Children speaking up!

Eating, physical activity and dental care

Key findings

The second evidence-based cycle
Northern Nova Scotia

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Northern Regional Health Board
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Action summary
Children speaking up!
Eating, physical activity and dental care

Healthy eating, physical activity and good dental care are basic health practices to ensure good health and prevent illness. Learning to make healthy choices early in life is an important first step. Supportive environments enable children to make choices and build self confidence to make decisions about their own healthy growth and development.

This is the second evidence-based cycle in northern Nova Scotia providing information to support healthy choices. It examines the health practices of children in grades four to six, focusing on eating, physical activity, and dental care and factors which influence their health practice.

The goal is to promote healthy child development by strengthening primary prevention strategies in the northern region for children aged 9 to 12 years.

Objectives of the study

- To identify the eating habits of children ages 9 to 12 years in school.
- To identify policies and systems that support healthy eating for children in school.
- To identify actionable factors that support healthy decision making of children aged 9 to 12 years for healthy eating.
- To identify physical activity level of children ages 9 to 12 years in school.
- To identify policies and systems which support physical activity for children in school.
- To identify basic dental care practices of children ages 9 to 12 years.
- To strengthen the school health curriculum in the areas of healthy eating, physical activity and dental hygiene.

Northern Nova Scotia Information base for cycle 2

Schools	27
Students	2439
females	49%
Grade 4	28%
Grade 5	31%
Grade 6	40%
Parents	2154
females	86%
Teachers	103
Principals	27
Caterers	21
Parent focus groups	10
Small group discussions	10

Methods

Supporting healthy choices for children was identified as a priority by Public Health Services staff in northern Nova Scotia. To translate this into practice, this evidence-based method designed by CIET (Community Information Epidemiological Technologies), combines quantitative and qualitative data in a way to facilitate action. To listen to the voice of the children of northern Nova Scotia, 2439 students

in grades 4-6 were guided through a self-administered questionnaire. The 27 schools involved are in 20 representative sites selected by Statistics Canada in the first cycle. In addition, students were asked to take home a questionnaire for their parents. A total of 2154 parents returned their questionnaire -- a response rate of 88%.

> This is way better than school work. I wish you would come back tomorrow.
>
> *Grade 6 boy and girl*

Key informant interviews were conducted with principals, teachers and caterers providing information on policies, programmes and their experienced view. After a preliminary analysis, focus groups of parents provided community level dialogue on the evidence and suggestions for change. Pamphlets were distributed and communication tools were developed to illustrate risk statistics in plain language during the focus groups. Following the data collection phase, work began on communication and dissemination of the evidence and mobilising action.

Healthy eating

Are our children eating?

- On the day before the survey 14% of children in northern Nova Scotia in grades four to six reported they do *not* eat breakfast. This proportion compares unfavourably with a well known study completed in Waterloo, Ontario, where 9% of children in grades four to six came to school without eating breakfast.
- On the day before the survey, 33% of children said they had *not* eaten a snack at recess.
- Children in grade six are *less* likely to eat breakfast and snacks: 18% reported to *not* eat breakfast and 44% reported to *not* eat snacks the day before survey.
- The length of a fast a child experiences can have a negative impact. In northern Nova Scotia 6% of children had not eaten breakfast and a recess snack - a long time for children to go without food.
- On the day before the survey 4% of children reported they had *not* eaten lunch

A look behind these indicators – promoting healthy eating

- *Parental pattern* of breakfast eating affects their children: a child of a parent who eats breakfast is almost twice as likely to eat breakfast compared with a child of a parent who does not eat breakfast.

Eating and physical activity

- a child who eats breakfast is 35% more likely to report s/he was “physically active” at recess.
- a child who has a snack is 19% more likely to be active at lunch time compared with a child that did not have a snack

Eating and self-esteem

- a child who feels cared for is at least three times more likely to have eaten breakfast, snack or lunch compared with a child who does not feel cared for
- a child who thinks s/he is "just right" is more likely to have eaten breakfast, snack, or lunch compared with a child who thinks s/he is over or under weight
- a child who has been told by others that s/he is "just right" is more likely to have eaten breakfast compared with a child who is told that s/he is over or under weight.

Breakfast, snack and lunch programmes

> We do have an early morning juice and muffin programme in place for those who arrive without a breakfast. Unfortunately, very few take part. By Grade 5, many students, especially girls, are embarrassed easily.
> *Grade 5 teacher, Colchester County*

- The existence of programmes does not mean that children access them. Of the 27 schools, 15 reported to have a breakfast programmes (formal or informal). This means that two-thirds of the children surveyed are in schools that have some form of breakfast programme. Yet, of those who ate breakfast, only 5% reported to do so *at school*.
- Recess snack programmes are also offered in 19 out of 27 schools. Two-thirds of the schools that have such a programme require students to bear the full costs.
- Twenty-one of the 27 schools interviewed have a lunch programme.
- Nutritionists were consulted by 1 out of 14 schools for their snack programme and two out of the 15 schools consulted one for their lunch programme.
- Social interaction facilitates children eating breakfast. In schools with a formal breakfast programme a greater proportion of students reported to eat breakfast at school compared to schools with an informal programme.
- A child who reported eating breakfast *at home* is five times *more likely to feel that someone cares* for them compared with a child who ate at school.

Dieting and self-esteem

Who is dieting?

Almost one in six children (16%) reported s/he was on a diet to lose weight. A girl is 50% more likely to be on a diet compared with a boy (13% boys reported to be on a diet compared with 19% of girls).

> If you are on a diet and it doesn't work, is it still a diet?
> *Grade4 girl, Colchester County*

A look behind who's dieting

- A child who usually <u>participates in gym class is less likely</u> to be on a diet.

- a child who feels cared for is 2.4 times more likely to *not* be on a diet compared with a child that does not feel cared for.
- a child who perceives him/herself as overweight is nine times more likely to be on a diet compared with a child who thinks s/he is "just right"; and
- a child who thinks other people tell him/her that s/he is overweight is 77% more likely to be on a diet compared with a child who thinks other people think they are "just right".

Do children like themselves and do they feel cared for?

> I'm just right!
> *Grade 5 Boy*

- Four percent of children reported to like themselves "none of the time". A boy is 30% more likely to report to like himself all or most of the time rather than some or none of the time compared with a girl. This sex difference is greater in grade six.
- Two percent of children reported that no one cares about them.
- A child who feels cared for is 18 times more likely to like her/himself compared with a child who does not feel cared for.
- A child who feels cared for is at least six times more likely to feel that adults listen to her/his ideas and opinions at school and at home compared with a child who does not feel cared for.

Talking with children

This project rose from the recognition of the importance of the voice of the children in the development of programmes and policies that affect their daily life. Some 14% of children *do not* feel listened to at school and six percent *do not* feel listened to at home. At the other end of the scale, 14% of children feel listened to at school *all* of the time and 37% feel listened to *all* of the time at home.

Who do children talk to about changes in their bodies?

- Two-thirds of children reported that they would talk to their parent/guardian first.
- The second most common answer was "nobody" (17%). A boy is three times more likely *not* to speak to anyone about the changes in their bodies compared with a girl.
- A child who does not feel cared for is 3.2 times more likely to *not* talk to anybody compared with a child that feels cared for.
- A child who likes her/him self "none of the time" is 79% more likely to not talk to anyone.

Physical activity at school

Are children on the move?

- 49% of students were *not* physically active at *recess* the day before the survey;
- 33% of students were *not* physically active at *lunch* time the day before the survey; and
- 53% of students were *not* physically active *after school* the day before the survey.
- 43% of the students play on a school team

Some gender bias exists in activity level:

- A boy is 19% more likely to play on a school sports team compared with a girl.
- A boy is 43% more active at recess and 35% more active at lunch time compared with a girl.

What makes our children move?

Self image and feeling cared for are determinants of physical activity:

- a child who is told by others that s/he is physically "just right" is 20% more likely to be active at recess or lunch compared with a child who is told by others that s/he is over or under weight; and
- a child who likes her/him self is 49% more likely to be active at lunch compared with a child that likes her/him self "none of the time".

Facilities make a difference in activity at school:

- a child who goes to a school that has a slide and a swing is 30% more likely to be active at lunch compared with a child who goes to a school that does not have swings and slides; and
- a child who goes to a school with an outdoor basketball court is 53% more likely to be active after school at school compared with a child who goes to a school that does not have these facilities.

Children's and parents view on schools and physical activity

Children and parents were asked what *schools* could do to help children be more physically active at school. The top three responses include:

- I think I am active enoughl;
- if there were more fun activities; and
- if there were *more kinds* of activities offered.

Children were also asked what *they* could do to be more physically active at school. Almost two out of ten children indicated that they would be more physically active if they were "better at games and sports". The difference between the parents' and children's response was that children were more likely to report "if I had more energy" while parents reported "if able to stay after

school".

Dental care

Some 43% said they need to brush their teeth *two times a day* and another 46% said they need to brush their teeth *three times a day*. Seventy percent of children indicated they needed to floss their teeth every day. However, almost 80% of parents reported that their child did *not* floss her/his teeth the day before the survey.

Looking behind children's dental care practice

- A child who feels cared for is almost five times more likely to brush her/his teeth at least two times a day and almost 3.5 times more likely to visit the dentist compared with a child who does not feel cared for.
- A child who likes him/her self is 12 times more likely to brush at least two times a day and almost two times more likely to visit the dentist compared with a child that like him/herself none of the time.
- A child who think s/he is "just right" is almost three times more likely to brush their teeth.

Next steps

Three major threads continuously appear when unpacking the components of eating practices, physical activity levels and dental care: the feeling of *being cared for*, the child's *image of her/his physical state* and whether s/he *likes him/herself.* Although complex, it is well known that positive reinforcement is key. Children of northern Nova Scotia are clearly telling us what makes a difference in their lives. The challenge is to listen and put the evidence into prevention strategies and programmes within existing limited resources. Actions taken now will prepare the children in northern Nova Scotia to better cope with the challenges of becoming an adolescent.

I. INTRODUCTION

Healthy eating, physical activity and good dental care are basic health practices to ensure good health and prevent illness. Learning to make healthy choices early in life is an important first step. Supportive environments enable children to make choices and build self confidence to make decisions about their own healthy growth and development.

This is the second evidence-based cycle in northern Nova Scotia providing information to support healthy choices. It examines the health practices of children in grades four to six, focusing on eating, physical activity, and dental care and factors which influence their health practice.

Numerous studies have shown that Canadian children have poor health practices[1, 2,3]. In 1998, the Heart and Stroke Foundation of Canada released a *Report Card on the Health of Canada's Kids*[4]. The findings of the survey included that the majority of children have poor diets and are not physically active. Dental care is another health behavior that needs attention. Based on 1994-95 statistics, approximately 72% of elementary schools in the northern region were considered at high risk for dental caries.

To get evidence on these important health issues in the northern Nova Scotia region, the second evidence-based cycle chose to go to the schools where children spend most of their time. Through an interactive epidemiological process the voices of children were documented. Evidence was also collected from their teachers, principals and parents. But the main voice for analysis was of the children of northern Nova Scotia. It is *their* perception on the issues of eating, physical activity and dental care that are important to listen to in order to gain a better understanding of the issues and for the implementation of effective change-strategies.

II. THE SECOND EVIDENCE-BASED CYCLE IN NORTHERN NOVA SCOTIA: GOALS AND OBJECTIVES

In the spirit of building the children's voice, *Children speaking up* is the name that was formed by the design group for this second cycle. The goal is to promote healthy child development by strengthening primary prevention strategies in the northern region for children aged 9 to 12 years.

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[1] Nova Scotia Department of Health and Heart Health Nova Scotia. *The Nova Scotia Health Survey 1995.* Province of Nova Scotia and Heart Health Nova Scotia; 1996.

[2] Nova Scotia Heart Health Program, Nova Scotia Department of Health, Health and Welfare Canada. *Report of the Nova Scotia Nutrition Survey.* Nova Scotia Heart Health Program, Nova Scotia Department of Health, Health and Welfare Canada. March 1993.

[3] Ismail, A., MacInnis, W., Poulin, C. et al. Nova Scotia Oral Health Survey of Children and Adolescents (NSOHS) 1995-1996. September 1997.

[4] Heart and Stroke Foundation of Canada. *Heart and Stroke Foundation Report Card on the Health of Canada's children.* Ottawa, Canada: Heart and Stroke Foundation, February 1998.

The objectives include:

1. To identify the eating habits of children ages 9 to 12 years in school.

2. To identify policies and systems that support healthy eating for children in school.

3. To identify actionable factors that support healthy decision making of children aged 9 to12 years for healthy eating.

4. To identify physical activity level of children ages 9 to 12 years in school.

5. To identify policies and systems which support physical activity for children in school.

6. To identify basic dental care practices of children ages 9 to 12 years.

7. To strengthen the school health curriculum in the areas of healthy eating, physical activity and dental hygiene.

Scope of complementary data collected

This cycle is concerned not only with issues such as foods children eat in school, the level of their physical activity and how many visits are made to the dentist per year, but also with the environment that can support healthy choices. This includes polices, available foods to school and the level and quality of coverage by public health services. All of these, and the level of other community services will be reviewed extensively.

In addition, to determine whether "healthy" foods are being eaten at school and children are participating in "enough" physical activity, assessment measures were developed that are affordable and usable at public health level. A nutrition working group comprising of nutritionists at regional and provincial level and a physical activity working group also comprised of "experts" at both levels worked to develop a consensus around a measurement system to assess "healthy" eating and levels of activity. This is important for currently, a large proportion of public health resources are being used to support healthy practices without any form of evaluation that is user friendly for public health. After much deliberation, simple questions that are understandable to young children and at the same produce results that are amenable to analysis were developed.

A number of personal and social factors such as education and employment, were accounted for formally in the analysis so as to be sure the impact of the services is independent of these well recognised determinants of child health. In addition issues of self esteem and body image were considered as it relates to making healthy choices.

The cornerstone evidence was gathered in a self-administered survey of children aged 9 to 12

with interviewers reading the questions. The children's parents also completed a self-administered survey. Key service providers concerned with child health practices (principals and teachers) were interviewed to include their views in the evidence-based planning process. Parent focus groups in each sentinel community discussed survey results and design action strategies. All of these finding were drawn together in a series of planning exercises among service providers, partner organizations, mothers, fathers, children, and/or other care providers. This consultative process will lead to local evidence-based strategies to make service delivery more effective.

The baseline survey involved contact with approximately 27 elementary/middle schools consisting of 2,529 children in the northern region. This will produce reliable benchmarks to monitor progress while at the same time drawing parents and children into the dialogue. The process of authorisation with the School Board has also set the stage for productive dialogue between public health and the school board which is useful given the amount of work that public health carries out in school. The contact with principals, caterers, home school associations and PTAs also enriched the dialogue. Closed working sessions with principals were carried out to discuss the results. While the evidence and the consultative process will determine the exact change and or improvement strategies, some actions will very likely include some fine tuning of public health service delivery.

Confidentiality and accountability

The evidence-based cycles pay special attention to confidentiality issues. This is guaranteed by the fact that no record is ever made of the name or address of the informants - there is no means to trace back to any individual participant. Personal information such as age, gender, level of education, household level of income and language spoken in the home will be collected. No identifying information is recorded other than noting the enumeration area in which the data is collected. In addition, interviewers will not be sent to work in their own communities, so no "informal" breach of confidentiality can be expected. Ownership of the data rests with the Northern Regional Health Board and it will be managed on their behalf by Public Health Services. CIETcanada is providing overall technical guidance for this process.

Ethics approval was received and a copy of the approval is in the Annex.

Evidence-based cycles, LoPHID and NHSI

This second cycle in northern Nova Scotia is part of project funded by Health Canada called Local Public Health Infrastructure Development (LoPHID). Nationally, LoPHID is one of eight projects of the National Health Surveillance Info-Structure (NHSI) initiative.

The ideas and concerns behind LoPHID go back many years. Most NHSI initiatives are on the "supply side" of evidence-based planning; they store and make available all information needed for health promotion and protection. Complementing this data supply function, as defined by CIET, LoPHID is a "demand side" contribution, concerned as much with the users of the data as

the actual data produced for local decisions.

The purpose of LoPHID is to strengthen local public health capacity to plan strategically, to conduct surveillance, to access existing data and to generate and use local information for decision-making.

The LoPHID initiative needs the collaboration of different partners and stakeholders, starting from the local level with the individual and the communities all the way up to the national level. In collaboration with five public health regions, this is being implemented over the period 1998-2000. In each region, the local public health information management system will be strengthened by incorporation of a local evidence-based planning technology, adapted to the specific conditions of the region.

The focal point of LoPHID in the northern region is the regional public health service management. The initiative will attempt gradually to bring on board other government, private sector, university, NGO and political stakeholders at local and provincial levels. It will seek to play a bridging and facilitating role between provincial-level interests and ground-level stakeholders in each participating region.

The LoPHID effort attempts to strengthen capacities for community-based assessment and analysis at the regional level, while producing actionable data on priority problems rapidly and at low cost. If successful, LoPHID will provide planners and programme managers increased access to quantitative and qualitative data from communities for local action, while building systematically the community voice into planning through several mechanisms:

- representation of all social groups in indicators, not just those who have access to the public services;
- community participation in fact-finding;
- dialogue and participation in the search for solutions based on evidence; and
- community-informed development of intervention strategies.

These four mechanisms go beyond rhetoric. As defined by the CIETmethods, they are practical steps acted out in communities to unlock a much bigger and more powerful process -- the interest and belief of people in their own governance. With successive cycles, as people begin to see that their input has made a difference, they might be stimulated to take on bigger challenges, based on their new tools for evidence-based planning.

III. METHODS

The method for this cycle is an adaptation of CIETmethods to the local Canadian context. The CIET methods, originally conceived in the mid-1980s as a capacity building process that could simultaneously produce accurate, detailed and actionable data rapidly and at low cost[5 6]. Ordinarily, CIETmethods focus on the use of epidemiological data in local or national planning. This may be at the level of a municipality, a city, a state, a number of provinces, or an entire country.

Box 2
CIETmethod's contribution to evidence-based planning

CIET adapts modern epidemiology, used originally for identifying causes of disease, to a broad range of planning concerns.

CIET builds public health surveillance capacity at the local level to prioritise public health issues, to obtain evidence on them and to precipitate informed decisions.

CIET combines quantitative and qualitative methods to enrich hard data with cultural and experiential insights.

CIET promotes community voice through participation in fact-finding, analysis of evidence, and the ensuing action.

CIET methods combine modern research techniques to gather evidence while involving local partners in the process. Rooted in modern epidemiology and participatory research techniques, CIET methods have been applied in many contexts besides health: education[7], water and sanitation[8], land mines[9], food security[10], economic sanctions[11], prevention of sexual violence[12] and the impact of structural adjustment measures on the vulnerable. The method has been used to measure impact, coverage and cost in the fields of environment[13], urban transport[14], agricultural extension[15], health care services[16], judiciary[17] and institutional restructuring. It has proved useful for community-designed

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[17] Massoud N. Measuring client satisfaction and expectations: The Case of the Mali Public Service. EDI/World Bank. September 1995.

strategies to combat corruption in the public services in several countries[18]. CIET schemes have been established in 44 countries over the last decade. In Canada, since 1994, CIETcanada has worked in over 200 Aboriginal communities across Canada in the study of youth resilience to tobacco addiction[19], substance abuse[20] and HIV/AIDS-related risk behaviour[21].

CIET methods follows a rigorous, tightly-focussed process. After a thorough review of existing information on the proposed topic and the local population, a careful selection of sentinel communities is made to ensure a representative sample. Fact-finding instruments such as household questionnaires, institutional reviews, key informant interviews, focus group discussions are designed to produce quantitative and qualitative data. Analysis focuses on coverage, cost, and impact of particular services. Data are then returned to the communities where discussions hinge on how the analysis and interpretation of results lead to strategies for communication and action.

With community feedback as an integral part of the information gathering process, CIET methods help to build the community voice into planning. This goes beyond householders answering questions; data from these interviews are returned to the communities, where they are discussed systematically in gender-stratified focus groups and, later, between focus group participants and community leaders. In this way, the communities in the region can contribute to policy making. CIET methods thus offer a very concrete way of increasing citizen participation in surveillance and decision taking.

A single survey offers a limited opportunity for supporting governance. What matters is reiteration, with visible tangible gains from each repetition. CIET methods call for data collection cycles to be repeated at regular intervals. In the course of repetition of the steps for each cycle, local researchers become increasingly capable of conducting these surveys themselves. With each new cycle, information on the previous cycle is disseminated to communities, success of the solutions derived from previous cycles is measured and topics for investigation can gradually be tuned to the needs and perspectives of the communities. In this way, evidence-based cycles in northern Nova Scotia will hopefully provide a basis for sustained, critical dialogue on issues that have a profound effect on people's daily lives, while building local technical capacities to do the job with decreasing and, after four cycles over two years, no external assistance.

The process unfolds through several identifiable steps:

1. *Identification of the problems* and solutions to be researched, producing a clear statement

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[18] Cockcroft A. Tanzania Service Delivery Survey: Corruption in the Police, Judiciary, Revenue & Lands Service. EDI/World Bank July 1996.

[19] CIET Technical Report to WUNSKA. First Nations Youth Inquiry into Tobacco Use. CIET, December 1996.

[20] CIETcanada Technical Report to the Cree Board of Health and Social Services of James Bay. Miyuupimatisitaau - Let us all be well. CIET, December 1997.

[21] Swaminathan, A, N Andersson, A Wassaykeesic, S Mhatre, R Imrie, K Molaro, B Thomas and D Etienne. *AFN First Nations HIV/AIDS Resilience Project: Key findings of the pilot study.* Assembly of First Nations-CIETcanada technical report. Ottawa, Canada; 30 June 1998.

of the objectives and limits of the cycle (Inception Note).

2. *Analysis of existing data*: Data from the existing sources (routine data and previous studies) are aligned in terms of the three CIET analytical categories -- impact, coverage and costs. Partner agencies involved in the sector are interviewed systematically, drawing them into the process.

3. *Design*: Development of the survey instruments, including clarification of specific objectives, design of questionnaires and guides for interviews and group discussions and selection of the sites to be visited.

4. *Training and testing:* Recruitment and training of local personnel who will gather the data; pilot testing of survey instruments, including data entry and analysis of the pilot results.

5. *Fact finding:* Information gathering at community level, including household questionnaires, interviews with key informants such as principals and health workers.

6. *Feedback* and interaction with sentinel communities and key informants at district level for interpretation and strategy development. This is done after a preliminary analysis identifying key findings. Gender stratified focus groups discuss the implications for action, and solutions emerging from these focus groups are taken into meetings with the key stakeholders.

7. *Definitive analysis* including results of data gathering and discussions at the local level. An analysis group was constituted and trained in modern epidemiological analysis. Members developed the lines of action to be further discussed during the workshop.

8. *Communication strategy/action*. At the end of the cycle, a workshop is held to initiate a communication strategy and action plan. This involves programme managers and policy-makers, representative communities, private sector and other key stakeholders as appropriate. The purpose is to digest the household and key informants' data, along with the community reactions to key findings, to produce a proposal for provincial or region-specific strategy for communication/action.

Selecting the topic

Several factors determined the topic selected for this second evidence-based cycle by the regional LoPHID Advisory and Implementation Committee.

- The Nova Scotia Health Standards (Edition 1,1997)
- Public Health Services staff input
- Chignecto-Central Regional School Board input

The Nova Scotia Health Standards document guides the delivery of Public Health Services in the four provincial regions. A number of targets and standards relate to school aged children including nutrition education, male and female perceptions of being overweight or underweight , school food policy development, dental health education, tooth brushing and flossing, active living and physical activity. Public Health Services is identified as having a key role to advocate for healthy public policy and encourage action around healthy child development. A timely opportunity was recognised to collect the local key evidence needed to plan services by using the CIETmethod and further to mobilise community based action in partnership with a key partner, the Chignecto-Central Regional School Board.

Public Health Services staff input reinforced this envisioned direction. When asked to submit suggestions for areas to study to the LoPHID Advisory and Implementation Committee, a number of their submissions related to the health of school aged children. Topics included physical activity, obesity and inactivity, nutrition habits, decision making, and foods available in the school environment. Several focused on mental health. Self esteem was a common thread through several submissions.

A basic primary prevention approach to examine the eating , physical activity and dental health practices of youth and the factors influencing these practices was the result of blending staff perceptions of local issues with the guidelines of the Standards document.

The selection was sealed with the support and interest of the School Board, a major stakeholder and partner in promoting healthy child development. Their willingness to enable a survey of children and their parents from school and the close examination of the school environment was a key factor to having this work begin.

Literature review

A full literature review was conducted at the beginning of the cycle to provide standard instruments and to build the study on existing knowledge. In the analysis stage another literature review was conducted. The literature review is presented with the results discussing how the local results are supported or not supported by existing studies.

Ethics and ethical clearance

As evidence-based planning expands and incorporates more people without experience in scientific research, there is a need for certain guidelines that will limit the abuse of the time and privacy of participants. CIET has become active, therefore, in promoting the establishment of national and local ethics committees to oversee the ethical aspects of research for evidence-based planning.

After completion of the design, an inception document was finalised. The inception document was submitted to the hospital ethics committee for the region which indicated that such school-based and community-based research was not within their mandate. Thus the inception document

was sent for review to the CIET ethics committee (see Annex for the letter of ethical approval).

Sampling frame, sampling and the sample

For the first LoPHID cycle in the Atlantic provinces of Canada, Statistics Canada used the 1996 National Census as the sampling frame. Stratifying by urban and rural divisions a last-stage random sample of 20 sentinel enumeration areas (EA) in each region was sampled, and weighted for population size.

For the second cycle, the same 20 enumeration areas were used. There was no sampling from this frame, every school in the EA became part of the sample. This provided a sample of 27 schools. There were *no* refusals.

Design sessions

During the course of three months a number of design sessions were held involving Public Health Services nutritionists, dental hygienists, health educators and nurses; field workers; mental health services; and CIET personnel. Expert advice was solicited from a variety of leaders in the field of nutrition, dental care and physical activity. The results were the development of five instruments: student, parent, teacher, principal and caterer's questionnaires based on standard questions from national surveys (see Annex for instruments).

Training and piloting

Once the design of the cycle is completed and the inception document approved by the ethics committee, there is recruiting and training of local personnel who will gather the data. Training of field workers is important to ensure quality data collection. It is also part of the mandate of building capacity in the community.

Initial training of nine field workers took place over three days (see annex for training agenda). Five of these individuals had already been part of the data collection process for the first evidence-based cycle. The training included an in depth examination of the instruments and background to each question. During the training, attention is given to *how* the instrument is delivered. Issues like body

Notes from the field.....**My Experience**

"On the whole, I was very glad to have been chosen as a participant in the Cycle. It gave me a much better sense of community buy in, partnership and research. The cycle was aptly named "children speaking up" to give the major sense of ownership to the children themselves, thus, encouraging truthful, thoughtful answers. The piloting, briefing and debriefing processes were also very valuable. They proved to me that everyone could make a significant contribution to the research. They could sometimes look at a question from a point of view not considered by the majority, and the result would be a question reworked so as not to prejudice or manipulate the final outcome of the survey. I was really impressed with the questions and the final outcome of the survey. I was also impressed how the questions and the multiple-choice answers were worded. So much valuable information can be gathered with the simplest of questions when given to a large number of people with only age and elementary school grade in common. Another comment on the format of the survey which was particularly rewarding was the fact that even the learning disabled were able to complete it by themselves with little or no help, at the same time keeping up with their peers. I would usually ask the children "so, how did you find that?" The response was always "Too easy!"

Faye Smith, Field worker

language, what gets written down, eye contact and tone of delivery of questions is reviewed thoroughly. Respect and professionalism are the main principles emphasised for conducting interviews.

As part of the training the instruments were piloted in six area schools. This allowed retailoring of the instruments and at the same time an opportunity to work out logistical issues and observe field workers as to their delivery of instruments. No instrument is implemented or no new question is added without piloting. Pretesting of survey instruments also includes data entry and analysis of the pilot results.

> This is way better than school work. I wish you would come back tomorrow.
>
> *Grade 6 boy and girl*

Training does not stop with the initial sessions. At the beginning there are debriefing sessions at the end of each day then every second day. These debriefing sessions allow field workers to voice both positive and negative experiences. At the same time it gives consistency on how the field work is conducted.

Field logistics

With any field work the logistics are critical to ensure buy-in by partners and acceptability by the community. Since the main field work took place in the schools the process of this cycle was designed to cause no extra work for teachers and principals in the schools. It was meant to be an exercise that was fun for the students and at the same time a learning experience in terms of their exposure to research.

In partnership with the Chignecto-Central Regional School Board, each of the participating schools received a letter of introduction from the school board. This was followed up with a letter of intent from Public Health Services suggesting a time for data collection. Telephone contact confirmed the date and time, documenting directions to rural schools, and further outlining the process of data collection (see Annex for letters).

Upon arrival at the school, the team reported to the administration office. If there was support staff in the office, they were given the courier bags for return of the parent surveys. This included pre-labeled and pre-paid bags with a 1-800 number for pick up and instructions on when to send collected surveys back to the LoPHID office (see Box). There

"Children Speaking Up: Eating, Physical Activity and Dental Care"

Instructions for Teachers
Return of Completed Parent Surveys

The data collected from the parent surveys is an essential part of our study. In an attempt to make this as easy as possible, we are asking you to do the following:

1. Have all the children participating in the survey take parent surveys home with them.

2. Collect returned surveys and place them in the courier bags in the administration office on _____ (two days after we have visited).

3. Send notices home with all children two days after we have visited.

4. Collect other returned surveys (the stragglers) and place them in the courier bag in the administration office on _____ (seven days after we have visited).

If you have any questions at any time, please call our office at 893-6115 (call collect if it is long distance) and we will be happy to lend any assistance needed.

were two sets of courier bags - one for the next school day

and one for one week later for the straggler responses. If there were no support staff, the principal or a participating teacher was asked to handle this task.

School Box contents for field work:

- T ten sharpened pencils (extras)
- T masking tape
- T markers
- T extra stickers
- T flip chart with definitions
- T interviewers' version of the questionnaire
- T interviewers' preamble
- T erasers
- T questionnaire packages

Teams of two field workers were sent into the classroom. They were equipped with a box of tools - flip charts with definitions of terms that may be unfamiliar to the students, markers, tape, contact list for all field workers, extra sharpened pencils, erasers, copy of preamble, and data collection packages. When they arrived, the facilitator took the teacher aside, gave him or her their survey with instructions for the collection and return of parent surveys including reminder notices (see box). The assistant began to pass out the survey packages, asking the students to please leave them unopened until we were ready to begin.

Children Speaking Up:
Eating, Physical Activity and Dental Care

NOTICE

If you have not yet completed your parents survey, please do so and return to school with your child tomorrow. Thanks

The students were asked to open their survey packages which contained their survey, a pencil for completing the survey, a sticker and a large envelope. They were told that this was another survey which should be taken home and filled out by their parent that night and returned to their classroom teacher the next school day. The field workers termed this envelope as "homework for your parents" which was received well by the students and was quite likely responsible for the 88% return rate of these surveys.

The well rehearsed preamble focused on the need for honest answers. Realising that the survey took place in a classroom where right answers are expected and rewarded, the difference between right answers and true answers was illustrated. The preamble also included a discussion on the importance of confidentiality and that the surveys would be read by an electronic scanner rather than people. The students were then facilitated through their questionnaires one question at a time with the whole group working together. The assistant field worker circulated about the classroom assisting students who were having any difficulty. The great deal of time spent on refining the student questionnaires to keep the language very plain was worth the effort. Even the students who were termed learning disabled by their teachers were able to complete the questionnaire on their own. The field workers collected the questionnaires when completed and told the students that they would be informed of the findings of the study. The classroom teacher survey was also collected at that time.

The principal data was collected by face-to-face interviews on scheduled days. Also during that visit, the facilities checklist was completed. Caterer interviews were conducted later via telephone.

Organising focus groups

As part of the method, focus groups are conducted to feed back preliminary evidence to the parents and at the same time develop community solutions around their concerns. As experienced in the first cycle, focus groups are not a process which community members want to participate in. This is in part, a result of the structure of the system which tends to be more expert-led rather than *both* expert and community-led.

Focus groups with parents were arranged to coincide with parent/teacher monthly meetings. Unfortunately, several of them were poorly attended due mainly to the time of year - June - when most people are winding down a number of activities before summer holidays or working in their yards. However, both the focus groups (more than three participants) and the small discussion groups (one to two participants) contributed qualitative data to the survey.

A means of conveying the preliminary findings to parents with a variety of literacy and numeracy levels was a challenge. It was decided that graphics would make the message simple and clear, thus a series of posters illustrating the preliminary findings were developed using paper cut out dolls. Some parents were shocked by the findings, passionate about the subject matter and had several suggestions for remedial action. Subsequently, it has been requested that the posters be reduced to letter size sheets and distributed to physician offices, mental health clinics, and "Meet the Teacher Night" at elementary schools.

Feed back on the Internet

Given the emphasis of the children's voice for this cycle, feed back to generate solutions from children was also conducted. This was done by constructing an interactive website where children could log on to (see Annex for copy). This website consisted of preliminary evidence plus some questions. All elementary schools in northern Nova Scotia were sent out a notice as seen in the side box.

"Hot News"

Waaaaaay back last March we did a health survey called "Children Speaking Up" with kids in Grades 4, 5 and 6 from Northern Nova Scotia.

Well guess what .....the results are in!!
If you want to know what all kids had to say, check out
www.ciet.org/interactive/kidspage.html

Here's your chance to let us know what's on your mind. You can e-mail us back and tell us what you think and, of course, it's confidential. There are also some links to other sites you might like to visit.
See you on the Net!!

Data entry

Generally double data entry is conducted using Epi-Info a public domain software. With the exception of the teachers', principals' and caterers' questionnaires, the students and parents questionnaires were structured to enable them to be scanned electronically. This requires setting a template using the Remark programme. Issues of paper quality, type of

pencil lead and type of eraser used to change mistakes can, from CIETs experience, facilitate scanning.

Prior to scanning there are simple preparation steps such as removal of staples and checking the questionnaires for double responses or for answers penciled outside the defined circle. During scanning the scanner is set up to stop at unexpected jumps or answers that are not coded for. The operator of the scanner must be trained to deal with this and understand the nature of the instrument. Despite this process, the data is cleaned again after scanning checking to see if the blanks are real. For more details please see the manual on scanning[22]

The data that is scanned is in a DBase format which is then imported into Epi-Info for analysis. At this point the data is further cleaned checking for duplications or errors with the original hard copy.

The data from the remaining instruments - teachers, principals and caterers – were entered in Epi-Info. The double data entry process was followed requiring two data enterers to input the same data set. By using the 'validate' command the two data sets are compared and the mismatches are outputed. The data enterers make the corrections.

Once the data is entered there is further cleaning of the data checking for duplications or errors with the original hard copy. Cleaning involves generating simple frequencies and cross-referencing any discrepancies with the original hard data.

Analysis

The CIETmethod complements quantitative epidemiological analysis with qualitative elements from key informants and focus groups using meso-analysis. For example, if public health nurses (PHNs) worked in some ways in certain communities and in other ways in other, the communities can be coded to reflect this. If programme managers in some communities are in favour of formula distribution, this too can be coded as a meso-analysis variable. Focus groups often generate richer and more textured evidence than structured interviews with key informants or individual quantitative questionnaires. Information thus generated by the focus groups can be coded, as can that from key informants, linking to records of individuals in the same domain as the qualitative data. Meso-analysis essentially deals with factors operating in the community or peer group by linking them to the behaviour of the individuals in that community[23].

Promising associations were analysed using standard epidemiological techniques to identify potentially confounding effects of age, education of parents, household income, urban and rural

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[22] Ahmed, R. Ho, A. Mhatre, S., and Andersson, N. *Scanning: a method of data entry - a manual and lessons learned.* CIETcanada, May 1999.

[23] Andersson N. Mesoanalysis: Quantifying qualitative data from communities and public services. *Proceedings of the Joint IASS/IAOS conference. Statistics for Economic and Social Development*, September 1998.

area and other factors (see List 1 to 5). Risk analysis used the Mantel- Haenszel procedure[24 25]. Contrasts are reported as the odds ratio (OR) or risk difference (RD).

LIST 1 - Factors in student questionnaire

Demographics
Age
Grade
Sex
No. of children in the house
No. of adults in the house
Language

Eating
Eating breakfast
Eating breakfast at school
Eating breakfast at home
Eating snack
Eating lunch
Eating lunch at school
Enough time for lunch?

Criteria for eating snack
Deciding based on money
Deciding based on choice
Deciding based on what was given

Criteria for eating lunch
Deciding based on money
Deciding based on choice
Deciding based on what was given

Spending
Amount spent

Dieting
Been on one?

Physical activity
Disability?
Like competitive
Other activities
On sports team?
Participate in gym
Like gym?
Feel good in gym
Active at recess
Active at lunch
Active after school at school
How school can help
How they themselves can be more active

Dental care
I need to brush
Number of toothbrushes
I need to floss
Visits to the dentist

Self-esteem
Talking about changes in their body
I think I am just right
I think I am over/under weight
Other people tell me I am just right
Other people tell me I am over/under weight
I like myself (all, most, some, none)
Someone cares (all, most, some, none)
Adults listen at school (all, most, some, none)
Adults listen at home (all, most, some, none)

[24] Mantel N, Haenszel W. Statistical aspects of the analysis of data from retrospective studies of disease. *J Natl Cancer Inst* 1959;22:719-748.
[25] Mantel N. Chi-square tests with one degree of freedom: extensions of the Mantel Haenszel procedure. *J Amer Stat Assoc* 1963;58:690-700.

LIST 2 - Factors in parent questionnaire

Demographics
Sex
Education
Language
Income

Eating
Satisfied with food available in school
Child ate breakfast
You ate breakfast?
Child ate snack
Child ate lunch
Child ate lunch at school
Enough time for lunch?
Follow Canada's Food Guide

Criteria for eating snack
Deciding based on money
Deciding based on choice
Deciding based on what was given

Criteria for eating lunch
Deciding based on money
Deciding based on choice
Deciding based on what was given

Spending
Amount spent

Physical activity
Consider it important?
Gymnasium in school?
Outdoor play equipment?
Track or sports field?
How school can help
How can child be more active
Do you regularly exercise?

Dental care
Number of times child brushed
Did your child have teeth flossed?
Visits to the dentist

Self-esteem
Who child talks to about changes in their body
Does you child like themself (all, most, some, none)
Does you child think someone cares (all, most, some, none)
Who influences child's decision making?

LIST 3 - Factors from principal questionnaire

Demographics
grades
school population

Eating
policies/standards/guidelines on foods brought in; breakfast/snack/lunch programme; food reward; food allergies; fundraising; volunteers serving food; training

Vending machines?

Breakfast programme?
How often? How was it chosen?
Who was involved in the choice?

Recess snack program?
Cost to students?
How often? How was it chosen?
Who was involved in the choice?

Lunch programme?
Cost to students?
How often? How was it chosen?
Who was involved in the choice?

System for assisting hungry children?
Costs with this system?

Menus are sent home?
Receive any feedback?

Follow Canada's Food Guide?

How many people handle food?
How many have them attended food handler's course?
Volunteers serve food?
Visit by public health inspector?

Physical Activity
policies/standards/guidelines on programmes; time allocated for gym class; fair play;

Intramural programmes?
Participation
Extramural teams?
Participation
Special one day events?
Participation
Physical education classes frequency?
Organised weekly activities?
Emphasis?

LIST 4 - Factors from teacher questionnaire

Demographics
Grade taught
Duration with this class
# of students
Students with allergies
Male/female

Student Behaviour
Bringing lunch
Buying lunch
Not eating
Unable to afford lunch
Given lunch by school
Given lunch by teacher
Hungry students

Addressing hunger
Signs of hunger
Prevalent sign of hunger
You provide food
Cost of food
Enough time to eat

Physical activity emphasis
Talk to students about changes in their body
Food rewards

Public Health Services Staff
PH nurse contact
Rating of service
PH nutritionist contact
Rating of service
PH dental hygienist contact
Rating of service
PH educator contact
Rating of service
PH support staff contact
Rating of service

LIST 5 - Factors from caterer questionnaire

Organization name
How long catering in this school
Position/title

Profit/non-profit
How long menu has been in effect
How selected as caterer

How menu selected
Item with most frequent sales
Item generating most profit

Factors from facilities checklist

Gym size
Play area size
Swings
Slides
Climbing apparatus size

Outdoor basketball hoops
Outdoor basketball courts
Weight room
Exercise room
Track size

Tennis court
Swimming pool
Hiking trail
Other features
Vending machines

IV. INFORMATION BASE

In March of 1999, 27 schools, in 20 representative sites as selected by Statistics Canada in the first cycle, were visited. As seen in Box 3 a total of 2,439 students in grades four to six completed facilitated self-administered questionnaires. At the same time 103 teachers completed a questionnaire. Students took home a questionnaire for their parents, providing input from parents. A total of 2154 parents completed a questionnaire resulting in an 88% response rate. As explained in the methods section, the logistics of the questionnaire was set up strategically to facilitate a response. Many children took home the questionnaire and told their parents it was their "homework".

Face-to-face interviews were conducted with the principals of the 27 schools. Caterers for the schools were also interviewed. After preliminary analysis, focus groups of parents were held to provide community level dialogue on the evidence and solicit suggestions for change. Small group discussions represent cases where only two parents were involved.

Box 3

Northern Nova Scotia information base for cycle 2

Schools	27
Students	2439
females	49%
Grade 4	28%
Grade 5	31%
Grade 6	40%
Parents	2154
females	86%
Teachers	103
Principals	27
Caterers	21
Parent focus groups	10
Small group discussions	10

V. KEY FINDINGS AND DISCUSSION

Healthy Eating

"Nutrition is fundamental to a sense of well-being, and to meet the growth, development and activity needs of children and youth"[26].

On the day of the survey, students were asked in three separate questions if yesterday they ate breakfast, a snack at recess and lunch at school.

Breakfast

Some 82% of children ate breakfast at home[27]. Only 4% of children indicated they ate breakfast at school[28]. The disconcerting fact is that 14% of children reported to not eat breakfast (figure 1)[29].

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[26] Health Canada. "Food for thought: Schools and Nutrition" Health Canada, 1997.

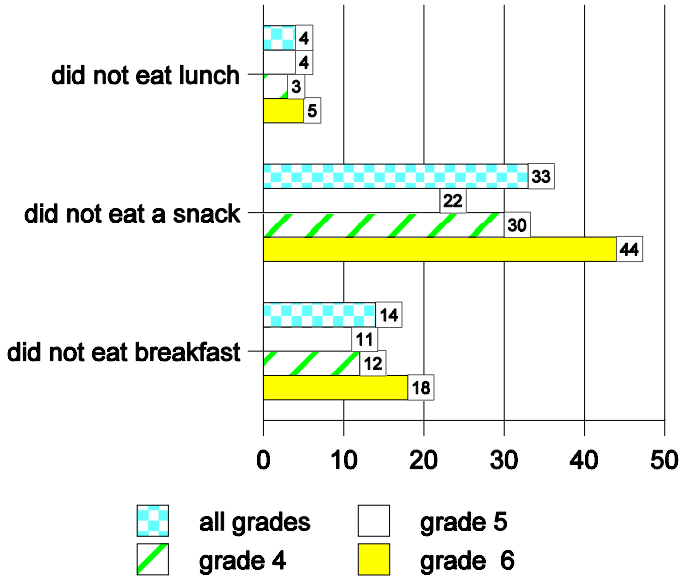
[27] (1944/2437)

[28] (103/2437)

[29] (340/2437)

This proportion was the greatest among grade six children, where 18%[30] reported to not eat breakfast the day before the survey. A child in grades four or five is 62% more likely to have had breakfast compared with a child in grade six[31]. No differences were found between girls and boys. When parents were asked if their child ate breakfast, compared with the children's responses, a lower percentage (8%) reported that their child did not eat breakfast.

Figure 1
Proportion of children, by grade, who *did not* eat breakfast, snack or lunch the day before the survey



The rate of 14% of children not eating breakfast observed in northern Nova Scotia is higher than the rate observed in a study completed in Waterloo, Ontario where 9% of children in grades four to six came to school without eating breakfast[32]. A 1991-1992 study by McIntyre (1993) found that 5% of primary school aged children in Nova Scotia came to school without eating anything[33]. This later study covers a lower age group than the *Children Speaking Up* study.

The impact on breakfast and physical activity was examined revealing that a child who eats breakfast is 35% more likely to report that s/he was "physically active" at recess[34].

> We do have an early morning juice and muffin program in place for those who arrive without a breakfast. Unfortunately, very few take part. By Grade 5, many students, especially girls, are embarrassed easily.
>
> *Grade 5 teacher, Colchester County*

The importance of breakfast eating for the development of children is clear. As indicated by Pollitt and Mathews the "data strongly suggest

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30 (172/985)

31 Odds ratio 1.62, 95%CI: 1.3-2.1; 12% (168/1452) of children in grades four and five did not eat breakfast compared with 18% (172/985) of children in grade six.

32 Bidgood,B.A., Cameron,G. Meal/Snack Missing and Dietary Adequacy Of Primary School Children. *Journal of Canadian Dietetic Association*. 53(2):164-168; 1992.

33 McIntyre, L., Travers, K., Dayle, J.. *Children's Feeding Programs in Atlantic Canada: Reducing Inequities?*. Faculty of Health Professions, Dalhousie University. July 1997.

34 Odds ratio 1.35; 95%CI: 1.07-1.71; 52% (1088/2091) of children who ate breakfast were active at recess compared with 43% (146/337) of children who do not eat breakfast.

that omitting breakfast interferes with cognition and learning"[35]. This importance and the proportion of children who are not eating breakfast is in part one of the reasons for the introduction of breakfast programmes. Yet, as clearly suggested by McIntyre and Herel, breakfast programmes can support home breakfasts but there is a need for more education about the importance of breakfast as well as support to families[36]. In this study principals were asked what type of breakfast programme if any their school offered. Out of the 27 schools surveyed, only three indicated they had a "formal" programme, another five indicated that they kept food "in the classroom" and a little less than half (12) reported to have no breakfast programmes (Figure 2). Those who do have some form of a breakfast programme provide it daily.

Figure 2
Schools with a breakfast programme (n=27 schools)

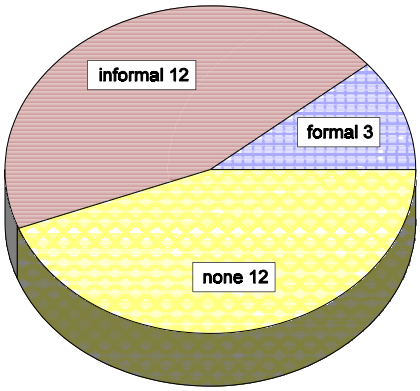

Figure 3
How the food service provider was selected for the breakfast programme (n=12 schools).

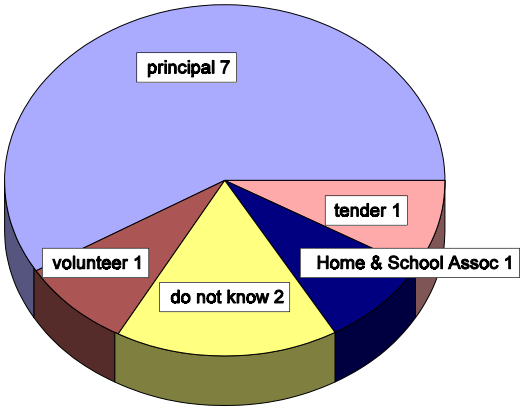

Figure 3 shows how the food service provider was selected. In the majority of the cases the principal is the main decision maker. When asked who was involved in the choice of the breakfast programme food service provider, in most cases (10 schools out of 12) indicated it was the principal, in three schools the teachers were also involved; in two cases the Home and School Association was involved; and in one case a nutritionist was consulted.

Examination by the student population reveals that two-thirds of the students are in schools that have some form of breakfast

[35] Pollitt, E., Mathews R. *Am J Clin Nutr.* 67(suppl): S813; 1998. As cited in: McIntyre, Lynn, Herel K. "The Value of Breakfast for Children: a new look at an old truth". September 1998.

[36] McIntyre, Lynn, Herel K. "The Value of Breakfast for Children: a new look at an old truth". September 1998.

programme[37]. This demonstrates that children do have access to breakfast at school. Yet, when we asked children, of those who ate breakfast only five percent reported to eat breakfast *at school*[38]. This difference in the two sets of data, the coverage of breakfast programmes (both formal and informal) according to the principals and the proportion of children reporting eating breakfast *at school* raises the question of why more children are not using the breakfast programmes. The difference between those children who report to eat breakfast at home versus at school was examined. With respect to age, sex, their self image and the number of children in the family there was no difference. In terms of whether these children felt that someone really cares for them, those children who reported eating breakfast *at home* were almost five times *more likely to feel that someone cares* for them compared with those children who ate at school[39].

Consulting your local dietician...

One principal talked about the results of getting advise on foods offered at her school: "the dietician offered recommendations on how to decrease fat content." This is an important aspect of healthy eating.

What can parents do to ensure their child eats breakfast?

- Make sure that the kids have a good night sleep so they are not too tired in the morning to eat breakfast.

- When I sat down and ate, she started to too. How many of us sit down to eat breakfast together?

Parent focus group

These findings give a clue to the intervention strategies that may be considered. It is not necessarily food that makes children eat breakfast but the more social aspects. Formal breakfast programmes tend to emphasise the social aspects thus a greater proportion of students report to eat breakfast at school when there is a formal breakfast programme compared with a school with an informal programme[40].

What can the school do to make sure children have breakfast?

- Educate children better on breakfast

- Breakfast programmes increases dependency on schools. So is it a good idea?

Parent focus group

Parents were also asked if they ate breakfast. Some 24% reported to not eat breakfast the day before the survey[41]. By linking with the parent data, a child of a parent who eats breakfast is almost two times more likely to

---

37 (1634/2439)

38 (103/2097)

39 Odds ratio 0.20; 95%CI: .07-.55; 94% (97/103) of children who eat breakfast at school feel cared for compared with 99% (1975/1991) who eat breakfast at home.

40 16% (39/248) of children that attend the school with the social formal breakfast programme eat breakfast at school rather than at home compared with 4% (43/1165) of those children that are in schools with other breakfast programmes.

41 (508/2145)

eat breakfast compared with a child of a parent who does not eat breakfast[42]. It appears that the breakfast pattern of parents does affect the breakfast patterns of their children.

Snacks

One-third of children (33%) reported to *not* eat a snack at recess. This is greater than what parents indicated (22%)[43]. A boy is less likely to eat a snack compared with a girl[44]. Similar to eating breakfast, the older grades were less likely to eat a snack: a child in grades four or five is almost two times more likely to eat a snack at recess compared with a child in grade six[45].

For those who did eat something at recess, 42% reported to have eaten what they choose to eat, with 50% eating what they were given. *Choice* can determine whether children eat a snack or not: a child who eats what s/he chooses to eat is almost 14 and a half times more likely to eat a snack compared with a child who ate what s/he was given, ate what s/he had enough money to buy or did not eat[46].

Money is also a determining factor. A child who eats what s/he has enough money to buy is a little more than three times more likely to eat a snack compared with a child who eats a snack for reasons such as what s/he is given or chose to eat[47].

Principals were asked about the presence of vending machines and recess snack programmes. Eleven out of the 27 schools reported to have food vending machines in the schools. A majority, 19 out of 27 school principals reported offering recess snack programmes for their students. Some two-thirds of the schools that have such a programme require students to bear the full cost. Only four of the 19 schools that offer a programme do not charge anything. All but one of the schools provide the programme daily with one offering it two to four times a week.

Figure 4 shows how the food service provider for their snack programme was selected as reported by the principal. Similar to the breakfast programme, the principal seems to be the prime decision maker. This was confirmed when principals were asked who was involved in the choice. All respondents indicated that parents, teacher, School Advisory Councils were *not* involved in the choice. The most common response was the principals themselves (10/14) followed by the school board (3/14). Only one school out of the 14 schools involved a nutritionist in their selection of a

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[42] Odds ratio 1.94, 95%CI: 1.43-2.64; Among those parents who eat breakfast, 91% (1475/1624) of their children also eat breakfast compared with 76% of children among those parents who do not eat breakfast.

[43] (464/2136)

[44] Odds ratio 0.70; 95% CI .6-.8

[45] Odds ratio 1.9, 95% CI: 1.6-2.3; 26% (381/1450) of children in grades four and five did not eat a snack compared with 44% (435/985) of children in grade six.

[46] Odds ratio 14.4, 95%CI: 9.5-21.6; 95% (673/707) of children who have a choice have a snack compared with 55% (946/1728) of children with no choice who eat a snack.

[47] Odds ratio 3.2, 95% CI: 1.5-7.01; 91% (111/122) of children who ate what they had enough money to buy ate a snack compared with 65% (1508/213) who ate a snack for other reasons.

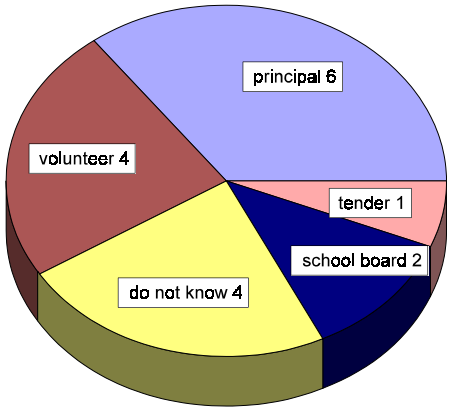
service provider for their snack programme.

Self-image, does have an affect on whether a child had a snack or not: a child who thinks s/he is "just right" is 28% more likely to have had a snack compared with a child who considers him/herself over or under weight[48].

A child's level of feeling cared for is linked to self-image. Similar to eating breakfast, a child who feels cared for is almost three times more likely to eat a snack compared with a child does not feel cared for[49].

Analysis by activity levels reveals that a child who has had a snack is 19% more likely to be active at lunch time compared with a child that has not had a snack[50].

Figure 4
How the food service provider was selected for the <u>recess snack programme</u> (n=17 schools).



One of the concerns with eating patterns of children is the length of fast that a child experiences between their last evening meal and their first meal on the following day. It is important that the child refuels her/his body after a night's sleep. However, in northern Nova Scotia six percent of children on the day before the survey had not eaten breakfast *and* a recess snack - indicating that a little less than half of the children that do not eat breakfast also do not eat a recess snack, a long time for children to go without food[51].

Lunch

Some 70% of children in northern Nova Scotia reported to eat lunch at school the day before

> I want my noon hour longer. I want to play longer.
>
> *Grade 5 Boy, Pictou County*

---

[48] Odds ratio 1.28, 95%CI: 1.02-1.60; 69% (1242/1807) of children who think they are just right reported to have had a snack compared with 60% (375/621) of those children who think they are over/under weight.

[49] Odds ratio 2.78, 95%CI: 1.38-5.62; 67% (1600/2391) of children who are cared for had a snack compared with 42% of children who do not feel cared for.

[50] Odds ratio 1.19; 90%CI: 1.06-1.45; 69% (1113/1618) of children who snack are active at lunch compared with 64% (516/813) of children who do not eat snack.

[51] (145/2439)

the survey[52]. Four percent reported to have *not* eaten lunch the day before the survey. This is greater than the one percent of children who did not eat lunch as reported by their parents[53].

> Sometimes a student does not have lunch...sometimes one will quietly ask for lunch if he or she hasn't brought one. The cafeteria will provide a lunch any time a student needs one even if they don't have the means to pay.
>
> *Grade 5 teacher, Pictou County*

Three out of ten students indicated they did not have enough time to eat lunch on school days[54]. When parents were asked the same question less than two out of ten parents thought their child did not have enough time to eat[55].

Some 28% declared to eat what they *chose* to eat, 38% reporting to eat what they were given and nine percent indicating they ate what they could afford to buy. Similar to snacks, *choice* does determine whether a child eats lunch: a child who believes that s/he ate what s/he chose to eat is 13 times more likely to eat lunch compared with a student who eats what s/he was given, could afford to buy or did not eat at all.

Parents and children were asked similar questions about the choices in eating lunch. Comparison of parents and children's responses shows a difference. In particular 45% of parents believed that their child ate what they were given compared with the students reporting rate of 38%.

Similar to the breakfast results, a child who eats lunch is almost four times more likely to report to usually participate in gym class[56]. Body image again plays a role on whether the child eats lunch or not: a child who thinks s/he is "just right" is 60% more likely to eat lunch compared with a child who thinks she is over or under weight[57]. Feeling cared for also has an affect: a child who feels cared for is almost five times more likely to have eaten lunch the day before the survey[58].

Twenty-one of the 27 schools interviewed reported to have a lunch programme. Among these schools 19 indicated that it was for all students. In terms of cost, the full cost of the programme is payed by students in 19 of the schools and in two schools the principal reported that students pay for part of the cost. The programme is provided daily in 14

> **Setting limits:**
>
> One principal clearly told the school board and the company providing food to his school that "I want lunch for $2. No pop, chips or bars."
>
> This principal is now pleased with the choices the cafeteria offers his students.

---

52 (1713/2434)

53 (23/2133)

54 (740/2432)

55 (347/2139)

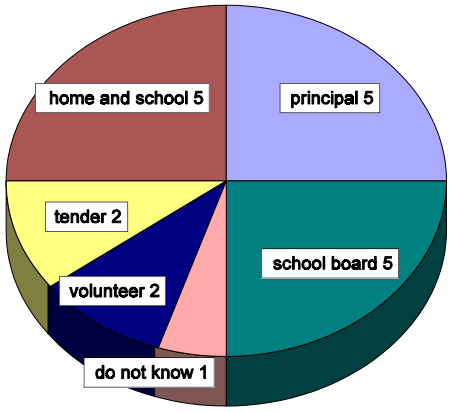
56 Odds ratio 3.97, 95%CI: 1.68-9.1; 98% (2280/2331) of children who had lunch reported to usually participate in gym compared with 92% (90/98) who did not have lunch.

57 Odds ratio 1.60, 95%CI: 1.02-2.52; 97% (1744/1807) of children who think they are just right reported to eat lunch compared with 95% (587/621) of those children who think they are under/over weight.

58 Odds ratio 4.69, 95%CI: 1.7-12.2; 96% (2299/2391) of children who feel cared for reported to eat lunch compared with 84% (32/38) who did not feel cared for.

schools, weekly in six schools and two to four times a week in one school. The food service provider for the lunch programme was selected by a combination of principal, school board and the home and school association (Figure 5). When asked who was involved in the choice, the principal was the most common answer followed by the school board. Nutritionists were consulted by 2 out of the 15 schools. Parents were not consulted in this choice; however, 21 out of the 23 schools did report that they send home breakfast, lunch or snack menus to parents. Principals were asked if they received any feedback from parents as a result of sending the menus home: 15 out of the 21 school principals reported "yes".

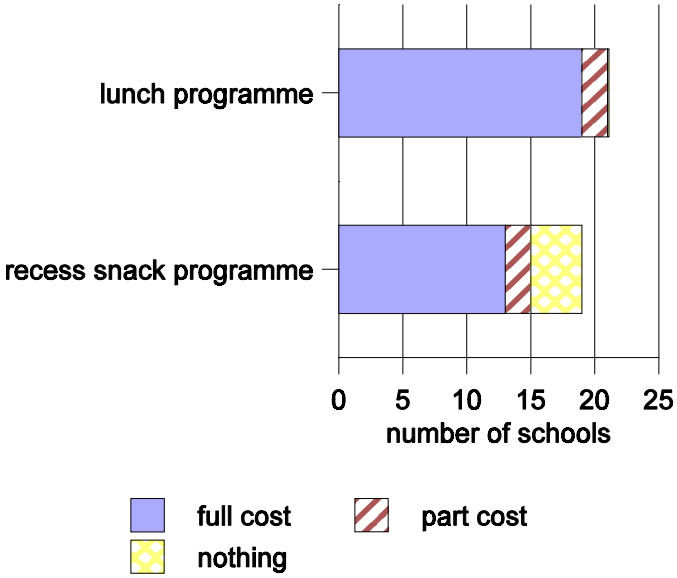
Figure 5
How the food service provider was selected for the lunch programme (n=20 schools).



Spending at school

As part of the design stage a content focus group with school children showed that cost of food at school was a concern to children. Subsequently, children were asked how much money they had spent on food at school the day before the survey. More than half reported (58%) that they had not spent any money. Of those who indicated they spent money, an average of $1.92 was spent the day before the survey. If this is a daily expense it totals almost ten dollars a week per child. The average spending per day from the parents reporting is almost identical to their children: $1.97.

Figure 6
The cost to students for recess snack (n=19) and lunch programmes (n=21)



Recess snack and lunch programmes are also a cost to the students. As seen in Figure 6 most schools do charge the students for the programmes, thus explaining some of the costs incurred by students.

Children in lower grades are less likely to spend money; a child in grade four is 72% more likely

to spend *no* money on food compared with a child in grades five and six[59].

Dieting and body image

> If you are on a diet and it doesn't work, is it still a diet?
> *Grade4 girl, Colchester County*

Almost one in six children (16%) reported to be on a diet to lose weight. A girl is 50% more likely to be on a diet compared with a boy (13% boys reported to be on a diet compared with 19% of girls)[60]. The difference in dieting between boys and girls is not seen until grade six where a girl is two and half times more likely to be on a diet compared with a boy[61].

> Internet feedback to: How would you tell your friend he or she does not need to be on a diet?
>
> *"Hey babe, cut the diet crap, you're perfect the way you are."* - grade 5 girl
>
> *"You don't need to diet because you should just be yourself and not be worried what other people think."* - grade 5 girl

Not surprisingly, a child *not* on a diet is 54% more likely to eat breakfast and 76% more likely to eat lunch compared with a child who is on a diet[62].

Participation in gym also appears to be linked to dieting. A child who usually participates in gym class is less likely to be on a diet[63]. This positive effect can support the promotion of gym class attendance. Exercise and physical activity were reported to be somewhat to very important by parents.

The feeling of being cared for also impacts on dieting: a child who feels cared for is almost two and a half times more likely to *not* be on a diet compared with a child that

> ***Dieting***
>
> ***Fact***
> Our children are dieting.
>
> ***Figure***
> 16% of children in grades 4 to 6 reported to be on a diet. For every two boys on a diet there are three girls on a diet. In grade six, 11% of boys and 24% of girls are on a diet.

---

[59] Odds ratio 1.7, 95%CI: 1.4-2.1; 67% (45/686) of grade four children do not spend any money compared with 54% (945/1747) of grade five and six students.

[60] Odds ratio 0.66, 95%CI: 0.5-0.8; 13% (164/1232) of boys are on diet compared with 19% (225/1196) of girls.

[61] Odds ratio 0.39, 95%CI: 0.3-0.6; 11% (54/491) of grade six boys are on diet compared with 24% (117/487) of grade six girls.

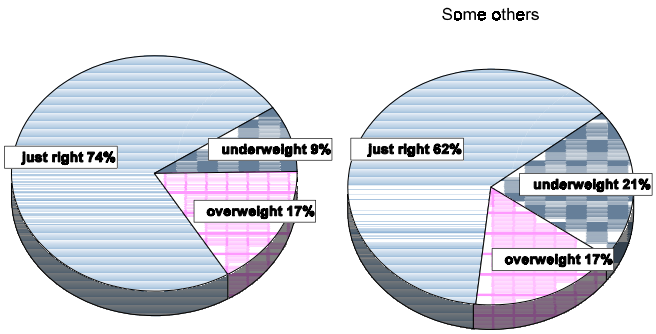
[62] Odds ratio 1.54, 95%CI: 1.13-2.12; 12% (252/2044) of children who were not on a diet did not eat breakfast compared with 22% (86/389) of children who were on a diet.

Odds ratio 1.76, 95% CI: 1.02-3.02; 3% (70/2043) of children who were not on a diet did not eat lunch compared with 7% (28/387) children who were on a diet.

[63] Odds ratio 0.52, 95%CI: .29-.94; 16%(371/2373) of children who participate in gym are on a diet compared with 32% (19/59) of children who do not participate in gym.

does not feel cared for[64].

Figure 7
I think that I am... Others tell me I am....
(n=2432)



A discrepancy exists between what a child thinks about her/his body image and what they hear others say about them (Figure 7). They seem to hear less positive reinforcement from others than from themselves with the exception of being overweight. One out of six children think they are overweight and they also think other people tell them that they are overweight (figure 7). A child who perceives her/himself as overweight is a little more than nine times more likely to be on a diet compared with a child who thinks s/he is "just right"[65]. A child who thinks other people tell her/him that s/he is overweight is 77% more likely to be on a diet compared with a child who thinks other people think they are "just right"[66].

> I'm just right!
> *Grade 5 Boy*

Boys are more likely than girls to think they are "just right". A boy is 21% times more likely to think he is just right rather than over or underweight compared with a girl[67]. This gender difference is greater in grade six (see figure 8).

Underweight, also appears to be an issue, where 9% think they are and 21% reported to have been told that they are underweight by other people (figure 7).

> **What can parents do about their children dieting?**
>
> *- Encourage physical activity instead of dieting. Explain that a child could eat the sweets if they go for a walk first.*
>
> *- My husband and I are constantly on a diet. This is not good for our children to see.*
>
> *- Develop their self-esteem - convince them they are just fine the way they are.*
>
> *Parent focus group*

---

[64] Odds ratio 2.4, 95%CI: 1.08-5.23; 84% (2020/2394) of children who feel cared for are not on a diet compared with 58% (22/38) of children who do not feel cared for.

[65] Odds ratio 9.2, 95%CI: 7.14-11.9; 50% (202/407) of children who think they are overweight are on a diet compared with 9% (166/1643) of children who think they are just right and are on a diet.

[66] Odds ratio 1.77, 95%CI: 1.33-2.36; 35% (146/412) of children who are told they are overweight are on a diet compared with 12% (180/1499) of children who are told they are just right.

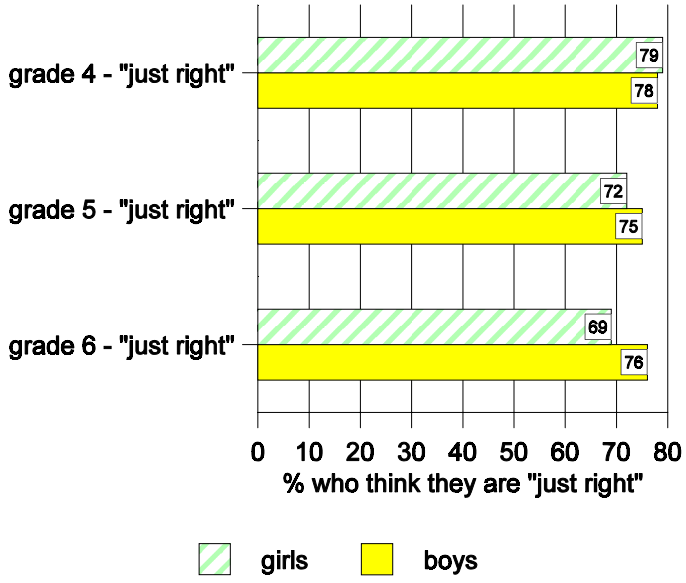
[67] Odds ratio 1.21, 95%CI: 1.01-1.5; 76% (937/1230) of boys see themselves as just right compared with 75% (868/1196) of girls.

Views on self

Some 80% of children *like themselves* all or most of the time[68]. Some four percent of children reported to like themselves "none of the time" (see Figure 9)[69]. A boy is 30% more likely to report to like himself all or most of the time rather than some or none of the time compared with a girl[70]. This sex difference is greater in grade six.

Parents were asked the same question about their children. The major difference is in the proportion who thought that their child likes her/him self "none of the time". Less than one percent of parents (0.3%) thought this was the case whereas four percent of their children reported to feel this way.

Figure 8
Proportion of boys and girls who think they are "just right" by grade level



What can parents do to help children like themselves?

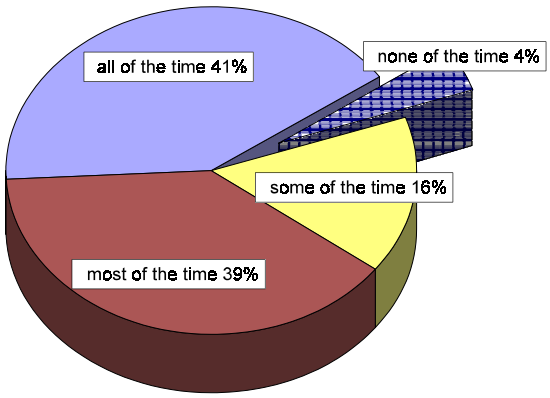
- I have some good reading material in the bathroom for my family... it has great stories that make them feel good about themselves.

- Keep talking to your kids.

- Tell your kids when you screw up. Learn to laugh at your mistakes.

Parent focus groups

Figure 9
I like myself.... (n=2431)



Feeling cared for affects a person's perception of how they see themselves. A child who feels cared for is almost 18 times more likely to like her/himself compared with a child who does

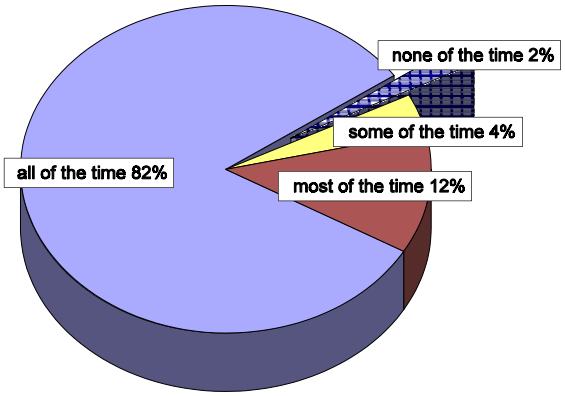
[68] (1945/2431)

[69] (98/2431)

[70] Odds ratio 1.3, 95%CI: 1.1-1.6; 82% (1010/1229) of boys like themselves all or most of the time compared with 78% (930/1196) of girls.

not feel cared for[71]. Some ninety percent of children feel that *someone really cares* about them most or all of the time (figure 10)[72]. Two percent reported that no one cares about them. Three parents out of 2144 responses indicated that they feel their child feels someone cares about them "none of the time". Eating breakfast, snack and lunch was also linked to the feeling of being cared for – reinforcing the importance of children feeling cared for.

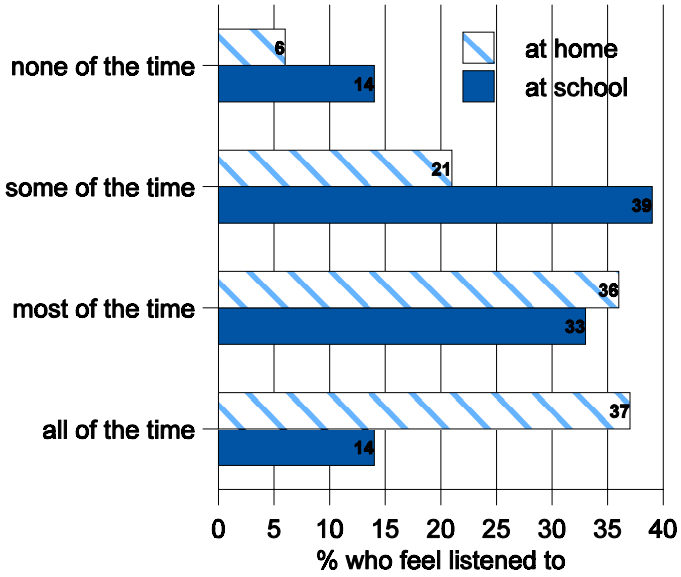
Figure 10
Someone really cares about me.... (n=2433)



Listening to children

The inception of this project rose from the recognition of the value of the voice of children in the development of programmes and policies that affect their daily lives. To have a voice children need to feel confident and feel good about themselves. This in part gets developed by a child's sense of whether s/he is listened to. To assess if children believed they were heard, children were asked if adults *at school* and *at home* listen to their ideas and opinions. As evident in figure 11 there is a difference between whether children believe they are listened to *at home* compared with *at school*. A greater proportion of children did *not feel listened to at school* (14%) compared with six percent at home[73]

Figure 11
Proportion of children who feel that most adults listen to their ideas and opinions at home and at school



Feeling cared for also affects a child's perception of being heard. A child who feels cared for is six times more likely to feel listened to in his/her home compared

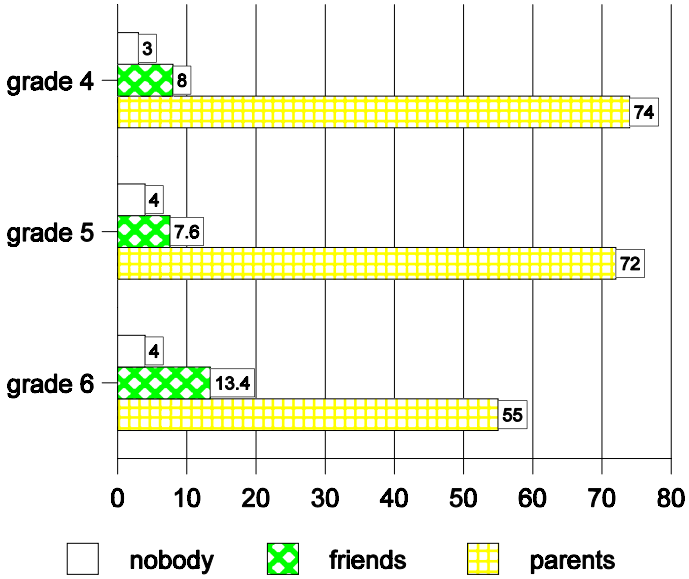
[71] Odds ratio 18.1, 95%CI: 7.5-43; 97% (2315/2392) of children who feel cared for like themselves compared with 43% (16/37) of children who do not feel cared for.

[72] (2294/2433)

[73] Kruskal Wallis=150.68, 1 df, p=.00000

with a child that does not feel cared for[74]. This affect is greater in school, where a child who feels cared for is almost seven times more likely to feel that adults listen to her/his ideas and opinions at school compared with a child who does not feel cared for[75].

Figure 12
Who children talk to about the changes in their body



Talking with children

Children were asked who they would talk to first about the changes in their bodies, two-thirds indicated their parent/guardian. There was no difference between boys and girls. The second most common answer was "nobody" (17%). A boy is three times more likely *not* to speak to anyone about the changes in his body compared with a girl[76].

With increasing age, a child is less likely to talk with her/his parents and talk more with her/his friends. Figure 12 shows difference among grades four to six.

Figure 13 shows differences in responses between parents and children to the same question of who their child would talk to first[77]. The largest differences lies with parents' emphasis on themselves and with an underestimation on part of the parents that their child talks to no one.

Dialogue is key to bringing health information to the child's knowledge. The feeling of being cared for once again seems to play a role in facilitating dialogue. A child who does not feel cared for is a little more than three times more likely to *not* talk to anybody compared with a

Internet feedback to: What is the best way to get your school to listen to you?

"To actually go up to them and tell them, make it sound worth while. To try and make a change in the world." grade 5 girl.

"Write a letter to the school board and one to the school." grade 5 girl

"Go to the student council and write in the newspaper" grade 6 class

---

[74] Odds ratio 5.9, 95%CI: 2.6-13.4; 94% (2260/2393) of children who feel cared for also feel listened to at home compared with 50% (19/38) of children who do not feel cared for.

[75] Odds ratio 6.8, 95%CI: 3.4-13.7; 87% (2078/2391) of children who feel cared for also feel listened to at school compared with 32% (12/38) of children who do not feel cared for.

[76] Odds ratio 3.1, 95%CI: 2.5-4; 25% (309/1232) of boys do not speak to anyone compared with 10% (116/1197) of girls.

[77] F-statistic=28.6, p=.0000

child that feels cared for[78].

Self-image also determines if the child will speak to anyone about changes in her/his body. A child who likes her/him self "none of the time" is 79% more likely to not talk to anyone[79].

Along with listening comes some decision taking. Parents were asked who or what they thought had the most influence on their child's decisions. Not surprisingly, eight out of ten parents indicated *they* had the most influence followed by friends (10%). As seen in figure 14, only two percent of parents indicated the media or internet.

Figure 13
Who would you talk to first about the changes that happen in your body: child's response and parent's response of who they think the child will turn to

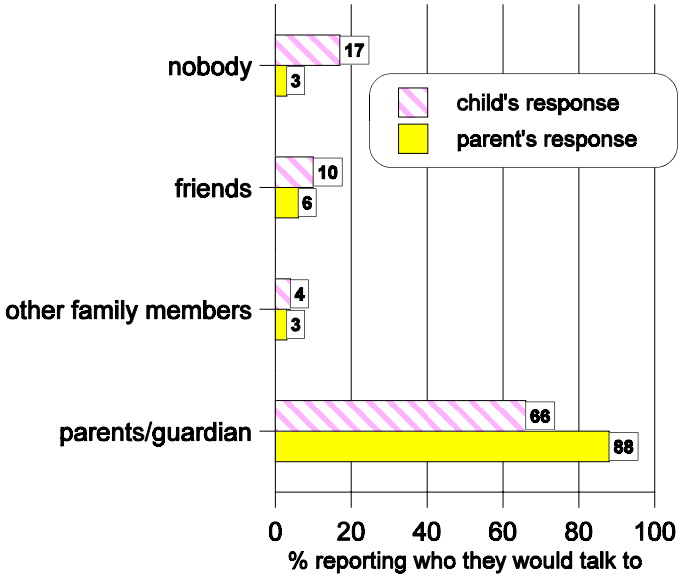
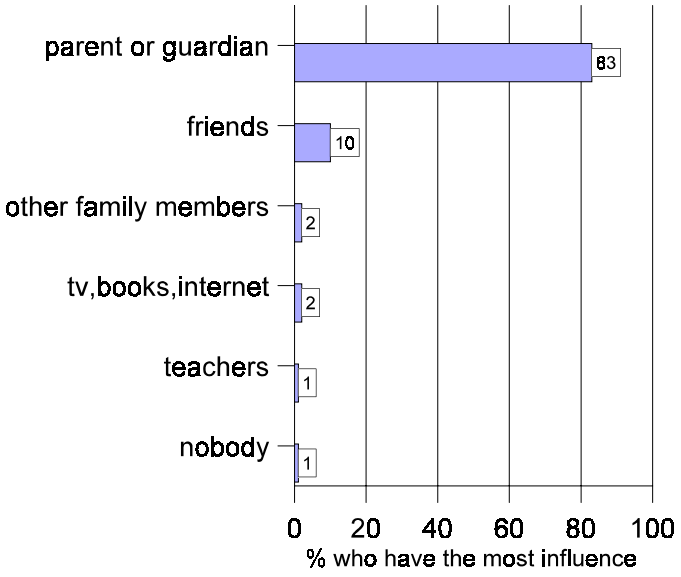


Figure 14
Parents view on who they think has the most influence on their child's decision making (n=2132)



[78] Odds ratio 3.2, 95%CI: 1.62-6.19; 53% (20/38) of children who do not feel cared for do not talk to anybody compared with 17% (405/2395) who feel cared for.

[79] Odds ratio 0.56, 95%CI: .35-.89; 17% (391/2333) of children who like themselves do not talk to anyone compared with 34% (33/98) who do not like themselves.

Physical Activity at School

"Children who participate in daily physical education are more fit, have better health habits, are less susceptible to stress and perform better academically"[80].

Schools are one of the primary societal institutions responsible for promoting physical activity among young people and thus this survey examined the extent to which schools are helping children to be physically active.

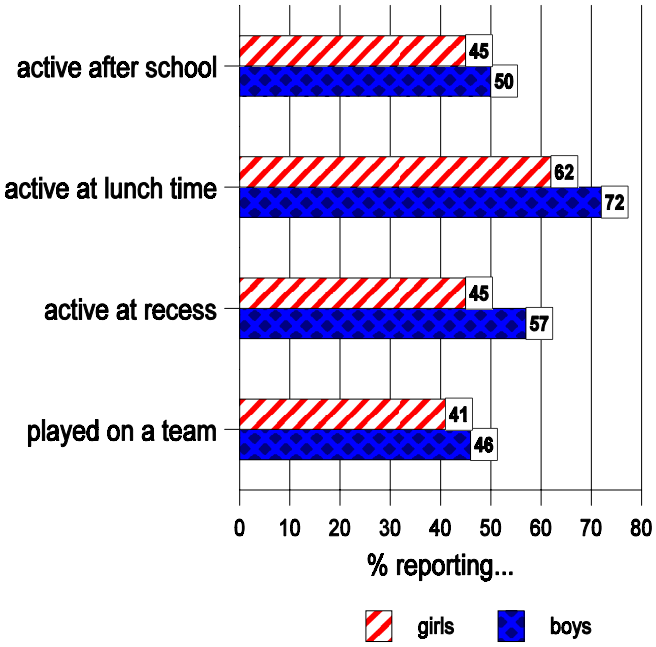
The power of this study is that it looks at physical activity pattern at school as assessed by the children themselves. This is important because it is a child's own perception that will change her/his practice. Children were asked to recall if they were physically active at school the day before the survey at recess, lunch time and after school at school. Physically active was defined as "any activity in which the body was in motion". Information was also collected on a child's perception on disabilities that limited their participation, participation on school teams, feelings about participation, and beliefs about how to be more active at school. In addition, the parents' perspectives on these issues and the impact of facilities on participation was collected.

Inactivity at school

In northern Nova Scotia one in every six students said they were inactive at school the day prior to the survey. This included being inactive at recess, lunch time and after school at school[81]. As noted in Figure 15, just over half of the students reported they were physically active at recess and after school while two-thirds were active at school at lunchtime. A surprising 43% of students indicated that they had been on a school team (intramural or extramural) at some time during the current school year.

As expected, having an intramural

Figure 15
Level of activity at school: girls and boys in grades four to six



[80] Information from the Canadian Fitness and Lifestyle Research Institute. Reference No. 99-02.

[81] 17% (405/2439) of children were inactive at recess, lunch time and afterschool while 83%(2034/2439) of children were physically active at least one of these times.

programme[82] increased activity at school. A child in the northern region is 43% more likely to be active at lunch time if their school has an intramural programme[83]. A child who reports not being active at recess is almost two and a half times more likely to report being active at lunch time if their school has an intramural programme[84]. A child who feels cared for is 61% more likely to be active at lunch time if his/her school has an intramural programme[85] while a student who feels listened to at school is 74% more likely to be active at lunch time if his/her school has an intramural programme[86]. These inactivity patterns take into account whether the child is bussed to school or not, goes to a rural or urban school and socioeconomic factors. It also takes into account the factors identified in List 1 and 2 in the methods section.

In this study physical activity at school is linked to a child's self-esteem and what others tell them about their bodies. A child who is told by others that s/he is physically "just right" is 20%[87] more likely to be active at recess and 20%[88] more likely to be active at lunch compared with a child who is told by others that s/he is over or under weight. Activity rates at lunch time are greater for children in grade six[89]who are told they are just right and for children who are the only children in the family and told they are "just right"[90]. A child who likes her/him self is 49% more likely to be active at lunch compared with a child that likes her/him self "none of the time"[91].

Girls are less active

Consistent with current research, this study found girls in the northern region were more likely to be inactive at school compared to boys[92]. In fact, a girl in the northern region was 74% more

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[82] Intramural programmes are organised physical activities at school where students compete against other students in their school.

[83] Odds ratio 1.43,95%CI:1.07-1.92;68% (1455/2133) of children who go to a school with an intramural program are active at lunch compared with 58%(176/302) of children who go to a school without an intramural programme.

[84] Odds ratio 2.34, 95%CI:1.58-3.46;50%(526/1046) of children who are not active at recess are active at lunch time if their school has an intramural programme compared with 30%(45/149)of children who are inactive at recess and who go to a school without an intramural programme.

[85] Odds ratio 1.61,95%CI:1.24-2.08; of children who feel cared for, 69%(1441/2100) are active at lunch time if their school has an intramural programme compared with 58%(170/295) who go to a school without an intramural programme.

[86] Odds ratio 1.74,95%CI:1.31-2.31; for children who feel listened to at school, 69%(1271/1850) are active at lunch if their school has an intramural programme compared with 56% who go to a school without an intramural programme.

[87] Odds ratio 1.20, 95% CI: 1.01-1.44; 53% (795/1496) of children who are told by others they are "just right" are active at recess compared with 47% (434/919) of children who are over/under weight.

[88] Odds ratio 1.20, 95%CI: 1.01-1.46;69% (1040/1500) of children who are told they are "just right" are active at lunch time compared with 63%(583/921) of children who are told they are over/underweight.

[89] Odds ratio 1.63,95%CI:1.23-2.15;for those in grade 6, 70%(402/575) of children who are told they are just right are active at lunch compared with 59%(237/403) of children who are told they are over/under weight.

[90] Odds ratio 2.16, 95%CI:1.30-3.60; of children who are the only children in the family, 73% (141/193) of those who are told that they are just right are active at lunch time compared with 56%(69/124) of those who are told they are over/underweight.

[91] Odds ratio 1.49, 90%CI: 1.01-2.4; 68%(1576/233)of children who like themselves are active at lunch time compared with 54%(52/98) of children who likes him/herself "none of the time".

[92] Centre for Disease Control, Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People, 1997 MMWR 46(RR-6);1-36; Sallis,J.F.,Owen,N. *Physical Activity and Behavioral Medicine,*1999, SAGE Publications, Inc.

likely to be inactive at school including at schools with intramural and extramural programmes compared with a boy[93]. Figure 15 shows that this included being less active at recess,[94] less active at lunch time[95] and less likely to be on a school team[96].

This study also found that compared with a boy, a girl was less likely to be active at recess if she was told she was overweight, [97] if she did not eat breakfast[98] or if she felt that she was not listened to at home[99].

Boys are more competitive

Gender differences are also evident in relation to participation on school teams. In this study only 41% of girls said that they participated on a school team this school year compared to 46% of the boys[100]. The Centre for Disease Control suggests that participation in sports declines during late childhood and adolescence because of the emphasis often placed on competition[101]. As reported in other studies, boys seem to prefer more competitive activities than girls[102]. In the northern region only 53% of the girls said "yes" to liking competitive sports compared with 79% of the boys[103]. In fact, boys were 74% more likely to report liking competitive sports some or all of the time compared with girls[104]. For boys who said they did not have a disability this rate increased to 3.1 times[105] and for boys who felt listened to at home this rate went up to almost four and a half

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[93] Odds ratio 1.74, 95%CI: 1.34-2.27,14% (165/1198) of girls are inactive including at extramural and intramural programmes compared to 8%(99/1235) of boys.

[94] Odds ratio .70, 95%CI: .59-.84; 45%(539/1196) of girls are active at recess compared with 57%(694/1227) of boys.

[95] Odds ratio .74;CI:.61-.89; 62% of girls (744/1197) of girls are active at recess compared with 57% of boys (694/1227).

[96] Odds ratio .84, 95%CI:.71-.99; 41% of girls (485/1197) were on a school team this year compared with 46% of boys(366/1231).

[97] Odds ratio .53, CI:.42-.65; 45%(340/749) of girls who are told they are overweight are inactive at recess compared with 61%(454/741) of the boys who are told they are overweight.

[98] Odds ratio .38, 95%CI:.24-.61; 32%(52/165) of girls who said they did not eat breakfast the day before the survey were active at recess compared with 55%(94/1172) of boys who said they did not eat breakfast the day before the survey.

[99] Odds ratio .23, 95%CI:.10-.49;27%(15/55) of girls who felt they were not listened to at home were active at recess compared with 63%(60/96)of boys who felt they were not listened to at home.

[100] 485/1197 girls were on a school team this year compared with 366/1231 boys.

[101] Centre for Disease Control, Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People, 1997 *MMWR* 46(RR-6);1-36

[102] Craig, C.L.,Russell, S.J., Cameron, C., Beaulieu, A., *Foundation For Joint Action: Reducing Physical Inactivity,* Canadian Fitness and Lifestyle Research Institute; Fitness/Active Living Unit, Health Canada; Interprovincial Sport and Recreation Council, 1999.p16.

[103] Odds ratio .31, 95%CI: .26-.37, 53% of girls (632/1196) say the like competitive sports compared with 79% of boys (975/1229)

[104] Odds ratio 1.76, 95% CI: 1.03-2.94; 97%(1194/1229) boys like competitive sports some or all or the time compared with 93%(1117/1196) of girls.

[105] Odds ratio 3.14, 95%CI: 1.84-5.42; 98%(940/967) boys without a disability compared with 93%(840/899) of girls without a disability.

times[106]. A girl who is told she is overweight or underweight is also less likely to like competitive sports[107] as is a girl in grade six compared with boys[108].

Boys views about themselves was linked to their liking of competitive sports. A boy who thinks he is "just right" is almost three and a half times more likely to report liking competitive sports[109] compared with a girl who says she is just right. A boy who likes himself most or all of the time is about three and a half times more likely to like competitive sports[110] than a girl who likes herself most or all of the time.

In terms of programming this evidence suggests the need to offer more non-competitive physical activities at school. This approach is supported by the Centre for Disease Control in their Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People. These guidelines suggest that if schools were to offer more non-competitive activities such as walking, running, swimming and bicycling, it may help to increase participation and enjoyment for students who do not currently participate in school intramural and extramural programmes[111]. Children in this survey support the idea of having more fun activities at their school. It was the second most common response from the children of northern region when they were asked what they thought their school could do to help them be more physically active.

Disabilities and physical activities

Three percent of children reported to have a disability that keeps them from joining in physical activities. Disability was defined as a difference that limits you or keeps you from doing physical activities. One in five students indicated that their disability keeps them from "sometimes" joining in activities.

Not all students feel good in gym class

Enjoyable physical education experiences are believed to be essential in promoting physical activity among children and adolescents[112]. While some 98% of students in the northern region

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[106] Odds ratio 4.41, 95%CI: 2.36-8.38; 98%(865/879) of males who feel listened to at home compared with 93% (827/886) of females who feel listened to at home.

[107] Odds ratio .39, 95%CI:.29-.52; 52%(232/444) who are told they are overweight like competitive sports compared with 74%(351/475) of boys who are told that they are overweight.

[108] Odds ratio .21, 95%CI:.15-.27;51%(250/486) of girls in grade six like competitive sports compared with 84%(412/490) of boys in grade 6.

[109] Odds ratio 3.33, 95%CI: 1.90-5.88; 98%(915/934) of boys who feel that they are just right compared with 94%(811/867) of girls who feel that they are just right..

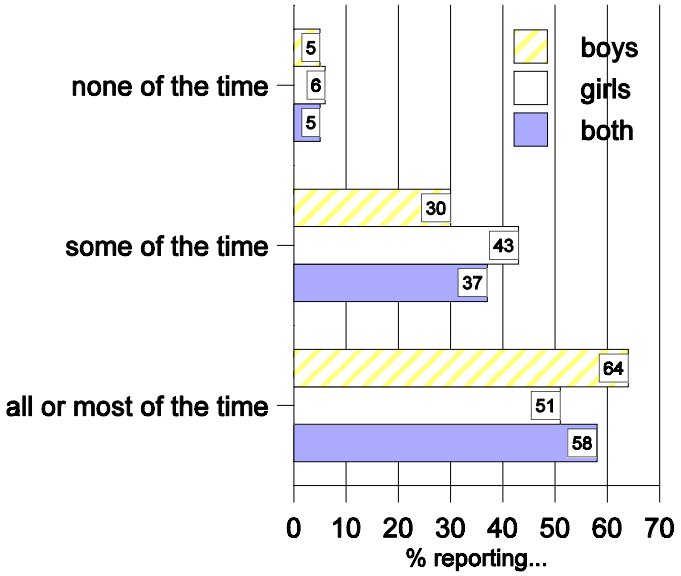
[110] Odds ratio 3.59, 95%CI: 2.06-6.31; 98%(988/1007) of boys who like themselves most or all of the time like competitive sports compared with 94%(869/929) of girls who like themselves most or all of the time.

[111] Centre for Disease Control. Centre for Disease Control Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People, 1997 *MMWR* 46(RR-6);1-36

[112] Centre for Disease Control, Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People, 1997 MMWR 46(RR-6);1-36

reported to usually take part in gym class only two-thirds of the girls said that they liked gym class all or most of the time compared with 74% of the boys[113]. Compared with a boy, a girl is less likely to like gym all or most of the time if she is on a diet[114] or if she believes she is overweight[115]. A girl who goes to a school that does not have an intramural programme [116]or who believes that nobody at home listens to her[117] is also less likely to like gym compared with a boy.

Figure 16
I feel good about myself in gym class...



Children also expressed that they did not feel good about themselves in gym class. As seen in Figure 16 girls were less likely to feel good about themselves in gym class compared with boys. Only 51% of the girls in the northern region feel good about themselves in gym class all or most of the time compared with 64% of the boys[118]. Older girls (11-13 years) are more likely to not feel good about themselves in gym class all or most of the time compared with older boys (11-13 years)[119]. Compared with a boy, a girl is also less likely to feel good about herself in gym class all or most of the time if she does not eat breakfast,[120] if she is overweight,[121] or if she thinks

[113] Odds ratio .73, 95%CI:.60-.88. 66% of girls (789/1195) like gym class all or most of the time compared with 74% of boys (906/1229).

[114] Odds ratio .43, 95%CI: .27-.69; For those who have ever been on a diet to loose weight, 56%(125/225) of girls said they liked gym all or most of the time compared with 74%(121/163) of boys.

[115] Odds ratio .35, 95%CI:.22-.56; For those who believe they are overweight, 51%(118/230) of girls said they liked gym all or most of the time compared with 75%(131/175) of boys.

[116] Odds ratio .37, 95%CI:.21-.64; In schools without an intramural programme, 58%(92/160) of girls said they liked gym all or most of the time compared with 79%(107/136) of boys.

[117] Odds ratio .26, 95%CI:.12-.57;For those who do not feel listened to at home, 31%(!&/55) said they liked gym all or most of the time compared with 63%(61/97) of the boys.

[118] Odds ratio .68, 95%CI: .57-.80, 51% of girls (611/1195) feel good about themselves in gym class all or most of the time compared with 64% of boys (792/1229).

[119] Odds ratio .49, 95%CI: .39-.61; or those 11-13, 46%(316/683) of girls said they liked gym all or most of the time compared with 64%(446/698) of the boys.

[120] Odds ratio .37, 95%CI:.23-.59; For those who said they did not eat breakfast the day prior to the survey, 35%(57/165) of girls said they felt good about themselves all or most of the time in gym class compared with 59%(101/172) of boys.

[121] Odds ratio .40, 95%CI: .26-.62; For those who are overweight,31%(72/230) of girls said they feel good in gym class all or most of the time compared with 53%(93/171) of boys.

no one at school listens to her[122] or at home [123]. A girl who says that she would be more active at school if her school provides separate activities for boys and girls is also less likely to feel good about herself in gym class all or most of the time compared with a boy.[124].

Feeling good about oneself in gym class is associated with a child's self esteem. A child who likes her/him self is a four times more likely to feel good in gym class all or some of the time compared with a child who does not like her/him self[125]. Also, a child who thinks s/he is "just right" is 52% more likely to feel good in gym class all or some of the time compared with a child who thinks s/he is over/under weight[126]. Feeling listened to is also important. A child who feels listened to at school is almost three times more likely to feel good in gym class compared with a child who does not feel listened to at school[127].

The evidence that some children do not like gym class and do not feel good about themselves in gym class suggests that there needs to be some changes in the classes. The Centre for Disease Control guidelines encourage schools to offer physical education experiences that are enjoyable and actively involve students in learning in order to foster more positive attitudes toward and encourage participation in physical education and physical activity[128].

Other physical activities besides gym

Physical activity in school goes beyond gym class. Students were asked if their school has other physical activities besides gym: three-quarter of students (74%) said yes[129]. Yet at the same time a little over half (53%) of the children indicated that their school could help them be more physically active at school if they offered more "fun" activities and just "more" activities.

In terms of actual programming, 24 out of 27 schools reported to have an organised intramural programme. For students in 15 of the 24 schools the intramural programme is available one to two times a week. Three schools have intramural activities everyday.

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[122] Odds ratio .29, 95%CI:.17-.48;for those who do not feel listened to at school, 25%(33/134) of girls like gym class all or most of the time compared with 53%(109/205) of boys.

[123] Odds ratio .22, 95%CI:.09-.54;for those who do not feel listened to at home, 16%(9/55) of girls feel good about themselves in gym class all or most of the time compared with 47%(45/96) of boys.

[124] Odds ratio .29,CI: .14-.57; for those who said they would be more active at school if their school offered separate activities for boys and girls, 30%(31/102) of girls said they felt good about themselves in gym class all or most of the time compared with 60%(44/73) of the boys.

[125] Odds ratio 4.2, 95%CI: 2.43-7.11; 95% (2223/2329) of children who like themselves feel good about themselves in gym class compared with 74% (72/97) of children who do not like themselves.

[126] Odds ratio 1.52, 95%CI: 1.03-2.24; 96% (1728/1809) of children who think they are "just right" feel good about themselves in gym compared with 92% (568/618) of children who think they are over/under weight.

[127] Odds ratio 2.97, 95%CI: 1.93-4.6; 96% (2009/2087) of children among those who feel listened to at school feel good about themselves in gym compared with 84% (286/339) of children who do not feel listened to.

[128] Centre for Disease Control, Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People, 1997 MMWR 46(RR-6);1-36

[129] (1796/2432)

Almost half of the schools also reported having extramural sports teams. All but two schools reported having special one day events related to physical activity. Half the schools (n=13) also reported having organised weekly programmes for physical activity with the other half (n=14) not having such programmes. This however is in part due to the availability of gym teachers. Only three of the 27 schools in the northern region have at least one full-time physical education position.

Principals and teachers were asked what is emphasised in their physical activity programmes. The top three responses were:

Principals (n=25)	**Teachers** (n=89)
• participation (52%)	• participation (48%)
• development of lifetime skills (24%)	• physical fitness (18%)
• fun (12%)	• development of lifetime skills (11%)

None of the of the principals or teachers said their programmes emphasised competition.

Based on interviews with principals, only two of the 27 schools have a written standard, policy or guidelines on physical activity programmes and the time allocated for gym class. Four out of 27 schools reported to have a written standard, policy or guideline on a "fair play" programme.

Facilities make a difference in activity at school

According to the Canadian Fitness and Lifestyle Research Institute (CFLRI), the nature of children's environment can be very important in making it easier for children to participate in physical activity[130]. This 1997 Physical Activity Monitor reports that 53% of parents ranked access to school based physical activity and sports facilities, services and programmes as second in helping their children to be active. It is thus not surprising that the availability of swings, slides, outdoor basketball courts, gymnasium and other physical activity facilities at schools in the northern region do in fact increase a child's chance of being physically active at recess, lunch time or after school:

< a child who goes to ***a school that has a variety of facilities*** is almost two and a half times more likely to be active at recess compared with a child who goes to a school that does not have a variety of these facilities[131].

< a child who goes to ***a school that has a slide and a swing*** is 30% more likely to be active at lunch compared with a child who goes to a school that does not have swings and

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[130] Craig, C.L.,Russell, S.J., Cameron, C., Beaulieu, A., *Foundation For Joint Action: Reducing Physical Inactivity,* Canadian Fitness and Lifestyle Research Institute; Fitness/Active Living Unit, Health Canada; Interprovincial Sport and Recreation Council, 1999.

[131] Odds ratio 2.41, 95% CI:1.78-3.25; 72% (163/225) of children who go to schools with a gym, a large climbing unit, an outdoor basketball hoop, swings and slides and one "other" facility are active at recess compared with 49% (1071/2204) of children who go to schools that do not have all of these facilities.

slides[132]. For a child in grade six this rate increases to 86%[133] and for a child who feel listened to at school the rate increases to 88%[134].

< a child who goes to ***a school with an outdoor basketball court*** is 53% more likely to be active after school at school compared with a child who goes to a school that does not have these facilities[135].

< A child who goes to ***a school with a gym*** is 58% more likely to be active at recess compared with a child who goes to a school without a gym[136].

It is clear that investing in physical activity facilities can have a significant impact on children being active at school. From the visits to the schools, Table 1 lists the number of schools that have the various facilities. Six of the 27 schools did not have a gymnasium. However, a majority (n=20) do have swings and/or slides.

What can the school do to increase physical activity at school?

- Let the kids bring their own equipment to school if they want.

- offer gardening... tai-chi breaks... stretch breaks

- schools should get feedback from parents

Parent focus groups

[132] Odds ratio 1.30, 95% CI:1.04-1.62; 70% (1157/1653) of children who go to schools that have at least one slide and one swing compared with 61% (474/782) of children who go to schools that do not have these facilities.

[133] Odds ratio 1.86, 95%CI:1.41-2.47; For children in grade6, 73%(335/461) of the children who go to a school with at least one swing and one slide are active at lunch time compared with 59%(307/522) of those children who go to a school without these facilities.

[134] Odds ratio 1.88, 95%CI:1.43-2.48; 95%CI:1.43-2.48; For children who feel listened to at school all or most of the time,72%(578/806) of children who go to a school with at least one swing and one slide are more active at lunch time compared with 57%(198/345) of children who go to a school without these facilities.

[135] Odds ratio 1.53, 95%CI:1.20-1.94; 64%(27/437) of children who go to schools with an outdoor basketball court compared with 44%(876/1998) of children who go to a school without these facilities.

[136] Odds ratio 1.58, 95% CI: 1.34-1.87; 57%(778/1366) of children who attend a school with a gym are active compared with 43%(456/1063) of children who attend a school without a gym.

Table 1: Facilities at schools (n=27)

Facility	# of schools with facility
Small gymnasium	11
Medium gymnasium	6
Large gymnasium	4
Small outdoor play area	7
Medium outdoor play area	2
Large outdoor play area	19
Swings	20
Slides	20
Small climbing apparatus	13
Medium climbing apparatus	10
Large climbing apparatus	16
Outdoor basketball hoops with team playing area	4
Outdoor basketball hoops with no team playing area	12
Weight training room	0
Exercise room	0
Outdoor track 100 meters or greater	1
Outdoor track less than 100 meters	1
Tennis court	4
Swimming pool	0
Hiking trail	4

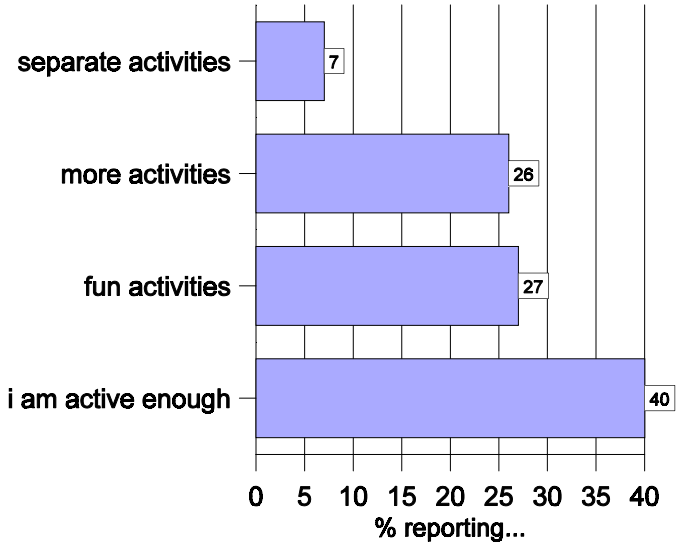
Students and parents want more and fun activities

Children were asked what they thought their *school could do* to help them be more physically active at school. As can be seen in Figure 17 the most common response was that they thought they were active enough (40%). The next most common response was if there were *more fun* activities (27%) followed by if there were *more kinds* of activities offered (26%). Some seven percent did suggest separate activities for girls and boys. Girls were more likely to say "separate activities" (9% of girls vs. 6% of boys) while boys were more likely to say they "were active

enough" (44% of boys vs. 37% of girls)[137].

Parents are supportive of physical activity. Some 83% believe that exercise and physical activity is very important at their child's school[138]. Another 17% felt it was somewhat important while less than one percent indicated that it was not important (n=8).

Figure 17
What can schools do help me be more physically active at school...



When parents were asked what the school could do, there was a different response compared with their children[139]. A fewer proportion of parents, 38% thought their child was active enough at school while a larger proportion (43%) said they believed their child would be more active at school if their school offered *more kinds* of activities. Another 17% of parents believed that *more fun* activities would be effective while three percent suggested separate activities for boys and girls. Parents of girls were twice as likely to suggest separate activities for boys and girls[140].

Students feel they lack the skills to be active

Children in the northern region were asked what *they could do* to be more physically active at school. While a little over half of the students said they were active enough some 17% of the students said they would be more physically active at school if they were "better at games and sports". Another 18% said they would be more active if they could stay after school. Some 11% said they would be more active if they had more energy.

Girls were more likely to say that they lacked the skills to be active (see figure 18). One in every five girls in this study feels she lacked the skills necessary to be physically active at school compared with 13% of boys. In fact, a girl is 68% more likely to say she would be more active at school if she was better at games/sports compared with a boy[141]. For girls who liked competitive

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137 Kruskal-Wallis=6.25, df=1, p=.01

138 (1773/2146)

139 Kruskal-Wallis=85.1; df=3, p=.0000

140 Odds ratio 2.05,95%CI:1.13-3.70;4% of girl's parents(44/1069) feel their child would be more active at school if there were separate activities for boys and girls compared with 2% of boy's parents (17/1056).

141 Odds ratio 1.68, 95%CI:1.35 - 2.10; 22% (258/1192) of girls say they would be more active at school if they were better at sports and games compared with 13% (159/1228) of boys.

sports this rate increased to 94%[142]. Youth research on the determinants of physical activity suggest there is a need to provide more enjoyable activities that build perceptions of competence or self-efficacy in physical activities in order to be effective in promoting physical activity in this age group[143]. The Centre for Disease Control Guidelines suggest that the individual factors positively associated with physically activity among young people include confidence in one's ability to engage in exercise (i.e. self efficacy), perception of physical or sport competence, having a positive attitude toward physical education and enjoying physical activity[144].

Parents' responses to this question varied from the children as seen in figure 19[145]. Parents were more likely to answer "active enough" or "if able to stay after school" while children were more likely to report "if I had more energy" or "if I was better at games/sports".

Figure 18
Girls and boys' response to: "What can you do to be more physically active at school." (N=2420)

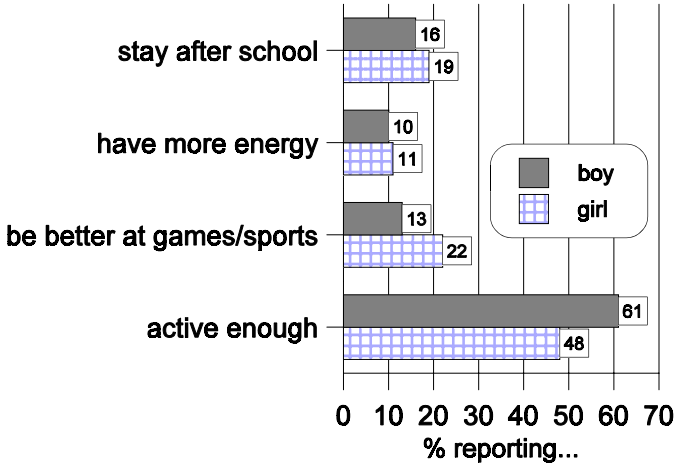
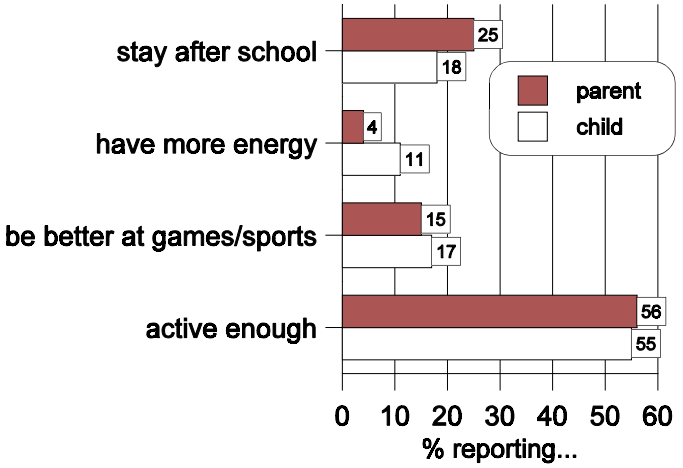


Figure 19
Child and parent response to what children can do to be more physically active at school



[142] Odds ratio 1.94, 95%CI: 1.54 - 2.45; For those who like competitive sports, 21%(236/1112) of girls said they would be more active if they were better at sports and games compared with12%(145/1190),

[143] Sallis,J.F.,Owen,N. *Physical Activity and Behavioral Medicine*,1999, SAGE Publications, Inc.

[144] Centre for Disease Control, Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People, 1997 *MMWR* 46(RR-6);1-36

[145] Kruskal-Wallis=120, 3df, p=.000009

Dental care

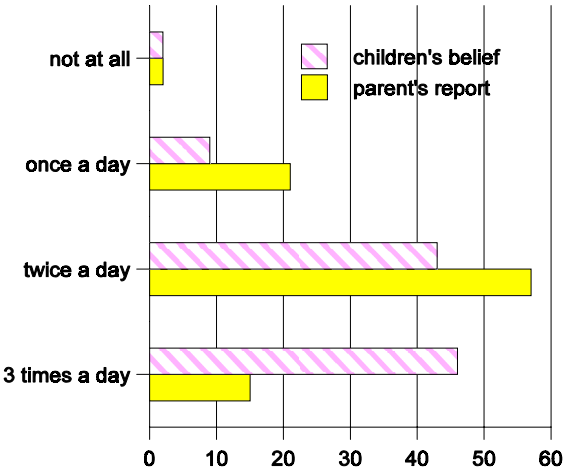
Children were asked how often they thought they needed to brush their teeth: 43% said they need to brush their teeth *two times a day* and another 46% said they need to brush their teeth *three times a day*. Almost one in ten children indicated that they need to brush their teeth only once a day. Figure 20 contrasts children's beliefs with parent's report of their practice -- belief and practice do not seem to line up.

Seven out of ten children indicated they needed to floss their teeth every day. However, almost eight out of ten parents reported that their child did *not* floss her/his teeth the day before the survey.

Over a six to seven month period, a little over two thirds of students reported to have two or three new toothbrushes. Less than one percent (n9) claimed to *not* have a toothbrush. Some 16% reported to *not* have dental floss.

Dental coverage (Medical Service Insurance - MSI) since its beginning in the early 1970s has declined from coverage up to age 18 years of age, to 16 years of age, to 14 years of age and to 12 years of age. Currently dental coverage under MSI includes all children until the month of their tenth birthday. In the last year one-third of children reported to have gone to the dentist at least two times and another one third had gone at least three or more times to the dentist. Parents reported a higher percentage of visits: almost half of the parents reported that their child went to the dentist at least two times in the last year.

Figure 20
Children's beliefs of how often they need to brush their teeth versus parent's report of how often their child brushed their teeth



Annual household income appears to be a barrier to accessing dental care for children no longer eligible for MSI dental coverage. A child who lives in a household where the annual income is greater than $15,000 is almost four times more likely to have visited a dentist in the past year when compared with a child from a household earning less than $15,000 annually.[146] This is regardless of eligibility for MSI dental coverage.

When it comes to education level, health care professionals seem not to be reaching a segment of the population in need of dental care education. A child whose parent has an education level of

[146] Odds Ratio 0.27, 95% CI:0.11-0.26; 79.4% (181/228) of children who live in a household where the annual income is less than $15,000 compared with 95.8% (1690/1764) of children who live in a household where the annual income is more than $15,000

grade 12 or higher is four times more likely to have visited the dentist in the past year compared to a child whose parent has an education level of less than grade 12[147]. The evidence suggests a review of all information that is systematically distributed to parents whether from their dentist, MSI or PHS to ensure that the message of good dental health practice is being understood.

To determine coverage of public health services in the school regarding dental services, teachers were asked about visits. One-quarter of the teachers interviewed indicated that a public health dental hygienist had talked to them about dental care in the last year; 17% of teachers had a dental hygienist come to talk to their class; and two percent reported to have had a dental hygienist come and talk individually to their students. A little more than one-quarters of the teachers also indicated that the public health hygienist had provided them with information and another quarter also indicated that they were provided by resources from the dental hygienist. Examining these results by coverage of the 27 schools interviewed reveals that all schools had a visit from a public health dental hygienist, but not necessarily all classes in each of the schools. This is a limitation of the resources available for this service.

Similar to eating, physical activity and self-esteem, the feeling of being cared for and body image has an affect on frequency of brushing and on dental visits. A child who feels cared for is almost five times more likely to brush her/his teeth at least two times a day compared with a child who does not feel cared for[148]. A child who likes him/her self is 12 times more likely to brush at least two times a day compared with a child that like him/herself none of the time[149]. Also a child who thinks s/he is "just right" is almost three times more likely to brush their teeth[150]. Attendance to dental visits is also affected:

< a child who *likes herself/himself* is almost two times more likely to visit the dentist compared with a child who claims to not like herself/himself[151].

< a child who *feels cared* for is 3.5 times more likely to visit the dentist compared with a child who does not feel cared for[152].

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[147] Odds ratio 0.25, 95% CI:0.17-0.38; 95.7% (1683/1758) of children whose parent has an education level of grade 12 or higher compared to 85.1% (291/342) of children who parent has an education level of less than grade 12.

[148] Odds ratio 4.8, 95% CI:1.44-15.7; 98% of children who feel cared for brush their teeth at least once and most two times a day compared with 65% (15/23) of children who do not feel cared for.

[149] Odds ratio 11.7; 95%CI: 4.7-29.1; 98% of children who like themselves brush at least once compared with 70% of children who do not like themselves.

[150] Odds ratio 2.68, 95% CI: 1.2-6.1; 99% of children who think they are "just right" brush at least once compared with 93% of the children who think they are over/under weight.

[151] Odds ratio 1.82, 95%CI: 1.01-3.29; 92% (2139/2332) of children who like themselves go to the dentist 1-3 times compared with 81% (79/98) of children who do not like themselves.

[152] Odds ratio 3.54, 95%CI: 1.61-7.77; 92% (2194/2394) of children who feel cared for go to the dentist 1-3 times compared with 66% (25/38) of children who do not feel cared for.

VI. COMMUNICATION STRATEGY/ACTION

Building the community voice into planning using the CIET method requires rigorous attention to communications throughout the CIET cycle. Strategic communication plans are developed and implemented by key stakeholders to:

The CIETcycle

1. Identification of the problem
2. Analysis of existing data
3. Design
4. Training and testing
5. Fact finding
6. Feedback
7. Definitive analysis
8. Communications strategy/action

- raise awareness in the community about the project and increase participation;
- ensure that objectives are met effectively and efficiently through an open and inclusive process among all participants and stakeholders; and
- ensure that survey results will lead to action and community mobilisation based on the evidence.

This communication aspects of the evidence-based cycle are the catalyst for using the local and relevant data that has been collected. This in turn increases knowledge to guide local action, enable more effective planning of services and supports to change behaviour and to impact on the well being of the community.

For this second cycle, the usual communication methods were used during this survey including face-to-face meetings, group work, telephones, tele-conferences, faxes, letters, newsletters, memos and the media. The introduction of email into this kind of work in northern Nova Scotia was a new experience for many. For those participants with email access, this quickly became the preferred mode of communication during the cycle.

Gaining Support

There were a number of challenges to overcome during this survey that required a strategic approach to communication. Gaining the support of the Chignecto-Central Regional School Board (CCRSB) was critical before any schools could be approached and children interviewed. Key individuals were contacted and meetings and presentations followed. Gaining the support and participation of each school required further sensitive planning. Developing an approach to implementing questionnaires that would ensure the participation of the children and their parents was key. The work had to be fun to do and not present any extra burden of work for schools, teachers, parents or children.

Attracting, supporting and maintaining a representation of regional public health staff participation into the process was a major goal. This project was an opportunity for them to learn about a community based approach to evidence-based planning in their community, to contribute their knowledge and expertise into the planning and be part of any future actions that may result from the evidence.

The process started by :

- Inviting Public health staff to participate in the identification of the problem by submitting their suggestions to the LoPHID Advisory Committee, a group of Northern Regional Health Board (NRHB) and Public Health Services (PHS) management persons. As the survey proceeded, this Committee expanded membership to include CIET staff, and representation from PHS staff, LoPHID field workers and the community. It identified itself as the LoPHID Implementation and Advisory Committee for the region with a role to oversee, advise, and assist with planning implementation and action strategies related to the findings of each LoPHID cycle. (Terms of reference are in the report annex).

- Developing a working relationship with the CCRSB through the Regional Partnership Advisory Group, Community Education and Partnerships. A written proposal, and presentation to this group helped to gain their understanding and support for the goals and objectives of the survey and ultimately approval to approach the schools.

- Seeking input and resources from a broad range of experts at universities, Health Canada, the Nova Scotia Department of Education and the Nova Scotia Department of Health.

- Writing letters to parents, teachers and principals describing the purpose of the survey and enlisting their support.

- Collaborating on press releases with the CCRSB and NRHB, Directors of communications.

Working effectively and efficiently

There were numbers of people to work with and keep informed during the survey including field workers, the design team, Public Health Services staff, the Regional Health Board, regional partners, provincial stakeholders and federal stakeholders. Coordinating included the following communication strategies:

- distributing regular and timely minutes to the design team;

- requesting input and distributing progress reports to all Public Health Services staff;

- developing a support/communication structure for the field workers that included supervision and access to a CIET support person and regular debriefing sessions. Their training included opportunities to practice communication skills, review confidentiality standards, pilot and refine instruments and to provide their input into logistics and process; and

- participating in meetings and teleconference calls with the LoPHID Project Team a committee made up of regional representatives from the five Atlantic pilot sites, provincial and federal representatives of LoPHID and CIET.

The survey field workers are a remarkable group of women from the community who have become strong advocates and ambassadors for this public health work. A number were experienced , having worked on the first cycle, and were eager to return to work on this cycle.

Leading to action

> *"This is very valuable information for me....I think all principals need to know this."*
> Principal, Elementary School, Northern Nova Scotia

Given that the survey findings could have implications for all elementary school children in the region, the feasibility of including all elementary schools (not only the sentinel schools) was reviewed again with the CCRSB Regional Partnership. This would have been difficult both technically and logistically and thus a strategy was developed to invite the participation of all the principals of the regions' elementary schools in any feedback sessions. It was felt this approach would enable a more inclusive CCRSB response to the findings and as well set the stage for planning to mobilise action later on.

The first press release was distributed to local and provincial media to inform the public of the beginning of the survey on the 4th of March, 1999. Local and provincial papers and local radio stations expressed keen interest in the survey. The press release was published in most regional papers. Two local radio stations carried out a short interview to air with their newscasts.

Following this, a progressive strategy was planned that would begin with the children and parents and culminated with a private consultation session for school principals. Dialogue with each group was documented for future use to support community led solutions. Some of the communication strategies included:

- facilitating focus groups with parents and using communication tools such as posters and a pamphlet to communicate the evidence;
- initiating feedback and dialogue with the children through an interactive website;
- providing an information packet and survey summary to all elementary school principals in August 1999 and inviting them to a consultation session in October 1999; and
- organising consultation sessions with principals after further analysis had been done on the data.

The principals' consultation sessions

The primary purpose of the principals' consultation sessions were to discuss how healthy decision making among the region's children can be better supported. The consultation sessions are not one time events or are they the endpoints. In fact they are the catalyst for action.

Objectives- Consultation Session

1. Share and discuss key findings of the "Children speaking up: eating, physical activity and dental care" project.
2. Use the evidence to identify actions that can be taken to support the healthy growth and development of our children in Grades four, five and six.
3. Initiate a process of evidence-based communication and mobilisation of action to support healthy growth and development of children led by the leaders of education.

The first session was held in Truro on 26 October, 1999 for 13 principals and teachers. A second session was held for seven participants on 23 November, 1999 to accommodate those who could not attend the October session. Invitations were extended to Family of School Supervisors and principals from every elementary school in the region. Others in attendance were from Health Canada, the Nova Scotia Department of Health, the Northern Regional Health Board, the Nova Scotia Sport and Recreation Commission, CIETcanada, Public Health Services and LoPHID field workers.

Following a presentation of the key findings, working group sessions were held to discuss the evidence and ways to mobilise action. Suggested actions to take arising from the consultation sessions are presented in Table 2. A summary of the session evaluations and a list of attendees are in the report annex.

Educators were asked:
"In the next year do you think your school will be able to take action on the issues identified during today's session?"

Answer: 12 of 17 said yes.

Immediately following the first principal consultation session a second press release was distributed on 27 October, 1999. This was picked up by both local and provincial media. CBC television Nova Scotia carried out an interview for their provincial evening newscast. Coverage was also achieved at the national level where an article was published in the *Globe and Mail*.

Table 2
Actions to take as identified during the principals' consultation sessions

Issues	Proposed Actions	How will it be done?	Who will do it?
Dental Education Low Flossing rates	Strengthen dental education in schools Show children how to floss	Classroom health teaching during flouride rinse programme	Dental Hygienist Train the trainer Teacher/Volunteers
Nutrition Education Quality of foods in schools Children not eating breakfast School Board Food Policy	Strengthen nutrition education in schools Educate the educators Educate parent groups Enact policies to support not for profit, quality food choices in schools	Improve quality of foods available in schools Provide more inservice/support to school staff Consider breakfast programmes Give information to parents and involve them Newsletters Have kids monitor what they eat Principals, School Advisory Councils, and Parent Teacher Groups need to push for policy development	Parents Teachers Students Nutritionists School Advisory Councils School Board
Physical Education Constraints of time, facilities and teacher resources supporting physical activity in schools	Strengthen physical activity in schools Educate the educators Educate parent groups Advocate to Department of Education to effect system changes	Provide/support daily physical activity programmes in schools Increase time for physical activity in schools Have older kids organise activities for younger kids Look for alternatives to expensive playground equipment Inform and involve parents Present findings to Department of Education	Department of Education School Advisory Councils Parents Teachers Students Principals Health Educators Regional Action Group

VII. THE NEXT STEPS

There is much work left to do to continue the dialogue that has started around the results. As suggested by a principal in the region, "we need to reach out to as many as possible with this information".

> *"I think most educators agree, the findings are important...it's what to do about it!"*
> Educator at the principal's consultation

However, it is important to first alleviate a concern expressed by some educators that only the schools need to be doing more. Action plans must include parents, teachers, principals, students, public health nutritionists, dental hygienists, health educators, public health nurses, School Advisory Councils, the School Board and the Nova Scotia Department of Education. Community Health Boards have expressed interest in the survey findings and may be able to use the findings to support their community health planning initiatives.

The results achieved during focus groups with parents and the consultation session with the principals are the outcomes of a strategic communication strategy and the beginnings of mobilising action. A number of actions were proposed at the principals' consultations and are a good place to start.

Proposed Actions (principals' consultation sessions)

- Strengthen dental health education in the schools
- Strengthen nutrition education in the schools
- Strengthen physical activity in schools
- Educate parents and educators
- Develop a School Board Food Policy
- Advocate to the Nova Scotia Department of Education to effect system changes

As this report is distributed to regional, provincial and federal stakeholders further opportunities will be sought to promote dialogue and action on the evidence.

Three major threads continuously appear when unpacking the components of eating practices, physical activity levels and dental care: the feeling of *being cared for*, the child's *image of her/his physical state* and whether s/he *likes him/herself.* Although complex, it is well known that positive reinforcement is key. Even before their teenage years, the children of northern Nova Scotia are clearly telling us what makes a difference in their lives. The challenge is to listen and put the evidence into prevention strategies and programmes within existing limited resources. Actions taken now will prepare the children in northern Nova Scotia to better cope with the challenges of becoming an adolescent.