healthyyouth/obesity/facts.htm.
- Centers for Disease Control and Prevention. (2012). What causes overweight and obesity? Retrieved February, 2014, from <http://www.cdc.gov/obesity/adult/causes/index.html>
- Centers for Disease Control and Prevention. (2011). Healthy Communities: What Local Governments Can do to Reduce and Prevent Obesity. Retrieved March, 2014, from http://www.cdc.gov/obesity/downloads/CDC_Healthy_Communities.pdf
- Centers for Disease Control and Prevention. (2009). Chronic Disease... The public health challenge of the 21st century. Retrieved February, 2014, from <http://www.cdc.gov/chronicdisease/pdf/2009-power-of-prevention.pdf>
- Centers for Disease Control and Prevention. (2005). The Role of Schools in Obesity Prevention. Retrieved March, 2014, from http://www.cdc.gov/healthyyouth/physicalactivity/pdf/roleofschools_obesity.pdf

- Cohen, J. F., Smit, L. A., Parker, E., Austin, S. B., Frazier, A. L., Economos, C. D., & Rimm, E. B. (2012). Long-term impact of a chef on school lunch consumption: findings from a 2-year pilot study in Boston middle schools. *Journal of the Academy of Nutrition and Dietetics*, 112(6), 927-933.
- Colorado State University. (2011). Community Readiness. College of Natural Sciences Tri-Ethnic Center. Retrieved December, 2014, from http://triethniccenter.colostate.edu/communityReadiness_home.htm
- Economos, C. D., Folta, S. C., Kuder, J., Clark, V., Goldberg, J., Collins, J., ... & Claire, K. (2009). Peer Reviewed: Retooling Food Service for Early Elementary School Students in Somerville, Massachusetts: The Shape Up Somerville Experience. *Preventing chronic disease*, 6(3).
- Edwards, R.W. Jumper-Thurman, P. Plested, B.A. Oetting, E.R. Swanson, L. (2000). Community readiness: research to practice. *Journal of Community Psychology*, 28 (3)291-307
- Findholt, (2007). Application of the community readiness model for childhood obesity prevention. *Public Health Nursing*, 24(6), 565570.DOI:10.1111/j.15251446.2007.00669.
- Fitzgerald, E., Bunde-Birouste, A., & Webster, E. (2009). Through the eyes of children: engaging primary school-aged children in creating supportive school environments for physical activity and nutrition. *Health Promotion Journal of Australia*, 20(2), 127-132.
- Food Research and Action Center. (2010). How Competitive Foods in Schools Impact Student Health, School Meal Programs, and Students from Low-Income Families. Retrieved April, 2014, from http://frac.org/pdf/CNR05_competitivefoods.pdf
- Freeman, (2006). 'Best practice' in focus group research: making sense of different views. *Journal of advanced nursing*, 56(5), 491-497.
- French, S. A., & Story, M. (2013). Commentary on Nutrition Standards in the National School Lunch and Breakfast Programs. *JAMA pediatrics*, 167(1), 8-9.
- Gundersen, C., Kreider, B., & Pepper, J. (2012). The impact of the National School Lunch Program on child health: A nonparametric bounds analysis. *Journal of Econometrics*, 166(1), 79-91.
- Hayes, D., & Berdan, G. (2013). School Nutrition Programs Challenges and Opportunities. *American Journal of Lifestyle Medicine*, 7(5), 333-340.
- Hildebrand (2012). An Evaluation of Oklahoma School Food Authority Training; Updated USDA School Meal Patterns and Nutrition Standards. Unpublished report.
- Institute of Medicine. (2015). About the IOM. Retrieved February, 2015, from

<http://www.iom.edu/About-IOM.aspx>

Institute of Medicine (2012). *Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation*. Washington, DC: The National Academies Press

Institute of Medicine (2009). *School Meals: Building Blocks for Healthy Children*. Retrieved February, 2014, from <http://iom.edu/~media/Files/Report%20Files/2009/School-Meals/School%20Meals%202009%20%20Report%20Brief.pdf>

Kids' Safe and Healthful Foods Project (2011a). *Schools Need Kitchen Tools & Training*. Retrieved, February, 2014, from <http://www.healthyschoolfoodsnow.org/schoolsneedkitchentoolstraining/>

Kids' Safe and Healthful Foods Project (2011b). *Serving Safe and Healthy Meals at Schools Takes Equipment and Training*. Retrieved, February, 2014, from http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Kids_Safe_and_Healthful_Foods/KSHF_SNF_Survey_05-19-2011_FINAL.pdf

Kids' Safe and Healthful Foods Project. (2013). *Most Schools Expected to Meet Healthier Lunch Standards*. Retrieved February, 2014, from <http://www.healthyschoolfoodsnow.org/most-schools-expected-to-meet-healthier-lunch-standards/>

Krueger, R. A., & Casey, M. A. (2000). Focus groups. *A practical guide for applied research*, 3.

Marshall, S.J. & Biddle, S. J. H. (2001). The transtheoretical model of behavior change: A meta-analysis of applications to physical activity and exercise. *Annals of Behavioral Medicine*, 23 (4), 229-246

Mathematica Policy Research. (2007). *School Nutrition Dietary Assessment Study-III*. Retrieved April, 2014, from <http://www.mathematica-mpr.com/nutrition/schoolmealsstudy.asp>

Mathematica Policy Research. (2012, November). *School Nutrition Dietary Assessment Study-IV*. Retrieved February, 2014, from http://www.mathematica-mpr.com/publications/PDFs/nutrition/snda-iv_findings.pdf

National Farm to School Network. (2014). *About Farm to School*. Retrieved April, 2014, from <http://www.farmtoschool.org/learn>

Oetting, E. R. Jumper-Thurman, B. Plested, M.A. Edwards, R.W. (2001). Community readiness and health services. *Substance Use & Misuse*, 36 (6&7), 825-843

Oetting, E. R. Donnermeyer, J. F. Plested, B. A. Edwards, R. W. Kelly, K. Beauvals, F. (1995). Assessing community readiness for prevention. *The International Journal of the Addictions*, 30(6), 659-683.

Oklahoma State Department of Education. (2013). *Oklahoma Low Income Report*. Retrieved January, 2015.

- Oklahoma State Department of Health. (2011). 2011 State of the State's Health Report. Retrieved February, 2014, from <http://www.ok.gov/health/pub/boh/state/SOSH2011.pdf>
- Oklahoma State Statistics. (2015). Percentage of Overweight and Obese Adults. Retrieved January, 2015, from http://www.ok.gov/okstatestat/Performance_Statistics/Health/Percentage_of_Overweight_and_Obese_Adults.html
- Oklahoma Tourism & Recreation Department. (2014). Oklahoma Map. Retrieved December, 2014, from <http://www.travelok.com/maps>
- Plested, B.A., Edwards, R.W., & Jumper-Thurman, P. (2006, April). *Community Readiness: A handbook for successful change*. Fort Collins, CO: Tri-Ethnic Center for Prevention Research.
- Plested, B. A. Jumper-Thurman, P. Edwards, R. W. Oetting, E. R. (1998). Community Readiness: a tool for effective community-based prevention. *The Prevention Researcher*, 5(2), 5-7.
- Prochaska, J. O. & Velicer, W. F. (1997). The Transtheoretical Model of Health Behavior Change. *American Journal of Health Promotion*, 12, (1), 38-48.
- Prochaska, J.O. (1994). Strong and weak principles for progressing from pre-contemplation to action on the basis of twelve problem behaviors. *Health Psychology*, 12(1), 47-51. Doi: 10.1037/0278-6133.13.1.47.
- Slater, M.D. Edwards, R. W. Plested, B. A. Jumper-Thurman, P. Kelly, K.J. Leonora, M. G. Keefe, T. J. (2005). Using community readiness key informant assessments in a randomized group prevention trial: impact of a participatory community-media intervention. *Journal of Community Health*, 30(1), 39-53. Doi: 10.1007/s10900-004-6094-1.
- Smarter Lunchrooms Movement. (2015). Resources. Cornell Center for Behavioral Economics in Child Nutrition Program. Retrieved January 2015, from, <http://smarterlunchrooms.org/resources>
- Story, M. (1999). School-based approaches for preventing and treating obesity. *International Journal of Obesity*, 23, S43-S51.
- Story, M., Nannery, M. S., & Schwartz, M. B. (2009). Schools and obesity prevention: creating school environments and policies to promote healthy eating and physical activity. *Milbank Quarterly*, 87(1), 71-100.
- The Center for Child Obesity. (2013). About Childhood Obesity. Retrieved January, 2015, from http://www.childobesity.com/CO_FamCOInfo.html

- The Pew Charitable Trust. (2013a). Serving Healthy School Meals Despite challenges, schools meet USDA meal requirements. Retrieved February, 2014, from <http://www.rwjf.org/content/dam/farm/reports/reports/2013/rwjf407899>
- The Pew Charitable Trust. (2013b). Report Finds That School Kitchens Need Significant Upgrades. Retrieved March, 2014, from http://www.pewtrusts.org/news_room_detail.aspx?id=85899527806
- The Pew Charitable Trust. (2013c). The School Food Modernization Act. Retrieved March, 2014, from <http://www.pewhealth.org/other-resource/the-school-food-modernization-act-85899491430>
- U.S. Census Bureau. (2013). Maps of metropolitan and metropolitan statistical areas. Retrieved May, 2014, from http://www.census.gov/population/metro/files/metro_micro_Feb2013.pdf.
- U.S. Department of Agriculture. (2015). About USDA. Retrieved February, 2015, from http://www.usda.gov/wps/portal/usda/usdahome?navid=MISSION_STATEMENT
- U.S. Department of Agriculture. (2014a). School Breakfast Program (SBP). Retrieved December, 2014, from <http://www.fns.usda.gov/sbp/school-breakfast-program-sbp>
- U.S. Department of Agriculture. (2014b). National School Lunch Program (NSLP). Retrieved December, 2014, from <http://www.fns.usda.gov/nslp/national-school-lunch-program-nslp>
- U.S. Department of Agriculture. (2014c). Team Nutrition. Retrieved February, 2014, from <http://www.fns.usda.gov/team-nutrition>
- U.S. Department of Agriculture. (2012, January). Federal Register/Vol. 77, No. 17. Retrieved February, 2014, from <http://www.gpo.gov/fdsys/pkg/FR-2012-01-26/pdf/2012-1010.pdf>
- U.S. Department of Agriculture. (2010). National School Lunch Program. Retrieved from <http://www.ers.usda.gov/topics/food-nutrition-assistance/child-nutrition-programs/national-school-lunch-program.aspx>
- U.S. Government Posting Office. (2015). National School Lunch Program – eCFR. Retrieved February, 2015, from <http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5&node=7:4.1.1.1.1>
- Wang, M. C., Rauzon, S., Studer, N., Martin, A. C., Craig, L., Merlo, C., ... & Crawford, P. (2010). Exposure to a comprehensive school intervention increases vegetable consumption. *Journal of Adolescent Health, 47*(1), 74-82.
- Wiecha, J.L., Hall, G., Gannet, E., & Roth, B. (2014). Healthy Eating in Out-of-School Time: The Promise and the Challenge. *National Institute on Out-of-School Time*

White House. (2010). Child Nutrition Reauthorization Healthy, Hunger-Free Kids Act of 2010. Let's Move. Retrieved December, 2014, from http://www.whitehouse.gov/sites/default/files/Child_Nutrition_Fact_Sheet_12_10_10.pdf

APPENDICES

Appendix A

IRB Approval

Oklahoma State University Institutional Review Board

Date: Wednesday, January 08, 2014
IRB Application No HE1376
Proposal Title: Oklahoma School Nutrition Culinary Training: Readiness of School Cafeteria Employees to Adopt New Practices
Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 1/7/2017

Principal Investigator(s):

Priscilla Ann Blevins	Deana Hildebrand
701 S Wicklow St Apt 106	315 HES
Stillwater, OK 74074	Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Cordell North (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,



Shelia Kennison, Chair
Institutional Review Board

**ADULT CONSENT FORM
OKLAHOMA STATE UNIVERSITY**

PROJECT TITLE: Oklahoma School Nutrition Culinary Training: Readiness of School Cafeteria Employees to Adopt New Food Preparation Practices

INVESTIGATORS:

Deana Hildebrand, PhD, RD, SNS
Oklahoma State University

Priscilla Blevins
Graduate Research Assistant
Oklahoma State University

PURPOSE:

The purpose of the evaluation is to 1) assess the readiness of school cafeteria staff to adopt new food preparation techniques and 2) to evaluate the impact of culinary training project to improve readiness of school cafeteria staff to adopt new food preparation techniques. The information will be used to help chefs and researchers develop a training program to meet the needs of school cafeteria staff.

PROCEDURES

You will participate in a focus group with other school cafeteria staff from your kitchen. The questions will ask about the readiness of school cafeteria staff to adopt new food preparation practices. Topics will include awareness of the need to make changes, current efforts being made toward the changes, consequences of not making the changes, resources and leadership available to make the changes. After each section the members will decide together the stage of readiness using a 9-point Likert scale. This study is designed to last approximately 1 to 1 ½ hours.

The study will be completed a second time in the Fall 2014 to assess the effect of a culinary training program to improve readiness of adopting food preparation practices.

RISKS OF PARTICIPATION:

There are no known risks associated with this project which are greater than those ordinarily encountered in daily life.

BENEFITS OF PARTICIPATION:

Benefits of participation in the program will help chefs develop and conduct a training program that best meets the needs of school cafeteria staff. Benefits to the society at large is an increased accessibility to affordable healthy foods to a large proportion of school age youth.

CONFIDENTIALITY:

The recorded discussions of this study will be kept private and destroyed within 1 year of the focus groups. Any written results will discuss group findings and will not include information that will identify you. Research records will be stored on a password protected computer in a locked office and only researchers and individuals responsible for research oversight will have access to the records.



COMPENSATION:

You will not be compensated for your participation. However, the school district will receive \$500 to be used at the school's discretion.

CONTACTS :

You may contact any of the researchers at the following addresses and phone numbers, should you desire to discuss your participation in the study and/or request information about the results of the study:

Deana Hildebrand, PhD, RD, SNS
Department of Nutrition Sciences
Oklahoma State University, Stillwater, OK 74078
Deana.hildebrand@okstate.edu
405-744-5059

Priscilla Blevins
Graduate Research Assistant
Department of Nutritional Sciences
Oklahoma State University
Stillwater, OK 74078
Priscap@okstate.edu

If you have questions about your rights as a research volunteer, you may contact

Dr. Shelia Kennison,
IRB Chair,
219 Cordell North, Stillwater, OK 74078,
irb@okstate.edu
405-744-3377

PARTICIPANT RIGHTS:

I understand that my participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time, without penalty.

CONSENT DOCUMENTATION:

I have been fully informed about the procedures listed here. I am aware of what I will be asked to do and of the benefits of my participation. I also understand the following statements:
I affirm that I am 18 years of age or older.

I have read and fully understand this consent form. I sign it freely and voluntarily. A copy of this form will be given to me. I hereby give permission for my participation in this study.

Signature of Participant

Date

I certify that I have personally explained this document before requesting the participant to sign.

Signature of Researcher

Date



School Cafeteria Staff Readiness Assessment

Focus Group Questions

Thank you for agreeing to participate in the focus group about adopting new food preparation techniques. The information will be used by chefs to be sure the pilot training programs meet the needs of school nutrition staff.

Our conversation will be recorded today. However, all information you provide will be kept completely confidential. To help keep the information confidential please do not mention any names while talking. Your responses will be grouped with the responses of other participants from this school and other schools. The recordings will only be used if there is need to listen to statements again to see how the pilot schools are alike and/or different. The recordings will be destroyed after 1 year.

Is everyone in agreement to participating and comfortable with the use of the recorder?

(If anyone is NOT in agreement thank them for their time and allow them time to leave.)

(Hand a packet to each participant.)

On the left side is a consent form saying that you agree to participate in the focus group. It explains why the focus group is being conducted and how the information will be used. It also says that you may leave at any time during the focus group conversation if you become uncomfortable with the questions. There is a copy for you to keep and one for you to sign and hand to me. Please take a few minutes and read through the information, and if you are still in agreement, sign one and keep the other for yourself. Please hand me the signed form so that they cannot be matched to the "response forms" in the other pocket.

On the right side of the packet are six colored pieces of paper. We call these anchored rating scales. Each one has a letter at the top. Our conversation will be divided into these six categories. I'll ask a series of questions for you to discuss as a group. After all have shared you will use the anchored rating scale to collectively decide where your school ranks on the scale. Based on our conversation, together you will decide on the statement that best reflects where you think your school ranks. These are important answers because they tell us about how school nutrition staff feel and know about adopting new food preparation practices.

Let's get started!



Appendix B

Community Readiness Assessment

School Cafeteria Staff Readiness Assessment

Focus Group Questions

Thank you for agreeing to participate in the focus group about adopting new food preparation techniques. The information will be used by chefs to be sure the pilot training programs meet the needs of school nutrition staff.

Our conversation will be recorded today. However, all information you provide will be kept completely confidential. To help keep the information confidential please do not mention any names while talking. Your responses will be grouped with the responses of other participants from this school and other schools. The recordings will only be used if there is need to listen to statements again to see how the pilot schools are alike and/or different.

Is everyone in agreement to participating and comfortable with the use of the recorder?

(If anyone is NOT in agreement thank them for their time and allow them time to leave.)

(Hand a packet to each participant.)

On the left side is a consent form saying that you agree to participate in the focus group. It explains why the focus group is being conducted and how the information will be used. It also says that you may leave at any time during the focus group conversation if you become uncomfortable with the questions. There is a copy for you to keep and one for you to sign and hand to me. Please take a few minutes and read through the information, and if you are still in agreement, sign one and keep the other for yourself. Please hand me the signed form so that they cannot be matched to the "response forms" in the other pocket.

On the right side of the packet are six colored pieces of paper. We call these anchored rating scales. Each one has a letter at the top. Our

conversation will be divided into these six categories. I'll ask a series of questions for you to discuss as a group. After all have shared you will use the anchored rating scale to decide where your school ranks on the scale. Based on our conversation, together you will decide on the statement that best reflects where you think your school ranks. These are important answers because they tell us about what people do and don't know. Let's get started!

Question line A: Existing Efforts to Change Food Preparation Methods

1. Using a scale from 1-10, how much of a concern is there about the food preparation methods used in your cafeteria (with 1 being "not at all" and 10 being "a very great concern")? Please explain.
2. **Please describe the efforts, if there are any, in your school to change food preparation techniques. (A)**
3. **How long have these efforts been going on in your school? (A)**
4. Would there be any part of the school cafeteria staff that are not included in the efforts? (Prompt: For example, some schools may not be included; some kitchen staff may not be included, etc.) (A)
5. Who benefits from the efforts? (Prompt: For example, individuals of a certain age group, ethnicity, etc.) (A)
6. Is there a need to expand these efforts/services to change food preparation? If not, why not? (A)
7. Is there any planning for efforts/services going on in your school to change food preparation? If yes, please explain. (A)
8. What formal or informal policies, practices and laws related to changing food preparation are in place in your school, and for how long have they been in place? (Prompt: An example of "formal" would be established policies, such as the school wellness policy, describing how foods will or will not be prepared. An example of "informal" would be similar to verbally prompting students to take a fresh fruit or vegetable.) (A)
9. Are there segments of the school for which these policies, practices and laws may not apply? (Prompt: For example, students, cafeteria cooks, etc.) (A)
10. Is there a need to expand these policies, practices and laws? If so, are you

aware of plans to expand them? Please explain. (A)

11. How do Child Nutrition employees view these policies and/or practices? (A)

Now we are ready to use the anchored rating scale. Find the orange piece of paper that says Scale A: Existing Efforts to Change Food Preparation Methods.

- Read the first statement and decide as a group if you can confidently say the cafeteria staff in your school meets and goes beyond that level.
- If yes, go to the next statement and do the same - decide as a group if you can confidently say the cafeteria staff in your school meets and goes beyond that level.
- When you reach a level, that you cannot confidently say yes, go back to the preceding level and circle that number.
- For example, you can confidently say that your school's cafeteria staff meet levels 1 & 2, but not level 3; the rank will be "2."

Question line B: School Cafeteria Staff's Knowledge of Existing Efforts

1. **Using a scale from 1-10, how aware are culinary staff in your school of changing food preparation techniques (with 1 being "no awareness" and 10 being "very aware")? Please explain. (NOTE: this figure between one and ten is NOT figured into your scoring of this dimension in any way - it is only to provide a reference point.) (B)**
2. **What does the school cafeteria staff know about changing food preparation techniques or activities? (B)**
3. **What are the strengths of these efforts to change food preparation? (B)**
4. **What are the weaknesses of these efforts to change food preparation? (B)**

Find the green piece of paper that says Scale B: School Cafeteria Staffs Knowledge of Existing Efforts. We will use the same instructions as before.

Question line C: Leadership to Change Food Preparation Methods

1. Who are the "leaders" specific to changing food preparation in your school?
2. Using a scale from 1 to 10, how much of a concern is changing food preparation to the leadership in your school (with 1 being "not at all" and 10 being "of great concern")? Please explain. (NOTE: this figure between one and ten is NOT figured into your scoring of this dimension in any way - it is only to provide a reference point.)
3. How are these leaders involved in efforts regarding changing food preparation? Please explain. (For example: Are they involved in a committee, task force, etc.? How often do they meet?)
4. Would the leadership support additional efforts to change food preparation? Please explain.

Find the pink piece of paper that says Scale C: Leadership to Change Food Preparation Methods. We will use the same instructions as before

Question line D: School Climate

1. Describe _____ (name of your school).
2. Are there ever any circumstances in which members of your school or cafeteria staff might think that NOT changing food preparation techniques should be tolerated? Please explain.
3. How does the school support the efforts to change food preparation?
4. What are the primary obstacles to efforts addressing changing food preparation in your school?
5. Based on the answers that you have provided so far, what do you think is the overall feeling among school members/culinary staff regarding changing food preparation?

Find the yellow piece of paper that says Scale D: School Climate. We will use the same instructions as before

Question line E: Knowledge about Changing Food Preparation

1. How knowledgeable is the school cafeteria staff about changing food preparation? Please explain. (Prompt: For example, why do food preparation methods need to be changed, what are the consequences, if any, of not changing food preparation methods, how will changing or not changing impact students, your staff? etc.)
2. What type of information is available in your school regarding this changing food preparation?
3. How do school cafeteria staff learn about how to change food preparation methods?

Find the purple piece of paper that says Scale E: Knowledge about Changing Food Preparation. We will use the same instructions as before.

Question line F: Resources for Changing Food Preparation Methods (time, money, people, space, etc.)

1. Who could your school ask for help in learning the skills needed to change food preparation? Why?
2. On a scale from 1 to 10, what is the level of expertise and training among those working on changing food preparation methods (with 1 being "very low" and 10 being "very high")? Please explain. (NOTE: this figure between one and ten is NOT figured into your scoring of this dimension in any way - it is only to provide a reference point.)
3. Are there volunteers who can assist the school in changing food preparation methods?
4. What is the school's attitude about supporting efforts to change food preparation methods, with people volunteering time, making financial donations, and/or providing space?
5. How are current efforts funded? Please explain.
6. Are you aware of any proposals or action plans that have been submitted for funding that address changing food preparation in your school? If yes, please explain.
7. Do you know if there is any evaluation of efforts that are in place to address changing food preparation? If yes, on a scale of 1 to 10, how sophisticated is the evaluation effort (with 1 being "not at all" and 10 being "very sophisticated")? (NOTE: this figure between one and ten is NOT figured into your scoring of this dimension in any way - it is only to provide a reference point.)
8. If there are evaluation efforts ask - Are the evaluation results being used to make changes in food production training programs or to start new ones?

Find the red piece of paper that says Scale F: Resources for Changing Food Preparation Methods. We will use the same instructions as before.

Appendix C

School Cafeteria Staff Readiness Assessment

Anchored Rating Scales

Scale A: Existing Efforts to Change Food Preparation Methods

1 No awareness of the need for efforts to change food preparation methods.

2 No efforts addressing changing food preparation.

3 A few individuals recognize the need to start some type of effort, but there is no immediate motivation to do anything.

4 Some school cafeteria staff have met and have begun a discussion of developing school efforts to change food preparation.

5 Efforts (training) are being planned.

6 Efforts (training) have been implemented.

7 Efforts (training) have been running for several years.

8 Several different programs, activities and policies are in place, covering different grade groups. New efforts are being developed based on evaluation data.

9 Evaluation plans are routinely used to test effectiveness of many different efforts, and the results are being used to make changes and improvements.

Scale B: School Cafeteria Staff's Knowledge of Existing Efforts

1 School cafeteria staff have no knowledge of the need for efforts addressing changing food preparation.

2 School cafeteria staff has no knowledge about efforts addressing changing food preparation.

3 A few members of the school have heard about efforts, but the extent of their knowledge is limited.

4 Some members and culinary staff of the school know about efforts to change food preparation.

5 Members of the school and culinary staff have basic knowledge about efforts (e.g., purpose).

6 An increasing number of school cafeteria staff have knowledge of efforts and are trying to increase the knowledge of the general school community about changing food preparation.

7 There is evidence that the school cafeteria staff has specific knowledge of efforts, including contact persons, training of staff, clients involved, etc.

8 There is considerable knowledge among school cafeteria staff about different efforts to change food preparation, as well as the level of program effectiveness.

9 School has knowledge of program evaluation data on how well the different efforts are working and their benefits and limitations.

Scale C: Leadership to Change Food Preparation Methods

1 School leaders do not recognize the need to change food preparation methods.

2 School leaders believe that food preparation methods are not an issue in their school.

3 School leaders recognize the need to do something regarding the need to change food preparation methods.

4 School leaders are trying to get something started.

5 School leaders are part of a committee or group that is addressing changes in food preparation methods.

6 School leaders are active and supportive of the implementing changes in food preparation.

7 School leaders are supportive of continuing basic efforts to change food preparation methods and are considering resources for future training.

8 School leaders are supportive of expanding/improving food preparation methods and are actively participating in the efforts.

9 School leaders are continually reviewing evaluation results of new food preparation methods and are using the information to make more changes.

Scale D: School Climate

- 1 The prevailing attitude is that the way food is prepared is unnoticed or overlooked within the school. (e.g. It's just not our concern.)

- 2 The prevailing attitude is "There's nothing we can do," or "We don't think it should change."

- 3 The school climate is neutral, disinterested, or believes that changing food preparation does not affect the school as a whole.

- 4 The attitude in the school is now beginning to reflect interest in the issue. "We have to do something, but we don't know what to do."

- 5 The attitude in the school is "we are concerned about this," and school members/cafeteria staff are beginning to reflect modest support for efforts.

- 6 The attitude in the school is "This is our responsibility" and is now beginning to reflect modest involvement in efforts to change food preparation.

- 7 The majority of the school generally supports programs, activities, or policies. "We have taken responsibility."

8 Some school members, groups, or cafeteria staff may challenge specific programs, but the school in general is strongly supportive of the need for efforts to change food preparation methods. Participation level is high. "We need to keep up on making changes in food preparation methods and make sure what we are doing is effective."

9 All major segments of the school are highly supportive, and school members are actively involved in evaluating and improving efforts and demand accountability.

Scale E: Knowledge about Consequences of NOT Changing Food Preparation

1 Changing food preparation is not a concern among school cafeteria staff.

2 School cafeteria staff have no knowledge about why food preparation methods should be changed.

3 A few of the school cafeteria staff understand the consequences of NOT changing food preparation methods in the school cafeteria.

4 Some school cafeteria staff recognizes the consequences of NOT changing food preparation methods, but do not understand how it impacts students and the program.

5 School cafeteria staff recognizes the consequences of NOT changing food preparation methods and general information about how it impacts students and the program is available.

6 A majority of school cafeteria staff recognize the consequences of NOT changing food preparation methods and that current food preparation methods in our school need to be changed.

7 School cafeteria staff have access to detailed information about the consequences of NOT changing food preparation methods.

8 School cafeteria staff have knowledge about the consequences of NOT changing food preparation methods.

9 School members have detailed information about changing food preparation as well as information about the effectiveness of changing food preparation methods.

**Scale F. Resources for Changing Food Preparation
Methods (time, money, people, space, etc.)**

- 1 There is no awareness of the need for resources to deal with changing food preparation methods.

- 2 There are no resources available for dealing with changing food preparation methods.

- 3 The school is not sure what it would take, (or where the resources would come from) to initiate efforts to change food preparation methods.

- 4 The school has individuals, organizations, and/or space available that could be used as resources.

- 5 Some members of the school are looking into the available resources.

- 6 Resources have been obtained and/or allocated for changing food preparation methods.

- 7 A considerable part of support of on-going efforts are from local sources that are expected to provide continuous support. School members and leaders are beginning to look at continuing efforts to change food preparation by accessing additional resources.

8 Diversified resources and funds are secured and efforts to change food preparation are expected to be ongoing. There is additional support for further efforts.

9 There is continuous and secure support for programs and activities, evaluation is routinely expected and completed, and there are substantial resources for trying new efforts to change food preparation method.

Appendix D
School Nutrition Readiness Assessment Report
Spring 2014 (Pre-training assessment)

Background

The purpose of the Readiness Assessment was to understand barriers and promoters for school nutrition staff to adopt new or refining existing food preparation practices to better meet USDA meal pattern requirements and nutrition standards while offering foods that are appealing to students (Plested, 2006). The readiness model is based on the premise that when efforts to make needed changes are matched to a “community” of people’s readiness to make the changes the efforts are more likely to be successful. (Edwards et al., 2000).

Nine stages of readiness have been identified and are defined below in Table 1 (Plested, 2006).

Table 1: Stages and Descriptions of Readiness to Adopt New or Revise Existing Food Preparation Methods

Score	Stage	Description	Goal
1	No Awareness	Existing food preparation methods are not generally recognized by school nutrition staff / leaders as a problem (or it may truly not be an issue).	Raise awareness about school nutrition
2	Denial/Resistance	At least some school nutrition staff / leaders recognize that existing food preparation methods are a concern, but there is little recognition for a need to make the change.	Raise awareness that the food preparation practices need to be changed locally
3	Vague Awareness	Most school nutrition staff feel that there is a local concern, but there is no immediate motivation to address food preparation practices.	Raise awareness that changes can be made.
4	Preplanning	There is clear recognition that changes must be made, and there may even be a group addressing it. However, efforts are not focused or detailed.	Provide concrete ideas, address local concerns.
5	Preparation	School nutrition leaders are beginning planning in earnest. School nutrition staff offer modest support of efforts.	Gather information to plan strategies.
6	Initiation	Activities are underway.	Develop skills
7	Stabilization	Activities are supported by administrators or school decision makers. School nutrition staff are trained and experienced.	Integrate new food production into local practices
8	Confirmation/ Expansion	Food production changes are being made. School nutrition staff feel comfortable with the changes, and they support expansions. Local data (e.g., student acceptance of meals, participation rates, etc.) are regularly obtained and shared with other school stakeholders (i.e., administration, teachers, parents).	Expand and enhance current school nutrition services.

9	High Level of Ownership	School nutrition staff are aware of how the new food preparation practices are impacting student meal consumption and participation rates. The information is leading to further changes. Staff are taking initiative to apply newly acquired techniques to different situations.	Maintain momentum and continue growth of school nutrition program.
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Source: Plested et al., 2006.

Readiness levels are driven by six distinct dimensions presented in Table 2. To move nutrition professionals to higher levels of readiness to adopt new or revise existing food production practices, training efforts should address the dimensions with the lower scores. In other words, it is important to match training strategies to readiness to assure new skills and practices taught in the *Cooking for Kids: Culinary Training for School Nutrition Professionals* are adopted and sustained by school nutrition staff.

Table 2: Dimensions Influencing Readiness

Dimension	Description
Existing Efforts	The extent to which efforts, programs and policies about food preparation and nutrition services exist.
Knowledge of Efforts	The extent to which school nutrition professionals know about the efforts, their effectiveness, and accessibility of efforts to all segments of the school.
Leadership	The extent to which school leaders support the school nutrition program.
School Climate	The prevailing attitude of school nutrition staff toward the issue, ranging from helplessness to responsibility and empowerment.
Knowledge about the Issue	The extent to which school nutrition staff know about the need to adopt new or revise existing food preparation practices, consequences of changing or not changing and how it impacts the nutrition program and students.
Resources	The extent to which local resources (people, time, money, facilities, equipment etc.) are available to support food preparation changes.

Source: Plested et al., 2006.

Methods

For the purpose of this assessment community was defined as the school nutrition staff. Six focus groups following the protocol described in *Community Readiness: A Handbook for Successful Change* (Plested, Edwards & Thurman, 2006) were conducted in six sites representing six school districts. The schools were recommended by the Oklahoma State Department of Education Child Nutrition Programs as pilot sites for the *Cooking for Kids: Culinary Training for School Nutrition Professionals* project. Each district signed a statement of agreement. Focus group members received written information about the assessment and signed consent forms. The assessment was approved by the OSU Institutional Review Board.

The focus group question line provided in the Community Readiness handbook was revised to match the issue of concern (culinary training). A series of questions specific to each dimension was facilitated by the graduate research assistant until no new information was added. After each series focus group participants used a respective anchored rating scale to establish a consensus for the dimension score. Dimension scores were averaged to determine the overall readiness score for each school. Dimension and overall scores were averaged across schools to calculate the all schools score. In keeping with Community Readiness handbook protocol all scores are rounded down to the nearest whole number.

Findings

Overall readiness scores and dimension scores for each school site are presented in Table 3. Across schools, readiness to adopt new or revise existing food preparation practices to meet USDA meal pattern requirements and nutrition standards while offering meals acceptable to students ranged from 1 (no awareness) to 6 (initiation) with no identified trends for enrollment, free / reduced price meal eligibility or geographic location. Overall the average readiness score was 3 (vague awareness).

The dimension with the overall highest score was knowledge of the issue (E). The consistent comment from focus group members related to this dimension was “food production practices needed to be changed to meet the USDA requirements.” Little was said about nutrition or improved health outcomes of students.

The dimensions with the overall lowest scores were “knowledge of existing efforts” and “available resources.” While school nutrition staff were aware of efforts the local school had already decided to change food production practices to meet the USDA regulations. For example, almost none of the kitchens were using deep fat fryers and most were struggling with the increase in processing fresh produce. In contrast, none of the focus group members were aware of statewide efforts to pilot culinary training but were excited about the prospect and did not know who the school could contact to receive help in changing food production practices. They also voiced interest in attending food production training and were eager to learn new techniques to address their unique needs. See Table 4.

Time, equipment and staffing were the primary needs in terms of resources. Focus group members emphasized that the equipment in each kitchen is different and that these differences determine how they prepare food. As such, training needs to provide options for preparing recipes. Support of teachers, administrators related to the school nutrition program varied by site.

Table 3. Schools' Readiness Scores by Dimension and Overall

School	Enrollment (2013-2014)	Dimension A Existing Efforts	Dimension B Knowledge of Efforts	Dimension C Leadership	Dimension D School Climate	Dimension E Knowledge Of Issue	Dimension F Available Resources	Overall Readiness Score
Chickasha	2,475	3	5	4	8	8	4	5 Preparation
Enid	7,858	9	3	9	4	4	2	5 Preparation
Sterling	430	2	2	2	2	1	2	1 No awareness
Lomega	234	5	8	2	8	9	4	6 Initiation
Mid-Del	14,580	1	2	3	1	4	3	2 Denial
Coweta	3,305	4	3	4	4	6	3	4 Preplanning
All schools (mean rounded down)		4	3	4	4	5	3	3 Vague awareness

Highlighted cells indicate lowest dimension scores.

Recommendations for Culinary Training

As discussed each school is at a different level of readiness to adopt new or revise existing food preparation practices and has unique concerns and situations that should be addressed in the culinary training sessions. These needs and corresponding recommendations / strategies are addressed in Table 5.

Table 4. Unique school situations, concerns and recommendations for training.

School	Readiness Stage / Lowest dimension	Kitchens & Feeding Sites ^a	Concerns	Recommendations
Chickasha Training at commissary kitchen	Preparation Few existing efforts	1 commissary kitchen 5 eating sites	<ul style="list-style-type: none"> • Not enough <u>time</u> to prepare food, specifically process produce. • Low participation at high school & middle school. • High a la carte participation 	<ul style="list-style-type: none"> • Emphasize time saving techniques. • Increase reimbursable participation by restructuring a la carte to reimbursable entrees.
Enid Training at commissary kitchen	Preparation Lack of available resources	1 commissary kitchen 3 school site kitchens 15 eating sites	<ul style="list-style-type: none"> • Teachers are critical of school nutrition program • Lack of time to prepare food 	<ul style="list-style-type: none"> • Emphasize time saving techniques. • Marketing program
Sterling	No awareness Low knowledge of why changes should be made	1 kitchen 1 eating site	<ul style="list-style-type: none"> • Saw nothing wrong with “old ways.” • Cost of making changes 	<ul style="list-style-type: none"> • Low intensity / hand holding / baby steps. • Emphasize how adoption of new food prep methods can save money.
Lomega Training at high school kitchen	Initiation School administrator	2 kitchens 2 eating sites	<ul style="list-style-type: none"> • No concerns, very positive. • Scratch cooking in place • Limited food distribution resources ? 	<ul style="list-style-type: none"> • Take to next step (e.g. • New recipes/ menus • “green-up” salad greens • Adding whole grains

	leadership indifferent (may not be a bad thing)			<ul style="list-style-type: none"> • Involve students & school staff in tasting to increase acceptance of new foods
Midwest-Del City Training at Del City Elementary kitchen	Denial 1) School nutrition staff not aware of existing efforts to change food production 2) School climate - Feel preparation methods for current menus are acceptable	25 kitchens 25 eating sites	<ul style="list-style-type: none"> • Mostly convenience foods on menus • “Kids choosing NOT to eat and going home hungry.” • Preparing whole grains so that they are acceptable to students. • Need consistent training that is adaptable to different kitchen equipment. 	<ul style="list-style-type: none"> • Skills to integrate more “scratch” cooking. • Time saving techniques for “scratch” cooking. • Adaptation of recipes for different equipment. • Marketing program • Student taste testing
Coweta Training at commissary kitchen	Vague awareness 1) School nutrition staff not aware of future efforts to change food production 2) Lack of resources to make changes	1 commissary kitchen 8 eating sites	<ul style="list-style-type: none"> • School stakeholders are not supportive of program (e.g., administration considering food service mang’t, students boycotting the cafeteria) • School nutrition staff desire assistance with presentation of foods • Concerned about holding food (i.e. presentation) for satellite to eating sites 	<ul style="list-style-type: none"> • Marketing program • Increase variety and appeal of secondary school menus. • Student involvement with taste testing

^a View photos of kitchens and equipment in accompanying PowerPoint slides.

VITA

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- Participated in videography of cooking techniques
- Assisted in plate-waste study at schools
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