Research Article

Use of Community Readiness Model to Develop and Evaluate a Pilot Culinary Training Program for School Nutrition Staff

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ABSTRACT

Objective: Use the Community Readiness Model (CRM) to develop and evaluate a contextually appropriate pilot culinary training program for school nutrition staff members.

Design: Mixed methods to guide intervention development.

Settings: Six school districts in rural and urban areas of a southwestern state.

Participants: School nutrition staff (n = 36; female; <1 to >20 years' experience).

Intervention: Pre- and post-training assessments used the CRM. Findings from the pre-assessment were used to develop the pilot culinary training intervention.

Main Outcome Measure: Readiness to integrate new food preparation methods into existing practices.

Analysis: The researchers used *t* and Wilcoxon tests to compare overall readiness and dimension scores ($P \leq .05$). Thematic analysis was used to identify themes from the discussion component of the assessments.

Results: Overall readiness increased from vague awareness to preparation ($P = .02$). Improved dimensions were knowledge of efforts ($P = .004$), leadership ($P = .05$), and knowledge of issues ($P = .04$). Themes included barriers, leadership, and motivation.

Conclusions and Implications: The CRM was useful for developing and evaluating a contextually appropriate and effective culinary training program for school nutrition staff. Future efforts should address the provision of additional resources such as on-site chefs, small equipment grants, and engaging school stakeholders.

Key Words: school nutrition, school food service staff, Community Readiness Model, culinary training, mixed methods (*J Nutr Educ Behav*. 2017;■:1-7.)

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INTRODUCTION

Policy, such as school meal regulations, is often used as a strategy to address public health concerns. Major and ongoing public health concerns in the US are the concurrent high rate of overweight and obesity, as well as the number of children who experience food insecurity.[1,2] Among school youth aged 6–19 years, the prevalence of overweight and obesity is 34%, and 17% of those are obese.[1] Compared to youth with healthier weights, not only do these youth have poorer academic outcomes, health outcomes, and increased health care costs, they are at increased risk of being obese as adults with poor health outcomes.[3,4] Furthermore, in 2014, 7.9 million children lived in food-insecure households in which the children, as well as the adults, did not have enough food to eat.[2] Food insecurity and weight status are associated with lower academic performance.[5,6]

Schools are a focal point for implementing policies and practices aimed at preventing obesity and reducing food insecurity.[7,8] In the US, >95% of youth and adolescents are enrolled in schools, spend about 50% of their day in school, and consume between 19% and 50% of their total daily calories while at school.[7] Of the 5 billion school meals served to youth in 2014, two thirds were served to students living in low-income households.[9]

The Healthy, Hunger-Free Kids Act passed by Congress in 2010 authorized the US Department of Agriculture's (USDA's) Food and Nutrition Service to update school meal patterns and nutrition standards, which were released and became effective in

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2012.[10] The new regulations increased the quantity and variety of fruits, vegetables, and whole grains, set age-appropriate calorie ranges, and reduced sodium and saturated fat in school meals, reflecting the Institute of Medicine's recommendations.[11]

The regulations marked the first major changes to the school meal nutrition standards in more than 15 years and affected all aspects of the food service operations.[12] As a result, the shift toward more fruits and vegetables and entrees with less sodium and saturated fat created a need for more equipment and space for on-site preparation and storage for fresh ingredients.[13] Furthermore, school nutrition staff needed training to expand the limited set of skills that had developed from preparing frozen and other convenience-type foods.[12-14] Other concerns included drops in student meal participation and maintaining positive attitudes among school nutrition staff owing to inefficient practices to accommodate existing equipment that had not been maintained.[13,14]

Despite the challenges, the majority of school nutrition directors were optimistic that they would be able to meet the updated regulations.[12,14] However, there were no reported attempts to assess the perspective of cafeteria nutrition staff regarding whether they felt ready to make the kinds of food production changes needed to meet the new regulations. This lack of knowledge created potential for what Weiner et al[15] described as an adoption-implementation gap. The decision to adopt a policy is frequently made by a limited number of people, often at the top of an organizational hierarchy, who are seldom involved in implementing the policy.[15] Successful implementation depends on the collective willingness and preparedness (eg, readiness) of the group of people who actually carry out changes on a day-to-day basis.[15] Therefore, to implement the updated meal pattern requirements successfully, there was a need to identify factors influencing the readiness of those responsible for implementation and to develop a targeted training to prepare them for change.

Readiness to change at an organizational level is a function of the group's attitudes toward the change, shared commitment to making the change, and perceived sense of support and capacity for making the change.[16] The concept was further supported by Stephens and Shanks,[17] who conducted a literature review of school food service interventions. They concluded that school nutrition training should not be limited to skill development but should empower food service professionals with reason for school meal requirements and their role in establishing a healthy school environment. That is, a culinary training program must be contextually appropriate and address the motivation and willingness of school nutrition staff to prepare them for change necessitated by policy adoption.

Community Readiness Model

The term *community readiness* refers to the willingness and preparedness of a group of people to take action on an issue.[18] Behavior change theory suggests that training programs are most successful when strategies are matched to the targeted audience's stage of readiness.[18,19] The Community Readiness Model (CRM), developed by the Tri-Ethnic Center for Prevention Research at Colorado State University, was shown to be an appropriate theory for planning and evaluating targeted interventions in diverse communities.[20,21] In this project, the community was defined as the school nutrition staff primarily responsible for food preparation.

The CRM presented 9 stages of readiness: (1) no awareness of the problem or need to change, (2) denial/resistance, (3) vague awareness, (4) preplanning, (5) preparation, (6) initiation, (7) stabilization, (8) confirmation/expansion, and (9) a high level of community ownership.[21] The stages were driven by 5 dimensions of readiness including knowledge of current efforts, leadership, community attitudes/climate, knowledge about the issue, and resources. Stage descriptions and dimension definitions are described elsewhere.[21]

The passage of the 2012 USDA meal patterns and nutrition standards prompted concerns about schools' abilities to comply owing to increased costs, equipment needs, and staff training.[12-14] The willingness of staff to make the changes necessary to increase the amount and variety of fruits, vegetables, and whole grains while decreasing saturated fats and sodium was also a cause for concern. To be successful, training was necessary that accounted for the nutrition staff members' levels of readiness to make changes. This research article describes the assessment of school food service staff's levels of readiness to meet the 2012 USDA meal patterns and nutrition standards, development of a contextually appropriate training program, and post-training readiness assessment to determine whether the training prepared school nutrition staff to make the necessary changes.

METHODS

Assessment of school nutrition staff members' readiness followed the group brief assessment protocol outlined in the *Community Readiness Handbook*, established by the Colorado State University Tri-Ethnic Center.[21] School districts were recruited from a list of 28 schools provided by the Oklahoma Department of Education Child Nutrition Services. The schools represented a variety of demographics, including rural and urban geographical location, enrollment, socioeconomic status, and food service operations. Six consenting school districts (21%) signed agreements to participate in the pilot training and pre-post assessments. Consenting school districts received $500 remuneration. The readiness assessment, which was conducted in spring, 2014 and fall, 2014, included nutrition staff responsible for food preparation. Each participant signed a written, informed consent form before participating in the study. Findings from the spring, 2014 readiness assessment guided development of the culinary skills training program, which was piloted in summer, 2014. Readiness was reassessed after the training. The study protocol was reviewed and approved as exempt by the Oklahoma State University's Institutional Review Board.

Assessments were conducted at each of the respective school district locations by the project lead, who had previous experience using the model, and trained graduate research assistants who used training materials from the Tri-ethnic Center and