International Polar Year

Nuts and Bolts of Research
Community Based Skills Development and Training Program

Summary Report
Fiscal Year 2011/2012
November 7-9, 2011

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Research Skills Training Session

The training course "Nuts and Bolts of Research" was a community based skills development and training program designed and run by Professor Gita Sharma, Endowed Chair of Aboriginal and Global Health, University of Alberta. Professor Sangita Sharma was assisted by Dr Francis Zotor and Megan Lukasewich, both members of the Aboriginal and Global Health Research Group. The training session took place over a three day period in the Fall, 2011 (November 7-9) at Aurora College in Inuvik, Northwest Territories (NT) and was funded by the International Polar Year. The session was also supported both by the Aurora College and the Aurora Research Institute. See Appendix A for session flyer.

This session provided participants with a better understanding of health research and how to build a research project from the ground up, emphasizing culturally relevant topics and approaches. Participants learned how to:

- Design a research question
- Choose the right methods for the research question
- Collect and analyze research data
- Present research findings to the community
- Use the data gathered to develop community programs
- Analyze data and use the results to inform policy

Participants increased their competitiveness in the workforce, gained new skills in research design, methods and communications and experience to complement their studies or work, and improved awareness of how research can inform local program and policy development.

Topics covered in the session included:

- How to develop a research question
- The role that research can play in a community
- Ways of developing research projects in collaboration with communities (including gaining approvals from university ethics boards, community ethics (ownership, control, access, possession (OCAP) and research licensing)

- The importance of community leadership and their involvement in the research process
- Basics of quantitative, qualitative, and mixed methods approaches
- Sampling strategies
- Data collection methods
- Basics of data analysis
- The importance of data disseminations
- Knowledge translation and transfer
- Capacity building

These topics were then incorporated into interactive in-class discussions and in-class assignments.

Participation

A total of 23 participants attended the training course. The participants were from different communities within the Northwest Territories and included individuals from Sachs Harbor Community Corporation, the Office Administration Program at Aurora College, Inuvik Justice Committee, Aklavik H.pylori Project, Beaufort Delta Health and Social Services, Aurora Research Institute, Ulukhaktok Community Corporation, and Inuvik Community Corporation. Seven other people registered for the course but could not participate due to other commitments. Talking to college professors and other community members, several expressed their interest in having their students attend the course, and were happy to learn that the program will be running again in late winter of 2012. We intend to promote the winter session starting mid-December 2011 to ensure community members and students are aware of the next session prior to their departure from school or work over the Christmas holidays. We will also email all participants who know members from their communities who would like to participate in the next training course, as well as individuals living outside Inuvik and neighboring communities who have expressed interest in attending. The session will be organized to coincide with the Aurora College 2012 students' timetable to allow for the use of the college's facilities and possibly the participation from students. Several; requests have already been made for availability of the presentation materials to allow for participants to embark on a "train the trainers" initiative following successful completion of the course.

Practical Session

The practical session included taught elements on the basics of research and interactive examples of developing a research question, different types of research methods, how to collect data and analysis. The breakdown of sessions taught over the three day period included:

Day 1 (November 7th): The introduction to research which covered the following areas:

- Benefits of the research course
- Capacity building
- What is research?
- Aspects of health research questions
- University Ethics and community ethics (OCAP)
- Research methods

The importance of developing an appropriate research question was introduced, emphasizing the fact that it should be feasible and realistic, not too broad or narrow, and be able to be answered. The day's discussions generated interactions among participants on numerous types of research questions; some examples were:

- Who determines if a patient needs a medical escort and at what age?
- Why are there so few treatment centers in NT and Nunavut (NU)?
- What is the greatest thing that can influence a person's quality of life in NT?
- In Ulukhaktok, who determines the amount of time specialized doctors spend in the communities? Are the waiting list times taken into consideration?
- In Sachs Harbor Community Corporation, why are some Elders refused approval for medical travel?

There was also much interest and discussion on ethics, particularly community ethics. The participants were interested in discussing topics on community ethics that directly affected them and their community. The topics that created further discussion were; sharing the findings of a study with the community after the data has been published as they do not need the raw data, maintenance of a partnership throughout the whole research process, ensuring that the community members understood their roles in the research process. Another topic that generated interesting discussions from some of the participants was that community members would like to go over the data with researchers before it is published.

At the close of the day's training, homework was given to participants to develop their own research question.

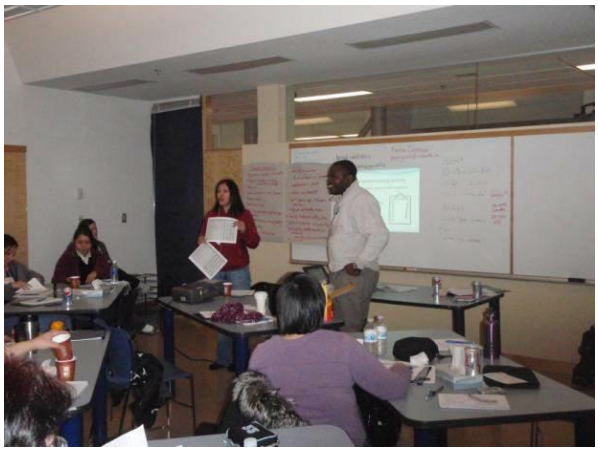

Day 2 (November 8th): Recap of previous day's activities. Participants then took turns discussing the research questions they had developed following the previous day's homework. The topics covered in Day 2 included:

- Selecting participants for a study
- Collecting data using the appropriate tools
    - Kinds of data either by one's self or from other available official sources
- Things to consider in data collection: what kind of data one needs, who to get the data from, where one will get the data from, how much data one needs, and when one needs to get such data.

Examples of the research questions participants developed as part of their homework were:

- What age did you start drinking and smoking?
- How many times a week do you eat non-nutrient dense foods?
- How much sugar do you have in your tea and how many times per day?

- How many people are homeless in Inuvik?
- How many people eat breakfast every day?
- How many community healthy behavior programs have been implemented in Inuvik?
- Where did individuals learn traditional crafting?

In-class group exercises focused on exploring various aspects of data collection and using appropriate research methods to answer a research question. For the final activity of the day participants were divided into five groups and worked together to develop a group research question. Following this, they then collected answers to their questions (by identifying a set of questions which they used to collect responses from class participants), analyzed the data collected, determined the best way to present the results to the class and finally needed to state the importance of the group's findings. The research questions the groups developed and worked on were:

Group 1:	Do you eat breakfast? Why or Why not?
Group 2:	What age did you start drinking? Do you still drink and if so, do you think you drink too much?
Group 3:	Do you have access to a computer? Do you have a facebook account and if so, why?
Group 4:	What is your favorite non-nutrient-dense food?
Group 5:	Do you play BINGO?

Day 3 (November 9th): Recap of previous day's activities; discussion on the challenges faced by each group when developing and carrying out their research question; presentation of each group's research project; discussion of data analysis and closing. The breakdown of the day's event was as follows:

- Present findings from data collection
- Analysis of data:
    - Quantitative

    - Qualitative
- Sharing research findings
- Knowledge transfer

Participants' discussion of the challenges they faced when working as a group taught them how to collaborate within groups and with people who have different ideas. They also learnt the importance of pilot testing their questionnaires and to learn from their mistakes before the study is conducted, and how to use culturally appropriate approach methods to disseminate knowledge.

Examples of the short term and long term implications of each group's work are summarized below:

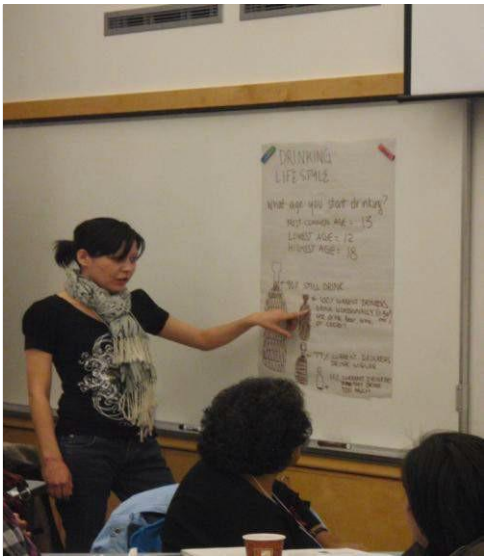
Group 1: Not a lot of people eat breakfast, which is of concern because it is a healthy lifestyle choice. Appendix B shows the handout the group created for dissemination to the class.

Group 2: There is a trend that in Inuvik people start drinking at a young age. We cannot say it was a problem as a lot of people do it, which raises concerns for long term health implications.

Group 3: A trend was shown that a lot of people use Facebook for social networking, campaigning, and selling products.

Group 4: Long term effects of non-nutrient dense food consumption could lead to obesity and subsequent diseases.

Group 5: There may be a need for gambolling support, but BINGO is also used for fund raising to support non-profit organizations.



There was considerable group discussion on knowledge transfer as each group discussed the

most appropriate places to disseminate their research findings. The participants discussed the benefits and possible negatives of sharing their findings with schools, newspapers, at community meetings, on facebook, at the town council, on the internet, at the health centre, through interagency meetings, with posters, and by word of mouth.

Discussion was then opened to the whole class to discuss the best places to disseminate the information gathered from the group "research project". The summaries below are what the groups came up with:

Group 1: Disseminate to schools and teachers to increase attendance rates, and children's attitudes and attendance, mothers and fathers, particularly single parents, community stores to maintain health food supply, and community health organizations.

Group 2: Community health divisions, RCMP, youth through the high schools, family medicine department, and youth groups to create awareness, treatment centres, support mentors, and church leaders.

Group 3: Local businesses to use as marketing tool, recreation departments, and workplace to inform that communication is changing.

Group 4: Food banks and people who bring food to the food banks, companies that sell nutritious and non-nutritious foods, nutritionist at the hospital, schools, restaurants, health minister, and food stores to create awareness to develop cooking classes, fitness clubs, and new programs in the schools.

Group 5: Could be disseminated to two separate areas; 1) for fundraising opportunities to not-for-profit and community fundraising programs, and 2) treatment centres, town council, justice committees who can develop programs on awareness and addiction.

Interaction: The course was designed to be interactive, catering for students' different learning styles and abilities. In addition to lectures on the theory, many culturally appropriate examples were used that engaged students either by working in groups or individually.

Homework: This was given to the students at the end of day one and consisted of going home and developing their own research question that was important to them with ample guidelines. Homework was discussed in class and students were able to ask questions and receive feedback on their work.

Group discussions: This was an important exercise towards the close of day two and day three to foster team work among participants; a key skill for collaboration in the work place.

The outline of the course is attached in Appendix C.

Evaluation

Participants were continuously assessed throughout the sessions. Evaluation was based on participant attendance, class participation, a pre- and post-quiz, as well as in-class and out-of-class assignments.

Pre- and Post-Student Evaluation

Pre-course evaluations were used to gauge students' knowledge level and enable facilitators to tailor class content and teaching methods. Post-course evaluations were used to evaluate students' level of learning and effectiveness of facilitation methods. All evaluation materials are shown in the Appendix D. Students could answer "yes", "not sure", or "no" to all questions on the pre- and post-course questionnaires.

Pre-course evaluations indicated that there was a wide range of student knowledge of research and that the class needed to be tailored to a variety of different levels and exposure to research. This was important as the facilitators wanted to ensure all participants benefitted from the training course. The pre-course questionnaire was given to students prior to the start of the course.

Below are the responses to the pre-students' evaluations:

Pre- Student Evaluation

Q1: Do you know what research is?

The majority of participants knew what research was (16/23); only two responded no, and there were five participants who were not sure what research was.

Q2: Do you know why people might want to do research in your community?

Approximately half of the participants knew why people may want to do research in the community (13/23), two responded no, and eight were not sure why people may want to do research in their community.

Q3: Do you know about any rules and regulations that need to be followed by people who want to do research in northern communities?

The majority of the participants responded no (11/23) to knowing about rules and regulations that need to be followed when conducting research, eight individuals responded that they knew about the rule and regulations, and four participants were not sure.

Q4: Are you aware of different methods of doing research (e.g. qualitative, quantitative)?

There were nine participants that were aware of the different types of methods, ten were not and four were not sure.

Q5: Can you describe some ways to collect data for research?

The majority of participants (13) felt that they could describe different ways to collect data, seven did not know and three were unsure.

Q6: Do you know what happens with results from research?

Of all the participants 12 of 23 know what happens with the results of research and six were unsure and five responded that they did not know at all.

Q7: Do you know how the community can be involved in research?

The majority of participants were unsure of how their community can be involved in research, eight responded yes to knowing how community can be involved and four said no as to how they would be involved in research.

Post-Student Evaluation

The same questions were provided in a post-questionnaire that allowed students to respond to the same questions and were provided the option to expand their "yes", ""not sure", or "no" responses. Below are examples of students' written responses from the post-course questionnaire which reflect their level of learning.

Q1: Do you know what research is?

All 23 of the participants knew what research was. Twelve participants on went further to explain what they knew about research following the course.

Examples of the responses were as follows:

- A way to find an answer to a question
- Asking questions about what you wanted to know
- Research is a question that was satisfied by varying answers
- Get answers to questions

Q2: Do you know why people might want to do research in your community?

With the exception of one participant who was not sure what people might want to do with research in their community, 22 of the participants said they were sure they knew why people may want to do research in their community. Examples of the participants' explanations included:

- Improvement in community health and wellness
- Community input in finding solutions to their problems
- To identify current trends within their community
- To give information
- To find out the answers to people by groups, age, sex, ethnicity, and to find out if there are any trends

Q3: Do you know about any rules and regulations that need to be followed by people who want to do research in northern communities?

Almost all of the participants responded yes to knowing about rules and regulations that need to be followed when conducting research (20/23). Three participants were not sure and explained that more information was needed on the rules and regulations, particularly relating to northern communities and how they vary depending on cultural differences and values.

Q4: Are you aware of different methods of doing research (e.g. qualitative, quantitative)?

All 23 participants said they were aware of the different types of methods.

Q5: Can you describe some ways to collect data for research?

All the participants said that they could describe different ways to collect data for research. Participant's responses included:

- Surveys focus groups and social media
- Questionnaires: verbal or written
- Observation
- Measurements
- Collecting information from Health reports from Statistics Canada

Q6: Do you know what happens with results from research?

Of all the participants' only one was unsure about what happens with the results of research but who did not expand on their answer. Twenty-two responded that they knew what happened with the results from research and summary of the responses were:

- Results are interpreted after filtering and cleaning of the data
- Research was published in scientific journals
- Is made available to make programs and policies
- Results can report trends
- Getting the research findings to those who can use them to make change in programs or policies

Q7: Do you know how the community can be involved in research?

All 23 of the participants were sure of how their community can be involved in research. All of the answers explained that involving the community members and leaders would ensure whole hearted participation.

Overall, from pre-student evaluation to post-student evaluation all the students now responded that they knew what research was, and 22/23 said yes, they knew why people might want to do research in their community. The number of people that did not know about rules and regulations that needed to be followed by people who want to do research in northern communities decreased from 11 to 3 and the number of participants who knew about the different methods used to conduct research decreased from 14 to zero. From the pre-student evaluation ten participants said that they did not know or were unsure of ways to collect data; this decreased to zero after the course. Eleven participants were originally either unsure or did not know about what happens with results from research; this decreased to one post-student evaluation who was still unsure. All of the participants responded that they knew how the community can be involved in research with was an increase of ten participants. The table below shows the pre- and post

students' evaluation from participants.

Table 1. Number of responses from participants following pre- and post- evaluations

	Yes		No		Not sure	
Questions	**Pre-**	**Post**	**Pre-**	**Post**	**Pre-**	**Post**
1	16	23	2	0	5	0
2	13	22	2	0	8	1
3	8	20	4	0	4	3
4	9	23	10	0	4	0
5	13	23	7	0	3	0
6	12	22	5	0	6	1
7	8	23	4	0	11	0

Course Evaluation

In addition to students' evaluations, a course evaluation was completed as well to provide feedback for facilitators, teaching methods and suggestions to refine future course development and outcomes. Responses were rated on a scale from "disagree" to "strongly agree".

Students were asked to rate the impact of the course on their understanding of research, effectiveness of course examples, content, materials, facilitators, as well as course logistics.

Overall student feedback was positive with the majority of responses being "somewhat agree" or "strongly agree". Eighty percent of the participants did "strongly agree" to all the questions asked on the evaluation form, whilst 16% responded to "somewhat agree". Only 3% and 1% neither agreed or somewhat disagreed respectively to all the questions asked.

Q1: This course improved my understanding of what research is.

Seventeen participants strongly agreed to this statement (74%), while five somewhat agreed (22%) and one neither agreed nor disagreed (4%).

Q2: I understood the examples that were used and felt they related to what was taught.

Of the participants, 20 strongly agreed (87%) and three somewhat agreed (13%) to the question.

Q3: The instructor presented everything clearly.

Eighteen of the participants strongly agreed (78%), three somewhat agreed (17%), and one neither agreed nor disagreed (4%).

Q4: The exercises in the course were fun to do.

All of the participants strongly agreed (100%) that the exercises were fun to do.

Q5: There was enough time for discussion and questions.

A total of 13 participants (57%) strongly agreed to the question, eight (35%) somewhat agreed, one neither agreed nor disagreed (4%), and one somewhat disagreed (4%).

Q6: The information was presented in a way that made it easy to remember.

Of the participants 16 strongly agreed (70%), six (26%) somewhat agreed, and one neither agreed nor disagreed (4%) that the information was easy to learn.

Q7: The information in the course helped me to understand how research can be used to improve health in my community.

Eighteen participants (78%) strongly agreed that the course helped them understand how research can be used. This was somewhat suitable for four participants (17%), and one participant (5%) did not agree or disagree.

Q8: The location of the course was suitable for me.

A total of 20 participants (87%) strongly agreed that the location was appropriate while three (13%) somewhat agreed.

Q9: The course instruction time was appropriate.

A total of 17 participants (74%) strongly agreed that the instruction time was the appropriate length while four (17%) somewhat agreed and two (8%) somewhat disagreed.

Q10: I would be interested in taking more courses on research.

Nineteen participants strongly agreed to this question (82%), two each (9%) somewhat agreed or were neutral.

Q11: I would recommend this course to others.

A total of 21 participants (91%) strongly agreed to recommend the course to others, and only two participants (9%) somewhat agreed.

Examples of responses to additional written course rating questions:

Q12: What parts of the course did you like best

- The practical and theoretical aspects of the course

- The instructors related very well their experiences during the course which gave me a clearer understanding to research
- An opportunity to understand what research truly was
- The instructors created a good atmosphere which made us all eager to stay on throughout the course
- I liked the way the instructors generated group interaction and everyone was eager to participate in the discussions
- The course gave me insights into the importance of research and how ordinary members within the community can be involved in raising issues of importance to them for the benefit of the community
- Working in groups put it all together as we were able to compliment each other's views
- The conversations were suitable and included everyone

Q13: Do you have any suggestions to improve the course?

- The room was too small to accommodate all the participants
- More information is needed for participants to know the practicalities of how they could be involved in research and who to contact should they need help in moving to the next level after the course
- Opportunities to use IT facilities would be helpful if the course is run in future
- A follow on course for the participants would help consolidate what has been gained from the course
- The course would also benefit Hunters and Trappers as well as community corporations
- Use of a microphone for those people who don't speak loud
- A book or flyer distributed to the class

Collaboration & Partnership

Our partnership with Aurora College and the Aurora Research Institute were fundamental to the success of the course. We are working closely with Aurora College to develop training materials and resources that compliment the content covered in their existing programming. We are currently adapting and developing training content to fit with Aurora College's course/module outline and plan to develop a non-credit Aurora College course as an outcome of these training sessions.

The course slides have been given to the Aurora College for further dissemination as many of the

participants requested the presentation so that they could provide it to other people at the organizations that they were from. The Aurora Research Institute, Inuvialuit Regional Corporation, and the Aklavik H.pylori Project all requested the slides to be able to "train the trainer" with their organizations. We hope to deliver the course again at Aurora College in February 2012 (funding permitting). We will work with the community to ensure that the course content is suitable for their needs. Appendix E includes pictures of the participants throughout the three day session.

Media Coverage

NewsNorth and the Inuvik Drum provided media coverage of the training session in Inuvik. Local media is a very useful medium to publicize training opportunities in the region. We will continue to build our partnerships with local print and radio media to encourage participation in the February course and to inform local communities of the progress of the course while the courses are in session.

Appendices

Appendix A: Session Flyer

Nuts and Bolts of Research

Community Based Skills Development and Training Program

When: March 16-18
Where: Aurora College
Cost: Offered at no cost to participants.

To register please contact Karen Edwards at karen.edwards@ualberta.ca

This training program will build employment skills by providing you with a better understanding of how to work in health research to build your own research project emphasizing culturally relevant topics and approaches.

Please Note:
This is the first in a series of three training sessions.

The next sessions will be in Fall 2011 and Winter 2012.

Participants will learn how to:

- design a research project
- choose the right method for your research question
- collect & analyze research data
- present research findings to the community
- use the data to develop community programs
- use data to inform policy

Why participate?

- Increase your competitiveness in the workforce
- Learn skills in research design, methods, and communication
- Get certification to compliment your studies
- Be certified to work as part of research projects in your region
- Better skilled to develop your own research project
- Learn to collect information to inform community programs

***NOTE**: May be of particular interest to anyone working or wanting to work in health care, education, research and social work fields and especially nursing students*

Participants evaluated through:

- attendance
- class participation
- quiz results
- student assignments completed outside of class
- development of small research project on a topic of the student's choice
- quality of student research project as assessed by the instructor

Course instruction includes:

- in-class sessions
- break out group discussions
- role playing
- short independent or group exercises
- reading hand-outs
- storytelling
- community visits

Courses are supported by Aurora College and Aurora Research Institute

Appendix B: Group 1 summary of data collection handed out to the class

Do You Eat Breakfast?

Group: Beverly, Chelsea, Paula, Sara, Sheree

Total # of people interviewed	11
Yes	5
No	6
# of Females	8
Females Age 25 & Under	2
# of Males	3
Males Age 26 & Over	3

Legend

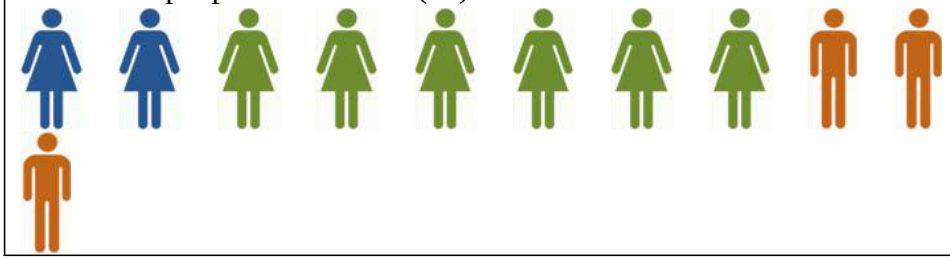
Female Age 25 & Under

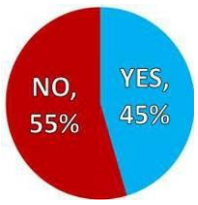
Female Age 26 & Over

Male Age 25 &Under

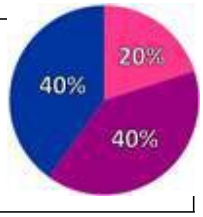
Male Age 26 & Over

Number of people interviewed (11)

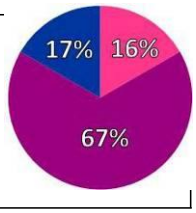




People who DO eat breakfast

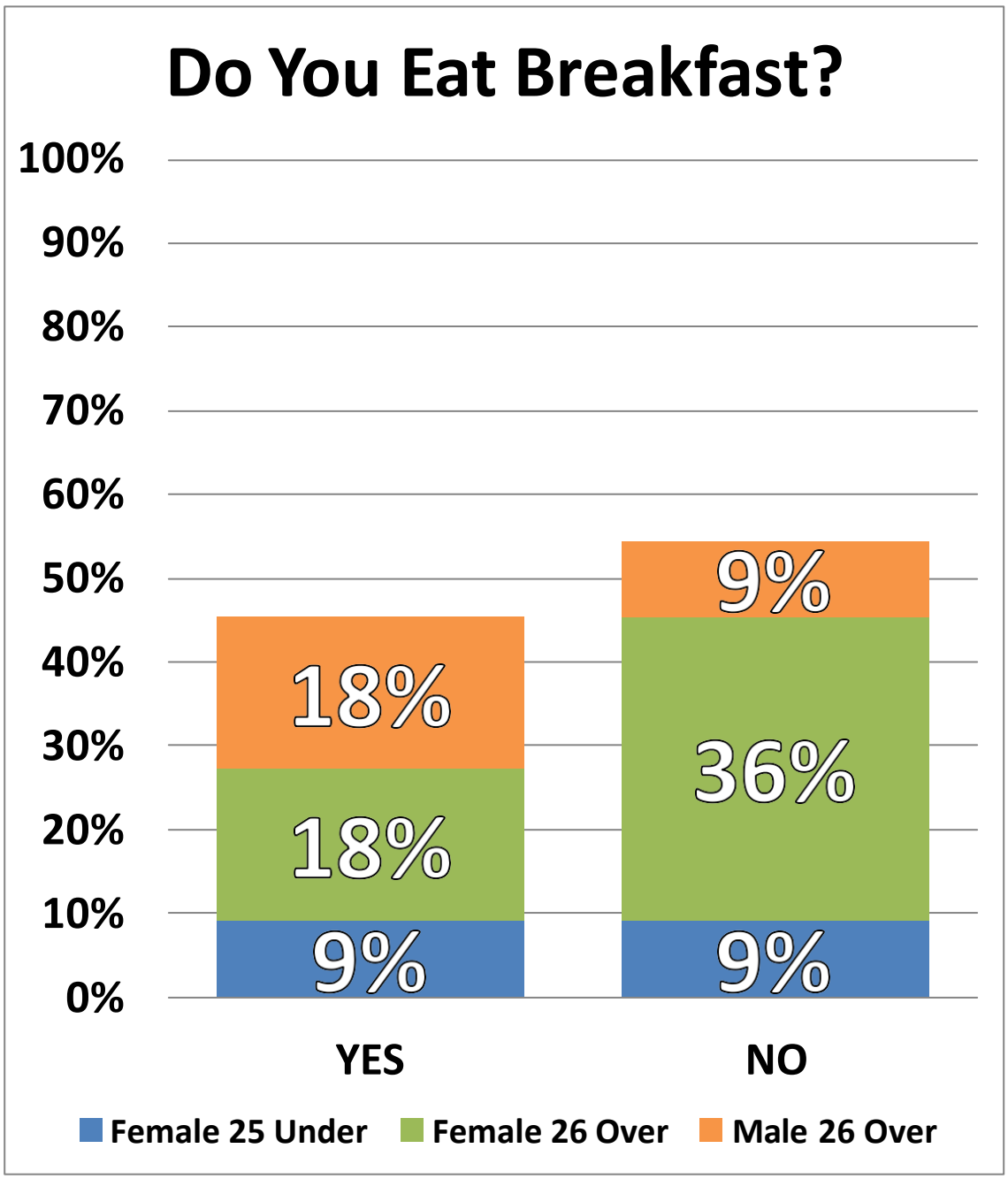


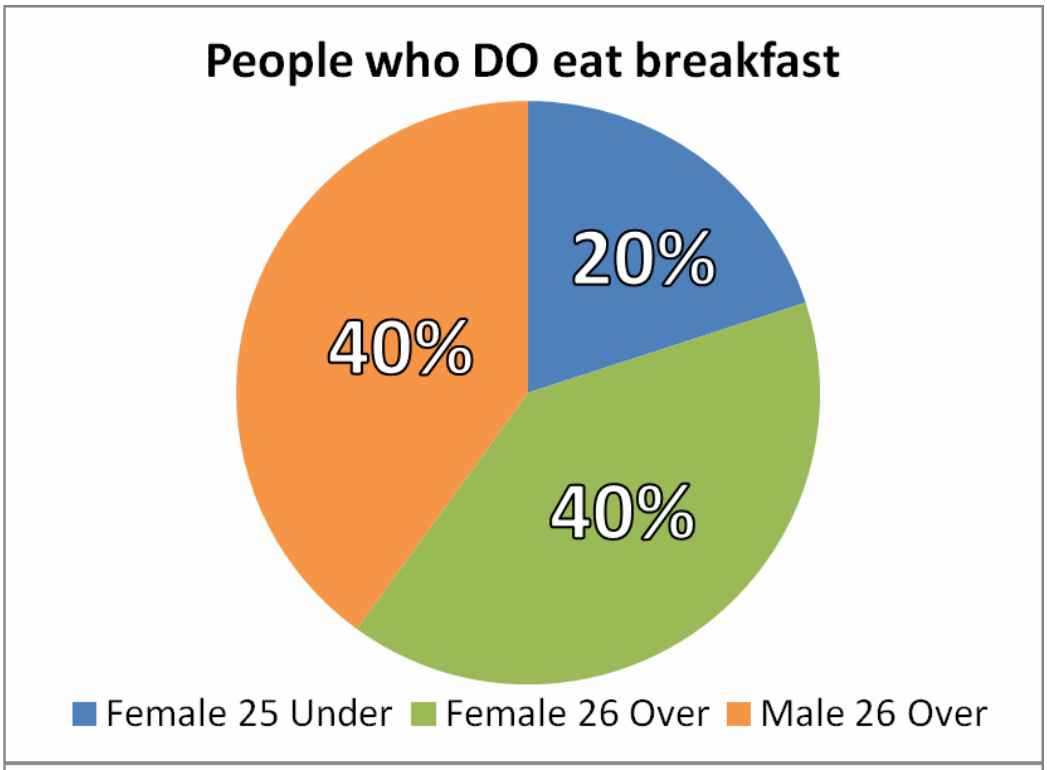
People who DON'T eat breakfast

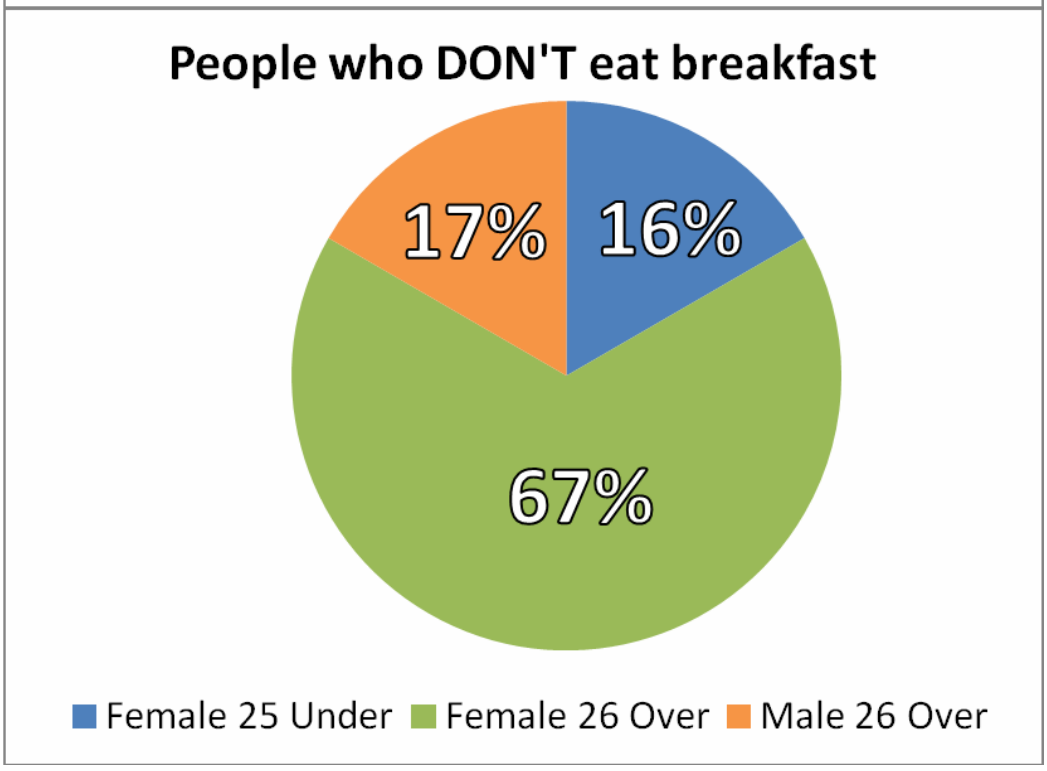


Reasons why people **ate** breakfast were that they said it's a healthy choice or they were hungry.

Reasons why people **didn't** eat breakfast were that they had no time, it was habit, they weren't hungry, or it was their own personal choice.




People who DO eat breakfast
20%
40%
40%
Female 25 Under
Female 26 Over
Male 26 Over


People who DON'T eat breakfast
17%
16%
67%
Female 25 Under
Female 26 Over
Male 26 Over

Appendix C: Course Evaluation Materials

Nuts and Bolts of Research: Community Based Skills Training Program

Please answer the questions below, BEFORE taking the course

BEFORE TAKING THE COURSE: Please answer the following questions (using the check boxes to the left).	**YES**	**NOT SURE**	**NO**
Do you know what research is?	☐	☐	☐
Do you know why people might want to do research in your community?	☐	☐	☐
Do you know about any rules and regulations that need to be followed by people who want to do research in northern communities?	☐	☐	☐
Are you aware of different methods of doing research?	☐	☐	☐
Do you know ways to collect information for research?	☐	☐	☐
Do you know what happens with results from research?	☐	☐	☐
Do you know how the community can be involved in research?	☐	☐	☐

AFTER taking the course please answer the questions below:

AFTER TAKING THE COURSE: Please answer the following questions (using the check boxes to the left).	**YES**	**NOT SURE**	**NO**	**Please use this space to explain your answers**
Do you know what research is?	☐	☐	☐	
Do you know why people might want to do research in your community?				
Do you know about any rules and regulations that need to be followed by people who want to do research in northern communities?	☐	☐	☐	
Are you aware of different methods of doing research (e.g., qualitative, quantitative)?	☐	☐	☐	
Can you describe some ways to collect data for research?	☐	☐	☐	
Do you know what happens with results from research?	☐	☐	☐	
Do you know how the community can be involved in research?	☐ ☐	☐ ☐	☐ ☐	

Rating	Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Strongly Agree
This course improved my understanding of what research is.	☐	☐	☐	☐	☐
I understood the examples that were used and felt they related to what was taught	☐	☐	☐	☐	☐
The instructor presented everything clearly	☐	☐	☐	☐	☐
The exercises in the course were fun to do.	☐	☐	☐	☐	☐
There was enough time for discussion and questions.	☐	☐	☐	☐	☐
The information was presented in a way that made it easy to remember.	☐	☐	☐	☐	☐
The information in the course helped me to understand how research can be used to improve health in my community.	☐	☐	☐	☐	☐
The location of the course was suitable for me.	☐	☐	☐	☐	☐
The course instruction time was appropriate	☐	☐	☐	☐	☐
I would be interested in taking more courses on research.	☐	☐	☐	☐	☐
I would recommend this course to others.	☐	☐	☐	☐	☐
What parts of the course did you like best?					
Do you have any suggestions to improve the course?					

Appendix D: Pictures of Participation