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Position of the American Dietetic Association, Society for Nutrition Education, and American School Food Service Association: Nutrition Services: An Essential Component of Comprehensive School Health Programs

ABSTRACT

It is the position of the American Dietetic Association (ADA), the Society for Nutrition Education (SNE), and the American School Food Service Association (ASFSA) that comprehensive nutrition services must be provided to all of the nation's preschool through grade 12 students. These nutrition services shall be integrated with a coordinated, comprehensive school health program and implemented through a school nutrition policy. The policy should link comprehensive, sequential nutrition education; access to and promotion of child nutrition programs providing nutritious meals and snacks in the school environment; and family, community, and health services'partnerships supporting positive health outcomes for all children. Childhood obesity has reached epidemic proportions and is directly attributed to physical inactivity and diet. Schools can play a key role in reversing this trend through coordinated nutrition services that promote policies linking comprehensive, sequential nutrition education programs, access to and marketing of child nutrition programs, a school environment that models healthful food choices, and community partnerships. This position statement provides information and resources for nutrition professionals to use in developing and supporting comprehensive school health programs.

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POSITION STATEMENT

It is the position of the American Dietetic Association (ADA), the Society for Nutrition Education (SNE), and the American School Food Service Association (ASFSA) that comprehensive nutrition services must be provided to all of the nation's preschool through grade 12 students. These nutrition services shall be integrated with a coordinated, comprehensive school health program and implemented through a school nutrition policy. The policy should link comprehensive, sequential nutrition education; access to and promotion of child nutrition programs providing nutritious meals and snacks in the school environment; and family, community, and health services'partnerships supporting positive health outcomes for all children.

ENVIRONMENT

The ADA, SNE, and ASFSA recognize the importance for school-based nutrition services, including policies that link nutrition education, child nutrition programs, a healthful school environment, and community involvement promoting healthful eating and physical activity. *Healthy People 2010* selected overweight and obesity as a leading health indicator of many preventable causes of death.[1] The Dietary Guidelines for Americans 2000 support recommendations for a healthy weight and physical activity each day.[2] A healthy school environment provides youth with the skills and support they need to (a) adopt healthful eating behaviors, (b) obtain a positive nutritional status, and (c) achieve improved academic success. Schools reach over 95% of all children between the ages of 5 and 17,[3] and meals and snacks at schools play a critical role in developing children's eating patterns, providing one third to one half of many students' daily nutritional needs.[1,4]

RATIONALE

Good nutrition and physical activity are essential for the long-term health of children.[2] Childhood obesity has reached epidemic proportions: some 4.7 million youth between 6 and 17 are overweight or obese. The number of overweight youth (11%) has more than doubled over the past 30 years, with most of the increase occurring since the late 1970s.[5,6] Type 2 diabetes, one of the most serious health problems of overweight and obese children, has recently escalated.[7]

Recent research validates the positive impact of breakfast on student performance.[8-11] Of the 53.2 million school-aged children in the United States, 27 million (51%) participate in the National School Lunch Program (NSLP) and only 7.4 million (13%) participate in the School Breakfast Program (SBP).[12] Children often go without breakfast owing to hectic schedules, long bus rides, and lack of resources,leaving a large margin for improvement. Schools need to explore alternate breakfast services to meet the changing needs of the student population. These might include serving breakfast in the classroom,serving breakfast

after first class period, or grab 'n' go breakfasts offered during class changes or before school.[13] Of the nearly 14 million American children who depend on free and reduced-price school meals for 9 months of the year, only about 2.3 million participate in the summer food program. Many communities do not offer this valuable program; hence, a large number of children do not get breakfast during summer months. This contributes to overall poor eating habits.[14]

Children's Eating Habits

Children's eating habits and physical activity patterns have changed over the last 3 decades. The availability of high-fat foods in the children's environment, the positive social environment associated with some non-nutritious foods, and children's predisposition to like these foods are contributing to the increased incidence of childhood obesity.[15,16] The media have a powerful influence and have the capacity to persuade children to make poor food choices. Even brief exposure to televised food commercials can influence preschool children's food preferences.[17,18]

The following statistics illustrate how schools are providing inadequate environments to support healthful eating. Only 2% of school-aged children meet the Food Guide Pyramid serving recommendations for all 5 major food groups, and not more than 30% eat the recommended amount from any 1 of the 5 major food groups. More than 84% of school-aged children eat too much fat.[19-21]

Just over half (51%) eat less than 1 serving of fruit a day, and 29% eat less than 1 serving a day of vegetables that are not fried. This is a far cry from the recommended 5 servings of fruits and vegetables per day. One in 5 students aged 15 to 18 years skip breakfast. Added sugar contributes to 20% of total food energy in children's diets. Depending on age and gender, 56% to 85% of children consume soda on any given day. All age groups have shifted from milk products to soda and fruit drinks.[19-22]

Children's failure to meet calcium requirements may hinder skeletal growth and bone mineralization and increase the risk of bone fractures and of osteoporosis later in life, especially among females.[4,23] Students' lunches brought from home provide less than one third the Recommended Dietary Allowance (RDA) for food energy, vitamin A, vitamin B_6, calcium, iron, and zinc. By comparison, SBP meals exceed the goal of 25% of the RDA for food energy and key nutrients.[24] Students from low-income families are more likely to participate in the SBP than students from high-income families.[25] Yet half of children from low-income families skip breakfast entirely.[26]

Physical Inactivity

Youth health status is further compromised by inactivity. Only 25% of young people (ages 12-21) participate in light to moderate activity every day. Lack of physical activity contributes as much to the high prevalence of overweight and obesity as unhealthful eating behaviors. Regular exercise increases functional capacity and reduces many risk factors for chronic disease later in life.[27,28] Providing children with instruction and skill development is imperative to maintaining a physically active lifestyle. Unfortunately, current instructional practices in physical education do not meet the standards identified by national health objectives.[29] Schools that offer physical activity programs that meet those standards report positive effects on academic achievement, including concentration; improved mathematics, reading, and writing test scores; and reduced disruptive behavior, even when time for physical education reduces the time for academics.[30]

Schools' Critical Role

The data on childhood obesity, inactivity, food security, and poor food choices are alarming. Schools can play a key role in reversing this trend through school nutrition policies that ensure coordination of comprehensive nutrition education programs, child nutrition programs, a healthy school environment, and community partners.[4,27] The most systematic and efficient means available to improve the health of America's youth is to establish healthful dietary and physical activity behaviors in childhood by promoting positive lifestyles and developing effective decision-making skills.

Nutrition and Academic Performance

One of the strongest justifications for nutrition programs and services in schools is the effect on students' cognitive performance and their educational achievement. Good nutrition is linked to learning readiness and academic achievement, decreased discipline problems, and decreased emotional problems. Participation in the SBP has been demonstrated to improve test scores, composite math and reading percentile scores, and class participation and to reduce absences and tardiness.[8-11,31,32]

Importance of Nutrition Education in Health Promotion

Nutrition education is a critical component of most major health promotion and disease prevention programs.[33] Nutrition education and high-quality meals have been shown to improve eating habits and health status.[3,34-38] Lifelong healthful eating habits help prevent health problems later in life, including the 3 leading causes of death: heart disease, cancer, and stroke.[4] Knowledge gained about school-based nutrition interventions over the past 20 years provides further justification for implementation of comprehensive school-based nutrition programs and services.[33]

Current research results provide evidence that school-based nutrition programs and services will both improve the health and contribute to the educational achievement of young people now and in the future. The Centers for Disease Control and Prevention (CDC) provide guidelines that summarize the most effective strategies for promoting healthful eating among school-aged youth within the coordinated comprehensive school health program (CSHP).[4]

Components of CSHP

Nutrition services are an essential component of a CSHP for healthy children.[4] A CSHP combines health education, health promotion, disease prevention, and access to health and social services at a school site in an integrated, systematic manner. Nutrition services is 1 of the 8 components of a coordinated CSHP. The other components are the school environment; health education curriculum; physical education curriculum; health services program; counseling, psychological, and social services programs; family and community involvement activities; and a staff health promotion program.[4]

All of these components are interdependent for a comprehensive health program and environment in schools. Nutrition services should be linked with physical education and health education in schools and are strong components of health services such as counseling, psychological, and social services programs. Families can reinforce and strengthen nutrition education by modeling nutritious, appealing meals in an environment that encourages a pleasant, social family time and reinforcing classroom nutrition instruction at home. Schools can emulate a healthy environment and promote health to both students and staff. Community environments and services can support and reinforce the healthy school environment with services and promotions.

School Nutrition Policies

Policies are necessary to help provide guidelines for school districts to plan, develop, maintain, and administer comprehensive nutrition programs. Successful nutrition services of a CSHP are guided by nutrition policies that link nutrition education, child nutrition services, healthy school environment, and community partnerships. The National Association of School Boards of Education has developed a number of sample school policies to assist decision makers in establishing a healthy school nutrition environment.[38]

CSHP guidelines recommend that schools adopt a coordinated nutrition policy that promotes healthful eating through classroom lessons and a supportive school environment.[4] School nutrition policies may address school meals and snack programs that meet US Department of Agriculture (USDA) standards and employ qualified staff who serve appealing choices of nutritious foods in a school environment that encourages students to make healthful food choices.[33] Policies may also include serving and actively promoting healthful school meals that meet minimum USDA school nutrient standards; providing access to free and reduced-price breakfasts, lunches, and snacks for qualified students; making nutritious foods available wherever food is served; meeting the nutritional needs of students with special health care needs; and providing adequate time for classroom nutrition education.[31]

States must develop policies that limit the sale of competitive foods or less healthful food choices; many already are. Other policy recommendations may focus on a curriculum for preschool through grade 12 behavior-focused nutrition education; pleasant eating environments; adequate space with sufficient time for students to enjoy healthful meals; procuring local, direct market fruits and vegetables for school meals; and access to school meals with a minimum wait time. In carrying out the school's nutrition policy, community volunteers, staff, and students serve as role models for healthful eating and promoting nutritious foods. In developing school nutrition policy, it is beneficial to include community leaders' help in assessing school eating environments and creating a shared vision and action plan done with adequate local, state, and federal funds.

THE NEED FOR COMPREHENSIVE, SEQUENTIAL NUTRITION EDUCATION

Comprehensive nutrition education refers to a planned, sequential instructional program that provides knowledge and teaches skills to help students adopt and maintain lifelong healthful eating patterns.[30] A sequential, comprehensive nutrition education curriculum should begin in preschool and continue through secondary school. Integrating nutrition education topics into other subject instruction areas may be necessary because of the current educational emphasis on academic achievement and mastery of core subject standards. However, this strategy should complement, not replace, a comprehensive nutrition education program. A multiyear, sequential nutrition curriculum from preschool through grade 12 facilitates the best use of limited instructional time.[33,37-40]

Research validates that behavioral change correlates positively with the amount of nutrition instruction received.[4] In US schools, the mean number of hours per school year spent on nutrition education is 13. This is below the minimum 50 hours thought necessary to impact behavior. A major intensive school-based health education program with increased time, intensity of lessons, and environmental change, coupled with parental involvement, significantly increases students' health knowledge and improves eating and physical activity behaviors.[41]

A culturally appropriate curriculum that uses the cognitive, affective, and behavioral teaching methodologies may influence behavioral change. Fewer than one third of schools provide thorough coverage of nutrition education related to influencing students' motivation, attitudes, and eating behaviors.[42] Nutrition education programs that influence eating behaviors focus on changing specific behaviors rather than on learning general facts about nutrition; employ active learning or experiential strategies using developmentally appropriate instructional concepts at each grade level; devote adequate time and intensity to focus on behaviors and skill building; and provide teachers and other staff with adequate training in nutrition education. Effective programs also link with the school environment by involving the child's family (because parental involvement is recognized by researchers to initiate

changes in children's dietary patterns) and providing school meal programs and food-related policies that reinforce classroom nutrition education.[4,34] The most effective school-based strategies to change consumption behavior include using a clear message, multiple strategies that reinforce that message, family involvement, an increase in the intensity and time of contact, and a theoretical framework.[43-45]

Teacher Training

A preschool through 12th grade nutrition education curriculum, taught by well-trained staff and well-supported teachers who are trained to teach nutrition, is a vital component of a CSHP. Teachers should be offered ongoing inservice training.[4,44,46] Approximately half (52%) of elementary school teachers have had formal training to teach nutrition, and training increased teachers' use of active learning strategies. Nutrition services staff must also be trained to understand what is being taught in the classroom and their role in supporting education.

Guidelines

Nutrition education guidelines for schools are vital to support the integration of nutrition education.The National Health Education Standards provide guidelines including understanding the principles and implications of healthful weight management, positive nutritional status, and dietary supplements; planning and preparing safe, healthful meals using proper storage and food-handling skills and using food labels to assess foods; critically evaluating nutrition information,misinformation, and commercial food advertising; and assessing one's personal eating habits, setting goals for improvement,and achieving those goals.[4] Another example of a recommended guideline is an understanding that food access, availability, ecology, and school gardens help to develop a deeper appreciation of our environment and food systems.[47,48]

Linking with Agriculture and Food Systems Education

The recent interest in incorporating gardens as a learning laboratory in schools provides many opportunities for enhancing the school environment and reinforcing nutrition education.[49,50] Integrating garden-enhanced nutrition education, using theory-based, skill-building, fun, sequential, experiential activities with community and parental involvement, is a strategy that can increase students' preferences for vegetables and increase their nutrition knowledge.[49] Research shows that children who plant and harvest their own fruits and vegetables are more likely to eat them.[50] Cross-linking school gardens into nutrition,physical education, environmental studies, and science curricula, as well as the schools' waste management and other activities, is an integral part of a comprehensive plan.

New strategies and policies are necessary for learning about and developing food systems; purchasing locally grown, seasonal food; exploring a region's present food self-reliance; developing seasonal food guides; supporting local farmers' markets; and building coalitions and alliances to address the protection of valuable environmental resources.

Linking with Physical Activity

Integrating nutrition and physical activity is critical to successful school nutrition programs. Nutrition and physical education staff can plan lessons and activities that teach students about the importance of good nutrition and physical activity as linked components for an overall healthy lifestyle. Nutrition instruction may be provided in physical education classes; athletic coaches serve as role models and should receive nutrition training to assist in providing students with reliable information regarding food choices. School meal programs may include physical fitness messages in their educational and promotional materials and provide "training tables" offering nutritious foods for students. Team Nutrition, a national initiative to improve children's eating and physical activity habits, demonstrates the linking of physical activity and nutrition messages.[51,52] Garden-based learning stresses physical activity.

ACCESS TO AND MARKETING OF CHILD NUTRITION PROGRAMS THAT PROVIDE NUTRITIOUS MEALS AND SNACKS MEETING FEDERAL CHILD NUTRITION PROGRAM STANDARDS

Access and Standards

Meal standards and children's access to healthful foods improve health status and academic performance. School meal nutrient standards are part of the USDA NSLP and the SBP. School breakfast must provide one fourth and lunch programs must provide one third of the RDA for calories,protein, calcium, iron,vitamin A,and vitamin C for the applicable age or grade groups. Less than 30% of calories must come from fat. In addition,the 2000 Dietary Guidelines for Americans are incorporated into the meal requirements.[2,53]

Child nutrition programs encourage students to participate in healthful school meals that meet USDA's standards through targeted marketing and merchandising strategies. Team Nutrition provides competitive grants to states for training and materials, such as sequential, experiential nutrition activities and marketing strategies for the meals.[51] Staff may encourage students and parents to participate in planning meals and incorporating cultural and regional preferences. Child nutrition staff and teachers collaborate to design and implement nutrition education programs that integrate healthful eating messages into the entire school environment. Child nutrition staff may teach nutrition lessons and/or give presentations to students, parents, and other school staff; provide food and content for classroom nutrition lessons; complement garden-based lessons by offering garden salad bars at

meals; coordinate activities with classroom, physical education teachers, and other staff; decorate the cafeteria with educational posters, the nutrition content of foods served and offer cafeteria tours to enhance CSHPs.[4,31]

Culturally Relevant Programs

Students are more likely to select and eat school meals when foods meet students' taste and cultural preferences and are served in a supportive, comfortable, attractive, and social environment.[54,55] School meals provide an opportunity to reflect and celebrate ethnic communities through preparation techniques and use of food products. Meals may be marketed in the classroom and related to the core curriculum, may be marketed in the cafeteria with signage and samples, and may also involve families through menus, take-home newsletters, and invitations to family meals at school and at presentations at parent organizations.

School nutrition advisory counsels and a nutrition education specialist can help facilitate meals and programs that celebrate diverse cultures. School programs must ensure that all materials distributed to students and families are in the appropriate languages.

Vegetarian Offerings

The number of school-aged vegetarians is increasing, and schools should address their dietary needs. Vegetarians' dietary requirements need to be considered in nutrition services including students' education, food services,screening, and counseling.[56] Meatless options should be offered to all children who eat school meals. School salad bars with a variety of fruits and vegetables provide students with choices of produce. Salad bars and other serving methods can also provide more offerings of plant foods such as legumes, soy, whole grains, and breads to help meet vegetarian needs.

Marketing

In an effort to entice students to participate in school meals, nutrition services are using marketing strategies. To compete with fast-food restaurants and improve student perceptions, schools are developing in-house food brands; offering restaurant-type menus;establishing food courts,portable food and salad bars, and carts; increasing à la carte offerings; and employing chefs to improve the visual and sensory elements of food. Studies show that when students have choices and/or have been exposed to a variety of fruits and vegetables, they are more likely to consume a greater amount of fruits and vegetables.[57-61] Also, when students consume a school lunch meal rather than a school's à la carte meal, they are more likely to consume more fruits and vegetables.[62] More schools are offering local, seasonal,fresh fruits and vegetables such as garden salad bars through direct farm-to-school marketing procurement. Some of the USDA's priorities include expanding direct marketing between farms and schools to increase the amount of locally grown produce offered in the NSLP and SBP.[63] In addition to marketing school meals, schools must ensure that families are aware of need-based programs for free or reduced-price meals.[33]

Professional Standards and Professional Development

Although meal quality standards are well established,professional requirements for school nutrition program director and manager positions are inconsistent. School-based nutrition programs'administrators fulfill the diverse roles of nutrition spokesperson, manager of multimillion dollar budgets, and partner in CSHPs. Child nutrition staff may take an active role in educating students, parents,teachers, and others about nutrition and the foodservice program offerings. The state with the highest level of school lunch participation in the country requires that a child nutrition program director/supervisor have, at minimum, a master's degree in a nutrition-related field. School nutrition directors should have, at minimum, a bachelor's degree in a nutrition-related field/foodservice management or a dietetics degree or certification/credentialing in food service from either the ASFSA or a state program.[31,64,65] Each of these credentials requires continuing education in order to maintain it.

In order to keep up with the demands in child nutrition and ensure the highest standards in these programs,new professional development programs have been implemented. Specifically, the ASFSA has established a nationwide certification program for all levels of food service and a credentialing program. Participants in the credentialing program are awarded the designation of School Foodservice and Nutrition Specialist (SFNS) after successful completion of a comprehensive examination.[66,67]

School nutrition professionals provide oversight, coordination, and support for integrating nutrition education providing healthful food choices.[68] "Keys to Excellence," a self-assessment tool designed by ASFSA, is available for dietetics professionals to use as a framework for continuous program review, evaluation, and improvement.[69]

Time for and Schedule of School Meals

In an attempt to provide increased classroom time within the existing school day, schools have decreased the amount of time available for students to eat lunch. The majority (82%) of high school students report that lunch periods are too short, and two thirds (62%) report that lunch lines are too long, both of which contribute to dissatisfaction with school lunch.[70] Consequently, many children choose to skip lunch or select foods that they can eat quickly from snack bars or vending machines.[62]

Policies to address school meal schedules and the amount of time for meals are imperative. The amount of time for lunch and the scheduling of school lunch in relation to recess impact the amount of food students eat. Anxiety about eating, peer pressure, peer influence, familiarity with foods,time, and the need for social interaction influence food consumption by

elementary-aged children. When lower-level elementary-aged students have recess before a 15-minute lunch, their food consumption was higher than students who had a 15-minute lunch period prior to recess.[71] In middle school, a 22-minute lunchtime in the cafeteria seems to be adequate.[72] An adequate time policy allows students at least 10 minutes to eat breakfast and at least 20 minutes to eat lunch, counting from the time they are seated.[4,33] Administrators and school boards need to ensure that policies are implemented that provide students with enough time to eat in a safe, comfortable dining area and that recess is not competing with meal times.

INTEGRATION OF NUTRITION EDUCATION WITH A SCHOOL ENVIRONMENT THAT MODELS HEALTHFUL FOOD CHOICES

Competing Food and Beverage Sales

Healthful school meal efforts and nutrition instruction may be contradicted in schools by environments such as snack bars, school stores, and vending machines that promote sales of food and beverages of low nutrient density. School policies that reinforce students' healthful dietary behaviors must be developed and enforced. Food and beverages sold or served on school grounds or at school-sponsored events need to meet nutritional standards and guidelines set by the school/district/state. These standards and guidelines should address à la carte offerings in the foodservice program; food and beverage choices in vending machines, snack bars, school stores, and concession stands; food and beverages sold as part of school-sponsored fundraising activities; classroom food used as rewards by teachers; corporate-sponsored nutrition education materials; in-school advertising of food products; and product giveaways and refreshments served at parties, celebrations, and meetings.[71,73,74]

Nutrition policy and guidelines should affect and impact the entire school environment. The American Federation of Teachers resolution denounces the sale of competitive foods and foods of minimal nutritional value (FMNV) as deterrents to student consumption of school meals and sound eating habits.[73] The NASBE urges school policies that promote healthful eating to address all food and beverages served to students, including those available outside the school meal programs.[33] A policy that prohibits the use of food as a reward or punishment promotes positive health behavior change.[4]

Food and beverages in middle and high schools should not be sold from vending machines or school stores until 30 minutes after the end of the last meal period unless they are part of the school foodservice program and meet standards associated with the Dietary Guidelines for Americans. Some states are developing legislation to ban the sale of certain food items, such as soft drinks and candy.[33] To help schools meet the challenge of promoting healthful behaviors, the CDC has developed a self-assessment and planning tool, the School Health Index (SHI). Schools can use the index to identify strengths and weaknesses of their health promotion policies and programs and then develop action plans for improving student health, motivating teachers, parents, students, and the community.[29,64]

Nutrition Standards for all Foods

The USDA's Healthy School Meals Initiative (SMI) standards have improved the nutritional quality of meals served in the NSLP and SBP. However, these nutrition standards do not apply to food and beverages sold in cafeterias as à la carte items or to foods sold in school vending machines, school stores, and snack bars. The USDA defines competitive foods as "foods offered at school other than meals served through USDA's school lunch, breakfast and after-school snack programs."[24,25] Current regulations prohibit the sale of FMNV in foodservice areas during school meal periods.[75]

The effect that competitive foods have on nutritional integrity and student participation in school meal programs is a concern. States that restrict the sale of competitive foods, such as Louisiana, West Virginia, Georgia, and Mississippi, maintain higher rates of participation in school meal programs than the national average. In the last 20 years, enrolment in schools increased 6.8%, yet participation in meal programs decreased by 1.2%.[7]

School nutrition services' budgets must often be completely self-supporting. Furthermore, 83% of middle/senior high schools expect the nutrition services department to be financially solvent and to cover their costs, excluding salaries. Among this group of schools, 29% expected the school food services to earn money in excess of cost.[65] Increasing prices for school meals and/or increasing sales of à la carte foods and fast-food options are ways in which many schools maintain their financial solvency. Fast-food and soft drink companies target the school market and increase their revenue to meet budgetary requirements. "Pouring rights" contracts with soft drink companies allow schools to receive a percentage of the profits.[74,76,77] Recently, as a recommended alternative, milk has replaced soft drinks in some schools in Wisconsin.[78] Vending machines, snack bars, and school stores should offer 100% juice and other healthful snacks.[31,60,62,79,80] The sophisticated, multimillion dollar advertising campaigns for fast foods, sweetened beverages, and salty snacks influence student food preferences. Merchandising incentives also influence and persuade schools to sometimes offer less nutritional items. Schools' child nutrition programs should serve as a learning laboratory for developing healthful eating habits and should not be driven by profit-making ventures that may undermine nutrition goals.[81]

FAMILY, COMMUNITY, AND HEALTH SERVICES' PARTNERSHIPS SUPPORTING HEALTH OUTCOMES FOR ALL CHILDREN

The school's efforts demonstrate to students and partners that the school recognizes healthful eating as an important

life skill and is committed to making it part of the school's total education program. A team of community partners delivering strong, consistent messages, and modeling healthful food choices as part of a coordinated school health program increases the effectiveness of school-based nutrition education. Students receiving consistent messages through multiple channels (eg, home, school, community, and the media) and sources (parents, peers, teachers, health professionals, and the media) are more likely to adapt healthful behaviors. Classroom teachers play a key role in many nutrition activities, but most activities are more effective if many adults reinforce them.

The declining occurrence of the "social meal," taking time to focus on eating together with family and friends around the table, is a concern. Fewer than one third (30.7%) of adolescents eat once a day with their families in a week's time, yet another third (32%) eat two or fewer family meals in a week, and over half (52%) report television viewing during meals. Adolescents reported more concern about making food choices at home than anywhere else.[82] Youth, with their parents, can plan meals, make menu suggestions, identify family members' food preferences, and participate in taste-testing. Other agencies, such as parent-teacher organizations or youth organizations, can be instrumental in supporting healthful eating.

Health and Nutrition Councils

Coordinating school nutrition education with community-based nutrition education campaigns can enhance its impact.[83] Nutrition education shares many of the key goals of other health education content areas, such as responsibility for one's health. Many theories and strategies used in other health education domains and in social marketing campaigns are used in nutrition education.

School nutrition councils may serve a coordinating role. A council consisting of a school's principal/site director, nutrition education specialist, coach, health teacher, physical education teacher, foodservice manager, custodian, school nurse, counselor, cafeteria aide, student, and a parent is a strategy to create a social environment that promotes healthful eating and good nutrition.[31] However, only one third of all US school districts have a district-wide school health council that addresses policies and programs related to health education. Only 8% include nutrition services on their council.[84] Council members' roles have been outlined and a theoretical framework for policy and environmental change for a council has been suggested and is a standing model in Head Start programs.[4,85,86]

Health Services

The number of school-based health service centers climbed to 1380 during the 1999-2000 school year.[87] Integrating nutrition screening, counseling, and referral as components of health services provides critical nutrition and diet-related information to enhance services to children.[88] Psychological and medical services are essential when addressing issues such as eating disorders. However, few schools have adequate staff to provide these necessary services. In recent years, there has been increased emphasis on ensuring that children with disabilities and special needs have the same education opportunities as other children. As these children enter the school setting, there is an increased demand for the nutrition specialist to be involved in developing the individualized education plan when nutrition and feeding are involved.[89]

These services, including medical nutrition therapy, are an essential component for children with special health needs, and the nutrition policy needs to reflect those needs.[90] The National School Lunch Act permits food substitutions to accommodate a medical or special dietary need for chronically ill students. Handicapped students requiring special dietary considerations must have a physician's written order that states the dietary changes and suggested meal modifications. The chronically ill child not identified as a handicapped student must have a written order from a recognized medical authority (physician, nurse, registered dietitian) according to the provisions of the National School Lunch Act.[91]

Researchers believe that the prevalence of food allergies is increasing, the number of deaths from food allergy–induced anaphylaxis is growing, and children are the largest group of the population affected by food allergy. Generally, participants with food allergies or intolerances are not "handicapped persons," as defined in 7 CFR 15b.3(i), and school food authorities are not required to make substitutions for them. However, when the physician's assessment indicates that food allergies may result in severe life-threatening reactions (anaphylactic reactions), the participant then meets the definition of "handicapped person," and foodservice personnel must make the substitutions prescribed by the physician. Foodservice representatives and the school nurse should work with a registered dietitian to develop diet substitutions.[92]

Programs Impacted

Child nutrition programs serve more participants than any other Food and Nutrition Services (FNS) program. Inconsistent funding and severe drops in funding from year to year, particularly in the Nutrition, Education and Training Program, have decreased the capacity of the USDA, states, and local agencies to deliver effective nutrition education to children. There is wide disparity in funding for nutrition education between the various nutrition assistance programs. Child nutrition programs have the largest number enrolled and the least funding for nutrition education.[93]

A small federal investment of USDA funding for nutrition education would enable state and local programs to leverage extremely limited resources into effective and innovative educational and training programs for students, educators, school foodservice personnel, and parents. Continued, sufficient funding is necessary to support state nutrition education and training infrastructure, program development, and a

coordinated social marketing campaign to promote healthful food choices for children. To be effective, the investment must support long-term repeated exposures through multiple channels at an intensity that can reasonably compete in the marketplace.[94]

Throughout the world, comprehensive feeding programs provide nutrition education to children, school staff, and the community. The entire school and community are educated by school lunch programs.[95] International school nutrition services programs are impacted by the US's school food and nutrition policies, education, and funding.[96]

Roles and Responsibilities of the Dietetics Profession and Nutrition Education Specialist

In general, as advocates, researchers, practitioners, and consultants, qualified nutrition professionals are in key positions for policy development at the school, community, state, and federal levels. The role of the dietitian and/or the nutrition educator is to advocate for recognition of the benefits that optimum nutrition provides to children's health, academic performance, and learning readiness. Dietitians and professional nutrition educators' expertise in policy development will strengthen their ability to work with schools and communities. In addition, nutrition professionals should consider serving on school committees concerned with school meals, Head Start Health Service Committees, health education and services, physical education and sports, and nutrition education; consulting with school systems in providing nutrition services for children with special nutritional needs; and suggesting nutrition resources and materials to teachers and curriculum supervisors. They may also work with school staff to provide parent, family, and community inservice programs.[97-99]

Nutrition education specialists are accountable and responsible for the nutrition integrity at schools and for implementing nutrition education standards. They also provide leadership for the development of polices, programs, and services that integrate nutrition services into the educational environment as a component of the CSHP.[68] Qualifications for nutrition education specialists include a master's degree in nutrition education, nutrition, or public health nutrition.[97] A new credentialing program of the ASFSA has been established to enhance the professional image of school foodservice and nutrition professionals. Qualifications include a minimum of an associate degree, work experience, specialized training, and passing a national examination.[100]

The majority of US schools (61%) have no nutrition education coordination, meaning that each teacher is responsible for his or her nutrition lessons. Without a coordinated effort, the opportunity to present a more focused message to students about the importance of healthful eating is lost.[41] Collaboration between the classroom teacher and child nutrition staff is necessary to facilitate the nutrition component of a CSHP. Nutrition education specialists, as CSHP team members, provide leadership and coordination to issues related to many of the components of the school comprehensive health program.

Specifically, the dietetics profession and nutrition education professions may be involved at the federal level by actively developing and implementing school health program policies. They can also be involved at the state agency level as child nutrition specialists, administrators, and nutrition education providers to both school nutrition service and teachers.[52] At the local level, they function within the school district as the nutrition education specialist, foodservice/child nutrition program director as well as consultants. They also serve as consultants for Head Start, day care, and after-school programs.

Nutrition education research is an essential role for registered dietitians and other nutrition education professionals. Continued nutrition education research to examine environmental variables, to test models in subgroups, to combine theoretical concepts into potentially effective models, and to build models based on prior work in nutrition education and theories from non-nutrition areas is essential.

CONCLUSION

We are at a critical crossroad for the future, and the path we take at this time will have long-term ramifications on the quality of school nutrition services, nutrition education, and the health of our children. A path perhaps of least resistance, convenience, and ease is the path of offering fast, less nutritious items in our school dining rooms. The alternative is to work together as a nutrition community to ensure that school meals and snacks are appealing, nourishing, and culturally relevant; reflect core beliefs regarding children's health, well-being, and education; and are offered in a positive social ambience with enough time for eating. This evokes a healthy environment in which all children can flourish—mentally, socially, and physically. What more important work could our community of dietitians and nutrition professionals have than to provide our children with food and nutrition education that nurtures and enables them to become healthy and productive citizens? Dietetics professionals and nutrition education professionals have the training and expertise to lead us to a call to action toward the development of the school as a community center in providing beneficial nutrition services to improve the health and well-being of our nation's children.

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