

## **Recess Before Lunch Programs in Elementary Schools: Perceptions and Practices of School Professionals**

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*Please note that this study was published before the implementation of Healthy, Hunger-Free Kids Act of 2010, which went into effect during the 2012-13 school year, and its provision for Smart Snacks Nutrition Standards for Competitive Food in Schools, implemented during the 2014-15 school year. As such, certain research may not be relevant today.*

### **ABSTRACT**

#### **Purpose/Objectives**

The objectives of this study were to examine the perceptions of school nutrition directors, principals/assistant principals, and teachers regarding issues important to consider when scheduling recess in relation to lunch, and to describe practices related to successfully implementing a recess before lunch program.

#### **Methods**

A random sample representing 700 school districts and all United States Department of Agriculture (USDA) regions was selected. A survey instrument was developed based on qualitative focus group data and addressed issues to consider when scheduling recess and when implementing a recess before lunch program. Surveys were mailed to school nutrition directors, who subsequently distributed surveys to principals/assistant principals and teachers in their districts, resulting in a total of 2,100 surveys. Statistical analyses included descriptive statistics, exploratory factor analysis, and multivariate analysis of variance (MANOVA).

#### **Results**

A total of 332 surveys (15.8%) were returned, with all groups of school professionals and all USDA regions represented. Five categories of issues to consider when determining how recess should be scheduled in relation to lunch in elementary schools were identified. These included personnel support/workload, child feeding implications, logistics, scheduling, and behavior. Issues rated as most important for successfully implementing a recess before lunch program included having strong leadership for the program, all involved parties working together to establish policy, and maintaining a positive attitude about the program.

#### **Applications to Child Nutrition Professionals**

The study results provide information about education and training resources needed to assist elementary school professionals in transitioning to a recess before lunch schedule. Educational materials should target the entire school community and should provide strategies for overcoming barriers, such as handling of logistical issues. Additional resources are needed to assist schools in implementing recess before lunch programs, such as samples of recess and lunch schedules, and draft policies that can be used as templates.

### **INTRODUCTION**

The National School Lunch Program (NSLP) is a federally assisted meal program that provides nutritionally balanced lunches to more than 30 million children each day (United States Department of Agriculture [USDA], 2007). In order for children to realize the benefits of the NSLP meals, they must eat the food served, and studies have shown that students often do not finish their school lunches. The School Nutrition Dietary Assessment Study-I, a nationwide study, found that students participating in the NSLP wasted roughly 12% of the calories from food served (Burghardt & Devaney, 1993; Devaney, Gordon, & Burghardt, 1995). Other smaller studies that focused on a few schools within a region found that plate waste estimates were from 10% to 37% (Buzby & Guthrie, 2002).

Plate waste may reduce the nutritional benefits children receive from the NSLP, and research has demonstrated

a clear relationship between nutrition and a child's cognitive development and ability to learn (Alaimo, Olson, & Frongillo, 2001; Bryan et al., 2004.; Johnson & Nicklas, 1999; Kramer, Allen, & Gergen, 1995; Meyers, Sampson, & Weitzman, 1991; Murphy et al., 1998; Troccoli, 1993). Healthy eating patterns in childhood are important to promote optimal intellectual development and health (United States General Accounting Office, 2003). Because of the NSLP's role in providing children with at least one-third of their daily nutrient requirements, it is important to promote healthful eating habits associated with the school meals program available to children in the school setting.

Several studies suggest one way to increase food and nutrient consumption and reduce plate waste is rescheduling lunch to follow recess. Getlinger and colleagues (1996) found that plate waste decreased from 34.9% to 24.3% when recess was scheduled before lunch rather than after lunch in elementary school grades 1-3. Other studies have shown similar results. Bergman, Buerge, Englund, and Femrite (2004) found that students with recess scheduled before lunch consumed significantly more food and nutrients than those with recess after lunch. In addition, food waste decreased from 40.1% to 27.2% when recess was scheduled before lunch. The Montana School Nutrition Program developed a pilot project to evaluate recess before lunch programs in four Montana schools (The Montana Office of Public Instruction, 2003). Results showed that the average amount of food and beverage waste per student decreased after recess before lunch program implementation.

In addition to the effects that recess scheduling may have on children's food consumption, the potential behavioral effects of scheduling recess before lunch are also important. A pilot study in one Hawaii elementary school found that changing to a recess before lunch schedule resulted in significant decreases in lunch line wait and discipline referrals (Tanaka, Richards, Takeuchi, Otani, & Maddock, 2005). The Montana School Nutrition Program pilot project surveyed administrators, teachers, and school nutrition personnel in schools with recess before lunch programs (The Montana Office of Public Instruction, 2003). These school professionals reported that recess before lunch was associated with a quiet cafeteria environment conducive to eating, a decrease in disciplinary problems at recess, in the cafeteria, and in the classroom, and children who were calmer and ready to learn in the classroom.

Although previous research has documented several benefits associated with scheduling recess before lunch, many schools have not adopted this schedule. According to the School Health Policies and Programs Study, only 4.6% of elementary schools schedule recess prior to lunch (Wechsler, Brenner, Kuester, & Miller, 2001). Thus, it is important to examine barriers that may prevent the implementation of recess before lunch programs, as well as factors associated with the successful implementation of recess before lunch programs. Rainville, Wolf, and Carr (2006) investigated the perceived barriers to scheduling recess before lunch. Barriers commonly identified by school professionals included preservation of instructional time, logistical issues such as addressing hand washing and winter clothing, and scheduling concerns. No research was identified addressing implementation of recess before lunch programs. The objectives of this study were to examine the perceptions of school professionals regarding issues important to consider when scheduling recess in relation to lunch in elementary schools, and to describe practices and policies related to successfully implementing a recess before lunch program.

## METHODOLOGY

### Sample

The sample consisted of school nutrition directors, elementary school principals/assistant principals, and elementary teachers in public school districts. A listing of states within each of the seven USDA regions was provided to Market Data Retrieval, a national school marketing company. The resulting random sample of 700 school districts was stratified by USDA region with 100 school districts from each USDA region. The final sample included a school nutrition director, an elementary school principal/assistant principal, and an elementary school teacher representing each of the 700 school districts, for a total sample size of 2,100.

### Research Design and Instrument

Eight focus group discussions were conducted to assess perceptions and practices of school professionals related to recess placement. Following two pilot focus groups, six additional focus groups were conducted, two in each of three geographic regions as defined by the USDA. Two of the three pairs of focus groups included one group of school professionals from a school district or elementary school that had implemented a recess

before lunch program and one group of school professionals from a school district or elementary school that scheduled recess after lunch. The remaining pair of focus groups consisted of individuals representing school districts or elementary schools with both types of recess schedules. The number of participants in the focus groups ranged from three to nine, and there were 47 total focus group participants. Participants included school nutrition directors, school nutrition managers, principals and assistant principals, teachers, and other school nutrition and teaching staff.

The guidelines of Krueger and Casey (2000) were used to plan the methodology for conducting the focus groups. Participants were asked semi-structured, open-ended questions designed to explore issues related to barriers and challenges in implementing a recess before lunch program as well as factors important in successful implementation of a recess before lunch program. Following transcription of the audio tapes from the focus group sessions, researchers thematically coded the responses into meaningful categories. Focus group themes included the following: factors leading to implementation of recess before lunch programs, challenges associated with recess before lunch program implementation, personal changes in professional role associated with recess before lunch program implementation, important factors to ensure a successful transition to a recess before lunch program, and most important factor when determining recess placement.

A survey instrument was developed from qualitative data obtained from the focus group sessions. In the survey, participants were asked to rate the level of importance of two sets of issues: 27 issues related to determining how recess should be scheduled in relation to lunch and 33 issues related to successfully implementing a recess before lunch program. The response scale was a 4-point Likert-type scale ranging from 4, very important, to 1, not important. Participants also were asked to provide information about themselves or their schools or school districts.

School nutrition directors who had participated in the focus groups were asked to pilot test the survey instrument. Each school nutrition director who participated ( $n=5$ ) was asked to complete the pilot survey, as well as distribute a pilot survey to one principal/assistant principal and one teacher. In addition to completing the survey, participants were asked to complete an evaluation form to assess the clarity and completeness of the cover letters, survey instructions, and survey content. Fifteen pilot surveys and evaluation forms were distributed, and 11 (73.3%) were returned. Only minor wording changes were made to the final survey instrument, based on the recommendations provided by pilot study participants. The University of Southern Mississippi Institutional Review Board approved the study protocol and survey.

### **Data Collection**

Each school nutrition director in the sample was mailed a package containing a cover letter and an envelope each for the school nutrition director, an elementary school principal or assistant principal, and an elementary teacher. The school nutrition director cover letter provided instructions on how to distribute the survey packets to the other school professionals in his/her district. Included in the survey packets for all school professionals were an instructional cover letter, the survey instrument, and a self-addressed, postage-paid envelope for returning the completed survey. No identifying codes were placed on the survey instruments, thus preserving the anonymity of all respondents. Participants were asked to return the completed surveys within a three week time period.

### **Data Analysis**

Survey data were analyzed using the statistical package SPSS Version 13.0 for Windows. Descriptive statistics included means, standard deviations, and frequencies of total responses. Exploratory principal components factor analysis was performed on the sets of items in the survey instrument, to determine if each set of items could be reduced to a smaller number of factors. Cronbach's alpha reliability coefficients were calculated to determine the internal consistency of any factors that emerged. Multivariate analysis of variance (MANOVA) was used to assess differences in factor scores based on recess placement and/or participants' job title. Portions of the survey in which items did not factor were analyzed using only descriptive statistics. For all statistical tests, an alpha level of 0.05 was used for significance.

## **RESULTS AND DISCUSSION**

### **Sample Characteristics**

A total of 2,100 surveys were distributed to 700 school nutrition directors, 700 elementary school

principals/assistant principals, and 700 elementary teachers. Of these, 332 surveys were returned and used in statistical analysis, for a response rate of 15.8%. Program and personal characteristics of respondents are provided in Table 1. All school professionals were represented, with the largest percentage of participants (38.7%) being school nutrition directors. All USDA regions were also represented, with the largest percentage of participants (17.6%) from the Midwest region and the smallest percentage of participants (9.3%) from the Northeast region. The largest percentage of principals/assistant principals and teachers (48.3%) reported working in elementary schools with recess scheduled after lunch for all students. The most commonly reported grades with recess before lunch were Grade 1 (37.9%), Grade 2 (36.9%), and Grade 3 (37.4%). The largest percentage of school nutrition directors (47.9%) reported working in school districts in which some of the elementary schools have a recess before lunch schedule.

**Table 1. Program and Personal Characteristics of Respondents**

<b>Item</b>	<b>Frequency</b>	<b>%</b>
<b>Job Title (n = 318)</b>		
School Nutrition Director	123	38.7
Principal/Assistant Principal	98	30.8
Teacher	97	30.5
<b>USDA Region (n = 323)</b>		
Midwest	57	17.6
Mountain Plains	56	17.3
Southwest	53	16.4
Southeast	52	16.1
Mid-Atlantic	42	13.0
Western	33	10.2
Northeast	30	9.3
<b>Elementary School Description (n = 178)<sup>a</sup></b>		
Recess is scheduled after lunch for all students.	86	48.3
Some students have recess after lunch, and some have recess before lunch.	61	34.3
Recess is scheduled before lunch for all students.	29	16.3
There is no recess at my school.	2	1.1
<b>Grades With Recess Before Lunch (n = 195)<sup>a</sup></b>		
Grade 1	74	37.9
Grade 3	73	37.4

None	73	37.4
Grade 2	72	36.9
Grade 4	64	32.8
Grade 5	47	24.1
Kindergarten	53	27.2
Pre-Kindergarten	24	12.3
Grade 6	11	5.6
<b>School District Description (n = 117)<sup>b</sup></b>		
Some of the elementary schools in my district have a recess before lunch schedule.	56	47.9
None of the elementary schools in my district have a recess before lunch schedule.	52	44.4
All of the elementary schools in my district have a recess before lunch schedule.	9	7.7
<b>School Nutrition Director Certification Status (n = 123)<sup>b</sup></b>		
SNA certified	45	36.6
Not certified	42	34.1
State Department of Education certified	21	17.1
SNS (formerly SFNS) credentialed	21	17.1
Registered Dietitian	15	12.2
Licensed Dietitian/Nutritionist	8	6.5

<sup>a</sup> This item was only answered by principals/assistant principals and teachers.

<sup>b</sup> This item was only answered by school nutrition directors.

### Issues to Consider When Scheduling Recess

Participants were provided with 27 statements regarding issues to consider when determining how recess should be scheduled in relation to lunch and were asked to rate the importance of each issue using a scale of 4, very important, to 1, not important. Issues that were rated as most important to consider when determining a recess schedule were those related to academics, including maintaining instructional time ( $3.77 \pm .49$ ) and children's academic performance ( $3.72 \pm .54$ ), and those related to children's health and nutritional status, including promoting children's health and well-being ( $3.70 \pm .54$ ), making sure children get enough to eat/are not hungry ( $3.64 \pm .60$ ), making sure children have enough time to eat ( $3.53 \pm .66$ ), and meeting children's dietary/nutritional needs ( $3.50 \pm .73$ ). Issues rated as least important included the logistics of managing children's belongings, however, one logistical issue, managing hand washing ( $3.19 \pm .82$ ) was rated as relatively important. In terms of the items related to support for the schedule from various involved parties,

support from principals/school administrators ( $3.22 \pm .81$ ) was rated as most important, followed by support from teachers ( $3.18 \pm .75$ ), and then school nutrition staff ( $2.95 \pm .85$ ).

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Exploratory factor analysis was conducted on the set of 27 items relating to issues to consider when determining how recess should be scheduled in relation to lunch. A principal component factor analysis with varimax rotation initially generated a seven factor solution, using the criterion of eigenvalues = 1. Only items loading at .40 or greater were retained, and items loading on more than one factor were retained in the factor on which they loaded the highest. Only one item loaded on the seventh factor, so the analysis was repeated selecting a six factor solution. Four items were omitted from analysis due to lack of cognitive association with other items in the factors. The fifth factor contained three items, but removal of one of these items produced an increase in internal consistency (Cronbach's alpha increased from .61 to .66). The sixth factor contained only two items, which demonstrated inadequate internal consistency (Cronbach's alpha of .48). Thus, these three additional items were removed from the analysis.

After omitting the items above, the factor analysis was repeated. The final factor solution contained five factors, which explained 63.4% of the variance. Table 2 presents the factors, items loading on each factor, and the Cronbach's alpha for each factor. Three of the factors demonstrated adequate internal consistency, with Cronbach's alphas ranging from .73 to .86. Two factors had Cronbach's alphas below the commonly used standard of .70, with Cronbach's alphas of .68 and .66. The researchers recognize this as a limitation, but given that this research was exploratory, made the decision to conduct follow up analyses using these factors as well.

**Table 2. Factor Descriptions for Issues to Consider When Scheduling Recess**

<b>Factor</b>	<b>Items Included in Factor</b>	<b>Cronbach's alpha</b>
Personnel Support/Workload	School nutrition staff schedules Workload/burdens on principals/school administrators Support for the schedule from school nutrition staff Support for the schedule from teachers Workload/burdens on teachers Workload/burdens on school nutrition staff Support for the schedule from principals/school administrators	.86
Child Feeding Implications	Children's food consumption at lunch	.80

	<p>Making sure children get enough to eat/are not hungry</p> <p>Impact on meal digestion</p> <p>Meeting children's dietary/nutritional needs</p> <p>Making sure children have enough time to eat</p>	
Scheduling	<p>Lunch period scheduling</p> <p>Recess period scheduling</p> <p>Class scheduling</p>	.73
Logistics	<p>Logistics of managing hand washing</p> <p>Logistics of managing winter/rain clothes</p> <p>Logistics of managing sack/cold lunches</p>	.68
Behavior	<p>Children's behavior in the classroom</p> <p>Children's behavior in the cafeteria</p>	.66

The first factor, personnel support/workload, included items related to support for the recess program from school administrators, teachers, and school nutrition staff, as well as items related to the associated workload for these parties. The second factor, child feeding implications, included items related to children's food consumption, meeting nutritional needs, and impact of the schedule on meal digestion. The third factor, logistics, included items related to the logistical concerns associated with recess schedules. This included managing winter/rain clothing, hand washing, and sack/cold lunches. The fourth factor, scheduling, included items addressing the scheduling of lunch periods, recess, and classes. The fifth factor, behavior, included only two items addressing children's behavior in the classroom and in the cafeteria.

Means and standard deviations for the factor scores are presented in Table 3. Mean factor scores indicate that child feeding implications is rated as the most important issue to consider when scheduling recess, followed by behavior, scheduling, personnel support/workload, and logistics. Thus, issues related to what is best for children emerged as most important.

**Table 3. Means and Standard Deviations for Issues to Consider When Scheduling Recess Factor Scores**

Factor	N	Mean <sup>a</sup>	SD
Personnel Support/Workload	327	2.83	0.65
Child Feeding Implications	326	3.42	0.54
Logistics	327	2.62	0.70

Scheduling	326	3.08	0.63
Behavior	320	3.34	0.64

<sup>a</sup>The response scale was a 4-point Likert-type scale ranging from 4, very important, to 1, not important.

MANOVA was used to determine if differences existed in factor scores by job title. The multivariate test for job title was significant ( $p < .001$ ), and univariate tests were significant for the personnel support/workload ( $p < .001$ ), child feeding implications ( $p < .001$ ), and logistics ( $p < .001$ ) factors. There were no significant differences in the scheduling and behavior factors by job title at the univariate level. Follow-up tests revealed that for each of the three factors that were significant at the univariate level, school nutrition directors rated personnel support/workload ( $p < .01$ ), child feeding implications ( $p < .001$ ), and logistics ( $p < .001$ ) as significantly more important issues to consider when scheduling recess than did principals/assistant principals or teachers.

### **Implementing a Recess before Lunch Program**

Participants were provided with 33 statements regarding issues to consider when implementing a recess before lunch program and were asked to rate the importance of each issue using a scale of 4, very important, to 1, not important. Table 4 presents the means and standard deviations for each of the 33 statements in descending order of agreement. School professionals rated 27 of the 33 statements as important or very important to successfully implementing recess before lunch program. The three issues that were rated as most important were having strong leadership for the program ( $3.53 \pm .64$ ), all involved parties working together to establish policy ( $3.48 \pm .68$ ), and maintaining a positive attitude about the program ( $3.48 \pm .68$ ). The next two issues both related to scheduling, including advance consideration of scheduling issues ( $3.44 \pm .64$ ) and being flexible with respect to scheduling ( $3.42 \pm .64$ ). Thus, leadership, inclusion of all involved parties in policy decisions, and scheduling were reported as key issues when implementing a recess before lunch program. Exploratory factor analysis of this set of statements did not yield factors that were cognitively interpretable, and further analysis of factors was not pursued.

**Table 4. School Professionals' Perceived Importance of Issues to Consider When Implementing a Recess Before Lunch program**

Statement	N	Mean <sup>a</sup>	SD
Having strong leadership for the program	310	3.53	0.64
All involved parties working together to establish policy	313	3.48	0.68
Maintaining a positive attitude about the program	313	3.48	0.68
Advance consideration of all scheduling issues	312	3.44	0.64
Being flexible with respect to scheduling	310	3.42	0.64
Communication about the program to school administrators	314	3.38	0.70
Communication about the program to teachers	311	3.37	0.68
Support from school administrators for the program	312	3.35	0.76
Extensive planning ahead for the program	312	3.34	0.73
Support from teachers for the program	312	3.33	0.70
Commitment to try the program for a specified period of time	311	3.27	0.75



Consideration of program impact on special needs students	315	3.25	0.69
Communication about the program to parents	311	3.23	0.78
Providing all involved parties an opportunity to offer input and voice concerns	313	3.20	0.73
Learning from other districts/schools with similar programs	310	3.19	0.77
Evaluation of feasibility of the program in existing facilities	311	3.17	0.78
Consideration of hand washing logistics	313	3.17	0.83
Support from school nutrition staff for the program	310	3.17	0.79
Research addressing program benefits/effectiveness	314	3.17	0.76
Communication about the program to school nutrition staff	312	3.17	0.79
Marketing the benefits of the program to all involved parties	307	3.14	0.83
Continuous assessment of program effectiveness	311	3.13	0.72
Communication about the program to children	313	3.11	0.79
Agreement by all members of the school community to adopting the program	311	3.10	0.83
Support from parents for the program	311	3.08	0.80
Creating a timeline for program implementation	308	3.06	0.76
Soliciting input from all involved parties regarding scheduling	309	3.05	0.78
Research addressing potential negative impacts of the program	312	2.99	0.76
Providing training for school nutrition staff	312	2.99	0.88
Planning for materials/supplies/equipment that might be required	309	2.97	0.84
Support from children for the program	312	2.87	0.84
Continuous assessment of program costs	315	2.81	0.88
Consideration for storing children's personal belongings	312	2.36	0.89

<sup>a</sup> The response scale was a 4-point Likert-type scale ranging from 4, very important, to 1, not important.

## CONCLUSIONS AND APPLICATIONS

While still limited, a growing body of research suggests that scheduling recess before lunch may positively impact children's nutritional intake (Bergman et al., 2004; Getlinger, Laughlin, Bell, Akre, & Arjmandi, 1996; The Montana Office of Public Instruction, 2003) and behavior (Tanaka et al., 2005; The Montana Office of

Public Instruction, 2003). In spite of these potential benefits, however, few elementary schools have adopted a recess before lunch schedule (Wechsler et al., 2001).

The current study examined perceptions of school nutrition directors, principals/assistant principals, and teachers regarding issues to consider when initiating a recess before lunch program and practices and policies related to successfully implementing a recess before lunch program. This study identified five categories of issues to consider when determining how recess should be scheduled in relation to lunch in elementary schools. These included personnel support/workload, child feeding implications, logistics, scheduling, and behavior. Participants indicated that child feeding implications was the most important factor to consider when scheduling recess, followed by behavior, scheduling, personnel support/workload, and logistics. The individual items rated as most important to consider when scheduling recess in relation to lunch were maintaining instructional time, children's academic performance, and children's health and well-being. Thus, issues related to what is best for children emerged as most important. Some of the issues identified as important to consider by participants in this study were similar to the barriers to scheduling recess before lunch identified by Rainville, Wolf, and Carr (2006), with preservation of instructional time, logistics, and scheduling concerns emerging as important factors in both studies.

Issues important for successfully implementing a recess before lunch program were also identified in this study. School professionals rated 27 of the 33 statements 3.0 or greater on a 4-point scale, signifying that these issues are important or very important to successfully implementing a recess before lunch program. Issues rated as most important by participants included having strong leadership for the program, all involved parties working together to establish policy, and maintaining a positive attitude about the program. Additional issues related to scheduling emerged as important, including advance consideration of scheduling issues and being flexible with respect to scheduling. Thus, strong program leadership, inclusive policy making, and scheduling were all considered key factors in successful implementation of recess before lunch programs.

Findings from this study suggest that the decision to implement a recess before lunch program is a more wide-ranging and complex undertaking than simply changing the recess schedule. Schools should utilize a team approach to fully examine all issues before implementing a recess before lunch program. Team members should include, but not be limited to school administrators, teachers, and school nutrition professionals. As communication and understanding of individual team members' roles increase, school teams can work together in planning and implementing a recess before lunch program. This team approach can keep the focus on what is best for children and maintaining the instructional time while working through the specifics related to logistics, scheduling, and personnel support.

The role of school nutrition professionals in the planning and implementing of a recess before lunch program can not be underestimated. They play a role that supports not only the nutritional benefits of a recess before lunch program but also the academic benefits. School nutrition managers and staff must be knowledgeable of the logistics and time constraints for meals that are designed into recess before lunch programs. They must be committed to having meals ready and serving children quickly and efficiently so that there is no delay in the children receiving their meals. In doing so, the school nutrition staff is doing their part so that instructional time in the classroom is not disrupted.

The mandate for a local wellness policy has initiated the discussion of establishing a healthy school environment in many school districts. Results from a survey of school professionals and parents on school wellness implementation in elementary schools (Molaison, Carr, & Federico, 2008) indicated that a healthy school environment should include healthy food choices, encourage physical activity, and promote positive interactions between school staff and students. Incorporating a recess before lunch program in an elementary school is one way to support a healthy school environment with minimal cost to the school district. School districts can use the results of this study as they plan to implement recess before lunch programs.

The main limitation to this research study was the response rate to the mailed survey instrument. At 15.8%, the response rate was lower than desired, which may cause concern for the generalizability of the results. However, although the response rate for the survey was low, all categories of school professionals and all seven USDA regions were represented in the group of participants. One factor that may have contributed to the low survey response rate was the timing of survey administration, which may have been too close to the end of the school year.

Recommendations for education and training based on study results include the development of education materials designed to assist elementary school professionals in transitioning to a recess before lunch schedule.

The education materials should target the entire school community, including administrators, teachers, and school nutrition staff, and should provide strategies for overcoming possible barriers or challenges, such as handling of logistical issues. Additional resources are needed to assist schools in implementing recess before lunch programs, such as samples of recess and lunch schedules, and draft policies that can be used as templates. Education materials regarding the potential benefits of recess before lunch programs should also be developed for parents. Although they were not included in the current research study, parents would play a critical role in supporting and promoting a successful transition to a recess before lunch program.

Findings from this study also suggest the need for additional research. The identification of best practices for implementing recess before lunch programs in elementary schools could build on this research study by involving school professionals who have been involved in the implementation of recess before lunch programs. Their perspective and experience with recess before lunch implementation in combination with these research findings can be used to identify best practices. This best practices resource could be used as a guide for school districts implementing or considering implementing a recess before lunch program. Pre- and post-studies of schools that change from a recess after lunch to a recess before lunch schedule should be conducted to identify practices that were important during the implementation of the schedule change.

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