Inusiqsiarniq:
Healthy Choices for Children and Youth
Health Promoting Interventions for Children in Arviat, NU

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Final Report
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We are greatly appreciative of the research team, led by Ruth Murphy and trained through our partnership with the University of Alberta and Dr. Gita Sharma and Dr. Nonsi Mathe and the staff of the Arviat Wellness Centre.

Most importantly, we recognize the enthusiasm and commitment to health improvement of the children who carried messages home to their families and who are still trying to make healthier decisions based on what they learned through this initiative. We salute them and their parents who ultimately will make the difference.

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EXECUTIVE SUMMARY

Purpose: The aim of our project is to improve child health outcomes and reduce risk factors for chronic disease through providing information to children. It was expected that the children would become message carriers, sharing this knowledge about healthy choices with their families. We collected data to give us an accurate nutritional profile for children ages 4-12 years in Arviat. Based on this data, key intervention messages about choosing strong foods for a strong life were developed by youth to carry out into the community. The engagement of children and youth as key message carries was expected to have a more significant impact on family choices than the standard approach of public health messaging.

Target population: We are working with a child population from 4-12 years old and their families. In addition, we are also working with the community at large as the children/youth take messages into the community using various media formats.

Primary activities:

1. Conduct research with 60+ children to determine the current nutrition profile for children ages 4-12 in the community
2. Design key messages to promote healthier food and fitness choices
3. Work with the Aboriginal Head Start and elementary school programs to reinforce key messages and activities
4. Engage a youth advisory team to design, develop and delivery key messages for children
5. Provide a toolkit of material and activities, including lesson plans and take home pamphlets for parents about healthier choices for children

The project has six main target sites and key partners:

1. Aboriginal Head Start and school classrooms, community breakfast programs, soup programs and cooking classes
2. Hamlet recreation sites and programs
3. Arviat Youth Piliriqatigiit project and engaged youth advisors and Elders around use of country foods in healthy Inuit diets and for a youth harvesting project
4. Arviaqpaluk Community Radio- community-wide messaging and reinforcement of the audio messages on the community cable channel using powerpoints, video clips and messages on social network sites
5. Community stores where key messages will be posted and reinforced with taste tests, product demonstrations, in-store contests for kids, consumer surveys
6. Homes through take home pamphlets from schools and survey updates

Major outcomes

We believe that parents and children want to be healthy and to make healthy choices. In order to do that well, they require strong, straight forward information and the community supports necessary to make better choices. Children are the best change agents in a community and can effectively reset the rules for healthier

choices within their families. Based on this, we hoped to accomplish, and have evidence to show the following outcomes:

1. Improved community capacity around Inusiqsiarniq through uptake of messaging campaign.
2. Improved wellness staff capacity in collecting, analyzing and interpreting research data back to the community.
3. Strong, visible emphasis around healthier choices found everywhere in the community.
4. Statistical evidence of healthier food choices in retail data.
5. Country food distribution system in place and in use in the community.
6. Statistical evidence of increased participation in community fitness/ intervention activities.
7. Sustained evidence of youth leadership in project management and messaging campaigns.
8. Engagement of child, youth and families evidenced in participation levels in intervention activities.
9. Positive responses in satisfaction and knowledge uptake surveys.

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Background

The primary focus of Inusiqasiarniq: Healthy Choices for Children and Youth study was obesity prevention for children and youth in Arviat. Arviat is a remote and isolated Inuit community in Nunavut with limited access to public health programming and a challenging food system in terms of access to and cost of healthy food choices. Working with elders and youth, this project focused on the development of a culturally appropriate obesity prevention program for children. One of the fundamentals of design was to present information about healthy choices, in the form of key messages, to children. It was expected that children would carry those messages into their homes, becoming advocates for healthier choices around nutrition and physical activity.

Using a cross-sectional survey design, we collected data using our modified Quantitative Food Frequency Questionnaire (QFFQ), to assess nutritional intake, daily energy and dietary inadequacies in the prior 30 days; height and weight, waist and hip circumferences. Dietary transition amongst Inuit is particularly unhealthy. This transition is characterized by increased consumption of high-sugar, high-fat store bought foods, decreased consumption of traditional foods, and decreased physical activity. The overarching aim of the study—to collect baseline data over a 12 month period that would provide Arviat-specific nutritional profiles of the children aged 4-12 years, provided clear indicators of the consumption behaviours that are contributing to an obesity level amongst this Arviat-specific target group that is alarmingly twice the national average.

Based on the data collected, we worked with a group of youth to design four key messages to begin to address concerns raised in the data. These key messages were presented through teaching units delivered into early childcare and elementary school classes. Every child took home information sheets containing the key message for that week.

This process was followed up by a community-wide information campaign around the key messages. This campaign included radio shows, powerpoint presentations which ran on the cable channel, posters and 1 page information brochures that contained the key message and pertinent information about it. Youth also designed video ads to reinforce the message with the target population of 4-12 year olds.

Process evaluation was conducted throughout the intervention process, as well as regular communications with community members, particularly Elders, partners, and stakeholders. Although evidence of behavioural change and information uptake cannot be measured based on a one year project, there are some areas of the intervention which have resulted in positive responses.

Project Goals and Objectives

The Inisiqsiarniq goals for Arviat are grounded in the overall community wellness strategy message of “It’s Us”—it is us to each of us to be able to lead a good life through understanding and applying healthier choices.

1. Healthier choices- healthier outcomes:
   Arviat children, youth and families will demonstrate competence in their ability to make healthier lifestyle choices

2. KT for life:
   Arviat children, youth and families will become actively engaged in improving personal health and advocating for improved health outcomes for the community (the "It's Us" message)

3. Sustainability:
   Arviat children, youth and families will become knowledgeable about their personal nutrition profile and understand the ways to improve that profile for lifelong health

Primary study objectives:

(1) Engage the community to create a comprehensive profile of children 4-12 years of age (including current dietary intake, height, weight, waist and hip circumferences).
(2) Develop inclusive multi-sectoral partnerships and provide training to support and guide the study ensuring the subsequent intervention is sustainable.

Secondary study objectives

1) Engaging Inuit children and youth in the development of key messages to promote healthy choices
2) To provide comprehensive outcomes and process evaluation of the entire project
3) To engage in extensive communication and network development throughout the entire community
4) To develop a nutrition intervention program that is accessible, relevant, and culturally appropriate
5) Inclusion of key resources (community groups, Elders, children, and youth)
6) Integration of a health profile and intervention development into Arviat Hamlet's community wellness plan
7) Celebrating progress and encouraging community partners and staff to present the program and results

Implementation

Inusiqsiarniq Project Guidelines

- Inuit lead healthy lifestyles that were respectful of and responsive to the environment, the animals and the individual and group—Inusiqsiarniq is the concept that will guide this project
- Healthy living requires knowledge and skills—this project is directed at providing every member of the community with the knowledge and skills (pilimmaksarniq) to make healthier personal choices. People

make poor choices because they have not been given good information.

- Inusiqsiarniq is embedded in both self-reliance and interconnectedness—this project seeks to build capacity in these mutually supportive areas by promoting the "It's Us" message: as a community it is up to us to ensure our own health and wellbeing
- By targeting our large child & youth population, we target the best message carriers in our community—if a child believes in the importance of making healthy choices, s/he will take that message into the home and family
- Inusiqsiarniq requires individuals and families to become more conscious and reflective (qanuqtururangniq) about choices they make daily—collectively as a community (piliriqatigiingniq) we can support improved health outcomes.

Activities-

1. **Conduct research with 60+ children to determine the current nutrition profile for children ages 4-12 in the community-**
   This activity was planned with our research partners at the University of Alberta. The research was considerably delayed due to issues and timelines inherent in the University of Alberta research processes. However, we did carry out the data collection process with 296 child participants between the ages of 6-12 years old. The report of this activity is available in Appendix A.

2. **Design key messages to promote healthier food and fitness choices**-
   Based on the main issues identified from the nutritional profiles of community children, four key nutritional messages were designed in collaboration with youth stakeholders. These messages and the supporting resources are listed in the next section and are available as deliverables with tis report. The messages associated with improved physical activity proved more difficult to develop. During the intervention, we designed, with Elders, an Inuit Fitness Test. Students were tested three times over the course of a year. Additionally, we conducted a 24 hr. pedometer challenge for all elementary school students. The data collected is available in Appendix B. The additional pedometer activities were not completed as the end of the school year was nearing and the staff had less available time to give to these activities. Initially, it was hoped that we would measure students in the 20010-11 school year and again in the early 2011 new school year. We planned to deliver a comprehensive program of summer activities for this target group of children. Unfortunately, due to funding restraints this part of the initiative was unable to be delivered as planned.

3. **Work with the Aboriginal Head Start and elementary school programs to reinforce key messages and activities-**

We were very fortunate to have excellent partners at both the elementary school and Aboriginal Head Start (AHS) program. However, both the school and AHS experienced a series of staff changes and the elementary school went through four principals. Despite this, we had terrific access and support and felt that we successfully collected our data and delivered the intervention materials in all classrooms. At the AHS, these activities were not pursued when the staff turn over resulted in untrained staff struggling with their new responsibilities.

The students who did participate in the activities thoroughly enjoyed every activity that occurred. They were particularly engaged in the Inuit Fitness Tests and wanted to know how much they had improved at each new testing session.

4. **Engage a youth advisory team to design, develop and delivery key messages for children-**
   Arviat is very fortunate to have a strong youth committee that delivers a series of after school and summer programs through the youth drop-in centre. The staff at Arviat Youth Piliriqatigiit (AYP) were all trained as data collectors and actively supported every aspect of this project. Although we were not able to enhance our summer physical activity program, AYP piloted the Atii Gameshow and reinforced some of these activities in the regular summer camp program which provided day camp for 262 registered children between the ages of 6-15 years.

   Youth were engaged in several different ways in the program:
   - Recently graduated youth and AYP youth volunteers were trained in the data collection process.
   - Youth attending the grade 10 Aulajaaqtut course helped to supervise the Inuit Fitness Test and other activities such as the Family Fit Walk.
   - A small team of youth from the high school media program and from the Nanisiniq project meet to design key messages, develop posters and powerpoints and radio/video scripts.
   - Through the community youth group, two young adults were hired to design and deliver a Young Harvesters' Program to train 8-12 year olds in sustainable harvesting to supply country food to the community.

   The participation of youth was instrumental in helping us prepare the intervention materials for use with younger children. Youth reported that they enjoyed these activities and learned from their participation.

5. **Provide a toolkit of material and activities, including lesson plans and take home pamphlets for parents about healthier choices for children-**
   The materials were provided to classroom teachers. Almost every teacher made use of the learning packages although this was voluntary. Most

reported that the information was easy to use and students enjoyed learning about the key messages. All students who participated took home the information and shared it with parents.

List of materials developed:

Food consumption activities for classrooms4 key message learning packages for use in schools
4 key message posters
4 key message pamphlets
4 key message powerpoints for the community cable channel
4 radio show scripts promoting key message
Video scripts
Inuit Fitness Test
Young Harvesters' curriculum (is development)

Partnerships & Intersectoral Collaboration

Research partners:

Dr. Sangita Sharma is Endowed Chair and Professor, Aboriginal and Global Health, at the University of Alberta. Dr. Sharma is a leading expert in dietary assessment methodologies and intervention program development for indigenous populations. Dr. Sharma had worked with Nunavut communities on her project Healthy Foods North. In joining the Inusiqsiarniq team, Dr. Sharma agreed to provide training in research methods and data collection to a team of local youth and wellness workers. Her team from the University of Alberta over saw the data collection process and did the data analysis for us. As well, Dr. Sharma was able to garner additional funding through a CIHR KT grant to help support the work of our research assistants is moving the key messages and additional information out into the community. These activities are reported on in appendices A, C and D.

Community partners:

The Hamlet of Arviat and the local Health Committee sponsored this initiative. In addition to administrative and financial services, the provision of office space/equipment, staff time, and communications was invaluable. By locating the initiative within the community Wellness Centre, we were able to link into other public health programs such as the community cooking programs, walking club, new country food diet initiative and community cookbook. This partnership gives us strong links to the community wellness plan and should help with sustainability of some aspects of the project.

Arviat Youth Piliriqatigiit is an active youth organization in the community. Through partnership with them we have engaged key youth advisory members and they have facilitated the coordination of youth volunteers. Many activities such as after school programs, summer camp and youth training initiatives have been linked to our own activities. The very successful Young Harvesters' Program, which is designed to teach 8-12 year olds how to hunt small game sustainably, was designed and

delivered through the youth organization. In addition, they coordinated events such as the Family Fit Walk and Family Berry Picking Day.
Arviat schools, with the support of the Arviat District Education Authority, has been very supportive of this initiative. The Levi Angmak elementary school delivered the key message lessons to all students and also enabled us to gather fitness data through the Pedometer Challenge and the Inuit Fitness Test. The Qitiqliq Middle School supported the Atii Gameshow pilot and the Young Harvesters' Program. The John Arnalujuak High School has provided youth volunteers to deliver fitness programs, gather fitness data, contribute to the design of messaging and develop multimedia products. They has now agreed to take over the Young Harvesters' Program so that it can be a sustainable after school activity in our community.

Arviaqpaluk Radio Society provided us with dedicated weekly airtime to facilitate the delivery and reinforcement of key messages.

Padlei Co-operative Association and Eskimo Point Lumber Supply are retail stores that have both supported the radio shows with weekly prizes. The Padlei Coop also agreed to allow us to put up shelf labels, have end-aisle promotional displays. All retail outlets and other community sites have allowed us to display posters and to make information handouts available to the public.

Outcomes

Training- There were three individuals who received training as research assistants and who have been able to carry on much on the on-going monitoring and data collection work. In addition to this, 14 individuals were trained specifically in the data collection process for the food recall research. A summary of this training is available in appendix D. These individuals continue to assist us with new projects that are being taken on in the community.

Youth-led message development- There was a lot of excitement generated amongst the youth who participated in the design of messages. Most remain active in the community film and media clubs. We expect that many will continue to use the skills that they have gained in this area in new community initiatives such as the eco-tourism initiative.

Children as message carriers- The use of children as message carriers derived from cultural practices and understandings with regards to the knowledge and discernment of children. Although the time for this project did not allow for the collection of responses from parents, we did get some general uptake responses from the community messaging component to the program. For the limited time between message delivery on community radio and respondents surveyed, knowledge uptake was strong. It would be interesting to see if it is sustained.

Teacher responses- Teachers were instrumental in the delivery of this program. It was important that teacher buy-in was very strong at the outset. Comments in the pre-implementation survey such as "…show them how much sugar is inside junk food because some students have a lot of candy and they eat whatever's given to them"; " student's who have a choice-- that are given money to

buy themselves stuff, choose a lot of pop and junk--where there is a lot of sugar in it and maybe if they knew a little bit more important about what's inside, like Sunny D is not really juice, then I think they'd understand the difference." We believe that most teachers were eager for the information and the simple key messages that they could promote. They were mostly appreciative of the lesson packages. Comments include: "This package is really organized and easy to understand. Keep up the good work you are doing!" and " I'm enjoying teaching this to my class; it's nice to have it all ready to go for us."

Fitness activities- The students' responses to the Inuit Fitness Test were the most enthusiastic. They participated very readily and were eager to track their own results and to do better each time. It was probably extra "fun" because the high school students were supervising the activities and their involvement gave the test a high profile with the students and they may have tried harder as a result. Since this was the first time the test was delivered and it was only delivered in Arviat, there is not normed results for it. It is hoped that the school will continue to use the test just for students' individual improvement purposes and to revitalize Inuit games.

With the Pedometer Challenge, we had all elementary classes participate in a 24 hr. event. This was not repeated in the school as the time in the school year ran out. The average number of steps taken per student was 8,696.9 in the 24 hour period. Again, we will encourage the school to repeat the challenge this year in the hope that the average will increase. Some general responses with regards to what children learned from this include the comments "Inuit always walked a lot and they were healthy so we can try to walk more" and "walking keeps you healthy and it's easy".

Young Harvesters' Program- The Young Harvesters' Program was identified as one of the youth designed activities to both promote fitness and to get children to eat and appreciate country foods. Many parents reported that they did not serve country food: "As a parent I think we buy too much junk food for our kids. I envy those whose children eat country food like caribou, bannock, tea and others because there are a lot of children who don't like to eat country food-- they'd rather have junk food". The idea behind the program was that if children harvested small game around the community, the mothers would have to cook and serve it (according to Inuit harvesting rules) and kids would eat it because they had harvested and provided it. There were three intakes of youth to the program with a 92% graduation rate. The program is hugely popular with both parents and children. In surveying parents about the program, we expected to hear about how much country food was not being used by the family. While all parents reported that the consumption of country food had increased and definitely by the child him/herself, the most consistent responses were about mental health and behavioural outcomes: "I am really happy with the program because my son doesn't

go hunting with his father. I noticed that he is a lot happier now and likes to help out more." "I think it is a very good that the Young Hunters' Program takes young boys out on the land. And the boys really enjoy it and have very active leaders who enjoy going out on the land. My son is active and happy now that he is in the program. He gets really excited when they are about to go on a land trip and is more active than usual. He seems to be happier now that he is going out on the land." The project report is available in appendix E.

Community messaging- The four key messages were reinforced throughout the community after the school delivery of the messages was completed. These activities included a series of weekly radio shows supported by posters, information handouts, and powerpoints run over the community cable channel. Every Friday, random surveys were conducted to collect responses on the uptake of the messaging. 83% of respondents had heard or seen evidence of the messages. In the survey, respondents were asked what they had learned. There was excellent retention of the key message. Respondents were also asked for comments about how to help make healthier choices. Comments such as "Fruits are expensive to buy, the junk food are cheaper to buy. Yogurt is expensive and some people really like yogurt. If you find certain foods that kids really like if they could be subsidized they [kids] would probably eat more. It's better having yogurt than having pop." "Awareness is really important. There should be parental education classes, more radio shows and outlaw gambling."

Supporting the messages through access- Some of the community-based programs that were offered and which linked to the Inusiqsiarniq initiative included community cooking classes (36 participants) using country food and the new country food diet which brought those wishing to lose weight into a support group (15 participants) that focused on country food use in a strong, protein rich food diet. In addition, a budgeting workshop (12 participants) focused on the use of country food to stretch food budgets. In addition, these activities were supported and augmented by a CIHR grant for Knowledge Translation that was run by our partners at the University of Alberta. The report on these activities is available in appendix C,

Knowledge Exchange

Much of the information about the knowledge exchange process has already been articulated here. It is important to note that many aspects of activities implemented through the Inusiqsiarniq initiative are on-going in the community. The very popular weekly radio shows are continuing and also include poster and information handout campaigns. The youth media club is continuing to develop and build on the video scripts promoting healthier choices. The community cooking and walking clubs had expanded and have sustained participation rates. A community cookbook featuring use of country foods is about to be printed and distributed to every household. The Young Harvesters' Project is not situate as a regular after school

offering as part of the high school programming and the curriculum for the 8 week course is in development. The community website will soon host all of the materials developed in this project and new materials that develop through the sustained programs.

Evaluation

Evaluation was on-going throughout the project. There were the more formal activities that involved stringent data collection. This included the school food consumption survey, the food frequency surveys and the Inuit Fitness Tests.

Less formal and on-going evaluation was collected through teacher response forms, participant responses and weekly community random surveys. The following were outcomes we had hoped to achieve and, for the most part, did achieve with this project:

1. Improved community capacity around Inusiqsiarniq through uptake of messaging campaign.
2. Improved wellness staff capacity in collecting, analyzing and interpreting research data back to the community.
3. Strong, visible emphasis around healthier choices found everywhere in the community.
4. Statistical evidence of healthier food choices in retail data. (Stores would not share this data.)
5. Country food distribution system in place and in use in the community. (A community strategy around this will be available in March 2013.)
6. Statistical evidence of increased participation in community fitness/ intervention activities.
7. Sustained evidence of youth leadership in project management and messaging campaigns.
8. Engagement of child, youth and families evidenced in participation levels in intervention activities.
9. Positive responses in satisfaction and knowledge uptake surveys.

Given the nature of the initiative, it is not possible to assess within a 12 month time period the degree of knowledge uptake and the extent to which this information may lead to behavioural change. Rather the focus has been on the general levels of satisfaction resulting from the activities and the creation of a process for sharing key health-promoting messages across a community. Based on our experiences with the Inusiqsiarniq initiative we have found the following:

- Children are effective message carriers to their families and to each other
- Children respond most positively when the message had a strong cultural component such as “Inuit always walked a lot and they were healthy so we can try to walk more”
- Community radio shows are very popular and are an effective vehicle for knowledge exchange
- Youth effectively design and develop effective health promoting messages

- Youth continue to be engaged when they are given a free hand and leadership responsibilities.

Recommendations

This project was initially designed to take place over multiple years. It was very difficult to try to constrain the original objectives, which were geared to significant behavioural changes, to a one-year timeframe. Although we cannot provide definitive evidence to support achievement of the outcomes originally intended for this project, we can point to what was an effective process for us. The process needs to be spread over a longer time period in order to do it all well and to achieve the critical mass required for real behavioural change across a community. As we make our materials and reports available on out community website (www.arviat.ca/hamlet-services-and-departments/communitywellness/), we hope that others will benefit from the experiences we had in attempting to improve health outcomes for our children. We will also be able to continue to report on some of the activities initiated with this project that have become programs themselves, such as the youth media messaging club, the young harversters' program, the community cooking with country foods workshops and school use of the Inuit Fitness Test.

Appendices

A: Report on Nutritional Profiles of Children
B: Results of the Inuit Fitness Test & Pedometer Challenge
C: CIHR Knowledge Translation Report
D: Arviat Training Summary

Appendix A

Inusaqasiarniq
Healthy choices for children and youth

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Contents

Executive summary

Overweight and obesity are increasing globally and including among children. For communities undergoing a rapid diet and lifestyle transition, such as those in Northern Arctic Canada, children are at particular risk for overweight and obesity. It is important to record the dietary consumption of Indigenous children in Northern Arctic Canada. Therefore, in collaboration with Dr Sharma at the University of Alberta, The Hamlet of Arviat, the Arviat Health committee and the Arviat Wellness Centre, undertook a study to assess dietary intake of children aged 6-12years old in the community of Arviat, Nunavut. One hundred and sixteen (116) boys and girls participated in the study; 296 24 hour dietary recalls were collected, most children gave three recalls with few giving two or one. In addition 116 food frequency questionnaires were collected, and height, weight, waist and hip circumferences were measured for all children. Body mass index (BMI), which is a measure of weight in relation to height, and the proxy measure for overweight and obesity, was calculated for all children. Compared with the Canadian average for children aged 6-11 years old (17.8 kg/m_2), children in Arviat of the same age range had a higher mean BMI (19.3 kg/m_2). Using the World Health Organization categorizations for overweight and obesity in children, most children were found to be of healthy weight (boys 37.7% and girls 42.8%). Approximately 26% of children were overweight and more boys than girls were obese (35.8% and 30.4% respectively). Information from 24 hour recalls showed that children breads, starches and cereals were the most frequently consumed food group (22.2 times per week per child). This group consisted of store bought foods such as pizza, pizza pops, kraft dinners and breakfast cereal. In addition children reported large amounts of drinks and in particular fruit juices and other drinks such as kool-aid, tang approximately 2 times per day. The least consumed group was fruits and vegetables, 2.5 times a week per child. The information gathered in this study will be useful in building a community based intervention population specific to reduce improve diet and reduce the risk of obesity in children in Arviat.

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Background

The prevalence of childhood obesity in Canada has almost tripled in the past 25 years. By 2030 approximately 26% of Canadian children aged 2-17 years will be overweight or obese [1]. Several studies show that Canadian Aboriginal children are at greater risk for development of obesity compared with non-Aboriginal children [2-11]. Obesity is a risk factor for many chronic diseases such as type II diabetes [12], cancer [13;14] and cardiovascular disease [15]. Studies show that childhood obesity predisposes an individual to life-long adult obesity [16] and the risk factors for obesity can begin to develop in childhood [17-19]. The community of Arviat invited Dr Sharma from the University of Alberta to work on a joint project funded by the Public Health Agency of Canada. This project aimed to gather evidence on diets of children in Arviat, that would be used to develop an intervention based on Healthy Foods North (HFN) (PI: Sharma), a successful population health intervention. The HFN nutritional and physical activity program highlighted the nutrition transition occurring among remote Inuit communities of Nunavut[20-22]. This transition is characterized by increased consumption of high-sugar, high-fat store bought foods, decreased consumption of traditional foods, and decreased physical activity. Data from HFN showed in Inuit adults multiple nutrient inadequacies. In addition, high rates of smoking, alcohol use and obesity as well as socioeconomic and behavioural risk factors for chronic disease were identified. However, none of these data were collected in children and youth, nor did they address issues specifically related to Arviat. The overarching aim of the study is to collect baseline data that could be used to develop a subsequent Arviat specific nutrition intervention program for children.

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Methods

Study setting

Arviat, NU, is the second most southern community in Nunavut and is only accessible via air. Total population is 2060, with approximately 93% of the total population identifying as Aboriginal. The median age of the Aboriginal population residing in Arviat is 18.4 years of age. There are approximately 530 children in grades 1-6. There are three foods stores and a health centre staffed by nurses.

Training of research assistants

Community research assistants and liaisons received in-depth training regarding dietary and lifestyle assessments, and gained hands-on knowledge and skills in research methods, data collection and analysis. Specifically, the wellness staff (n=7) underwent training on two separate occasions. In the first session, facilitated by Dr Sharma, Wellness staffs were trained in how to collect dietary data using the 24 hour recall method. In the second session, facilitated by Dr Mathe, Wellness staff received training in the food frequency questionnaire method and the collection of anthropometric data in children.

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Anthropometry

Wellness staffs were trained in collecting simple anthropometric measurements including height, weight, waist and hip circumferences, following the guidelines of the International Society for the Advancement of Kinathropometry (ISAK) [23]. Underweight, overweight and obesity were determined using body mass index (BMI) calculated as

Weight (kg)/ height (m_2)
Overweight and obesity were determined using the World Health Organization classifications for children. Children were considered overweight or obese if their BMI was at or above the 85_{th} percentile for age and gender according to the WHO (Table 1).

Table 1- BMI classification according to the World Health Organization

Underweight	Less than 5th percentile
Healthy weight	5th percentile to less than 85th percentile
Overweight	85th percentile to less than 95th percentile
Obese	Equal to or greater than 95th percentile

24 hour recall

The 24 hour recall method is designed to assess the actual intake of individuals. A single recall is not sufficient to describe an individual's intake; multiple recalls over several days are required to achieve this. In the 24 hour recall method subjects and their parents (for those below 7 years old) were asked by a research assistant, to recall the subjects exact food intake during the previous 24 hours or preceding day. A four stage multiple-pass interviewing technique was used:

a) In the first pass, a complete list of foods and beverages consumed during the preceding day was obtained;

b) In the second pass, a detailed description of each food and beverage consumed, including cooking methods and brand names (where possible) for example staff asked the participants questions such as:

"was the slice of bread you had white or brown?" "was it thick, thin or medium?" "what did you put on the bread?"

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c) In the third pass, estimates of the amount of each food and beverage item consumed are obtained. Ordinarily this is undertaken with the assistance of household measures using photographs, measuring spoons and cups, or food models; however, for children this step is not possible. Therefore only quantities obtained e.g. one bowl of cereal

d) In the fourth pass, the recall is reviewed to ensure that all items, including use of vitamin and mineral supplements have been recorded correctly.

"Is that all you had to eat yesterday?" "Did you wake up in the night, and did you have a drink or a snack?"

"Did you take any supplements?" For most participants, Wellness staffs obtained 3 recalls on non-consecutive days including a weekend day.

Food frequency Questionnaires

A food frequency questionnaire is designed to obtain qualitative, descriptive information about usual food consumption patterns. The aim of a food frequency questionnaire is assess the frequency with which certain food items or food groups are consumed during a specified time period (daily, weekly, monthly or yearly). Dr Sharma and her team previously developed and validated a population specific food frequency questionnaire to assess the diets of Inuit adults in Nunavut as part of the HFN program[24]. From this adult questionnaire, a child-specific questionnaire was developed from the adult questionnaire and used in this study.

The questionnaire consists of two components, a list of foods and a set of frequency-of –use response categories. Research assistants asked participants if they had consumed any of the food items over the last 7 days, using closed questions and the food list as a memory prompt.

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Data collection in schools

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Data entry

Community staffs were trained in data entry using Microsoft excel in pre-developed databases. All data, including anthropometry, 24 hour recalls and food frequency questionnaires were entered on the day collected. All members of the team were trained in the use of the excel spreadsheets, coding and rotated the responsibility of entering data. All members of the team were involved in cross-checking of data and making sure there was no missing information and that it was accurately coded.

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Main findings

Information was gathered from 116 children aged 6-12 years old. For each child, their height, weight waist and hip circumferences were measured. Body mass index was calculated for all children. Data for seven children were excluded for the analysis; for four children all data missing for height, weight and other anthropometry. A further three children were excluded from classification of BMI analysis as their age was not available therefore a total of 109 children classified for overweight and obesity.

Height, weight and circumferences

Table 2- Physical characteristics of boys and girls

	Boys (n=55)			Girls (n=57)		
	mean	**minimum**	**maximum**	**mean**	**minimum**	**maximum**
Height (cm)	127.0	109.1	151.9	129.9	104.7	157.6
Weight (kg)	32.0	19.5	79.5	33.0	16.8	61.8
Waist circumference (cm)	68.9	55.0	105.7	69.5	50.2	98.5
Hip circumference (cm)	74.4	60.5	110.0	75.7	55.5	100.5
BMI (kg/m^2)	19.4	14.3	34.4	19.2	14.3	28.8

The mean height for boys was 127 cm; the shortest boy was 109.1 cm and the tallest was 151.9 cm. The mean height of the girls was 129.9 cm; the shortest girl was 104.7 cm and the tallest 157.6 cm. The mean waist circumference of boys was 68.9 cm; the smallest waist circumference was 55.0cm and the largest 105.7 cm. The mean hip circumference was for boys was 74.4 cm, the smallest being 60.5 cm and the largest 110.0 cm. The mean waist circumference for girls was 69.5 cm (range 50.2-89.5cm) mean hip circumference was 75.7 cm (range 55.5-100.5 cm). The mean weight for boys was 32.0 kg with the lightest boy being 19.5 kg and the heaviest 79.5 kg. The mean weight for girls was 33.0 kg the lightest girl was 16.8 kg and the heaviest 61.8 kg. The mean BMI for boys was 19.4 kg/m2, the lowest

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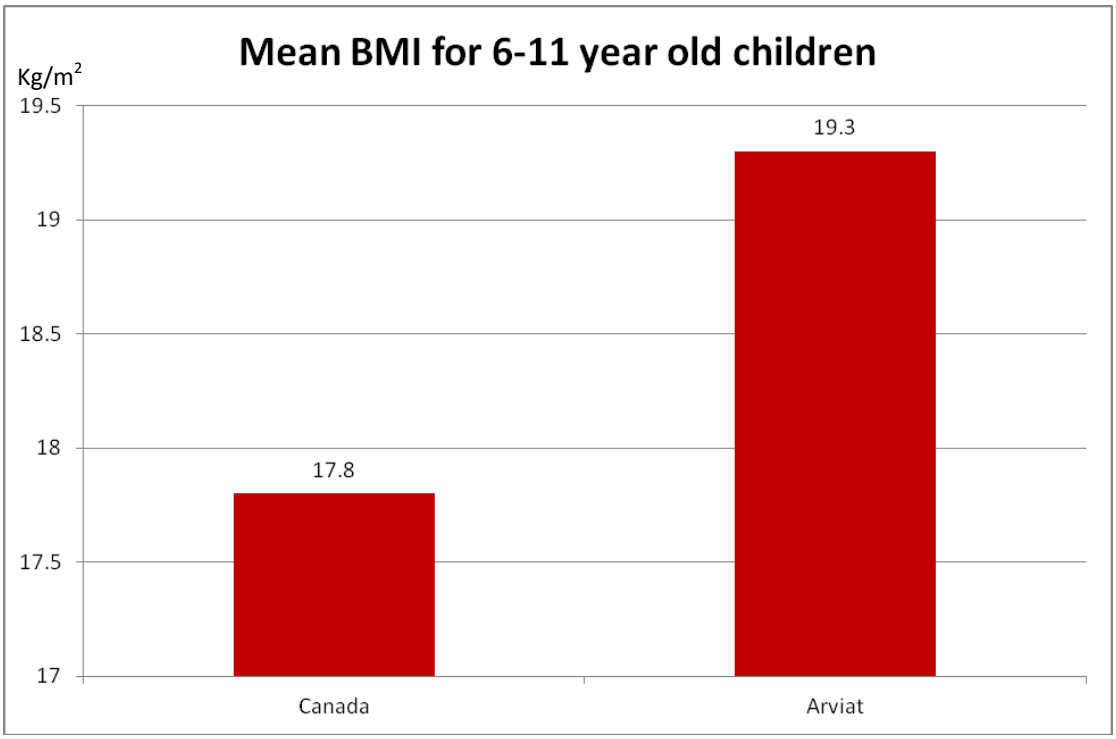
being 14.3 and the highest being 34.4 kg/m2. Amongst the girls mean BMI were 19.2 kg/m2 with the lowest being 14.3 kg/m2 and the highest 28.8 kg/m2.
Figure 1 shows the mean BMI for all children aged 6-11 years old in Arviat compared with the Canadian average for children of the same age. It can be seen that children in Arviat had higher mean BMI than the Canadian average for children of the same age.
Kg/m2

Figure 1. Mean BMI for 6-11 year old children in Canada compared with Aviat



Classification of overweight and obesity

Table 3 shows classification of overweight and obesity for children using the World Health Organization categories, this information is represented diagrammatically in figure 2.

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Table 3- BMI classification according to the World Health Organization

	Boys (n=53)				Girls (n=56)			
	Underweight	**Healthy weight**	**Overweight**	**Obese**	**Underweight**	**Healthy weight**	**Overweight**	**Obese**
N	0	20	14	19	0	24	15	17
%	0%	37.7%	26.4%	35.8%	0	42.8%	26.8%	30.4%

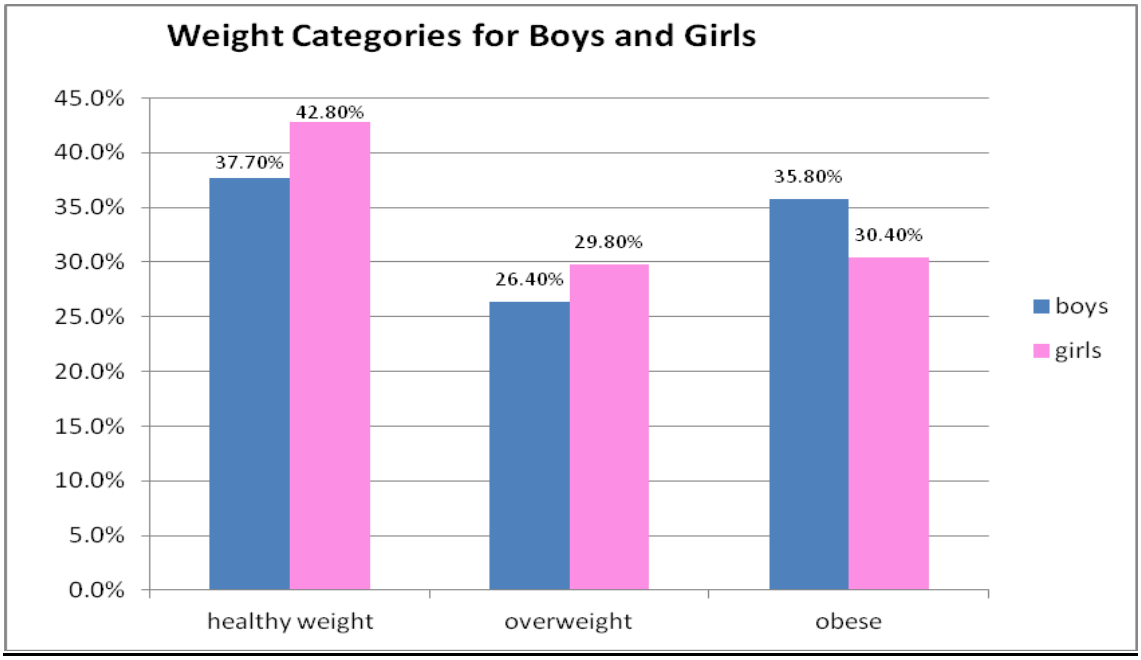

Figure 2. Weight categories for boys compared with girls in Arviat

Figure 2 shows the weight categories for boys compared with girls. There were more healthy weight girls than boys, more overweight girls than boys; however more obese boys than girls.

Figure 3 shows combined overweight and obesity prevalence for children old in Canada (26%) compared with Arviat (59.6%). A higher prevalence of overweight and obesity was reported in this study compared with the Canadian average.

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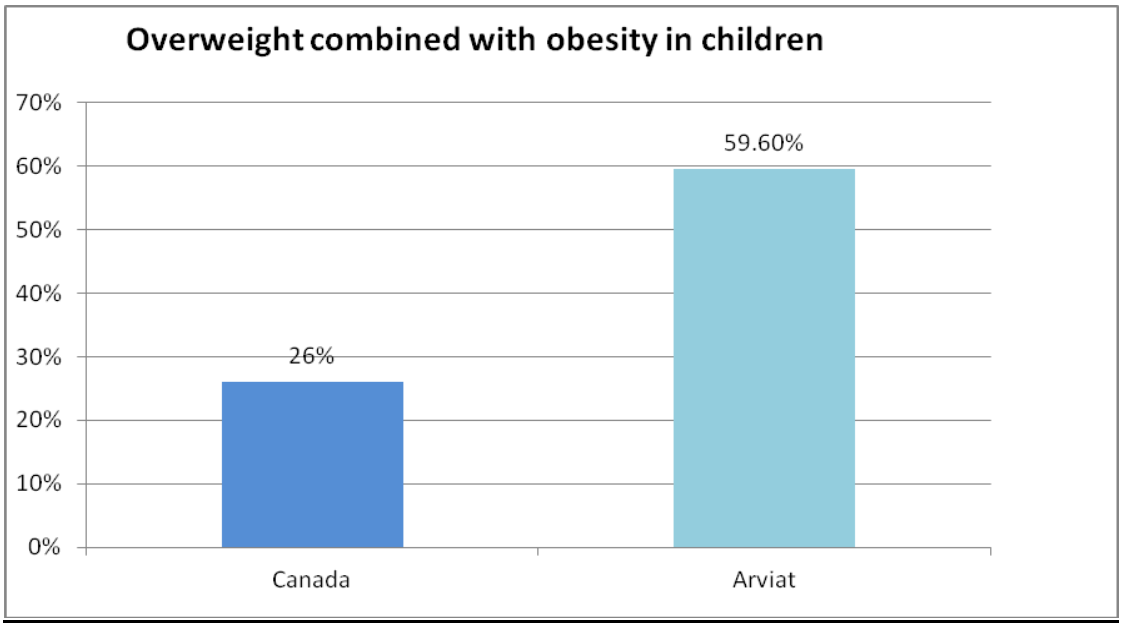

Figure 3. Combined overweight and obesity in Arviat compared with the Canadian average

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Dietary intake

Three 24 hour recalls were collected for 116 boys and girls aged 6-12 years old. In total 296 recalls were collected. The recalls record food eaten on 3 non-consecutive days including a weekend day. Most children gave three recalls with only a few giving 2 or one. In addition, each child gave a food frequency questionnaire. The information presented here is from the 24 hour recalls. The figures below detail intake per child.

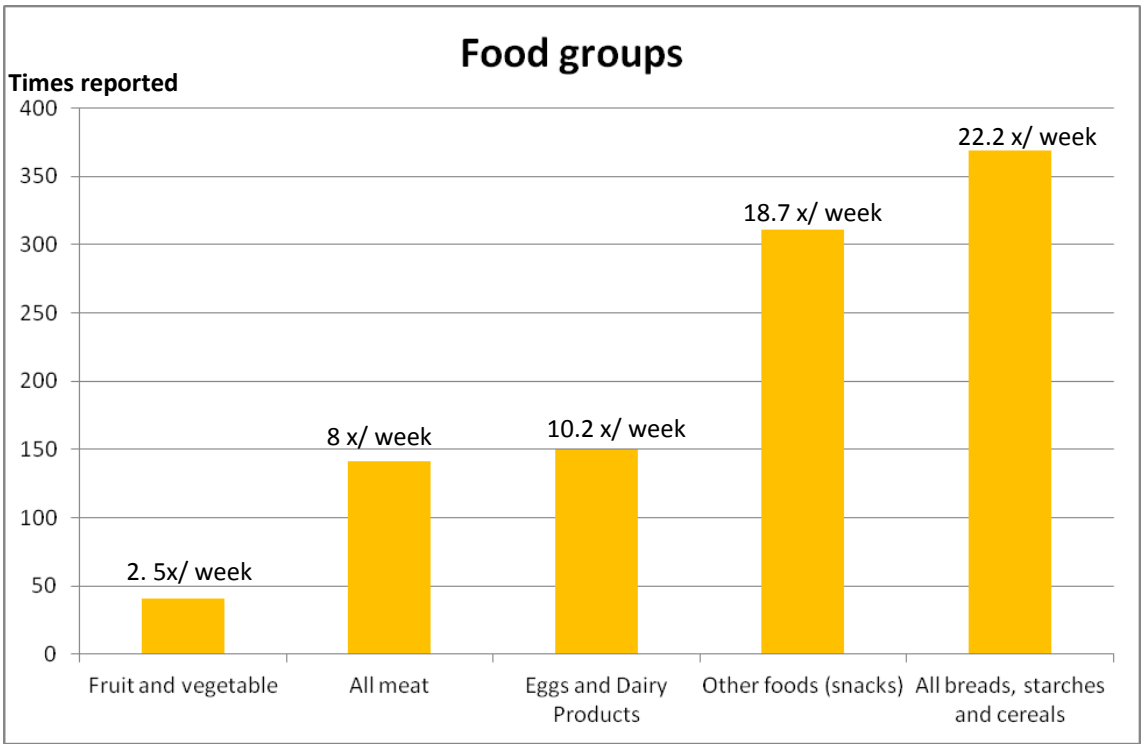

Figure 4. Food groups reported by children from 24 hour recalls

Figure 4 presents the food groups reported by children. Fruit and vegetable was the lowest group reported, 2.5 times per week per child; all meat was reported 8 times per week, Eggs and dairy 10.2 times per week; other foods (mostly snacks) 18.7 times per week and all breads, starches and cereals 22.2 times per week per child. The individual food groups are discussed in greater detail in figures 5-11.

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1. Traditional foods Times reported

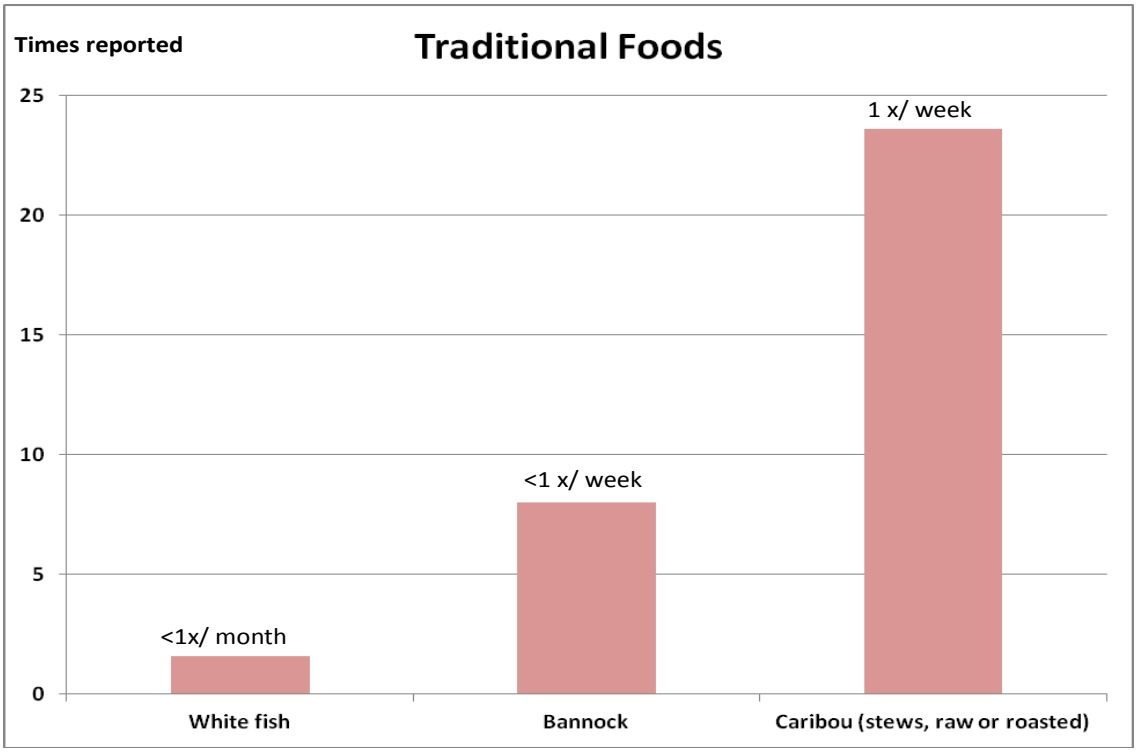

Figure 5. Traditional foods

Caribou was the most commonly reported traditional food. Amongst 116 children, was caribou reported 1 time per week per child either in stews, raw or roasted. Bannock was eaten less frequently (less than once a week per child) and so was white fish. No other traditional foods were reported.

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2. Fruits and vegetables

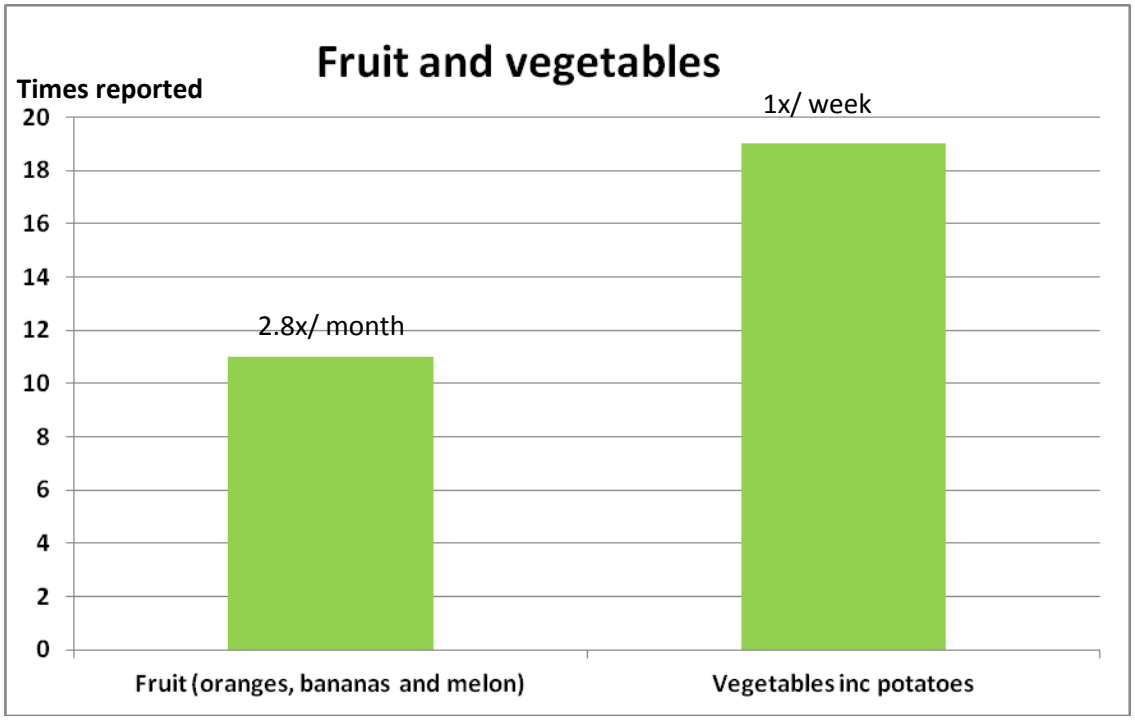

Figure 6. Fruit and vegetables

Children reported more vegetables than fruit. The most commonly reported vegetables were corn, broccoli or mixed vegetables eaten at least once a week per child. Fruit was mostly oranges, bananas, apples and watermelon; children ate fruit 2.8 times a month per child.

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3. All meats

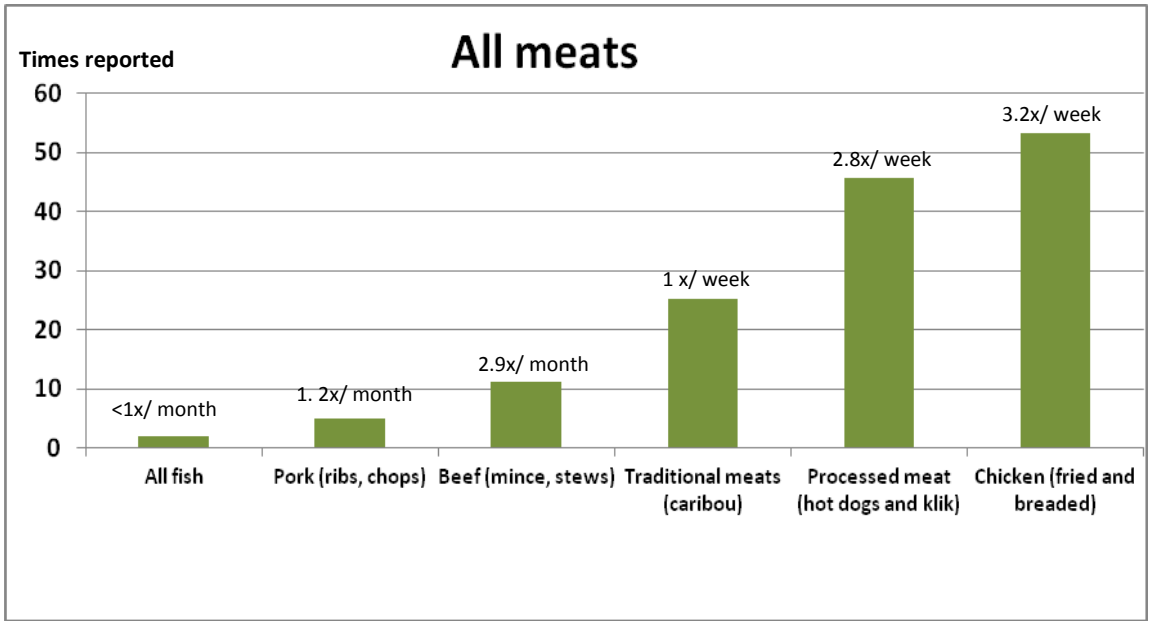

Figure 7. All meat

Of all meats, children reported more chicken either fried or breaded than any other meat. Chicken was reported approximately 3 times per week per child. This was followed by processed store bought meats with wieners/ hot dogs the most commonly reported approximately 2.8 times per week per child. Caribou was the most commonly consumed traditional meat eaten at least once a week per child. Beef was next highest reported as ground mince or in stews, eaten approximately 3 times a month per child. The children reported pork meat less frequently (1.2 times a month), it was mostly eaten as pork chops or ribs. Very little fish either traditional or store bought, was reported (less than once a month per child).

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4. Eggs and dairy

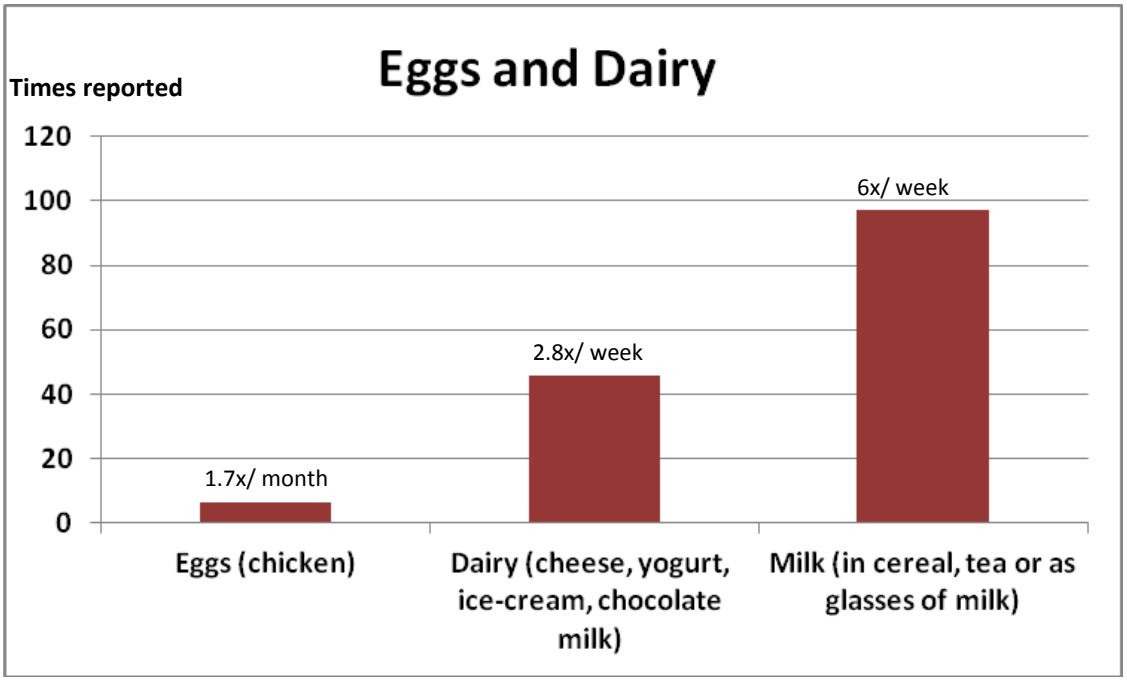

Figure 8. Eggs and Dairy

Of the dairy and eggs, children reported milk (mostly plain whole milk or 2%) more than any other product (6 times per week per child) which is almost once a day per child. Milk was consumed in cereal, in tea or on its own. The next most commonly consumed in dairy products were yogurt, cheese, ice cream and chocolate milk/ milkshakes; approximately 3 times per week per child. Eggs eaten mostly scrambled as a breakfast food, were reported approximately once per month per child.

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6. All other foods (snacks)

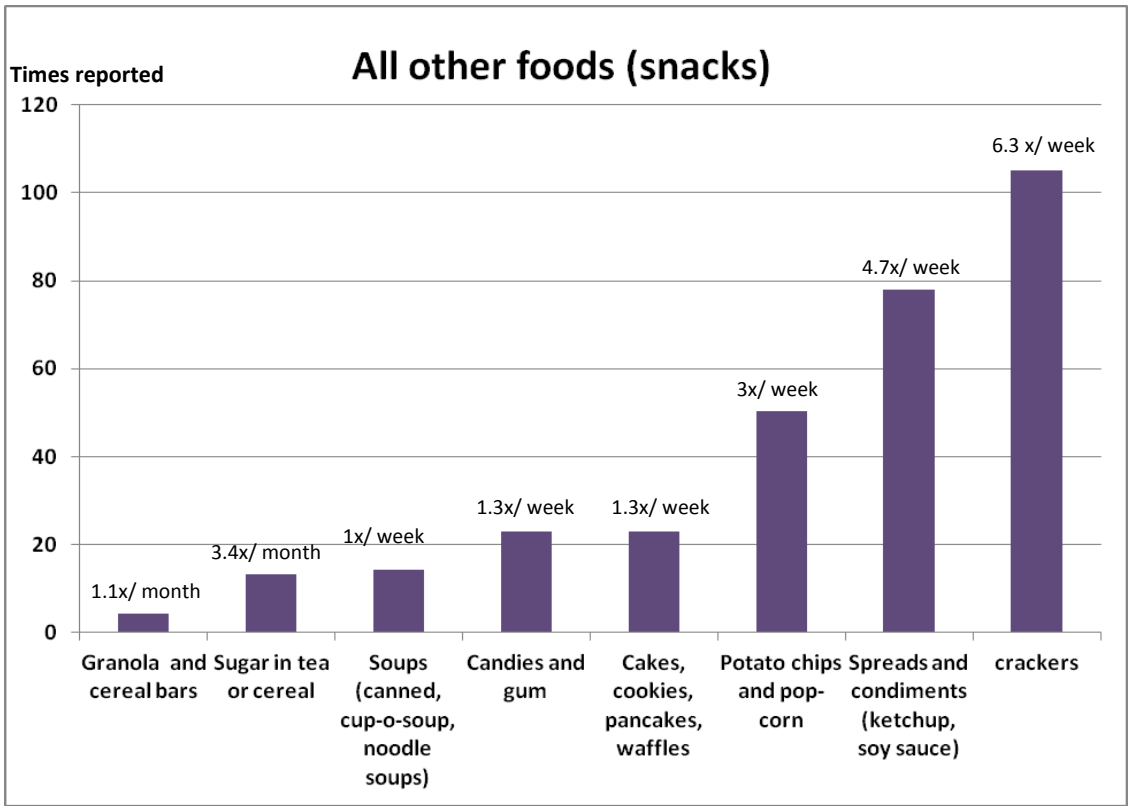

Figure 9. All other foods (snacks)

Crackers were the most commonly reported snack or other food. Crackers were eaten with soup or with different spreads especially cheese whiz; children ate crackers approximately 6 times per week per child. Spreads and condiments were the next highest reported, the most common being ketchup, which was eaten with many foods and soy sauce which was eaten mainly with rice; spreads were reported 4.7 times per child per week. The children reported potato chips and popcorn 3 times per week per child; and cakes, cookies and candies and gum once a week per child. Soups (canned or as

soup cups) were reported approximately once per week per child. Sugar in tea or cereal was reported 3.4 times per month and granola bars 1.1 times per month per child.

6. All breads starches and cereals

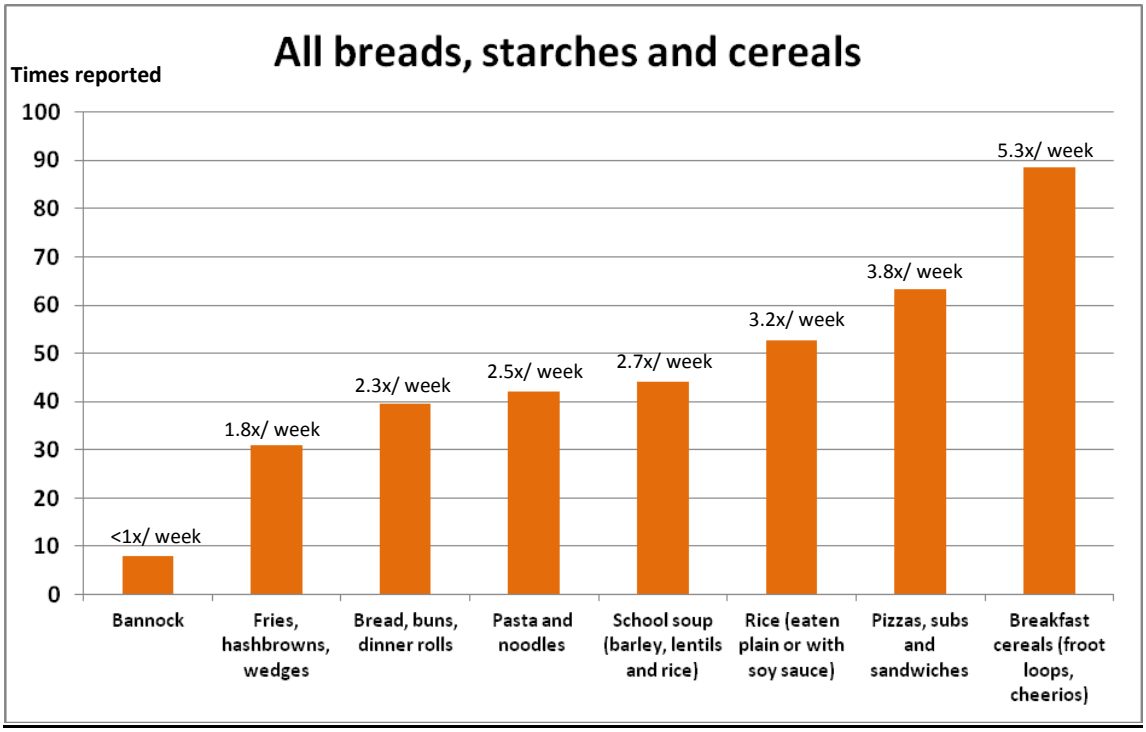

Figure 10. All breads, starches and cereals

Breakfast cereals were the most commonly reported, on average cereal was reported 5.3 times per week per child. The most common cereals were frootloops and cheerios. Pizzas, subs and sandwiches were the next highest reported, with pizza / pizza pops the most common reported (3.8 times a week per child). Rice was next highest reported, this was usually eaten with soy sauce (3.2 times a week per child). School soup was reported 2.7 times a week per child. Pasta and noodles, which include macaroni and cheese Kraft dinner, spaghetti and meatballs and noodles, were reported 2.5 times a

week per child. Bread, buns and dinner rolls were reported approximately 2.3 times per week per child. Fries, hash browns and other potato-based store bought foods were reported 1.8 times per week per child. Bannock was eaten less frequently (less than once a week month per child).

7. Drinks

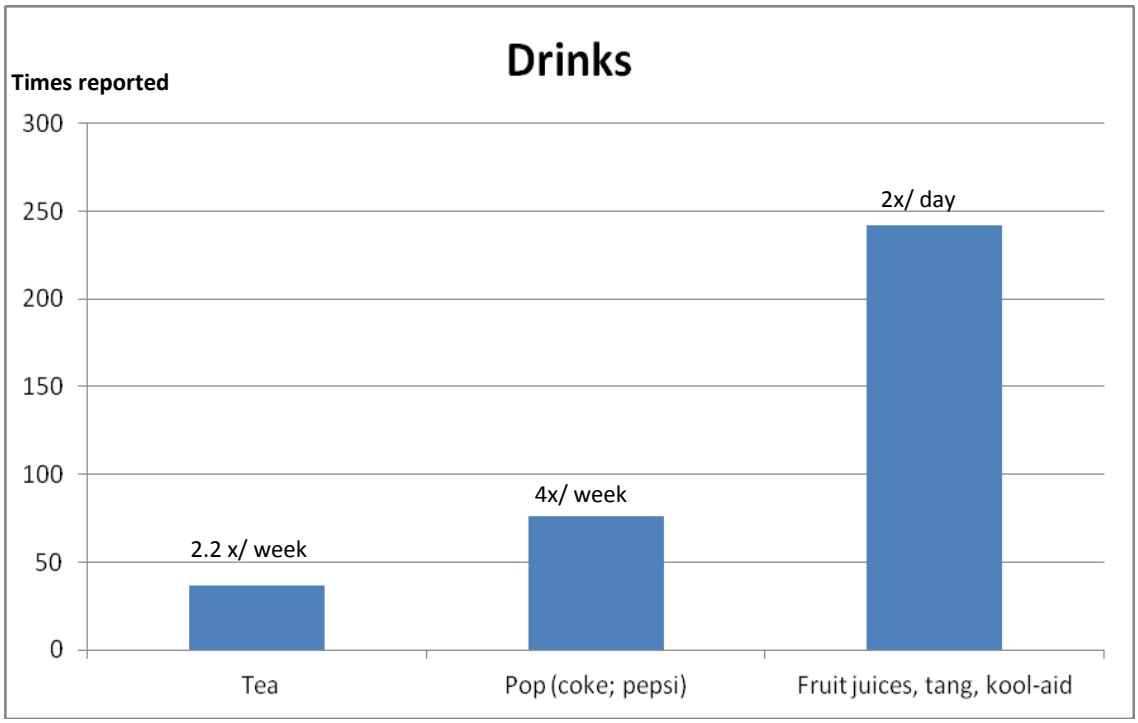

Figure 11. Drinks
Boys and girls consumed more fruit juices, tang and kool-aid than any other drink at least 2 times a day per child. The most popular "juices" were Sunny D and frozen Juices. These are not real fruit juice and usually contain high amounts of sugar. Pop, with Pepsi and Coca-cola (no diet drinks reported) most commonly reported, were reported at least 4 times per week per child. Tea was reported at 2.2 times per week per child.

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Discussion

The aim of this study was to gather evidence on the diets of children in Arviat that could be used to developed a community based, population specific intervention program to reduce the risk of overweight and obesity. In this study it was shown, that children in Arviat have a high BMI and prevalence of obesity compared with the Canadian average. In addition, the study showed that the childrens diets were low in fruit and traditional foods, with a high consumption of store bought processed foods and drinks.

This trend seen in the diets and weight patterns of children is reflective of trends reported in the adult diet in NU and the Northwest Territories (NT). Recent studies of Inuit and Inuvialuit women living in NU and NT found high energy intakes and high obesity prevalence as well as low intakes of many nutrients, including dietary fibre, folate, and vitamins A, D, E and K [25;26]. A recent study in three Inuvialuit communities in the NT found 65% of adults to be overweight or obese [27], while another study found that 72% of Inuit adults living in three remote NU communities were overweight or obese [28]. In addition, a study conducted in an Aboriginal community found that children's diets consisted of mainly energy dense foods low in nutritional value, such as sweetened beverages and snacks, and were low in foods of high nutrient density such as fruits and vegetables. As a result, many micronutrient deficiencies were observed; many children were at risk of zinc inadequacy, and the mean intakes of calcium and vitamin D were below the recommended levels [29-31].

The 2006 Aboriginal Peoples Survey showed that 30% of Inuit children in Canada had at some point experienced hunger [32]. Food security is a growing challenge for Aboriginal populations residing in Arctic

Canada, both in the context of traditional food systems and market foods [33], and people living in the Arctic have limited access to fresh foods, especially affordable fruits and vegetables [34]

Traditionally, Northern Aboriginal populations consumed a subsistence diet consisting of foods that were hunted and gathered (i.e. sea and land mammals, fish, birds and plants). This diet has been recognized as nutrient-rich and protective against a variety of chronic diseases [35-37]. However, within the last 50 years, diets have changed due to limited access to fresh food, declining use of traditional foods [20;38;39] and the consumption of store bought pre-packaged non-nutrient dense foods imported from Southern Canada that are often higher in fat and sugar, and of relatively low nutritional quality [40- 46]. The recent dietary shift has resulted in decreased diet quality characterized by excessive energy intake (carbohydrate and fat) and insufficient vitamin and mineral intake [35;47-50].

Conclusion

This study as gathered evidence on the diets of children in Arviat NU, that can now be used to develop an intervention program to improve the diet and reduce overweight and obesity.

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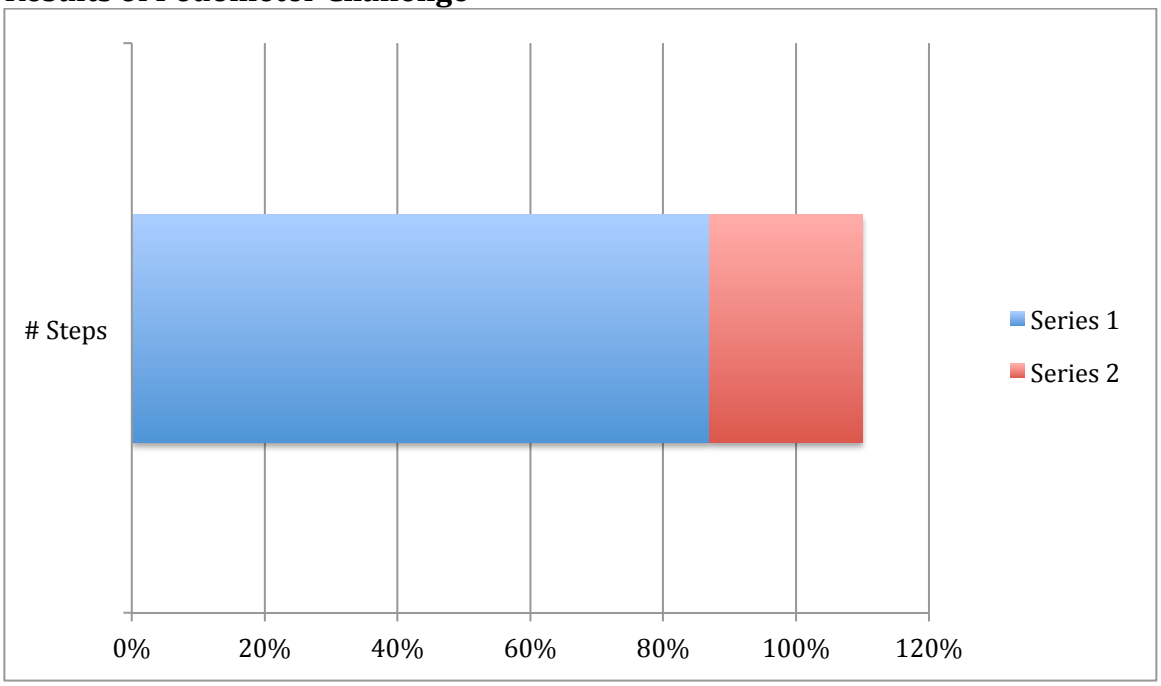
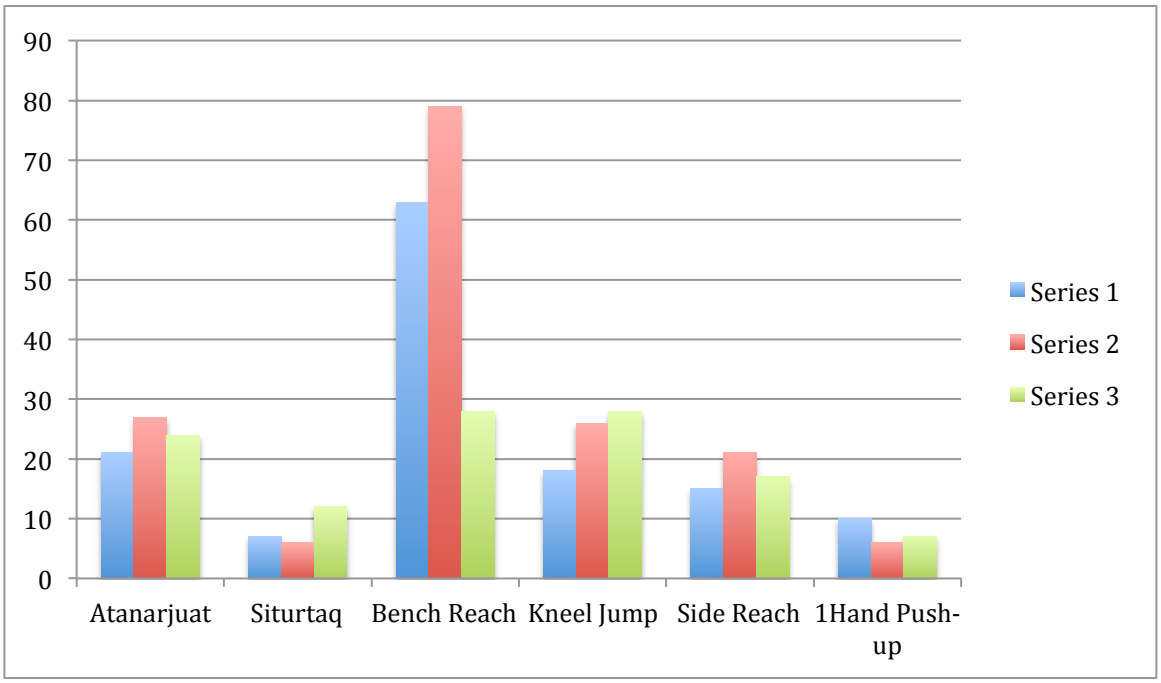
Appendix B
Results of Pedometer Challenge

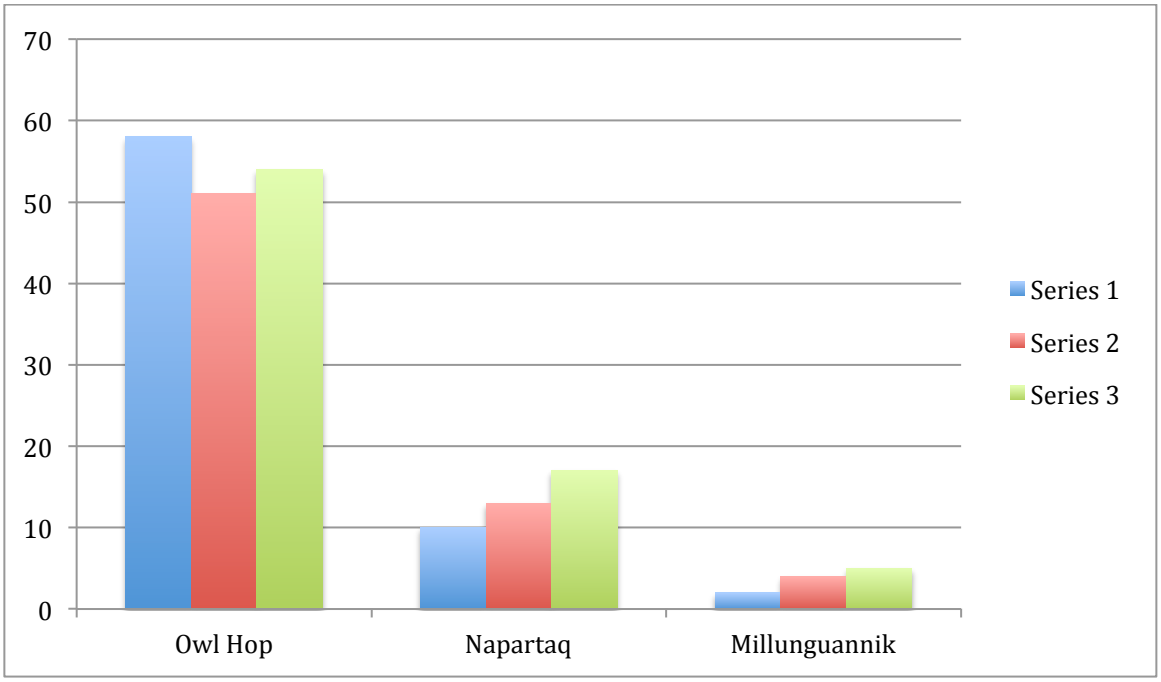


In the 24 hr. period, 273 students participated in a Pedometer Challenge. The average number of steps taken was 8696.9 or 87% of the target recommended number of steps of 10,000 steps per day.

Results of the Inuit Fitness Test



Inuit Fitness Test cont'd.



All the students in the elementary school were tested on 3 separate occasions in the events identified for the Inuit Fitness Test. The test involves four sections: endurance, strength, flexibility, accuracy. At least two of the four activities in each category were tested. Under endurance were Atanaarjuat and siturtaq; under strength bench reach and kneel jump; under flexibility were side reach, 1 hand push-up, owl hop; accuracy were napartaq and millunguannik.

In most events, students made gains between test 1 and 3.

Table of Contents

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Appendix C:
CIHR Knowledge Translation Report

KT Sections for CIHR end of grant report

Objectives of the event/activity:

Please briefly list the objectives/expected results of the funded event/activity

This program aimed to transfer knowledge obtained from a community-based nutrition and physical exercise intervention study (Healthy Foods North (HFN)) that was conducted in Indigenous communities in Arctic Canada to Arviat a community in Nunavut that did not receive the program.

If the event/activity achieved most or all of its objectives/expected results described in the application for funding, please list the three most significant results/accomplishments of the event/activity

OR

If the event/activity achieved only some or none of the objectives/expected results described in the application for funding, please explain which objectives were not met and why

(maximum 250 words).

This project successfully carried out the 4 activities which included community workshops, cooking classes, walking clubs and a classroom learning module. The role and benefits of traditional foods and activities were highlighted during each of the four knowledge transfer activities conducted using the local language of Inuktitut. In addition, this project **built capacity** for community based program development through **training** of research assistants in Arviat to deliver the program activities. In addition, the program complimented and enhanced existing programming in the community such as using radio shows as an innovative community specific method of disseminating knowledge on health eating and lifestyle. The **radio shows** are run on a weekly basis. The project successfully engaged other community stakeholders including the Hamlet council, schools and food stores.

Description of the event/activity and participants:

A. Provide a brief description of your event/activity (date, location, activities, strategies etc. maximum 250 words):

The project was comprised of 4 activities offered in Inuktitut, as the local language is critical to preserving traditional culture and values, and started in January 2011. The activities included 1) **community workshops** which provided educational presentations concerning nutrition and its relation with chronic disease, these were held on four separate workshop sessions with an average of 26 people attending each; **cooking classes,** with emphasis placed on preparing healthy meals using country foods and incorporating store-bought foods, such as frozen vegetables into stews, are held twice a week on Tuesday and Thursday afternoons in the Hamlet wellness centre. The attendees are varied and include both women and men, with a class of typically 8-14 in attendance; **walking clubs** were offered in the spring and fall (since many Inuit travel to camps during the summer months) engaged participants in a 35 minute walk twice weekly with the intent to increase the duration to 50 minutes by adding the opportunity to use the community exercise room equipment; and **classroom learning modules** which provided nutritional data regarding traditional and non-traditional food items for elementary level

students to manipulate while learning about nutrition, health, physical activity, and risk reduction for chronic, diet-related diseases. In addition to the project activities, training of research assistants, took place on two separate occasions March 2011 and again in January 2012.

Indicate the number of event/activity participants by type:

Category of Participant by Role	**Total No.**	**Category of Participant by Affiliation**	**Total No.**	
Members of research community	6	Members of the public sector (e.g. government)	4	
Knowledge users/ stakeholders (please specify)	58	Members of the private sector (e.g. industry)	3	
Members of the public (e.g. consumers) other– specify:	260	Members of the not-for-profit sector (e.g. charities)	7	

Summary of discussions and/or deliverables (products, outcomes, decisions, recommendations etc.):

A. Provide a brief summary of discussions that took place, if appropriate (maximum 250 words):

Community members were engaged in community workshops targeted primarily at youth and young adults who comprise the majority of the community. Elders were invited to participate as presenters to share their knowledge and experiences regarding traditional foods. These interactive workshops were conducted in locations frequented by youth such as the local school, youth groups, and food stores (n=3). Youth were also engaged to create their own messages to promote healthier nutrition. These resulted in a series of 6 posters and supporting powerpoints and 4 video messages.

Indicate any deliverables planned, in-progress, or completed as a direct result of the event/activity:

Deliverable Type	**No. Planned/In progress**	**No. Completed** (e.g., submitted for publication or published)	**Total**	**If deliverable available on a website, provide URL where**
Website (include URL)	1	0		

Workshop proceedings				
Report				
Article				
Journal (e.g., special issue of academic journal)				
Book				
Policy paper or recommendations				
Applications to funding opportunities:	2	3	5	
Others (specify):	4 Youtube messages	6 powerpoints/poster series	10	

Provide a brief summary of KT activities (dissemination, exchange, partnerships etc. taking place before, during, and/or after the event/activity), if appropriate (maximum 300 words): Inuit ways of operating required a process of shared visioning with meaningful collaborative efforts directed at working for the common good. The partnership team is operating with this goal in mind and based on active support from many sectors of the community. Community consultations on nutrition, child/youth health, and food security identified issues for the community to address. Additionally, food security research helped clearly identify barriers to good nutrition for families. This laid the groundwork for our KT project.

This KT project has engaged community parents in awareness sessions and community-driven dialogue, over the radio, the cable channel, poster campaigns and community workshops around issues of food security, healthy pregnancy, healthy choices, good nutrition choices for children and ways to boost immune systems and so help prevent communicable disease and how healthy eating protects against chronic diseases. A recent consultation strongly recommended messages be presented about healthy drink choices, stretching food budgets and cooking with country foods. We will continue this program developing awareness-promoting materials for improving healthy choices.
The KT goals for Arviat are grounded in the overall community wellness strategy message of "It's Us"—it is up to each of us to be able to lead a good life through understanding and applying healthier choices:

4. Healthier choices- healthier outcomes:
   Arviat children, youth and families will demonstrate competence in their ability to make healthier lifestyle choices
5. KT for life:
   Arviat children, youth and families will become actively engaged in improving personal health and advocating for improved health outcomes for the community (the "It's Us" message)
6. Sustainability:

Arviat children, youth and families will become knowledgeable about their personal nutrition profiles and understand the ways to improve that profile for lifelong health

Impact/outcomes of event/activity (including, but not limited to, summary of participant evaluation results where available:
A. Check all that apply

☒ consensus – key messages around which to organize dissemination/learning activities
☒ decision on research priorities – development of shared goals/proposals for further research
☒ guidelines—set of 5 guidelines developed for community nutrition projects:

1. Inuit lead healthy lifestyles that were respectful of and responsive to the environment, the animals and the individual and group—Inusiqsiarniq is the concept that will guide this project
2. Healthy living requires knowledge and skills—this project is directed at providing every member of the community with the knowledge and skills (pilimmaksarniq) to make healthier personal choices. People make poor choices because they have not been given good information.
3. Inusiqsiarniq is embedded in both self-reliance and interconnectedness—this project seeks to build capacity in these mutually supportive areas by promoting the "It's Us" message: as a community it is up to us to ensure our own health and wellbeing
4. By targeting our large child & youth population, we target the best message carriers in our community—if a child believes in the importance of making healthy choices, s/he will take that message into the home and family
5. Inusiqsiarniq requires individuals and families to become more conscious and reflective (qanuqtururangniq) about choices they make daily—collectively as a community (piliriqatigiingniq) we can support improved health outcomes.

☒ research project – 1 of 5 research applications has been funded for 2012-13
☒ dissemination of knowledge – continuous communication plan developed for delivering key messages to various sectors of the community
☒ application of knowledge – knowledge applied across community wellness programs
other (specify):

Provide a brief summary of participant evaluation results and/or testimonials where available
Evaluation of the HFN-KT program was in assessing the overall impact on food behavior, awareness and knowledge of nutrition and its importance relative to disease, the

role of physical activity, and the value of traditional foods. Surveyors (n=2) and disseminators (n=2) were trained local community members conducting surveys in Inuktitut. For each event, disseminators recorded attendance numbers, quantity of promotional items distributed, number of questions put forth by attendees, and duration of the event. At the conclusion of the event, the disseminator canvassed the audience for feedback if they: i) had learned something new; ii) found it interesting, and iii) if they would like to attend a similar or different event. Responses were positive and constructive and served to direct our next steps.
This information will be useful for the community and its services (health care, recreational, youth) to assess the value and impact of HFN-KT and provide direction for modification or expansion in response to their needs. Materials and information as well as de-identified data will be put on a community web site that is publicly accessible. Website content and structure will be designed in both Inuktitut and English.

Intended follow-up: The project has enabled the community to identify further gaps in knowledge around nutrition and healthy choices. Based on this a number of proposals have been submitted for additional funding that will help the community produce KT materials in gap areas.

Provide a brief summary of intended follow-up activities, where appropriate
Results of evaluation will be provided to the community leaders in the format and language of their choice. This information will be useful for the community and its services (health care, recreational, youth) to assess the value and impact of HFN-KT and provide direction for modification or expansion in response to their needs. Materials and information as well as de-identified data will be put on a community web site that is publicly accessible. Website content and structure will be designed in both Inuktitut and English.

Appendix D:
Arviat Training Summary

Arviat training report
Travel dates: 20-24th November 2011
Sunday 20th November 2011
We discussed the ideas for training. Ruth suggested that we say the training is about building programs instead of research. Do not mention research and just focus on the program building aspect of it.
Also, Ruth was keen that we emphasise professionalism, ethical conduct and confidentiality and respect for the answers that are given out by community members.
We discussed the program layout and came up with the following structure for the three days

Day one:
Morning
Introduction to program building
Asking questions in the community to help build the program
The importance of confidentiality and professionalism
Afternoon
Introduction to the PHAC program
The problem the PHAC program seeks to address
The questions
Lets look at the consent forms
The tools that we will use to answer the questions i.e. 24 hour recall, FFQ, and anthropometry
Day two:
Morning
Using the FFQ to collect dietary data.
The difference between FFQ and 24 hour recall
Activity: In pairs practicing on each other, using the short FFQ
Discuss the answers we found about each other, what we eat in the long term
Afternoon
Go and find a child and parent of any age or if you cannot find a child any person will do
Ask them the questions about the FFQ
Write down the answers they give you
Note the amount of time it takes to ask the questions
Note any problems in asking the questions
Day three:
Morning
Review of the previous day's home work
Discussing any problems with the data collection
Making sure everyone understands the information they have collected
How can we make the form better in light of the problems we encountered using them

Steps
1) Did you ask for consent to ask the questions
2) Did the child stop or refuse to carry on?
3) Is the questionnaire too long for some children

Afternoon

Lets talk about what the program will look like
What do we do with all these answers?
Sharing the answers with the community
How do we use the answers to the questions to build a program

Monday 21st November

Location: Arviat Wellness Centre
Time: 10am-4pm

Participants:

Ruth Murphy- Project co-ordinator Arviat Wellness centre , **Kukik Baker**- Youth projects co-ordinator kbaker@gov.nu.ca (867-857 4722), **Hilda (Kablu) Panigoniak**- research assistant- misskablu@hotmail.com (867-857-2327), **Mandy Mamgark-** youth auntieman@live.ca (867-857-4510), **Chantel Kablutsiak-** youth worker- ckablutsiak.yad@gmail.com (867-857-2159), **Winnie Malla-** wellness centre co-ordinator- w.malla@hotmail.com (867-857-2153), **Cecile Gibbons**- Health Moms, Healthy babies- Cecile_gibbons@hotmail.com (867-857-2634), **Martha-** Health Moms, Healthy Babies, **Nonsi Mathe**

Morning session

Introductions-What is your name, what job do you do and what is your favourite colour and why?
What is a program, why build programs and how to build programs.
The importance of involving the community
The importance of confidentiality and ethical conduct

Afternoon session,

Introduction to the PHAC Arviat program
The aims and objectives
Why are we doing it?
Who are we asking the questions?
What tools will be used to collect the answers

Tuesday 22nd November 2011

Location: Arviat Wellness Centre
Time: 9am-3:30pm

Participants

Ruth Murphy- Project co-ordinator Arviat Wellness centre , **Kukik Baker**- Youth projects co-ordinator kbaker@gov.nu.ca (867-857 4722), **Hilda (Kablu) Panigoniak**- research assistant- misskablu@hotmail.com (867-857-2327), **Mandy Mamgark-** auntieman@live.ca (867-857-4510), **Chantel Kablutsiak-** youth worker- ckablutsiak.yad@gmail.com (867-857-2159), **Winnie Malla-** wellness centre co-ordinator- w.malla@hotmail.com (867-857-2153), **Cecile Gibbons**- Health Moms, Healthy Babies- Cecile_gibbons@hotmail.com (867-857-2634), **Martha-** Health Moms,

Healthy Babies, **Nonsi Mathe,** post-doctoral research fellow, University of Alberta, nonsi.mathe@ualberta.ca

Morning

Review of previous days' activity

Understanding the food frequency questionnaire

Understanding the difference between the food frequency questionnaire and the 24 hour recall

Wednesday 23rd November 2011

Location: Arviat Wellness Centre

Time: 9am-3:00pm

Participants

Ruth Murphy- Project co-ordinator Arviat Wellness centre , **Kukik Baker**- Youth projects co-ordinator kbaker@gov.nu.ca (867-857 4722), **Hilda (Kablu) Panigoniak**- research assistant- misskablu@hotmail.com (867-857-2327), **Mandy Mamgark**- auntieman@live.ca (867-857-4510), **Chantel Kablutsiak-** youth worker- ckablutsiak.yad@gmail.com (867-857-2159), **Winnie Malla-** wellness centre co-ordinator- w.malla@hotmail.com (867-857-2153), **Cecile Gibbons**- Health Moms, Healthy babies- Cecile_gibbons@hotmail.com (867-857-2634), **Martha-** Health Moms, Healthy Babies, **Mary Ahmak** m_ahmak@hotmail.com research assistant **Nonsi Mathe,** post-doctoral research fellow, University of Alberta, nonsi.mathe@ualberta.ca

Morning

Review of homework

Discussing questions and helping those who were not able to do the home to have a practice.

Using the experience of interviewing children, on flipcharts participants listed all the problems that could occur during the interview of mother and child. These included, shy child who did not want to answer, bored child who didn't want to answer questions, child who wanted to go and play, child who had many questions that had little to do with the study, parents not knowing what the child ate and refusing to participate.

On a separate flip chart participants suggested ways to over come the problems. These included, making the child comfortable, smiling at the child, telling him/her a joke, distracting the child who wanted to go and play, giving the child something to play with. The group suggested that it might be a good idea to have stickers. That would encourage the children to take part and listen to the questions

ACTION: Kukik and Ruth to organise ordering stickers and colouring tools to distract children while they answer questions about their food

Afternoon

Interpreting the answers from the questions

Sharing the answers with the community- In groups participants made plans on how to share the results with the community. Participants suggested the use of the radio, poster, community meetings, engaging the elders to teach some of their knowledge, doing demonstrations in the food stores about how much sugar is in different drinks, EDUCATE, EDUCATE, EDUCATE

Other suggestions from training

Changes to FFQ

- Suggested that we add a question about how often the child went to the breakfast program
- Also to add a question about spreads on the FFQ
- Edits made to the form such as replacing "Eskimo balls" with bannack balls

Community networking
Date: Tuesday 22nd November 2011
Location: Elementary School
Time: 1pm
Present: Brenda Mercer Manik- Principal Ruth Murphy, Project co-ordinator Aviat Wellness Centre and Nonsi Mathe, Aboriginal and Global Health Research Group
RM introduced NM to the principal and began to explain elements of the proposed PHAC program. NM thanked the principal for the meeting, explained that the Aboriginal and Global Health Research Group was working in partnership with the Wellness Centre and Hamlet to support the project, mainly through training of program assistants, developing the tools to collect information for the program and will later help with the interpretation of the results of the information gathered.
NM presented the principal with two recently published papers of the groups work with other Aboriginal communities in the North, and a summary of the Health Foods North program. In addition the principal was presented with a business card for NM which she could use if she required any further information on the project.
The principal thanked RM and NM for the information. She appeared enthusiastic about the initiative. She asked if she could be sent a summary of the proposed programs activities and particularly what would happen in the schools. In addition she wanted to know if the Department of Education responsible for schools in Nunavut had been informed about the proposed work and given their approval.
Action required: Check with Shirley if the DEA had been informed of the study. Action RM {Shirley had informed the DEA about the project, received a letter of support and attended a meeting to address their questions.}
Summary of the program for principal. ACTION: NM and RM
Date: Tuesday 22nd November 2011
Location: High School
Time: 1:45pm
Present: Ruth Murphy, Nonsi Mathe and Kimberly Dymond (Aulajaaqtut 10/11).
Met with Kimberly who is a teacher in the higher school and assisted with the Inuit fitness test, which is part of the physical activity side of the program for children in Arviat, Discussed with her the projected and shared the groups papers with her.
Date: Tuesday 22nd November 2011
Local: Hamlet offices
Time 7pm
I asked Ed Murphy about talking to the Hamlet council members. Unfortunately, it was too late to be placed on the agenda. However, Ed Murphy kindly offered to pass any messages to the council members. He thanked the members for their continued support and countless letters that they had written in support of the funding proposals. He shared with the members the publications on Vitamin D and Women of Child bearing age, and

also the HFN summary. Ed said the message was well received and the council members remembered our previous visit and thanked us for returning.

Date: Wednesday 23rd November 2011

Location: QWS (other high school); the breakfast program is run from this school

Present: Ruth Murphy, Nonsi Mathe, Doreen Hannak Principal QWS and breakfast program co-ordinator (867-857-2778)

Talked to Doreen about the PHAC program. Discussed the breakfast program and what foods were provided and to whom. The breakfast program gives out cereal, tinned fruit and powdered milk. The food is given out mainly to school children but also to anyone in the community who attends. The breakfast program runs everyday from 8:30 am. At 10am a second meal is served to all school children. This meal is a soup (consisting of rice, barley, chicken broth).

Doreen expressed interest in receiving the information from the study and that it may be useful to influence the food what foods were purchased for the two meal programs.

Appendix E:
Young Harvesters' Report

The Arviat Young Harvesters' Project

Arviat is a community located in one of the richest harvesting areas in Nunavut. It is, therefore, an increasing concern to the Arviat Health Committee and Hamlet Council that many families are food insecure and that many children do not receive adequate nutrition to ensure basic health. Through community-driven research around food security (Ford & Tagalik, 2011), community members reported not having access to country foods because there was either no hunter in the family or the family did not have equipment necessary for harvesting. In additional community-initiated data collection into children's nutritional intake we found that the diet of our children aged 4-12 years consists of only 12% protein. The bulk of the diet comes from processed carbohydrates (53%) and sugar drinks (26%). When we surveyed parents to find out why children are not consuming country foods the consistent reply was that "they did not like the taste".

Inusiqsiarniq is a program initiated in the community to help address these issues. The program targets 4-12 year olds that seeks to promote consumption of country foods, limit consumption of non-foods and encourage physical activity. It was a 12-month pilot, based on the idea that if we provide information about strong food choices, children will take those messages into their homes, becoming the strong food advocates in their families. It is expected that a positive shift in diet amongst young children will establish better eating patterns for life. Funding from the Public Health Agency of Canada for this project ended in December, 2011.

One component of this program is the Young Harvesters' Project. The objective of the program is to train young harvesters between the ages of 8-10 in sustainable harvesting methods and in Inuit values and hunting practices. The group of 12 children, lead by 2 youth, work with community Elders learning about respectful harvesting, animal seasonal patterns and habitat. They also learn how to make tools and weapons, equipment required for harvesting and transporting catch, butchering and preserving foods. The focus is on the abundant small game that is harvestable within walking distance from the community. The harvesters work with youth who are strong hunters and practice skills daily after school in order to prepare for harvesting sessions. Small game is harvested using slingshots, spears and snares. The group also goes on occasional longer hunting trips. They have been able to harvest caribou on these occasions. For most of these boys, this is their first catch. The game is returned to the community and shared and the celebrations of a child's first catch observed. Since a family must eat everything a young hunter brings back, ptarmigan, hares and duck are becoming part of family meals. The caribou, which has been scare for several months, was widely celebrated.

It is reported that the children readily eat what they have harvested. The boys also "thank" Elders by cutting ice blocks and bringing them to their homes, as well as some game and small gifts. The Elders are very supportive of this program.

Sewing canvas hunting bags not only ensures that harvesters have a place to keep tools and weapons. It also provides the opportunity to teach them about preparing for harvesting, what to always carry with you onto the land and what is necessary for survival. We expect that this program will begin to address the dilemma of families who have no hunters by sparking an interest and ability in hunting early in life. We are also linking these children through significant relationships to experienced hunters who can guide them as they begin to harvest more independently. The program also dispels the myth that hunters require large equipment in order to harvest for their family.

Presently, there are 12 boys participating in this program. We are already receiving many requests for additional intakes and also requests from girls who want to become harvesters. We feel that it is very important to be able to continue to deliver this program through the spring and summer so as not to miss teaching in every season. Funding for the program pays youth wages, some Elder honouraria and small amounts for materials required for weapon and equipment making. Funding has been provided to the program from the Arviat Hunter's and Trapper's Organization, The Country Food Distribution Program, The Kaminuriak Caribou Management Board, the Small Change Fund and the Climate Change and Health Impact fund through Health Canada.

Comments from parents:
"I am really happy with the program because my son doesn't go hunting with his father. I noticed that he is a lot happier now and likes to help out more."

"I think it is a very good that the Young Hunters' Program takes young boys out on the land. And the boys really enjoy it and have very active leaders who enjoy going out on the land. My son is active and happy now that he is in the program. He gets really excited when they are about to go on a land trip and is more active than usual. He seems to be happier now that he is going out on the land."

Young Harvesters' Project
Arviat Wellness Centre
Kukik Baker: kukikb@gmail.com