LITERATURE REVIEW

Policy Options to Support Healthy Eating in Schools

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ABSTRACT

Objectives: School nutrition policies offer a promising avenue by which to promote healthy eating and reduce the risk of chronic disease. This article reviews policy components that could support healthy eating, examines their evidence base and suggests directions for future research.

Method: Information was drawn from research and other literature written in English between 1994 and 2008. Guided by recommendations from the World Health Organization, evidence pertaining to five potential components of policies was identified and reviewed: foods available, the food environment, health education, health services and counselling, and family and community outreach.

Results: A limited number of evaluations have examined the impact of school nutrition standards and have shown a positive impact on food availability and student nutrient intake. Results have shown that behaviourally focused nutrition education, especially when combined with food services and other initiatives, may affect students' eating habits positively but may not decrease obesity levels. Evidence pertaining to other potential policy subcomponents, such as limiting food marketing in schools, coordinating all food services and providing nutrition-related health services, is limited or lacking.

Conclusion: Conceptually, comprehensive school nutrition policies comprising all five policy components offer an integrated and holistic approach to school nutrition. They could provide an umbrella to guide all school actions pertaining to nutrition and serve as a framework for accountability. Does conceptualization match reality? Further research is needed to determine how policy components affect implementation and outcomes.

Key words: Public health; education; health promotion; nutrition; policy; schools

Comprehensive school health (CSH) is a term used in Canada that is synonymous with the terms "Health Promoting Schools" and "Coordinated School Health" used by other jurisdictions.[1,2] School nutrition policy, as part of CSH, offers a promising strategy for reducing the risk of chronic disease, contributing to healthy weights and supporting student learning.[3-5] School nutrition policies provide a framework by which schools can plan, implement and evaluate nutrition-related actions using a coordinated approach that reflects current dietary guidance.

To assist the many jurisdictions that are developing policies, this article summarizes evidence pertaining to potential components of comprehensive policies, organized as follows: food and beverages available, food environments, health education, health services and counselling, and family and community outreach. Potential subcomponents of policies, such as nutrition standards, food programs and food contracts, are also addressed, as are directions for future research.

METHOD

Because of the limited evidence base it is premature to conduct a rigorous, systematic review of school nutrition policies. Recommendations from the Health Promoting Schools (HPS) of the World Health Organization (WHO) and the Nutrition Friendly Schools Initiatives (NFSI) informed the selection of the five policy components reviewed in this article. In keeping with the WHO Global Strategy on Diet, Physical Activity and Health, only components that affect nutrition-related chronic diseases were included. Evidence pertaining to each component was drawn from a variety of sources: randomized controlled trials, epidemiologic observations, practice-based evidence and informed opinion (e.g., the Institute of Medicine [IOM]) The literature was obtained from PubMed searches on school nutrition policies from 1994 to 2008 and other pertinent literature, such as governmental and non-governmental reports. Searches were conducted on school nutrition policy and each policy component and subcomponent. Documents in English were assessed for relevance, research design, conceptual robustness and contribution to the evidence base.

Summary of literature search

Food Available in Schools

Nutrition Standards

Nutrition standards, the standards that determine the types of food available in schools, are central to nutrition policies; some policies consist solely of nutrition standards. Many agencies, such as the WHO[6] and the IOM,[7] recommend the development of standards to encompass all foods available in school to help students optimize their nutrient intake. Internationally, existing standards vary in stringency (e.g., strict requirements for fat, salt or sugar versus more general requirements) and adherence criteria (e.g., required versus recommended implementation). In addition to food/nutrient standards, standards may specify portion size, energy content, availability (e.g., limitations on location and timing) and grade

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level (e.g., items permitted for secondary but not elementary students) (see IOM[8] for an example).

The mandates pertaining to standards vary widely. They may reflect national legislation (e.g., Scotland) or subnational legislation (e.g., Ontario). They may address the nutritional quality of meal programs and/or all foods available in schools (e.g., the US has required standards for meal programs and voluntary standards for all other foods). While limited in number, evaluations of nutrition standards indicate a positive impact on food availability and student consumption.[3,9,10] Additional research supports standards for food preparation and procurement.[11] Currently, too little research has occurred to arrive at a consensus on the most effective types of standards.

Food Programs

As described by HPS, food programs aim to increase food availability while promoting healthy eating.[12] Numerous countries (not Canada) operate national programs that range from the provision of a complete lunch or breakfast to single foods such as fruits, vegetables or milk.[13] Evaluations of US meal programs show that they contribute to higher intakes of key nutrients.[14] Fruit and vegetable programs also show a small but positive impact on consumption,[15,16] as do milk programs.[17] Research from Prince Edward Island indicates that student uptake of unsubsidized school meals may be quite limited,[18] in contrast to the high participation rates in countries with universal meal programs funded by government.[13] A report published in 2000[19] concluded that most meal programs in Canada did not meet the criteria for sound social programs. Ten years later, it is timely to revisit the question and to examine the relation between school food programs and nutrition policies.

Contracts with Local Food Producers

Contracts with local food producers and with food companies can also follow nutrition standards. The WHO's Global Strategy on Diet, Physical Activity and Health encourages the procurement of food from local producers, an initiative also supported by HPS.[12] Story et al. support the increasing number of farm-to-school programs and school gardens as a strategy for obesity prevention.[20] Limited research indicates that local foods, such as fruits and vegetables, may contribute to healthier eating in schools, provide educational opportunities for students, assist with farmland preservation and support local economies.[21] Further research on this topic, including the impact on the environment, is warranted.

Exclusive Contracts

Contracts that give soft drink companies the exclusive right to sell their product in schools have been criticized for promoting the consumption of full-calorie soft drinks. These drinks are associated with an increase in calories and body weight and a decrease in calcium intake.[22] Limited evidence from the US indicates that the presence of soft drinks in schools influences student consumption levels.[23] In 2006, major soft drink companies agreed to adopt standards to phase out full-calorie carbonated soft drinks by 2009-2010 in all US schools.[24] While this agreement does not preclude the signing of exclusive contracts, by the 2007-2008 school year shipments of full-calorie soft drinks had decreased by 65% compared with 2004.[25] Refreshments Canada also agreed to remove all full-calorie soft drinks from Canadian schools by the 2009-2010 school year.[26] It will be important to monitor the impact of this change and determine the extent to which full-calorie soft drinks are replaced with other beverages.

Food Environment

Food and Beverage Marketing

Examples of food and beverage marketing include logos and brand name signage (e.g., on vending machines), sponsored educational materials and free product samples.[27] A number of groups recommend the elimination of all food marketing in schools,[28] and others recommend that only healthy foods be marketed.[29] There is insufficient evidence to determine which approach might be most effective; however, US research indicates that schools can use the marketing strategy of price reductions to increase the purchase of healthier items.[30]

Food Availability Near Schools

The HPS recommends that schools cooperate with nearby vendors so that their food items support health.[12] In the absence of policy, a higher concentration of fast food restaurants may cluster near schools, whereas a relatively low concentration of grocery stores sell fruits and vegetables.[31] In the US, student participation in school meal programs was higher where policies prohibited students from leaving the school campus during the school day.[32]

Other

Other aspects of the school food environment that policies may address include avoiding the use of food as a reward or punishment,[27,33] providing guidance on foods and celebrations,[27] supporting non-food fundraising[27] and promoting a child-centred atmosphere for eating.[34] An additional subcomponent is to ensure that a senior staff person is responsible for coordinating these and all other aspects of school food, including cafeterias, vending machines and food outlets.[35] This person could help reduce the fragmentation among food services that often exists[36] while ensuring that students have sufficient but not excessive access to food. The impact of these policy subcomponents is not well studied.

Health Education

Nutrition Education

As part of health education, nutrition education may include food preparation and consumption, food skills, factors that influence food choices and requirements, emotional and socio-cultural aspects[12] and energy balance.[7] No research was found that discussed teaching students about school nutrition policies. Both HPS and the IOM recommend that nutrition be taught in all grades throughout the school year using an evidence-based curriculum that focuses on behavioural skills.[7,12] Standards-based nutrition education may be taught as part of health education and/or integrated into other subjects and can be extended into the school environment (e.g., nutrition information at food outlets). While nutrition may be a common curriculum topic, the number of hours it is actually taught may be low[37] and insufficient to affect behaviour.[20]

Evaluations of nutrition education interventions indicate that they may promote the consumption of healthy foods, especially if they are part of a multi-component intervention and are behaviourally oriented.[38] They are less likely to result in physiological changes, such as decreased body mass index.[7,39] While guidelines exist on how to

design effective nutrition interventions for young people, research is needed to assess the extent to which they are followed.[40]

Staff Qualifications

The success of implementing a comprehensive school nutrition policy requires involvement of school staff such as teachers, food service staff and the administration. Ongoing teacher training that includes behaviour change methods is an important consideration.[7,12] A Canadian study found that prospective teachers were ill prepared to address nutrition in schools and recommended compulsory nutrition education in teacher education programs.[41] In the US, specialized training is generally limited.[37] When it occurs,[42] however, it aids with curriculum implementation and program sustainability.[43] Other staff members with nutrition-related responsibilities, such as health services staff, should have appropriate qualifications and receive opportunities for professional development.[44] It is important to ascertain the extent to which school staff members are prepared to adopt a comprehensive approach to school nutrition and to fill gaps where needed.

Health Services and Counselling

Health services can support healthy eating by providing information on access to food, dietary guidelines and food programs, and by assisting with the detection of nutrition problems, referrals and follow-up.[12,45] For example, health service providers may assist with screening and surveillance to identify problems related to nutritional status. In the US, school-based body mass index screening has been used to increase parental awareness of their child's weight status,[46] but there is inconclusive evidence on the effectiveness of such programs to prevent obesity; more research is needed to assess the impact of screening and the potential harm that may occur.[47] School-based obesity treatment programs may be effective, but population-based programs might be the most appropriate to avoid vulnerability to teasing and embarrassment.[48] NFSI recommends that health services provide on-site services or have a referral system for students' psychosocial health.[49] Services can provide leadership by supporting affirmative action against bullying, stigmatization and discrimination due to body size or shape and food choices. It is unclear the extent to which schools provide health services to support healthy eating.

Community and Family Involvement and Outreach

Parental involvement is frequently a component of school-based health interventions.[38] HPS, NFSI and WHO recommend involvement of community and family groups in the development and implementation of school nutrition policies. A multi-partnered school health team that includes parents and community members can provide input, including advocacy, throughout the policy process.[12] In a review of the literature there were limited examples of parental and community involvement in school nutrition policies.[3,48] More research is needed to clarify the role of community and parental involvement in advancing school nutrition policy and the role of schools in contributing to health promotion in the larger community.

Knowledge gaps and discussion

Jurisdictions with school nutrition policies face the challenge of deciding how to apply existing, limited research to develop policies that contribute effectively to student health and learning objectives. Simultaneously, they have a role in advancing the evidence base to identify critical policy components and the relative roles of each, and to ensure that policies do no harm to students.

Although the evidence base is limited, comprehensive policies that address all five components discussed in this article are consistent with the multicomponent, coordinated and integrated approaches currently recommended to improve the health of young people.[4-7,39,49] Comprehensive policies can provide students with a consistent health-reinforcing message from multiple sources (e.g., food services, classrooms, health services) by example and through education. They can link school nutrition with families and communities and serve as a framework for accountability.

The varied policy landscape among Canada's provinces and territories presents an opportunity to help address the current evidence gap. A summary of current provincial policies indicates that while all of them include nutrition standards, only a few address additional policy components and none address all five.[50] Moreover, the policies vary in stringency and mandate.[50] This situation provides an opportunity for jurisdictions to assess the differential impact of policy components, stringency and mandate on implementation and outcomes. Related questions include the following: What is the relation between the type of policy and the resources allocated to implement and evaluate it, if any? How does the type of nutrition policy affect students' perceptions of food, nutrition, eating and health? What are the unintended consequences of policies, if any? Given that no Canadian policies are fully comprehensive at this time, two questions remain: What factors influence the development of comprehensive policies, and What is their impact on implementation and outcomes?

CONCLUSION

Concerns about rising rates of obesity and chronic disease risk have focused attention on school nutrition. School nutrition policy is part of a broader CSH approach that is consistent with international recommendations. Comprehensive policies can address all aspects of school food, including the foods available, the food environment, health education, health services and counselling, and family and community outreach. Provincial/territorial policies in Canada vary widely, providing an opportunity to assess the effects of policy components on the implementation and impact of policies. Further research in this area would make a valuable contribution to the field.

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