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UNDERSTANDING BARRIERS TO IMPLEMENTING QUALITY LUNCH AND NUTRITION EDUCATION

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ABSTRACT: Food services and nutrition education are priorities for the Coordinated School Health Program in Massachusetts, which is a CDC-funded partnership between the Massachusetts Departments of Education and Public Health. Despite funding and resources provided by governmental and non-governmental agencies, schools are facing barriers in effectively creating a healthy nutritional environment. A qualitative survey was conducted to understand barriers to implementing quality lunch and nutrition education programs perceived by superintendents, principals, food service directors, nurses, and health educators in Massachusetts. The results suggest that while funding can initially enable schools to provide quality lunch, but without changes in students' preference for unhealthy food and parental and community involvement in fostering students' healthy eating behavior, the lunch programs cannot achieve a sustainable success. Lack of opportunity for communication among food service staff, health educators, and teachers appears to hinder the coordination necessary to promote school lunch as well as school-wide nutrition education. Respondents acknowledged that the state's academic assessment system is the priority issue in their schools, but expressed that the interests and initiatives of superintendents and principals in the lunch and nutrition education programs can be enhanced. Overall, the results suggest that successful implementation of quality lunch and nutrition education programs require not only the collaborative efforts of school administration and staff but also the support of parents, community, and the mass media.

KEY WORDS: coordinated school health program; quality lunch; nutrition education; barriers.

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INTRODUCTION

Schools are identified as a key setting for public health strategies to prevent and decrease the presence of overweight and obesity.[1] Most children spend a large portion of their time in school, and school-based programs related to improving nutrition have long been a part of the school experience.

The Coordinated School Health Program (CSHP) is a school-based intervention that seeks to improve the health and well-being of students while also improving academic outcomes. The model, designed by Diane Allensworth and Lloyd Kolbe, consists of eight interactive components. These components are health education; physical education; health services; food and nutrition services; counseling, psychological and social services; healthy school environment (both physical and emotional climate); health promotion for staff; and family and community involvement. In a CSHP model administrators, teachers, staff, parents, students and the community at-large are responsible for insuring that these components work together to form a solid base for promoting healthy behaviors through programming, policies, and the overall school environment.

In Massachusetts, the Comprehensive Health Curriculum Frameworks provide statewide guidelines for learning, teaching, and assessment in health for the Commonwealth's schools. The Frameworks, which were first adopted in 1996, endorse the CSHP as the standard model for health education. Superintendents, principals, health educators, nurses and other school based staff are familiar with the CSHP model through the established Frameworks as well as through professional development opportunities, technical assistance, and other resources provided by the Massachusetts CSHP.

Some schools may find it daunting to implement all the components of a CSHP and may opt to initiate the model by addressing a few priority components. The Massachusetts CSHP has addressed nutrition services as a priority for schools and aim to improve several aspects of the school nutritional environment, particularly school lunches and nutrition education.

A quality school lunch program means that schools provide lunch programs that offer a variety of healthy, tasty, and diverse choices, and students are encouraged to participate.[2] A nutrition education program means that students receive nutrition education messages not just in health education classes and the cafeteria, but through their core curriculum and throughout the school. These messages should be interactive, consistent, and reinforce each other.[2]

Schools choosing to address the nutrition services component have several resources to use, including the Centers for Disease Control and Prevention (CDC)'s *School Health Index* and *Changing the Scene—Improving the School Nutrition Environment* from U.S. Department of Agriculture, Food and Nutrition Services Team. Both tools help schools to develop action plans to create a healthier school environment through the development, implementation and evaluation of improved nutrition policies and programs. State education and public health agencies provide training and technical assistance to support these programs in local schools. Finally, the National Association of State Boards of Education's school health policy guide, *Fit, Healthy, and Ready to Learn*, helps schools address students' poor dietary patterns.[3]

Despite the resources offered by federal and state government agencies and non-governmental organizations, schools are facing barriers to supporting the implementation of a CSHP model and more specifically a healthy nutritional school environment through quality school lunch and nutrition education.[4,5] Without removing the roadblocks to schools' implementing quality lunch and nutrition education, schools may not be able to serve as an effective venue of developing children's healthy eating habits.

The purpose of this project is to examine the barriers and resource needs that schools perceive with regard to improving their nutritional environment. This article begins by briefly reviewing the background and rationale of this project. Next, a qualitative survey conducted with diverse stakeholders of the lunch and nutrition education programs at Massachusetts' schools is reported. Finally, the implications of the results and ways to address the barriers are discussed.

Previously, quantitative surveys have been done to identify barriers to the overall CSHP. A survey of superintendents in Ohio indicated that state-mandated proficiency exams were perceived to be the top barriers to paying attention to the CSHP, followed by lack of funding, personnel, time, and leadership.[4] Another survey of superintendents was done in Wyoming, reporting a similar pattern of results.[5] The top five barriers to the CSHP expressed by Wyoming superintendents were funding, salaries, standard assessment, time, and declining enrollment.

While these two studies represent important first steps, more research is necessary for three major reasons. First, although identification and rank-ordering of barriers are meaningful, the contextual factors associated with the barriers have yet to be understood in order to effectively and efficiently assist schools adopting the CSHP. That is, an in-depth and holistic understanding of the barriers is necessary.

Second, little research has been done to investigate barriers pertaining specifically to implementing quality lunch and nutrition education, which are the priority tasks of the CSHP in many states including Massachusetts. As reviewed earlier, the CSHP encompasses eight areas of school health including food and nutrition services. Within the food and nutrition services component there are several priority areas to address including quality lunch and nutrition education. Barriers facing these two priority areas need to be understood.

Finally, previous studies are limited to surveying superintendents and principals, who are important but definitely not the only stakeholders in the implementation of the CSHP. Successful implementation of the quality lunch and nutrition education programs, for example, will require commitment and cooperation of food service directors, nurses, and health educators as well as superintendents and principals.

The present project used a qualitative approach to investigate the barriers pertaining specifically to quality lunch and nutrition education of the CSHP. Further, the project surveyed diverse stakeholders at Massachusetts' schools, in addition to principals and superintendents. Specifically, three major types of personnel who are pivotal in implementing the two programs were surveyed: superintendents and principals, food service directors, and nurses and health educators. Details of the methods are presented below.

METHODS

Overview

Qualitative survey was chosen over quantitative survey format in order to elicit in-depth thoughts pertaining to barriers and thus to gain a comprehensive understanding of the perceived barriers. Mail survey was chosen as the mode of contact in recognition of the busy time schedule of school administrators and staff. Cost and time requirements for conducting focus group or person-to-person interview were prohibitive for this project.

Sampling

The sampling frame of the survey was the Massachusetts Department of Education's mailing list, from which a total of 217 respondents were randomly selected. Considering that superintendents and principals

are especially pressed for time, they were over-sampled to ensure sufficient number of responses. Of the 217 questionnaires sent out, 65 were superintendents and 65 were principals. The remaining 87 comprised of food service directors, nurses, and health educators.

The Survey

The questionnaire was sent out in October 2002. A cover letter explaining the purpose of the survey and assuring respondents' anonymity and postage-paid return envelope were provided along with the questionnaire. Two questions were asked for each program: (1) ''What do you think will be potential roadblocks in your school's implementing the [quality lunch] program (2) ''What resources do you think you will need to implement the [nutrition education] program.'' Prior to asking these two questions, the questionnaire provided the USDA's full definitions of ''quality lunch'' and ''nutrition education.''[2]

Within four weeks, response rate reached 25.3%, with 55 completed questionnaires returned. This level of response rate is typical for ''cold'' mail surveys that do not provide advanced notification or incentives for participation.[6] In the case of qualitative surveys, which tend to require more time and efforts, response rate can be even lower. A concern accompanying low response rate is that the individuals who choose to participate may have different characteristics than those who don't. However, virtually every survey relies on respondents who choose themselves to participate. In qualitative research, especially, participants' willingness to provide their thoughts and feelings is essential. As qualitative research aims to obtain an in-depth understanding, it tends to use much smaller sample than quantitative research, the purpose of which is to find representative information.

Of the 55 respondents, 10 were superintendents or principals, 18 were food service directors, and 27 were nurses or health educators. The majority of the respondents (62%) were at suburban schools, and the remainder comprised of 25% at rural and 13% urban schools, respectively.

Analytic Approach

For qualitative questions, a sufficient number of responses is reached when a consistent pattern in responses emerge.[7,8] Because we could identify a coherent theme of responses per each stakeholder category, we did not pursue a follow-up mailing. Upon receiving responses,

TABLE 1

Barriers to Providing Quality Lunch

Superintendents/Principals	*Food Service Directors*	*Nurses/Health Educators*
Lack of funding	Lack of funding	Lack of funding
Students' preference for unhealthy food	Students' preference for unhealthy food	Students' preference for unhealthy food
	Lack of communication with teachers	Lack of parental support
	Lack of leadership	Lack of communication with food service staff
	Short lunch time	Lack of leadership
	Lack of support materials/training for food service staff	Short lunch time
	Lack of opportunity to incorporate students' input	

three independent groups of researchers examined the responses to identify common threads and to develop key categories. The pattern of results was comparable across the three research groups. Tables 1 and 2 summarize the barriers to each program.

RESULTS: BARRIERS TO PROVIDING QUALITY LUNCH

Funding

Across the board (i.e., superintendents, principals, food service directors, nurses, health educators), respondents cited lack of funding as the fundamental issue obstructing the offering of quality lunch program. Respondents consistently indicated that vending machines and fast food stores on campus from which students buy junk foods every day are a stumbling block to the effective implementation of quality lunch, but that budgetary concerns hinder school administrations to give up those. Superintendents remarked that cost considerations necessitate selling unhealthy meals at cafeteria because those, rather than healthy meals, are the foods that students like to buy.

TABLE 2

Barriers to Providing Nutrition Education

Superintendents/Principals	*Food Service Directors*	*Nurses/Health Educators*
Lack of time for coordination between teachers and food service staff	Lack of time for coordination between teachers and food service staff	Lack of time for coordination between teachers and food service staff
Lack of facilitating staff	Lack of leadership from the administration	Lack of facilitating staff
MCAS	Lack of creative materials for cafeteria nutrition education	Lack of leadership from the administration
	MCAS	Lack of support materials for classroom nutrition education
		MCAS
		Mass media promoting junk food
		Lack of reinforcement at home and cafeteria and due to vending machines

Respondents suggested that funding can help address a range of resource needs for their lunch programs. For example, according to respondents, funds can be used to buy more fresh fruits and vegetables instead of canned products, to improve outdated kitchen equipment that does not allow serving food at a proper temperature, and to hire more food service staff to alleviate dining room traffic and to prepare healthy foods more appealing and attractive to students.

Students' Preference

The results indicated a critical factor that determines the effectiveness of quality lunch program is students' support. Across the board, respondents pointed out that students' lack of preference for healthy lunch menus is a roadblock. For example, a food service director stated, ''I try very hard when I plan a menu to keep it nutritious, low in fats,

sugar, sodium, etc. But students will still only eat (purchase) the foods they like (chicken patty, nuggets, pizza). There have been times we have spent a lot of prep time to make something different or healthier only to throw most of it away.'' A family and consumer science teacher observed that the offerings in his/her school are ''terrific,'' but students tend to choose less nutritious offerings. Similarly, a health coordinator wrote, ''The high school students were furious this year when French fry sales were limited to three days a week.''

The majority of respondents indicated that this is a major problem for schools with self-supporting lunch programs. Because nutritious food is less popular and take in less money, school lunch programs are inclined to offer less healthy, more popular food such as french fries, pizza and fried chicken nuggets, in order to cover costs and compete with offerings available through the a la carte programs, vending machines and school stores. Some nurses and food service directors said that their schools' lunch time is too short for students to enjoy the meals.

Parental Support

Health educators consistently pointed out that parental involvement is crucial in promoting student support and making the quality lunch programs a success. Lack of parental involvement was observed in several areas. Some stated that parents often send junk food in ''causing students to eat only the empty calorie snacks.'' Others noted that parents do not seem to know that their children are usually eating unhealthy foods at school and that this should be discussed at home. A health educator wrote that his/her school received multiple parental complaints that their children did not like the healthy choices and instead the parents requested junk food snacks.

Another health educator noted that a media campaign should be done to educate parents about the importance of fostering healthy eating habits for their children. These results suggest that parental involvement is essential in encouraging students' preference for healthy foods, which in turn influences the financial viability of quality lunch programs.

Lack of Communication

There appears to be a need for a greater level of appreciation and coordination among health educators, food service staff, and teachers. For example, some health educators wrote that food service staff's resistance to using preparation techniques to reduce fat, salt, and sugar,

and their attitudes that healthy foods will not be chosen by students are road blocks to providing quality lunch.

On the other hand, a food service director complained that ''teachers assume food service has no knowledge when it comes to nutrition.'' Majority of food service staff remarked that more communication between teachers and food service staff is essential in encouraging students' participation in school lunch.

Lack of Leadership

Nurses, health educators, and food service directors expressed that administrators need to exhibit more commitment and leadership. A food service director said, ''Principals and staff think they are baby sitting. Parents should be feeding them enough at home so the school doesn't have to worry.'' Another food service director wrote, ''Principals should be told that this is not an option.'' Similarly, health educators expressed that they feel the administration doesn't think a quality school lunch is an important factor impacting the school's learning environment.

Support for Food Service Staff

Food service directors indicated that education and training of all food service staff is necessary. They stated specifically that more recipe, education, and training on healthy foods should be readily available.

BARRIERS TO PROVIDING NUTRITION EDUCATION

Lack of Time for Coordination

Respondents consistently suggested that lack of time erects barriers to coordinating nutrition education. For example, a health educator wrote, ''The desire to work together between family & consumer science teachers and other teachers is present, but we lack the time to coordinate efforts for our students.'' Similarly, superintendents and principals recognized the need for coordination between food service staff and teachers to integrate instruction; however, they pointed out that ''food service staff work only during specified hours during which teachers are teaching or eating lunch.'' Many food service directors were aware that coordination between classroom and cafeteria is critical for the successful implementation of nutrition education, but indicated that they lack the time

for collaboration. While some food service directors expressed their desire to visit classrooms, some health educators stated that food service staff are not interested in participating in nutrition education. Although food service staff's interest in being involved in nutrition education may vary school to school, more communication appears to be in order for collaborations to happen between classroom and cafeteria.

Lack of Reinforcement

Respondents in schools where nutrition education is offered expressed frustration that the messages are not effectively reinforced throughout school and at home. For example, a health educator said that his/her school has a wonderful nutrition education program but the messages are not reinforced by parents. A key cause of lack of reinforcement in schools seems to be cost considerations. A health educator said ''the campus junk bar that generates money'' should be eliminated for classroom nutrition education to have an impact. Another health educator stated that nutrition education is offered but is not reinforced by the food choices offered in school cafeteria. According to a nurse, dining room nutrition education, other than display of posters and pamphlets, is almost impossible because lunchtime is too short. It is clear that effective, consistent nutrition education cannot be achieved without concerted efforts from all related sectors at school as well as at home.

Lack of Leadership

Administrators said that they need staff who can be resourceful in making nutrition messages consistent throughout the school. Health educators and food service directors remarked that a greater level of interest, initiative, and commitment should be shown by administrators. While respondents viewed that nutrition education coordinated by health, or family & consumer science teachers can be effective, they noted that due to budget shortages these staff are being cut in their schools. Respondents indicated that nurses are already overburdened with their responsibilities for health services. It appears that funding would allow schools to have personnel who can organize, facilitate, and assist nutrition education efforts in the classroom and cafeteria.

Lack of Support

Health educators stated that they and other classroom teachers need support materials such as teaching plans, posters, and pamphlets to

guide students and to distribute to their parents. Health educators said that teachers should receive further education on nutrition, since not all teachers are knowledgeable about proper nutrition. Without additional education, teachers may not feel entirely comfortable in talking about nutrition in class, according to health educators. A food service director noted that dining room nutrition education is typically limited to posters and pamphlets, and suggested that more innovative approaches are needed.

MCAS

Respondents consistently pointed out that the Massachusetts Comprehensive Assessment System (MCAS) is the priority of their schools and nutrition is often regarded as extra-curricular topic rather than a part of curriculum. Some health educators asserted that in order for nutrition education to be a valued part of curriculum and for schools to spend more time on nutrition education, the MCAS should include nutrition as a topic area. Many health educators and food service directors understood that teachers already have a heavy curriculum to teach, but suggested that nutrition education can be more in-depth and integrally related to core curriculum.

Mass Media

Health educators wrote that mass media messages' positive portrayal of sweet, salty, and fatty food defeats schools' efforts to foster healthy eating habit in students. A health educator suggested that such media tactics should be analyzed and adapted to promote healthy food in schools.

DISCUSSION

This project sought to investigate the barriers against schools' implementing quality lunch and nutrition education as it relates to a CSHP. The first-hand account of barriers provided by individuals at the center of school nutritional environment advances the understanding of the roadblocks and resource needs that they face by identifying and illustrating the contextual factors associated with the barriers.

Overall, the results indicate that funding can solve many of the root causes of barriers. For example, funding will allow schools to provide fresh fruits and vegetables, to update kitchen and dining room

facilities, and to eliminate vending machines. With funding, schools will be able to hire additional food service staff who can prepare healthy and appealing lunches and additional nutrition education staff who can direct creative, collaborative approaches. Additional funding would also allow schools to provide nutrition education, training, and resources for both teachers and food service staff.

Simultaneously, however, the results suggest that funding is the necessary, but not sufficient condition for the effective offering of quality lunch and nutrition education programs. It appears that diverse sectors of the school community, including not only the administration and various school staff, but also parents and guardians at home, community and statewide organizations, and the mass media should fully recognize the importance of helping children develop healthy eating habits and what each of the sectors contribute toward this end. Therefore, a school should employ a collaborative approach to creating a healthy school environment.

Schools by themselves cannot solve the serious health risk behavior of students without the cooperation and input of the various sectors of the community. However, schools provide the facility in which families, community-based organizations, government and the media can work in concert to support a healthy lifestyle for youth. Hence, schools should adopt a coordinated school health model as a first step in acknowledging that they need the involvement of all members of the wider school community in implementing a quality school lunch and nutrition education.

The Massachusetts Departments of Education and Public Health, through their shared participation in the CDC's CSHP, can help schools establish CSHP on the level local through technical assistance and available materials. Additionally, the Nutrition Services office at the Massachusetts Department of Education provides training and support for activities that create and sustain a healthy nutritional environment in schools. After adopting a coordinated school health approach, there are activities that staff, students, parents and the community can perform to overcome or minimize the environmental barriers to implementing a quality school lunch and nutrition education.

First, within school, students' input can be more actively sought, in order to identify ways to further improve their lunch environment. For example, some food service directors stated in the survey that their schools need to channel more student input to menu development. Regular, systematic survey or focus group of students will help schools provide meals that are both healthy and appealing for students. Others suggested that their schools' lunch time is too short for students to sit

down and enjoy the meal. Therefore, a policy endorsing an adequate amount of lunchtime may provide an environment conducive to students' participating in school lunch and exploring healthy choices.

Also, within school, a forum in which food service staff, nurses, health educators, and teachers can get together and share what they are doing to encourage students' healthy eating should be provided. Acknowledging various school staff's role in creating a healthy school environment will be an important foundation for the successful implementation of the quality lunch and nutrition education programs, in addition to superintendents' and principals' initiatives and commitment.

Diverse sectors' input and collaboration is needed from outside of school as well. The results indicated that incorporating parents' input will be critical in creating a healthy school environment. A parental advisory committee can provide support and guidance for school's quality lunch and nutrition education initiatives. By providing nutrition information on menus sent home to parents, schools will have an opportunity to increase parents' involvement and interests. Both parents' and students' understanding and interests in healthy food will be enhanced when they participate in at-home student–parent nutrition learning activities provided by school via menus or school news letters.[9]

Statewide and community-based organizations also can provide key mechanisms and support for developing School Health Advisory Councils (SHAC). The SHAC will help create an integrated school, parent and community coalition team to develop an action plan to enhance the health and well-being of students and promote school health programs. For example, the American Cancer Society offers support on how to form a SHAC through *Promoting Healthy Youth, Schools and Communities: A Guide to Community-School Health Advisory Councils.*

Community coalitions may help schools address various resource needs. For example, in order to secure materials and training for food service staff and teachers, schools may seek help from pediatricians, college and university nutrition faculty, and local chapter of the American Heart Association, the American Dietetic Association, and the American Cancer Society.[5,10]

For schools that cannot afford to retain a health educator or does not have a dietician on its food services staff, hospitals or community health centers can be of help. For example, a registered dietician can provide input on designing a nutrition education program. Dieticians can also work with nurses or health educators to address obesity prevention and control measures in schools. Institutes of higher education can provide assistance with building a curriculum

that promotes a healthy school nutritional environment, while also offering support in evaluating school health programs and monitoring youth priority risk behaviors.

Community collaborations can also be formed between schools and grocers and wholesalers. This can help schools defray cost for purchasing healthy food.[5,10] Finally, mass media campaigns for raising the entire community's awareness of the importance of children's healthy eating habit can be done by forming a coalition with local radio, television, and newspapers.

This project has at least two major limitations. First, although it used a qualitative survey method, a higher response rate would have been desirable. Second, a survey of students and parents could have provided a more comprehensive understanding of factors affecting the implementation of quality lunch and nutrition education.

Despite all the challenges, creating and sustaining quality school lunch and nutrition education programs are a worthy goal to pursue. For example, the National Evaluation of School Nutrition Programs found that students who participated in the school lunch program had superior nutrition intakes than non-participants.[11,12] However, many schools have experienced the popularity of foods competing with the school lunch through snack bars, vending machines, a la carte programs and school stores, which can also influence the eating behavior of students.[13] Foods offered in schools through these venues are not regulated by the government child nutrition programs such as the National School Lunch Program and therefore have more freedom to offer food items that contain greater grams of saturated fat, sodium and calories than items in the school lunch program. The wide availability of such foods outside the school lunch program may have a negative effect on the healthy eating behaviors of youth.

The results of the present project show that each sector of the school community needs to recognize the challenges and its role and responsibility in creating a healthy school environment. When the diverse sectors of the school community understand and work together to address the barriers, schools can serve as an effective venue for fostering children's healthy eating habits.

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