

Nutrition in Saskatchewan Schools: Policy, Practice and Needs

Prepared for the Heart and Stroke Foundation of Saskatchewan

**Dr. S. Berenbaum
University of Saskatchewan**

April 2004

Executive Summary

In Saskatchewan, the mission of the Heart and Stroke Foundation is to improve health by preventing and reducing disability and death from heart disease and stroke through research and health promotion. The Foundation commissioned this study because of the concern of the sharp rise in the percentage of the Saskatchewan population, including children and youth, who are overweight or obese. The study's purpose was to determine the extent of policies and practices regarding nutrition in schools in Saskatchewan. The findings would serve to enhance the Foundation's primary prevention and health promotion strategies with respect to the health of children and youth.

We collected baseline data by means of a questionnaire to determine the existence of nutrition and food policies in Saskatchewan schools, the factors contributing to or inhibiting the development of policies, and school activities involving nutrition and food. Additional information was gathered from interviews with key stakeholders.

Major Findings

1. The most common barrier to setting guidelines and policies was lack of perceived need.
2. Vending machines and canteens are the most common food service available in the schools replying to the survey. Vending machines typically serve pop, chips/chocolate bars/candy and juice while canteens most often offer chips/chocolate bars/candy, pop, milk, sandwiches, baked goods and ice cream items.
3. Most schools have informal food and nutrition guidelines. The informal guidelines are varied and numerous. There does not appear to be a "typical" informal guideline or policy. In most cases, teachers and principals were the prime instigators of policies and guidelines. For those schools having formal written guidelines, most had very little difficulty in developing the guidelines. The reason cited most often for not having formal or informal guidelines or policies were because "people never thought of it" or that the need for guidelines had not been identified.
4. Most schools serve food at school events. The most common foods sold are juice, hamburgers/hotdogs, milk, chips/chocolate bars/candy, pop and baked goods. Most schools have no guidelines for serving food at school events. The most common reason given for not having guidelines was "people never thought of it."
5. The majority of schools permit food as fundraising items. Foods most typically sold are baked goods, chips/chocolate bars/candy, and juice. Most schools have no guidelines for using food as fundraising items.
6. Information, support and interest were identified key elements for developing food policies or guidelines.

7. The majority of schools offer nutrition education for students. Nutrition education is typically by lessons conducted by teachers. Resource material are frequently used as are videos/slides/films, paper and pencil activities and guest speakers. The most common way nutrition activities are incorporated in the school is through incidental teaching anytime of the year and by covering a unit on a specific topic in a short period of time. The most frequent barriers to nutrition education for students are nutrition not being a priority topic and the teachers not having enough time or background training and resources. Respondents feel that having more resources available to them would help in their nutrition education.

Recommendations

For Heart and Stroke Foundation and Other Health Professionals:

1. Work to create awareness of the need for school food policies or guidelines among key stakeholders (e.g. students, teachers, principals, Boards, community).
2. Provide schools with examples of successful nutrition guidelines from other schools. Such guidelines may assist schools with development of their own guidelines.
3. Provide schools with evidence for the effect of nutrition guidelines on budget, food sales, corporate support, fundraising, and the health of children.
4. Help schools understand the effects of written food and nutrition policies or guidelines.
5. Work with schools to identify ways to overcome concerns arising about development and implementing policies (e.g., fundraising, student choice, priority of nutrition, lack of policy clarity, approaches to implementation).
6. Encourage schools to support their nutrition education efforts with sound food policies and guidelines. To encourage schools to adopt a coordinated school nutrition policy that promotes healthy eating through classroom lessons and a supportive school environment. Such a policy would help ensure that students received nutrition education messages that are reinforced throughout the school environment. For example, such a policy would address nutrition education classes, school lunch and breakfast, classroom snacks and parties; use of food to reward or discipline; and food sold in vending machines, at school stores, snack bars, special events and as part of fundraising activities.
7. Encourage the preparation of written food policy guidelines and policies developed through a partnership of key stakeholders (e.g. students, teachers, parents, Boards, food service personnel, nurses, public health professionals communities). The policy should meet local needs and be adapted to the health concerns, food security needs, food preferences and dietary practices of different ethnic and socioeconomic groups.

8. Provide resources, suggestions and ideas to schools for helping their students possess the knowledge and skills necessary to make nutritious and enjoyable choices for a lifetime.

For Schools and School Boards:

1. Explore ways and strategies to improve the nutritional status of students. The link between nutrition and learning is well documented. Healthy eating patterns are essential for students to achieve their full academic potential, full physical and mental growth, and lifelong health and well-being.
2. Seek input from all members of the school community to develop a coordinated school nutrition policy that promotes healthy eating through nutrition education and a supportive school environment.
3. Explore and foster the development of school food and nutrition policies and guidelines. Consider school food and nutrition policies and guidelines that:
 - are comprehensive in nature, that include policies for wherever food is sold or given away (vending machines, canteens, fundraising, cafeterias, special events)
 - offer healthy, appealing food wherever food is available
 - provide adequate time for nutrition education so that students can learn general health skills (e.g., how to assess their health habits, set goals for improvement) and specific nutrition-related skills (e.g. plan a healthy meal, read and compare food labels)
 - coordinate school food service with nutrition education and with other components of the school program to reinforce messages about healthy eating
4. Examine whether existing policies could be adapted to include a nutrition component.
5. Explore alternatives to fundraising that support sound nutrition and food policies. Choose food and beverage items that are healthy and nutritious or non-food items.
6. Explore ways to incorporate nutrition education into the classroom through different subject areas and by various means.
7. Provide opportunities and encouragement for staff to model healthy eating habits.
8. Involve family members and the community in supporting and reinforcing nutrition education.

For Teachers:

1. Develop a comprehensive scope and sequence for nutrition education.
2. Work with food service personnel, coaches, physical education teachers, and other staff to coordinate nutrition education efforts and give students consistent messages about healthy eating.
3. Request healthy snacks from parents for class parties.
4. Avoid using food to reward students.
5. Take part in nutrition training sessions and share experiences with other teachers.
6. Find and use resources for nutrition education.
7. Involve families and community organizations in nutrition education activities.

For Students:

1. Urge the student council to request healthy food choices in school and school events.
2. Support the development of food and nutrition policies and guidelines.
3. Provide positive suggestions for change.
4. Volunteer to become involved in planning school menus.

For School Food Service Staff:

1. Provide tasty, nutritious and appealing foods.
2. Support classroom lessons by offering foods that illustrate key messages.
3. Coordinate activities with classroom and physical education teachers and staff.
4. Involve students and families in planning school menus.
5. Support and be involved in the development of school food and nutrition policies.

For Parents:

1. Provide healthy snacks for school parties and special events.
2. Find out what schools are doing to promote health eating.

3. Join a school health or nutrition advisory council to guide nutrition policy.
4. Provide positive suggestions for change.
5. Speak to school administrators and school boards about the importance of effective nutrition policies and programs.
6. Urge parent associations and school clubs to sell healthy food or non-food items.

Table of Contents

Executive Summary	i
List of Tables.....	viii
1.0 Introduction	1
2.0 Questions of Interest.....	1
3.0 Data Collection.....	2
3.1 Sample.....	2
4.0 Survey Results.....	2
4.1 Food Services in Schools	2
4.1.1 Vending Machines.....	3
4.1.2 Canteens	3
4.1.3 Cafeterias.....	4
4.2 Foods Served.....	4
4.3 Food Service Policies and Guidelines.....	5
4.4 School Events.....	7
4.5 Fundraising Events.....	9
4.6 Guidelines Development.....	10
4.7 Nutrition Education Activities	11
5.0 Interview Results.....	13
6.0 Major Findings	15
7.0 Discussion	15
8.0 Recommendations	16

8.1	For Heart and Stroke Foundation and Other Health Professionals	16
8.2	For Schools and School Boards.....	17
8.3	For Teachers	18
8.4	For Students.....	19
8.5	For School Food Service Staff	19
8.6	For Parents.....	19
9.0	Conclusion.....	19

References

Appendices

List of Tables

Table 1	Availability of Food Services in Schools	3
Table 2	Foods Served in Vending Machines.....	4
Table 3	Foods Served in Canteens	4
Table 4	Foods Served in Cafeterias.....	5
Table 5	Schools Having Formal and Informal Guidelines.....	5
Table 6	School Events at Which Food is Sold	7
Table 7	Foods Sold at School Events.....	8
Table 8	Foods Sold at Fundraising Events.....	9
Table 9	Barriers to Setting Nutrition and Food Guidelines in Schools.....	10
Table 10	Nutrition Education Activities Offered to Students in Schools	11
Table 11	How Nutrition Activities are Incorporated In and Outside of the Classroom.....	12

1.0 Introduction

Healthy eating is well recognized as an important factor in actively promoting health. Having adequate amounts of food of high quality may reduce the incidence of malnutrition, obesity and chronic diseases in children.

Historically, the role of the public school was the provision of instruction. Increasingly, that role has been expanded to address issues that interfere with the child's motivation or ability to learn. There is little question that the mandate of the contemporary Canadian school has been expanded to include strategies designed to promote the overall positive development of children. Many schools across the country include programs that address the child's social, emotional and physical development.

Schools are in a unique position to influence the healthy development of children (Church, 1997; Gallagher, 1999; Howe & Covell, 2000; James, Rienzo & Frazee, 1996; Lytle, Seifert, Greensetin & McGovern, 2000; McBean & Miller, 1999; Meyer & Conklin, 1998; Passmore, 1996; Pateman et al, 1995; Position of the American Dietetic Association, 2000; Turner et al, 2000.) A variety of food and nutrition related programs have been described in the literature and include breakfast, lunch and snack programs and nutrition education programs (French, et al, 1997; Kennedy & Cooney, 2001; Meyer, 2000; Nicklas et al, 1997; Stang, Story, Kalina & Snyder, 1997; Sydner, et al, 1999). In addition, policies have been suggested and/or implemented describing appropriate foods to be served in cafeterias or vending machines, or the most appropriate foods that can be brought to school for lunch or snacks (McKenna, 2000; Story, Hayes, & Kalina, 1996). Such programs have the aim of helping the hungry or improving the nutritional status of children.

In Saskatchewan, the mission of the Heart and Stroke Foundation is to improve health by preventing and reducing disability and death from heart disease and stroke through research and health promotion. The Foundation commissioned this study because of the concern of the sharp rise in the percentage of the Saskatchewan population, including children and youth, who are overweight or obese. The study's purpose was to determine the extent of policies and practices regarding nutrition in schools in Saskatchewan. The findings would serve to enhance the Foundation's primary prevention and health promotion strategies with respect to the health of children and youth.

2.0 Questions of Interest

In exploring nutrition policies and practices, we were interested in seeking answers to the following questions:

1. What nutrition and food policies currently exist in Saskatchewan schools?
2. What factors contribute or inhibit the development of nutrition and food policies in schools?
3. What school activities involve nutrition and food and are these activities congruent

with existing school nutrition and food policies?

4. What meaning do key stakeholders (students, parents, teachers, principals, school board members) in the school give to school nutrition and food policies? How do they see these policies as useful/not useful or needed/not needed in their schools?

3.0 Data Collection

Phase 1 collected baseline data by means of a questionnaire to determine the existence of nutrition and food policies in Saskatchewan schools, the factors contributing or inhibiting the development of policies, and school activities involving nutrition and food. A questionnaire (Appendix A) and covering letter were mailed to 745 Grades K-12 public, separate and community schools in Saskatchewan. Questionnaires were addressed to the principal.

Results from Phase 1 provided guidance in exploring school and food policy issues in depth (Phase 2). Interviews were conducted in select schools to further explore school nutrition and food policy issues (or lack thereof).

3.1 Sample

We received responses from 252 Saskatchewan schools for a response rate of 33%. Of the schools participating, 39 were from large cities (e.g. Saskatoon, Regina), 49 were from smaller cities (e.g. Moose Jaw, Swift Current, Prince Albert, North Battleford), and 159 schools were in a rural area. There were 119 elementary schools, 2 junior schools (Grade 7-9), 20 junior/high schools (Grades 7-12), 30 high schools (Grades 9-12) and 77 all grades (elementary to grade 12) schools. Four schools completed the questionnaire but did not identify their type of school. Forty eight schools were designated as community schools. Twenty eight schools had over 500 students while 186 schools had between 100 and 49 students. The majority of individuals completing the survey were principals (N=179) and teachers (N=56).

Five schools, representing a diverse range of schools, were selected and contacted to participate. Two public schools, two high schools and one community school were selected and represented rural and urban areas. Principals were contacted and names of teachers, students, parents and others were received to contact and interview. Ten individuals were interviewed. The individuals interviewed included 4 teachers, 3 students, 2 parents, and 2 community coordinators.

4.0 Survey Results

4.1 Food Services in Schools

Few notable differences were found among the different types of schools, except that high schools with larger student populations tended to have cafeterias. Given the small number of schools having cafeterias, the data is being presented in aggregate (i.e. data from all schools

combined). The issues arising were also similar among the different types of schools as well.

We asked respondents about the availability of vending machines, canteens, and cafeterias in schools. Vending machines and canteens are the most common food service available. Table 1 illustrates the number of schools having various food services venues.

Table 1. Availability of Food Services in Schools

Food Service	Number of Schools	Percentage of Schools
Vending machines	156	62%
Canteen	137	54%
Cafeterias	15	6%

4.1.1 Vending Machines

Vending machines were found in 156 (62%) of the 252 schools. They were typically found in school hallways (N=52; 33%) or lobbies (N=32; 21%). The majority of schools give all students access to the vending machines (N=116; 74%). Thirteen (8%) give access only to certain students; 126 (81%) give access to staff. Thirty-four (22%) schools give access to others (i.e., public).

Of the 96 schools who do not have vending machines, the following reasons were given:

- not needed or wanted (N=26; 27%)
- school policy (N=25; 26%)
- no vending machine operators had approached school (N=18; 19%)
- no funds to support vending machines (N=11; 11%)

4.1.2 Canteens

Canteens are typically open for lunch (N=124; 91%) and are operated by a student council or group (N=109; 80%). Some canteens are operated by school administration (N=12; 9%), parent groups (N=6; 4%), and private companies (N=5; 4%).

Of the 111 schools that do not have canteens, the following reasons were given:

- not necessary/not needed/no demand (N=30; 27%)
- funds not available to support canteen (N=29; 26%)
- no space (N=20; 18%)
- school policy (N=12; 11%)

4.1.3 Cafeterias

Cafeterias are typically open for lunch (N=15; 100%) and breakfast (N=13; 87%) and are operated by private companies (N=5; 67%).

Of the 233 schools that do not have cafeterias, the following reasons were given:

- funds not available to support (N=69; 30%)
- no space or facilities (N=45; 19%)
- school too small (N=38; 16%)
- not necessary/not needed/no demand (N=22; 9%)
- school policy (N=7; 3%)

4.2 Foods Served

Vending machines typically serve pop, chips/chocolate bars/candy, and juice (Table 2). Canteens most often offer chips/chocolate bars/candy, pop, milk, sandwiches, baked goods and ice cream items (Table 3). Cafeterias typically serve sandwiches/hamburger/hot dog/french fries, baked goods, juice, milk and pop (Table 4).

Table 2. Foods Served in Vending Machines

Food Item	Number of Schools Serving	Percentage of Schools With Vending Machines (N=156) Serving
Pop	135	87%
Juice	112	72%
Chips/chocolate bars/candy	44	28%

Table 3. Foods Served in Canteens

Food Item	Number of Schools Serving	Percentage of Schools With Canteens (N=137) Serving
Chips/chocolate bars/candy	94	69%
Milk	83	61%
Sandwiches	82	60%
Other items	66	48%
Ice cream items	59	43%
Pop	40	29%

Table 4. Foods Served in Cafeterias

Food Item	Number of Schools Serving	Percentage of Schools With Cafeterias (N=15) Serving
Sandwiches/hamburgers/hot dogs/fries	15	100%
Milk	15	100%
Fresh fruits and vegetables	13	87%
Baked goods	13	87%
Juice	13	87%
Pop	10	67%

4.3 Food Service Policies and Guidelines

Schools were asked about formal (i.e., written) and informal (i.e., unwritten) policy and guidelines for food services. Most schools do not have formal food and nutrition policies or guidelines. Many have informal guidelines. Most commonly, guidelines state what foods could be served. Table 5 illustrates the number of schools with formal and informal food and nutrition guidelines for the various food services available.

Table 5. Schools Having Formal and Informal Guidelines

Service Type	No Guidelines	Formal (i.e. Written) Guidelines	Informal (i.e., Unwritten) Guidelines
Vending Machines	76	12	61
Canteens	46	12	70
Cafeterias	4	9	5

In those schools that do have written guidelines for vending machines, the guidelines vary as illustrated by the comments below:

“We only allow juice in the school”

“No gum or seeds”

“No nuts”

“No service at recess or to children under grade 6 without written permission of parent”

“No foods sold in vending machines.”

“No food - only pop and juice”

By far, most schools have unwritten guidelines for vending machines. A sampling of these unwritten guidelines from both the survey and interviews are found below.

- “Only at break, not in hallways or classrooms”
- “A mix of healthy and junk foods”
- “Grades 6-12 only; no use during school class time
- “Soft drinks/juice may be purchased for lunch or after school. Can only be consumed in lunchroom or front entry. Otherwise, must be taken home.”
- “Any changes or additions to vending machines must be done through permission of the administrative committee at the school.”
- “No junk food, keep as nutritious as possible”
- “Vending machine must have a juice (orange, apple)”
- “Must make money, must be easy to maintain”
- “Pop machine is for adult use only!”
- “No small candy.”
- “Follow Canada’s Food Guide”
- “No candies containing sticks”
- “Absolutely no gum, suckers, or sunflower seeds.”
- “Not able to use the machines first thing in the morning”
- “Staff approved, SRC approved”
- “If students, especially elementary are buying a lot of ‘junk food’ and not eating their lunch, we contact parents and keep students from continuing to eat this way”

Typically, written guidelines for canteens focussed on healthy, affordable food. Some also mentioned that guidelines stressed the care of the facility and the condition of the kitchen.

Unwritten guidelines for canteens, as mentioned in the survey and by interviewees, included:

- “Students are not encouraged to go to canteen during class time”
- “Follow nutritionists’ guidelines”
- “A mix of healthy and junk foods”
- “What may be sold, who is allowed in canteen when opened and the time the canteen is opened”
- “No pop due to sugar and amount of kids on meds”
- “Staff supervise so that no food leaves cafeteria”
- “No nut products”
- “Keep food products safe”
- “We only sell healthy drinks - milk and juice”
- “Chips and bars only sold on Fridays”
- “Minimum 5 cent candy or none”
- “Not too many items”

Written guidelines for cafeterias also focused on healthy, affordable food. Prices of foods and food safety guidelines are also sometimes written as guidelines/policy.

Fewer unwritten guidelines were found for cafeterias. These guidelines include:

- “School staff supervises no food removal”
- “Occasional treats do exist”
- “Try and offer a complete menu everyday - but also try to be debt-free”
- “Canada’s Food Guide”

Schools were asked who initiated the development of formal (i.e., written guidelines). In all cases, teachers and principals were the prime instigators of policies and guidelines. Most respondents indicated that there was very little difficulty in developing formal guidelines.

The reason cited most often for not having formal or informal guidelines or policies was because “people never thought of it.”

4.4 School Events

The majority of schools (N= 243; 97%) indicate they serve food at school events. Nine schools indicate they do not serve food. Table 6 indicates the number of schools serving food at various events.

Table 6. School Events at Which Food is Sold

Event	Number of Schools Serving Food at Event	Percentage of All Schools (N=252) Serving Food at Event
Hot dog/hamburger/sub/pizza and other similar days	207	82%
Doughnut/treat/cake or other similar days	110	44%
Tournaments	41	16%
Track and Field Days	26	10%

The majority of schools (N=107; 44%) indicate that they serve food at school events 10 or more times during school year. Table 7 indicates the most common foods sold at school events.

Table 7. Foods Sold at School Events

Event	Number of Schools Selling Food at School Events	Percentage of Food Item Sold of Schools Selling Food at School Events (N=243)
Juice	167	69%
Hamburgers/hotdogs	163	67%
Milk	144	59%
Chips/chocolate bars/candy	135	56%
Pop	135	56%
Baked goods	124	51%
Sandwiches	105	43%
Ice cream items	105	43%
Fresh fruit/vegetables	95	39%

One hundred thirty-one schools have no guidelines for serving food at school events. Eighty-nine have informal (unwritten guidelines). The most common reason cited for not having guidelines was that “people never thought of it.” A sampling of the numerous unwritten guidelines were:

- “Hot dog or sub sale once a month”
- “Healthy, affordable”
- “All activities are done by classroom teachers/coaches or under their supervision”
- “Care to avoid nut and peanut products due to allergies”
- “Cooking guidelines (e.g. for hotdogs)”
- “Who will operate what food days, what kinds of food offered, prices”
- “Low cost lunch items, no sweets for lunch; junk food allowed during dances only”
- “No candy, pop, chips”
- “Food brought in from recognized caterer”
- “Food must not leave confined areas”

Written guidelines typically state what foods are to be served (e.g. no nuts, healthy foods). Teachers and principals usually initiated the development of formal guidelines for serving foods at events. Almost all indicated no difficulty in setting up guidelines and policies.

4.5 Fundraising Events

Schools were asked about whether they permitted food as fundraising items. The majority of schools (N=217; 86%) permit the selling of food items. Foods most typically sold as fundraising items are baked goods, chips/chocolate bars/candy, juice and fresh fruit and vegetables (Table 8).

Table 8. Foods Sold at Fundraising Events

Item	Number of Schools	Percentage of Schools Using Food For Fundraising Events (N=217)
Baked goods	119	55%
Chips/chocolate bars/candy	98	45%
Juice	52	24%
Fresh fruit and vegetables	46	21%

Most schools (N=120) have no guidelines for using food as fundraising items. Seventeen have formal written guidelines and 67 have informal (i.e., unwritten) guidelines. Teachers and principals typically initiated the guidelines. Few had difficulty in setting guidelines. The most common reason given for having no guidelines was “people never thought of it.”

For those schools having written guidelines, the following are samples of guidelines shared:

- “Guidelines refer more to the amount of money being generated”
- “Cannot sell anything with nuts or peanuts inside the school - but school can sell nut products outside of physical school building”
- “We cannot sell any products in the school that are currently offered by the private company in the cafeteria”
- “We are limited to the number of different items to be sold. Any variance must be approved through the administrative committee”
- “No candy, pop, peanut or peanut butter”

For those schools having unwritten guidelines, some sample guidelines are:

- “Done during non-school time”
- “Appropriate food is decided upon by the organizing committee”
- “As outlined by public health”
- “Reasonably healthy foods”
- “As per season”
- “Only food that is frozen or fruits”
- “All proceeds from all food sales go to the student council”
- “Teacher must help arrange and supervise”

“Nut free, reasonable prices, variety, and some food value”
 “Must appeal to students, must remain low cost”
 “Healthy, not time consuming, support local businesses”
 “Approved at staff meeting”

4.6 Guidelines Development

Respondents were asked to describe barriers to setting nutrition and food guidelines in schools. The reasons given are found in Table 9.

Table 9 Barriers to Setting Nutrition and Food Guidelines in Schools

Barrier	Number of Schools	Percentage of All Schools (N=252)
People never thought of it	114	45%
Lack of support for guidelines by parents	40	16%
Lack of support for guidelines by students	37	15%
Lack of support for guidelines by teachers	23	9%
Lack of support by school board	12	5%
Lack of support by principal	11	4%
Involvement of food corporations in the school	15	6%

Respondents thought that what helped or would help in setting nutrition and food guidelines in schools were:

- support for guidelines by students/teachers/parents/principals/school board (N=148)
- nutrition and food guidelines that are not too restrictive (N=103)
- support for guidelines by food corporations (N=31)
- support for guidelines by vending machine contractors (N=29)

Respondent were asked about ways to support nutrition/food policy development. They indicated an interest in:

- examples of successful nutrition guidelines from other schools (N=135)
- pamphlets/handouts/material on the reasons for having guidelines (N=115)
- discussions/presentations by nutritionists and/or other health professionals to students, teachers, principals, and/or others (N=109)
- evidence for the effect of nutrition guidelines on budget, health status and other aspects of school life (N=93)
- research articles on nutritional status of children/adolescents (N=33)

4.7 Nutrition Education Activities

Respondents were asked about nutrition activities offered to students in their schools. Over 96% of schools offered nutrition activities (N=243). Nine respondents indicated that no activities were offered or that they were unaware of such activities. The most popular nutrition education activities included videos/slides/films, lessons conducted by teachers, using resource material and having guest speakers. Table 10 indicates these activities.

Table 10 Nutrition Education Activities Offered to Students in Schools

Nutrition Education Activity	Number of Schools Indicating this Activity	% of Schools Offering Nutrition Education (N=243)
Lessons conducted by teachers	216	88%
Resource material	188	77%
Videos/slides/films	168	69%
Paper and pencil activities	133	55%
Guest speakers	133	55%
Games/activities	76	31%
Snack/meal program	74	30%
Field trips	74	30%
Special Events	60	25%
Computer activities	55	23%

Typically, teachers conduct the nutrition education activities (N=235; 96%). Other individuals involved in nutrition education include nurses (N=112; 46%), dental educators (N=78; 32%), dietitians and nutritionists (N=71; 29%), other health professionals (N=60; 25%) and parents (N=22; 9%).

Respondents were asked how nutrition activities were incorporated in and outside of the classroom. Table 11 indicates that the most common method of incorporating nutrition activities is through incidental teaching anytime of the year.

Table 11 How Nutrition Activities are Incorporated In and Outside of the Classroom

	Number of Schools Indicating How	% of Schools Offering Nutrition Education (N=243)
Incidental teaching anytime of the year	168	69%
Cover a unit on a specific topic in a short period of time (i.e., a bit everyday for a week)	164	67%
Cover a specific topic over a long period of time	114	47%
Informally at lunch	71	29%
Through snack times/party days	67	28%
Special events	72	30%
Do not know	12	5%

Respondents indicated that the barriers to offering nutrition education to students included nutrition not being a priority topic to cover (N=63; 26%), teachers not having enough time (N=60; 25%) or the background training or resources (N=53; 22%) to cover nutrition and that the students (N=54; 22%) or teachers (N=15; 6%) were not interested in nutrition.

Ways to encourage nutrition education included having more resources available (N=112; 46%), providing more access to health professionals (N=87; 36%), having students ask for more nutrition information (N=77; 32%), providing more time for nutrition education (N=77; 32%) and mandating nutrition education in the schools (N=72; 30%).

5.0 Interview Results

The interviews with key individuals from the schools explored more fully the issue of formal and informal food and nutrition guidelines and policies. As found in the survey, the reason for developing policies or guidelines varied. For some, concerned parents or other schools featured in the news prompted the development of guidelines. For others, the principal or a teacher spearheaded the changes. A key concern was the amount of junk foods served and the impact of unhealthy eating habits on student performance.

The development of policies or guidelines, formal or informal, was influenced by many factors. Interviewees indicated that having an individual or committee passionate about advocating and making changes was critical. This individual or group helped create awareness of healthy eating in schools and appropriate and acceptable alternatives. They sought the support of and involved parents, teachers, students and others.

Numerous suggestions were given for creating more awareness of healthy eating in schools. These included sharing success stories from other schools, preparing newsletters or pamphlets on healthy eating and the benefit of healthy eating policies, having assemblies for staff and students to keep them informed about healthy eating and new policies, give teachers the tools and resources to talk to their students about the issue, providing school in-services for teachers, sponsoring special events or contests. Interviewees agreed that open communication with all stakeholders was or would be critical for developing policies or guidelines.

There is no doubt that issues arose for those who had developed policies or guidelines. Typically, students were concerned about not having their favourite foods or drinks. Sometimes the students became frustrated with the changes, especially at times that they craved “junk” food. Not having these foods available was viewed as an inconvenience. However, with time, these frustrations often dissipated.

One argument often made for not having guidelines or policies was wanting students to make their own choices. Some commented that the more important aspect of healthy eating was to create awareness of what to eat, rather than to dictate what one should eat. Also mentioned was that formal written policies may be more problematic than informal guidelines.

Interviewees were asked about barriers to setting policies, either based on experience or perceptions. Similar to the survey, a lack of perceived need for policies was identified. It was surmised that this lack of identified need might be due to the feeling that students already ate healthy and brought healthy snacks and lunch from home. Some also felt that this lack of need might be because the demand for changes has not been made by any one individual or group.

Where a food policy/guideline might be identified, it was often seen as competing with other more pressing issues in the school system. The time required to push for and develop a policy was often considered. It was sometimes viewed as too much work to develop a policy or guideline. If a policy or guideline had to be “sold” to stakeholders, more concerns arose. One interviewee commented “we have so many written policies already”; another stated “people

don't need more written guidelines.”

The issue of personal choice often arose. Some felt a barrier was or would be that students have the right to choose what they eat. Another comment received related to whether the changes made in school are “band-aid” solutions, not addressing the real issue of individuals knowing, understanding and choosing healthy foods.

One concern mentioned was whether the development of any policy or guideline might be taken too far. It was suggested that common sense had to prevail in any decisions or policies being made. The recognition of junk foods being offered at home (or through snacks and lunches brought from home) and at local stores near schools had to be recognized. Some felt that developing policies and guidelines were fruitless given that they “can get it (junk food) at the corner store” or because “we have competition of fast food places near school.”

Profit issues arose as a possible barrier. The need to fund raise for school initiatives and projects was emphasized. Food was often sold and was deemed as an important fund raiser. As one individual commented “we want to make money for our program so we sell what the students will buy” or “what we sell is demand driven.” One interviewee commented that “when we try to sell fruits and vegetables they don't sell well.” Still another stated “it all comes down to money, which is more important than nutrition to most students and staff.”

Interviewees were also asked what helped them in setting guidelines or what would help them if they hadn't yet set guidelines. Demonstrated need and interest are the most common replies. Some felt that education on why guidelines or policies would be beneficial would be important. It was clear that the development of guidelines had to serve a purpose and have benefit. It was also felt that interest for guidelines would have to be demonstrated by students, staff, parents, the principal and the school board. Support from these stakeholders was deemed essential. Interest and need are related as it was felt that one has the potential to show interest only if they are familiar with the need.

A person or committee with a passion to spearhead the promotion and development of guidelines was mentioned. Because the development of such policies was often seen as time consuming, time was frequently mentioned. This was particularly important from the teachers' perspective. Making gradual changes was also mentioned.

Mentioned less often was input from outside organizations and individuals (e.g. government, public health nutritionists and nurses). Information or guidance was suggested as ways that organizations and public health professionals could help.

The issue of support was discussed with the interviewees. Support from the school board and the principal to develop policy or guidelines was mentioned. One issue that arose frequently was the issue of monitoring and evaluating the changes.

6.0 Major Findings

1. The most common barrier to setting guidelines and policies was lack of perceived need.
2. Vending machines and canteens are the most common food service available in the schools replying to the survey. Vending machines typically serve pop, chips/chocolate bars/candy and juice while canteens most often offer chips/chocolate bars/candy, pop, milk, sandwiches, baked goods and ice cream items.
3. Most schools have informal food and nutrition guidelines. The informal guidelines are varied and numerous. There does not appear to be a “typical” informal guideline or policy. In most cases, teachers and principals were the prime instigators of policies and guidelines. For those schools having formal written guidelines, most had very little difficulty in developing the guidelines. The reason cited most often for not having formal or informal guidelines or policies was because “people never thought of it” or that the need for guidelines had not been identified.
4. Most schools serve food at school events. The most common foods sold are juice, hamburgers/hotdogs, milk, chips/chocolate bars/candy, pop and baked goods. Most schools have no guidelines for serving food at school events. The most common reason given for not having guidelines was “people never thought of it.”
5. The majority of schools permit food as fundraising items. Foods most typically sold are baked goods, chips/chocolate bars/candy, and juice. Most schools have no guidelines for using food as a fundraising items.
6. Information, support and interest were identified key elements for developing food policies or guidelines.
7. The majority of schools offer nutrition education for students. Nutrition education is typically by lessons conducted by teachers. Resource materials are frequently used as are videos/slides/films, paper and pencil activities and guest speakers. The most common way nutrition activities are incorporated in the school is through incidental teaching anytime of the year and by covering a unit on a specific topic in a short period of time. The most frequent barriers to nutrition education for students are nutrition not being a priority topic and the teachers not having enough time or background training and resources. Respondents feel that having more resources available to them would help in their nutrition education.

7.0 Discussion

McKenna (2000) suggests that policies are typically initiated in response to a perceived problem. The findings from this study indicate that policies and guidelines were not developed for many schools due to a lack of perceived need. Although health professionals and researchers have identified nutrition problems among school aged children, often the impetus for initiating school nutrition policies has come from primarily health, not education, agencies. Although health promoters see schools as a natural site for nutrition action, Green and Kreuter

(1991) suggest that many educators may believe that the educational role of schools would be compromised in pursuing health objective. Whether this is the case for the individuals participating in this study is indeterminable.

School nutrition policies often conflict with other school concerns (McKenna, 2000). These concerns which were shared by respondents both in the questionnaire and through interviews are similar to those mentioned in the literature (financial issues, student choice, time to develop a policy). For example, if a nutrition policy means that certain popular foods are no longer provided or food sales for school fundraising are restricted, there are consequences for those groups who benefit from the sales. Clearly, this issue is an important one. With regard to “student choice” there are two main opposing views regarding how much choice should be ceded to students regarding food. The “healthy choice” view is that schools have a responsibility to guide students’ choices by modeling healthy food selections by offering primarily (or exclusively) healthy foods. This view results in a food environment designed to guide students’ food decisions in a way that promotes health. The “student choice” view is that students should be given a wide range of foods that includes both healthy and less healthy selections and should be allowed to choose from among them. In this view, schools are seen as having a responsibility for educating students and then allowing them to decide for themselves. These views must be discussed and considered in the development of any policies.

In this study, schools that had written school food and nutrition policies indicated few problems in developing such policies. The literature would seem to suggest that policy development and implementation can be difficult (McKenna, 2000). Our survey and interview results suggest that there is support for the development of food guidelines in schools. Respondents felt that guidelines and policies had a role to play in influencing children’s health. However, the extent to which these guidelines and policies should be in place was not readily determined by this study. Respondents did indicate though that they thought that common sense and being realistic with policies was important.

Clearly, schools are involved in nutrition education activities. The extent and content of these activities was not determined in this study. However, the data suggests that nutrition education activities are not necessarily congruent with food served in vending machines, canteens, cafeterias or at school events. Several researchers suggest that schools should work to support their nutrition education efforts with sound food and nutrition policies or guidelines.

8.0 Recommendations

8.1 For Heart and Stroke Foundation and Other Health Professionals

1. Work to create awareness of the need for school food policies or guidelines among key stakeholders (e.g. students, teachers, principals, Boards, community).
2. Provide schools with examples of successful nutrition guidelines from other schools. Such guidelines may assist schools with development of their own guidelines.

3. Provide schools with evidence regarding the effect of nutrition guidelines on budget, food sales, corporate support, fundraising, and the health of children.
4. Help schools understand the effects of written food and nutrition policies or guidelines.
5. Work with schools to identify ways to overcome concerns arising about the development and implementation of policies (e.g., fundraising, student choice, priority of nutrition, lack of policy clarity, approaches to implementation).
6. Encourage schools to support their nutrition education efforts with sound food policies and guidelines. Encourage schools to adopt a coordinated school nutrition policy that promotes healthy eating through classroom lessons and a supportive school environment. Such a policy would help ensure that students receive nutrition education messages that are reinforced throughout the school environment. For example, such a policy would address nutrition education classes, school lunch and breakfast, classroom snacks and parties; use of food to reward or discipline; and food sold in vending machines, at school stores, snack bars, special events and as part of fundraising activities.
7. Encourage the preparation of written food policy guidelines and policies developed through a partnership of key stakeholders (e.g. students, teachers, parents, Boards, food service personnel, nurses, public health professionals communities). The policy should meet local needs and be adapted to the health concerns, food security needs, food preferences and dietary practices of different ethnic and socioeconomic groups.
8. Provide resources, suggestions and ideas to schools for helping their students possess the knowledge and skills necessary to make nutritious and enjoyable choices for a lifetime.

8.2 For Schools and School Boards

1. Explore ways and strategies to improve the nutritional status of students. The link between nutrition and learning is well documented. Healthy eating patterns are essential for students to achieve their full academic potential, full physical and mental growth, and lifelong health and well-being.
2. Seek input from all members of the school community to develop a coordinated school nutrition policy that promotes healthy eating through nutrition education and a supportive school environment.
3. Explore and foster the development of school food and nutrition policies and guidelines. Consider school food and nutrition policies and guidelines that:
 - are comprehensive in nature, that include policies for wherever food is sold or

- given away (vending machines, canteens, fundraising, cafeterias, special events)
 - offer healthy, appealing food wherever food is available
 - provide adequate time for nutrition education so that students can learn general health skills (e.g., how to assess their health habits, set goals for improvement) and specific nutrition-related skills (e.g. plan a healthy meal, read and compare food labels)
 - coordinate school food service with nutrition education and with other components of the school program to reinforce messages about healthy eating
4. Examine whether existing policies could be adapted to include a nutrition component.
 5. Explore alternatives to fundraising that supports sound nutrition and food policies. Choose food and beverage items that are healthy and nutritious or choose non-food items.
 6. Explore ways to incorporate nutrition education into the classroom through different subject areas and by various means.
 7. Provide opportunities and encouragement for staff to model healthy eating habits.
 8. Involve family members and the community in supporting and reinforcing nutrition education.

8.3 For Teachers

1. Develop a comprehensive scope and sequence for nutrition education.
2. Work with food service personnel, coaches, physical education teachers, and other staff to coordinate nutrition education efforts and give students consistent messages about healthy eating.
3. Request healthy snacks from parents for class parties.
4. Avoid using food to reward students.
5. Take part in nutrition training sessions and share experiences with other teachers.
6. Find and use resources for nutrition education.
7. Involve families and community organizations in nutrition education activities.

8.4 For Students

1. Urge the student council to request healthy food choices in school and at school events.

2. Support the development of food and nutrition policies and guidelines.
3. Provide positive suggestions for change.
4. Volunteer to become involved in planning school menus.

8.5 For School Food Service Staff

1. Provide tasty, nutritious and appealing foods.
2. Support classroom lessons by offering foods that illustrate key messages.
3. Coordinate activities with classroom and physical education teachers and staff.
4. Involve students and families in planning school menus.
5. Support, and be involved in, the development of school food and nutrition policies.

8.6 For Parents

1. Provide healthy snacks for school parties and special events.
2. Find out what schools are doing to promote healthy eating.
3. Join a school health or nutrition advisory council to guide nutrition policy.
4. Provide positive suggestions for change.
5. Speak to school administrators and school boards about the importance of effective nutrition policies and programs.
6. Urge parent associations and school clubs to sell healthy food or nonfood items for fundraising activities.

9.0 Conclusion

The link between nutrition and learning is well documented. Healthy eating patterns are essential for students to achieve their full academic potential, full physical and mental growth, and lifelong health and health being. Well-planned and well-implemented school food policies can positively influence students' eating habits.

References

Baxter, S. (1998). Are elementary schools teaching children to prefer candy but not vegetables? Journal of School Health, 68(3), 111-113.

Church, S. (1997). School food - turning the tide. Nutrition & Food Science, 1, 20-22.

French, S., Story, M., Jeffery, R., Snyder, P., Eisenberg, M., Sidebottom, A. & Murray, D. (1997). Pricing strategy to promote fruit and vegetable purchase in high school cafeterias. Journal of the American Dietetic Association, 97(9), 1008-1010.

Gallagher, A. (1999). Statement of the American Dietetic Association - Promoting Healthy Eating Behaviors: The Role of School Environments. (www.eatright.org/gov/lg062499.html)

Howe, B. & Covell, K. (2000). Canada needs a national school meals program. Policy Options, 63-68.

James, D., Rienzo, B. & Frazee, C. (1996). Using focus group interviews to understand school meal choices, Journal of School Health. 66(4), 128-131.

Kennedy, E. & Cooney, E. (2001). Development of the child nutrition programs in the United States. Journal of Nutrition, 131, 431S-436S.

Levine, J. & Gussow, J. (1999). Nutrition professionals' knowledge of and attitudes towards the food industry's education and marketing programs in elementary schools. Journal of the American Dietetic Association, 99(8), 973-976.

Lytle, L., Seifert, S., Greenstein, J. & McGovern, P. (2000). How do children's eating patterns and food choices change over time? Results from a cohort study. American Journal of Health Promotion, 14(4), 222-228.

McBean, L. & Miller, G. (1999). Enhancing the nutrition of America's Youth. Journal of the American College of Nutrition, 18(6), 563-571.

McKenna, M. (2000). Nutrition policies for schools. Nutrition Bulletin, 25, 201-207.

Meyer, M. (2000). Top predictors of middle/junior high school students' satisfaction with school foodservice and nutrition programs. Journal of the American Dietetic Association, 100(1), 100-103.

Meyer, M. & Conklin, M. (1998). Variables affecting high school students' perceptions of school foodservice. Journal of the American Dietetic Association, 98(12), 1424-1428.

Nicklas, T., Johnson, C., Farris, R., Rice, R., Lyon, L. & Shi, R. (1997). Development of a

school-based nutrition intervention for high school students: GIMME 5. American Journal of Health Promotion, 11(5), 315-322.

Passmore, S. (1996). Nutrition education in schools - educating the children. Journal of Human Nutrition and Dietetics, 9, 357-362.

Pateman, B., McKinney, P., Kann, L., Small, M., Warren, C., & Collins, J. (1995). School food service. Journal of School Health, 65(8), 327-332.

Position of the American Dietetic Association: Local support for nutrition integrity in schools. (2000). Journal of the American Dietetic Association, 100(1), 108-111.

Snyder, P., Anliker, J., Cunningham-Sabo, L., Dixon, L., Altaba, J., Chamberlain, A., Davis, S., Evans, M., Hurley, J. & Weber, J. (1999). The Pathways study: a model for lowering the fat in school meals. American Journal of Clinical Nutrition, 69(supp), 810S-815S.

Stang, J., Story, M., Kalina, B. & Snyder, P. (1997). Meeting the U. S. dietary guidelines in school meals: Current practices, perceived barriers, and future training needs. Journal of Nutrition Education, 29, 152-158.

Story, M., Hayes, M. & Kalina, B. (1996). Availability of foods in high schools: Is there cause for concern? Journal of the American Dietetic Association, 96(2), 123-126.

Turner, S., Levinson, R., McLellan-Arnold, B., Stevenson, S., Donkin, A. & Dowler, E. (2000). Health eating in primary schools: an educational perspective from a socially deprived area. Health Education Journal, 59, 196-210.

Appendices

Appendix A: Survey Instrument

Appendix B: Interview Guide