

A Compendium of Best and Promising Practices for
Heart Health and the Prevention of Cardiovascular
Disease, Stroke and Diabetes

Aboriginal Channel

ACKNOWLEDGEMENTS

The Compendium of Best and Promising Practices for Diabetes, Cardiovascular Disease, Stroke Prevention and Heart Health was developed based on the work of the Health Behaviour Research Group at the University of Waterloo. The *Compendium* is an edited and condensed version of several large reports produced by an extensive team of researchers and writers on the original project. The material is not new and all credit for the content is due to the writing teams that produced the reports listed below.

OVERALL DIABETES REPORT

[Best Practices in Type 2 Diabetes Prevention Report](#)

Hanning, R.M., Manske, S., Skinner, K., McGrath, H., Heipel, R. (May 2004). International Best Practices in Type 2 Diabetes Prevention, (Project Final Report and Appendices), Waterloo, Ontario, Canada: Health Behaviour Research Group, University of Waterloo for the Heart Health Resource Centre, Ontario Public Health Association (funded by Health Canada).

[Best Practices in Type 2 Diabetes Prevention-Appendices](#)

Hanning, R.M., Manske, S., Skinner, K., McGrath, H., Heipel, R. (May 2004). International Best Practices in Type 2 Diabetes Prevention, (Project Final Report and Appendices), Waterloo, Ontario, Canada: Health Behaviour Research Group, University of Waterloo for the Heart Health Resource Centre, Ontario Public Health Association (funded by Health Canada).

[Best Practices in Type 2 Diabetes Prevention -Dissemination Report](#)

Skinner, K., Manske, S. (May 2004). International Best Practices in Type 2 Diabetes Prevention, (Dissemination Report), Waterloo, Ontario, Canada: Health Behaviour Research Group, University of Waterloo for the Heart Health Resource Centre, Ontario Public Health Association (funded by Health Canada).

NOMINATED PRACTICES SCAN

[Nominated Scan Project Summaries](#)

Hanning, R.M., Manske, S., Skinner, K., McGrath, H., Heipel, R. (January 2004). International Best Practices in Type 2 Diabetes Prevention, (Nominated Scan Project Summaries), Waterloo, Ontario, Canada: Health Behaviour Research Group, University of Waterloo for the Heart Health Resource Centre, Ontario Public Health Association (funded by Health Canada).

ABORIGINAL CHANNEL

[Aboriginal channel summary](#)

Hanning, R.M., Manske, S., Skinner, K., McGrath, H., Heipel, R. (August 2004). International Best Practices in Type 2 Diabetes Prevention, (Aboriginal Channel Report), Waterloo, Ontario, Canada: Health Behaviour Research Group, University of Waterloo for the Heart Health Resource Centre, Ontario Public Health Association (funded by Health Canada).

[Aboriginal project summaries](#)

Hanning, R.M., Manske, S., Skinner, K., McGrath, H., Heipel, R. (August 2004). International Best Practices in Type 2 Diabetes Prevention, (Aboriginal Channel Project Summaries), Waterloo, Ontario, Canada: Health Behaviour Research Group, University of Waterloo for the Heart Health Resource Centre, Ontario Public Health Association (funded by Health Canada).

Best and Promising Practices – Aboriginal

Best Practices

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***Matrix of
Aboriginal Programs Overlapping with Other Channels***

Best Practices

Program	African American	Community	School	Stroke	Women	Worksites
<i>Pathways Study, The</i>			✓			

Promising Practices

Program	African American	Community	School	Stroke	Women	Worksites
<i>Diabetes Challenge, The</i>		✓				
<i>Kahnawake Schools Diabetes Prevention Project (KSDPP)</i>		✓	✓			
<i>Lifestyle Interventions in Pima Indians</i>		✓				
<i>Looma Healthy Lifestyle</i>		✓				
<i>Maori & Pacific Diabetes Awareness</i>		✓				
<i>Native Hawaiian Diabetes Intervention Program</i>		✓				
<i>Okanagan Diabetes Project</i>		✓				
<i>Sioux Lookout Diabetes Program</i>		✓	✓		✓	
<i>South Auckland Diabetes Project</i>		✓				

Source

Gila River Indian Community, Tohono O’odham (University of Arizona); White Mountain Apache, San Carlos Apache (John Hopkins University); Oglala Lakota, Sicangu Lakota (University of Minnesota); and Navajo (University of New Mexico)

Overview

The Pathways Study targets students entering grade three and follows the students until they finish grade five. The students’ families were a secondary target audience.

The program was a multi-centred, school-based, culturally oriented obesity prevention program for third, fourth and fifth grade American Indian students. The primary goal of *The Pathways Study* is to positively influence individual, behavioural and environmental risk factors associated with obesity, particularly physical activity and eating behaviour through:

- Children’s knowledge about physical activity and food choice
- Their values about health and nutrition
- Their sense of personal control over their activity

Specific objectives included the following:

- Providing more opportunities for exercise and for healthier food choices
- Promoting change in the children’s environment that supports healthful dietary and activity practices
- Influencing family food selections
- Reducing the barriers to exercise and healthful eating
- Creating peer support for exercising and selecting lower fat foods
- Developing skills for the practice of regular activities and for healthy food preparation
- Enhancing children’s ability for self-monitoring and goal setting

Four main components of the full study were developed and pilot-tested:

1. Changes to the school food service
2. Classroom curriculum
3. Physical education program
4. Family involvement

Results/Outcomes

The Pathways Study was divided into two phases: a three-year feasibility phase and a five-year, full-scale study. The objectives of the feasibility phase were:

- To assess the acceptability and support from parents, students, and school tribal authorities for a comprehensive, school-based program for the prevention of obesity in elementary school children
- To develop and pilot-test the different components of the intervention
- To develop and test approaches and methods for measurements of primary and secondary endpoint variables

The objective of the study phase was: to reduce average percent body fat in intervention-school children by 3% in three years, compared to the control-school children. This goal was to be achieved through an increase in physical activity and a reduction in fat intake as a percentage of dietary energy.

Formative Evaluation

A formative evaluation was conducted during the feasibility phase to identify and prioritize obesity risk factors. Information was collected about eating and physical activity behaviours at home, the schools and the community from samples of children from the participating schools. Some of the high priority obesity risk behaviours that were identified included:

- Few family-based activities
- Little opportunity to do physical activity at home
- Children watch a lot of television, movies, and videotapes
- There is little encouragement to do physical activity at home
- Little home-based role modeling for physical activity
- Children drink a lot of sugar drinks at home and in the community
- Children eat a lot of high fat foods at home

The feasibility study showed that adults were supportive of physical activity of their children, however, were not consistently active with them. Results from the dietary component of the feasibility study showed that:

- All children ate lunch at school and 70% ate breakfast at school
- The mean energy intake was close to the recommended level
- Out of school sources provided a greater amount of fat sources than in school fat sources
- Many children had a high sodium intake
- Sweetened drinks, such as pop and Kool-Aid contributed the most to energy intake from out of school sources
- The nutritional intakes were close to the intakes of other children in the United States.

Process Evaluation Results

Several components of *The Pathways Study* intervention, as well as the process evaluation instruments were pilot tested during the feasibility phase. The researchers found the family resource packages and the family events were easier to implement than the advisory councils. They were also better received than the advisory councils. The successes and the recommendations were used in the development of *The Pathways Study* initiatives for the full study.

Researchers systematically documented the intervention procedures and activities (such as training process and content, attitudes of school administrators, teachers, food service directors, physical education instructors, and how much exposure the intervention components received) as part of the process evaluation. Twenty-seven different sets of data collection instruments were developed for the process evaluation and generated a substantial amount of information that was used to improve *The Pathways Study* intervention. Two examples of the findings include:

- Teachers from grade 10 and 11 classrooms reported that they were not teaching the lesson as described in the curriculum because the lessons were taking too long and some frustration was seen in the group work. These reports resulted in some changes to teacher orientation and the need to make regular visits to the classrooms for support and assistance.
- Comments by participants indicated which activities were most popular at the Family Fun Night. The comments indicated which activities were successful and which ones required some changes.

Impact Evaluation

Several studies have reported on outcomes for different objectives of the study. Some of the results for the Intervention group include:

- Significant reductions in fat and saturated fat in school lunches
- An increase in diet and physical knowledge
- Significant decreases in fat and saturated fat during lunch-time observations
- Significant increase in percent carbohydrate intake
- No significant differences in calories or nutrients with the Control group
- More physical activity, although not significant

Outcome Evaluation

There were 1704 students from 41 schools who participated in *The Pathways Study*. They were randomly selected to participate in one of two conditions: the Pathways intervention or the Control group. The main outcome variable for the program was percent body fat, determined by a combination of anthropometric and bioelectrical impedance measurements. There were no significant differences in the mean percent body fat in the Intervention group as compared to the Control group.

Prevention of Chronic Disease and Conditions

- Cardiovascular Disease
- Overweight/Obesity

Risk Factors and Other Issues

- Physical Inactivity
- Unhealthy Eating/ Nutrition

Setting

- Elementary Schools
- In home

Audiences

- Children (< 13 years)
- Families/Parents/Couples

Audiences Characteristics

- Aboriginal
- Teachers/Educational instructors

Approach

- Education
- Environmental Support

Program Description

There were four components to *The Pathways Study*:

1. Classroom Curriculum
2. Physical Activity
3. Family Involvement
4. Changes to the School Food Service

Component 1: Classroom Curriculum

Objective: create an integrated school environment in which teachers, food service personnel, physical educators, and the students' families work together toward the common goal of practicing and sustaining the new behavioural skills introduced by the curriculum.

Features:

- Targeted to grades 3-5
- Lessons promoted healthful eating and increased physical activity
- Consisted of two 45-minute sessions per week over twelve weeks
- Lessons include stories and activities using imaginary American Indian characters
- Taste-tasting of new foods and beverages
- Practiced behaviours related to goals for healthful eating and physical activity

Component 2: Physical Activity

The aim of this component was to increase energy expenditure during school time by increasing frequency and quality of physical education classes. It was modeled after the SPARK program and included a unit of American Indian games derived from traditional games from each of the Pathways.

Features:

- Minimum of three, 30-minute physical education sessions per week during the school year
- Exercise breaks during classroom time
- Guided play during recess
- Variety of modules on health-related and sport-related fitness, American Indian games, conditioning activities and inclement weather activities

Component 3: Food Service Intervention

School lunch and breakfast programs formed the nucleus of this intervention. Since children attending schools in American Indian communities consume as much as 60% of their daily caloric intake at school, food service provides an opportunity to introduce healthful food choices.

Component 4: Family Based Intervention Activities

The purpose of this component was to harness the powerful influence of the family on shaping children's eating and exercise habits. The four elements of this component included:

- The distribution of Family Packs, which contained information and suggestions for eating and physical activities that the family could do together, as well as locally available, low cost, low-fat, low-sugar food items to share in families
- Two Family Events to kick off the program in grade three and end the intervention, during which healthful food samples were offered, games and activities were available, and printed information was distributed
- A Family Celebration to demonstrate and learn family games, have a low-fat snack, and recognize participation in the Pathways experience
- School-Based Family Advisory Councils designed as a mechanism for families and community members to provide feedback on the intervention and to encourage ownership and sustainability of Pathways.

Resources

A variety of resources were produced for this project, including:

- Pathways Nations Map poster, various food lists, lists of physical activities, illustrations of body cues, goal-setting materials, word games, and evaluations forms
- Teachers' instructional manual including lesson plan, overhead transparencies, audiotapes, posters, Family packs, and incentive items, information and curriculum related resources and a training manual – to guide teacher training

Other Information

The exact cost of the project is unknown. The National Heart, Lung and Blood Institute provided support to the project.

A key element required to enhance program impact is support from school personnel, including principals, teachers, and food services, and from parents.

The Pathways Study requires time from classroom and physical education teachers. They need to be trained in the classroom components and have time to implement the curriculum, meet with food service staff, and coordinate the program. This study had great involvement of many groups, including six Native Nations and five universities. Various groups provided additional support, which may be difficult to duplicate in other communities.

This study demonstrated tremendous collaboration among the university community, Native American community members, and their leaders.

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Source

Wolseley Family Place, Manitoba

Overview

Wolseley Family Practice (WFP) is a family centre that provides support and development opportunities for families, using a holistic approach to health and well-being. The Diabetes Challenge was developed as part of WFP's efforts to expand its range of supports. The project aimed to work towards the prevention of diabetes and the complication of diabetes through healthier lifestyles, and increasing the knowledge and capacity of those who participate.

The target audience was the Wolseley Family Place community, which included:

- 85% women aged 18-34
- 95% children under age 4
- 90% Aboriginal
- 75% on social assistance
- 92% with a gross income of less than \$19,000/year
- 70% without a high school diploma
- 80% single parents

The program was successful in increasing participants' knowledge of the disease and has provided information and opportunities to become more active, eat healthier and work towards prevention.

Results/Outcomes

The goal of the program was to prevent the onset, or reduce the severity of, symptoms of Type 2 Diabetes. The objectives were:

- To raise awareness of the links between food, activity levels and stress reduction in maintaining a healthy lifestyle
- To increase health education specific to the prevention of Type 2 diabetes
- To provide access points and encourage increased physical activity in the participants of WFP.

Process evaluation included feedback from the project coordinator and participants to gather information on what was learned through the project's efforts related to the development of an approach for addressing Type 2 diabetes education.

The Diabetes Challenge was successful in informing and education participants about diabetes, and the value of positive lifestyles and nutrition. The project also provided realistic opportunities for participants to experience healthier lifestyles. Participants were generally more knowledgeable about Type 2 diabetes, and recognized the importance of taking care of themselves and how to do so.

A number of features of the program were considered significant:

- The fact that the project worked within the realities of participants' situations, and made information, menus and activities relevant in their lives;
- The inclusiveness and continuous effort to develop, test and refine activities so that participants would remain involved, brought more people into the project from all age groups; and,
- The setting and relationships that developed created trust and stronger commitment to be involved and experience what the project had to offer.

Prevention of Chronic Disease and Conditions

- Type 2 Diabetes

Audiences

- Families/Parents/Couples

Risk Factors and Other Issues

- Physical Inactivity
- Tobacco Use
- Unhealthy Eating/ Nutrition

Audiences Characteristics

- Aboriginal

Setting

- Community at Large

Approach

- Awareness
- Education
- Environmental Support

Program Description

The program developed separate activities for adults and children. The adult activities included:

- Launch of Active Living contest to promote activity and awareness of healthy lifestyles.
- Launch of Fit Family contest to promote activity, healthy eating and health education for the whole family.
- Peer mentor development to work as community level diabetes educators at WFP and the surrounding community.
- Walking club to provide a weekly cardio workout for participants at a moderate fitness level.

- A stretch club was offered at least once a week for participants at any fitness level.
- A weekly Family Swim Night to promote family physical activity for participants with school age children.
- A smoking awareness program encouraged participants to cut down or quit smoking.
- A weekly cooking class that focused on nutrition and health education in an informal setting.

Key program activities for children included:

- The hours and mandate of the Girl’s Club were expanded to allow the WFP to offer a healthy dinner and physical activity and spend time talking about healthy lifestyle options.
- Diabetes awareness and education using presentations, sharing circles, games and theatre, and presenters who discussed living with diabetes.
- Theatre workshops, leading to a diabetes awareness play.
- Games from a diabetes resource package (slightly modified).

Resources

Resources included a diabetes prevention play and contest materials.

Other Information

The budget for the program was as follows:

• Personnel	\$78,633
• Travel	7,275
• Office supplies	2,809
• Program Materials	3,573
• Printing	2,500
• Evaluation	10,000
• Training	750
• Administration	1,800
Total:	\$107,340

The Wolseley Family Place collaborated with a number of community partners to deliver the program.

The activities could be used in combination with more intensive, individual interventions.

References

No references available

Promising Practice

Source

McGill University, Universite de Montreal, Kahnawake Education Centre, Kateri Memorial Hospital Center.

Overview

The goal of this program is to decrease the onset of Type 2 diabetes among present and future generations. The target audiences are schools, families and the community-at-large in Kahnawake Territory, Quebec.

The main objectives are:

- To increase daily physical activity and healthy eating habits among children
- To mobilize the community
- To foster community empowerment and ownership through participation in all aspects of the project
- To build capacity within Kahnawake to ensure sustainability of the project goals, objectives and activities in the future.

The KSDPP is a participatory research project involving the Mohawk community in partnership with community and academic researchers. The intervention program is comprised of school and community-wide activities targeting children, teachers and parents. KSDPP aims to change social norms as well as the physical environments at school and in the community.

There is a comparison community of Mohawk residents in Tyendinaga. The main outcomes of the project are anthropometric, behavioural, and fitness changes of elementary school children. Process, impact and outcome evaluations were conducted.

Results/Outcomes

Process Evaluation

The purpose of the process evaluation was to monitor changes in the elementary schools and the community. The outcome variables were obesity, fitness, eating habits and physical activity. A variety of methods were used to collect data from both sources, including observation, record-keeping, questionnaires, and telephone surveys. Results from the school evaluation indicated positive changes with the successful introduction of new food items (fruits and vegetables) and elimination of less health snacks (pudding). In the community, there was

high awareness of the importance of diabetes in the community. Respondents (parents in the Intervention and Comparison communities) indicated high agreement with the KSDPP objectives and wanted to see the project continue after the end of research funding.

Impact Evaluation

A self-administered questionnaire was used to determine whether two proximal impact variables (self-efficacy and perceived parental support) would be influenced by the school intervention. Results of the impact evaluation were not reported.

Outcome Evaluation

Baseline measures were taken on all elementary school children (whose parents/guardians had provided written informed consent) in the Intervention and Comparison schools. Children in grades 1 and 2 at baseline formed a cohort that was followed-up annually. Children in grades 1-6 in both communities were reassessed 2 years after baseline.

Two sets of variables were measured: fitness and body composition; and behavioural assessments of eating habits and physical activity patterns. Fitness was measured with a 1-mile run/walk test while body composition assessment included 6 anthropometric measurements (weight, height, triceps and subscapular skinfold thickness, waist and hip circumference) to determine body fatness. Children completed questionnaires to provide a variety of information on food consumption, physical activity, participation in organized sports, playing outside, television watching, and use of video games. Parents assisted in the completion of the dietary and physical activity questionnaires.

Baseline data showed that girls who performed poorly on the run/walk fitness test, watched TV excessively, had low physical activity levels and were involved in community and summer sports had higher skinfold thickness measurements. For boys, poor performance on the run/walk fitness test, involvement in summer sports and not playing outside correlated with a higher skinfold thickness. The cross-sectional analysis showed the TV viewing was the strongest correlate of skinfold thickness among girls.

Dietary intake results were collected four years after the intervention. No significant differences were found for the mean intakes of energy, fat, or sucrose. There was a significant decrease in the frequency of consumption of high-fat foods and fruits, and a significant increase in the energy contribution of white sugar. While a larger proportion of children consumed fruits in 1998, the amount consumed was significantly smaller than at baseline.

A significantly higher number of children consumed fat-free milk. A trend toward fewer children consuming bacon was observed. The amount of colas consumed was smaller, which was opposite to the trend observed in US children.

Prevention of Chronic Disease and Conditions

- Type 2 Diabetes
- Overweigh/Obesity

Audiences

- Children (<13 years)
- Adults (19-64 years)

Risk Factors and Other Issues

- Physical Inactivity
- Unhealthy Eating/ Nutrition

Audiences Characteristics

- Aboriginal
- Community Volunteer
- Teacher/Educational Instructor

Setting

- Elementary Schools
- Community at Large
- Media

Approach

- Education
- Environmental Support

Program Description

The core of Kahnawake was the gradual introduction of a Health Education Program into grades 1-6 in two elementary schools in Kahnawake. The program was supported by 63 distinct activities for the children, teachers, families, and community that occurred over three years. The intervention included the curriculum component along with a variety of complementary activities such as:

- Information booths
- Healthy breakfasts
- Teacher health activities in the classroom
- Media involvement (newspapers, radio)
- Numerous physical activities such as: Community Walks, sliding party, Walk and Run clubs

Dietitian and community nurses piloted the program for the first 2 years in the presence of classroom teachers. Once the program was developed, teachers delivered the program with support from KSDPP staff.

A substantial staff (13 members) was required for this project along with community researchers. Community researchers are education and health professionals who work or live in the community and who share the responsibility for the research component of the project. This project also included academic researchers and a scientific director.

Resources

Website

The project website: www.ksdpp.org, describes the program including the vision, information about diabetes, research activities, the training program, the Community Advisory Board, administration, and project funding. It is also updated for community events, new healthy recipes, and has a message board.

Training Program

The KSDPP Training Program in Diabetes Prevention offers information about the experience learned in Kahnawake to other Aboriginal communities. Participants find out about what's required to begin a diabetes prevention initiative in their own community. The KSDPP Training Program is geared towards workers in Aboriginal communities involved with health topics, health promotion, nutrition, recreation, wellness or education.

Code of Research Ethics

A KSDPP Code of Research Ethics was developed and outlines obligations of academic researchers, community researchers and the community throughout the research process. This Code allows for dissent at publication.

Health Education Curricula

Health Education Program curriculum for grades 1 to 6 was designed with community input. It focuses on environmental and family aspects to enhance increased knowledge of diabetes and the importance of healthy eating and physical activity.

Other Information

This project utilized a Community Advisory Board made up of approximately 40 volunteers from multiple sectors of the community. They actively participate in all aspects of the project. The school interventions are supported by numerous multifaceted, community wide programs involving families and peer groups to promote healthy lifestyles and reinforce the messages delivered in school.

This project may be suited for adaptation by other communities, both Native and non-Native.

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Promising Practice

Source

National Institute of Diabetes and Digestive and Kidney Diseases (Phoenix, Arizona)

Overview

Pima Action and Pima Pride were two lifestyle interventions developed for Pima Indians. Pima Pride emphasized self-directed learning and culture, while Pima Action was a behavioural intervention with structured activity and nutrition education. The two interventions were assessed for 12 months in the form of a pilot study of the feasibility and process of delivering lifestyle interventions in the community.

The primary target group for the intervention was Pima Indians living in the district of the Gila River Indian Community (Arizona) who were obese, normoglycaemic, and aged 25-54 years.

After 12 months of the Intervention and subsequent follow-up, Pima Pride was more effective at preventing weight gain and glucose intolerance than Pima Action. However, neither Intervention achieved significant weight loss.

Results/Outcomes

The goal of Pima Action (the activity and nutrition intervention) was to increase energy expenditure over baseline by 700-1000 kcal per week through physical activity and to reduce fat and alcohol and increase fibre intake.

The goal of Pima Pride was self-directed learning towards healthier lifestyles, facilitated by an appreciation of Pima culture.

The objectives of the study were to:

- Assess whether the Pima Action intervention would produce more change in self-reported diet and exercise behaviour than the Pima Pride program, or vice versa
- Determine the relative effectiveness of the two interventions in altering risk factors for diabetes e.g. body weight, fasting, and post-load glucose and insulin concentrations

Results of the Pilot Study

A large number of participants completed the 6 and 12-month examinations, however adherence to the interventions was poor. On average, members of Pima Pride and Pima Action attended only 17% of their classes and meetings.

At 6 months, members of the Pride group reported significantly decreased intakes of energy, carbohydrate, starch, and fat, while there were no significant dietary changes in the Action group. Yet there were no significant differences between groups. Weight and BMI had increased significantly in the Action members, but not the Pride members after 6 months. For the other physiological variables, no other significant changes occurred.

After 12 months of the interventions, members of both intervention groups reported increased levels of physical activity, with no significant difference between groups and the Pride group maintained a decrease in starch intake. At 12 months, weight, BMI, BP, glucose and insulin concentrations had all significantly increased in the Action group, while waist circumference decreased significantly in the Pride group. Although not significant, the Action group gained more weight on average than the Pride group. By comparison, the 22 members of the observational group completing measures gained an average of 1.9kg.

Findings from the pilot study suggest that the activity component of the intervention should emphasize walking, and the nutrition component should emphasize total calorie reduction, weight loss, and weight-monitoring in addition to reduction in dietary fat. Practical constraints to attendance at classes and meetings should be addressed on an individual basis. More professional staff input and incentives should be used to enhance adherence.

Process Evaluation

During the course of the program, qualitative data were collected from the Pima Action group on their opinions of the intervention. The participants said that the program motivated them to do more activity and to use low fat foods. They felt that support from peers, knowledge about the fat content of foods, and classes on healthy cooking made it easier for them to make behaviour changes. They enjoyed generating their own ideas to change their behaviours.

No impact or outcome evaluations reported.

The cultural aspects of the Pima Pride intervention could be incorporated into other existing Aboriginal programs.

Pima Indians may find a less direct, less structure, and more participative intervention more acceptable than a direct and highly structured approach. Lifestyle interventions may be more effective in some populations if they were delivered to family units of randomization rather than to individuals. Low attendance at nutrition classes may have been due to a number of factors: lack of transportation, need for childcare, alcohol-related problems, other social factors, and high staff turnover. Although desired by the participants, weekly nutrition classes may have been too onerous, and less frequent but more intensive nutrition classes may be more successful.

Prevention of Chronic Disease and Conditions

- Type 2 Diabetes
- Overweight/Obesity

Risk Factors and Other Issues

- Alcohol and Other Drugs
- Physical Inactivity
- Unhealthy Eating/ Nutrition

Setting

- Community at Large

Audiences

- Adults (19-64 years)

Audiences Characteristics

- Aboriginal

Approach

- Education

Program Description

Participants were identified and recruited from a database and extensive local advertising. They were screened for fit with the eligibility criteria (obese normoglycaemic, and aged 25-54). Eligible individuals were randomly assigned to one of the two treatment conditions: Pima Pride (n=47) or Pima Action (n=48). An observational group included eligible subjects who declined randomization (n=35).

Data collection from the Intervention group at baseline included: blood pressure, height, weight, waist circumference, fasting, and post-load plasma glucose and insulin concentrations, work and leisure-time physical activities (with a Pima specific questionnaire), energy expenditure, and nutrient intake (24-hour recall).

Follow-up of the intervention groups occurred at 6 and 12 months. After follow-up, subjects were informed of their weight, plasma fasting glucose, and serum cholesterol concentrations, while all other measurements were not disclosed until completion of the study. At the end of 12 months of intervention, subjects in both intervention groups were given the choice to: continue attending their assigned intervention, switch to the other intervention, or to quit. Twenty-two of the participants in the observational group (n=35) were examined once during the study and data was collected on anthropometry and glucose tolerance.

Activities in the Pima Action group

Program participants could choose from a variety of non-vigorous physical activities and could exercise with a group or individually, including: walking, water aerobics, softball, volleyball, and paid activities such as community farming/gardening, and cleaning the local cemetery.

Each participant kept a monthly activity log that was reviewed by staff. Dieticians advised participants on the recommendations of the American Diabetes Association. Weekly group meetings and home visits were part of the nutrition section. Behavioural techniques were used during classes and consisted of modeling, role-playing, group problem-solving, food preparation demonstrations, food tasting, and grocery store tours.

Activities in the Pima Pride group

Participants met in small groups approximately once a month to discuss their understanding and attitudes about current lifestyles of the community, and listened to local speakers on Pima culture and history. Members of the community acted as discussion leaders and facilitated the group meetings.

Staff members recorded attendance at group meetings. Basic printed information on healthy eating and exercise habits was distributed to participants. To facilitate communication between staff and group members, and between group members themselves, Pima Pride newsletters were circulated. Participants had the option of contributing to the newsletters, which carried Pima poetry, stories and folklore. Participants took part in a detailed interview, lasting between 40 minutes and 2 hours, on their perceptions about health and lifestyle.

Resources

None mentioned.

Other Information

Future lifestyle intervention programs should consider local culture and values, and more effectively address potential constraints to participation, such as participant preference and socioeconomic factors.

References

Venkat Narayan, K.M. et al. (1998). Randomized clinical trial of lifestyle interventions in Pima Indians: a pilot study. *Diabetic Medicine*, 15, 66-72.

Promising Practice

Source

Monash University (Victoria, Australia); University of North Carolina (Chapel Hill, north Carolina); Derby Aboriginal Health Service (Derby, Australia)

Overview

This program looks at trends in diet and physical activity behaviours, body weight, glucose tolerance and fasting insulin and triglyceride concentration. A cohort of overweight and diabetic people was tracked over two years. Some of them were active participants in the diet and physical activity intervention and were compared to those in the same cohort but not participating in the intervention.

At the beginning, the community was responsible for implementing and directing the program. Community initiatives were activated in the broader community and were assessed over four years using three-cross-sectional community surveys.

An initial reduction in BMI was observed among the Intervention group, although weight loss was not sustained. Also, evidence was found for protection against increases in plasma glucose and triglycerides. At the community level, there was, however, no significant change in the prevalence of diabetes or IGT over four years of follow-up.

The target audience was high-risk overweight and diabetic people and individuals in the Australian Aboriginal community of Looma over the age of 14.

Results/Outcomes

The goal of the project was to assess the sustainability and effectiveness of a community-directed program for primary and secondary prevention of obesity, diabetes and cardiovascular disease in an Aboriginal community in north-west Western Australia.

The objective of the project was to examine trends in diet and physical activity behaviours, body weight, glucose tolerance, fasting insulin and triglyceride concentrations for a remote Australian Aboriginal community responsible for implementing and directing a lifestyle improvement program.

Three types of evaluation occurred: process, impact and outcome.

Process Evaluation

Key aspects of the project process that were evaluated included: intervention initiatives, council policy supporting the initiatives and community support. Researches suggest that the process was strong.

Impact Evaluation

The impact evaluation measured the proportions of persons making dietary and physical activity changes. Since sparse baseline data was available from younger person, impact results apply only to the 35+ age group. Three cross-sectional community surveys were conducted at baseline, 2 years and 4 years following the intervention. Participation was voluntary and data were self-reported and showed:

- Baseline: few reported attempting to reduce their intake of sugar and/or fat and more than 60% of persons reported no form of regular physical activity
- Compared to baseline, significantly fewer persons reporting no attempts to lower their intake of fat and/or sugar at both the 2 and 4-year follow-ups ($p < 0.001$)
- Compared to baseline, the proportion of sedentary individuals was significantly lower at 2-years ($p < 0.046$) and 4-years ($p < 0.004$)

Outcome Evaluation

The outcome evaluation consisted of two parts: a longitudinal evaluation of the initial intervention with comparison to a 'non-intervention' group, and cross-sectional community risk factor surveys.

Description of the Longitudinal Evaluation

A longitudinal evaluation of the initial intervention occurred over 24 months with a group ($n=96$) of volunteers who were initially screened to determine whether they were at high-risk for diabetes (overweight and results of biochemical measures) or had diabetes. Follow-up at 6-month intervals was incomplete for 47 of the individuals screened, usually because they were absent from the community ($n=27$). From this group who completed follow-up, a cohort of overweight and diabetic people ($n=32$) were tracked every 6 months, over a span of two years following the onset of the intervention program. This cohort was compared to a non-intervention group ($n=17$).

Results of the Longitudinal Evaluation

The intervention and non-intervention groups were similar with respect to age, gender, BMI, prevalence of abnormal glucose tolerance and baseline physical activity and dietary habits. Decreases in mean BMI occurred at both 6 and 12 months, relative to baseline. However, after 12 months, the difference was no longer apparent. Fasting plasma glucose concentration changed significantly across groups over the first 6 months but returned to baseline after 12 months and there was no statistical significance between the intervention and non-intervention groups. Fasting insulin concentration was significantly lower at 18 months ($p=0.004$) relative to baseline values and the interaction between intervention/non-intervention groups approached significance. Fasting plasma triglyceride concentration did not vary with time.

Description of Community Surveys

Anthropometric and biochemical outcome measures were assessed in three cross-sectional community risk factor surveys. Body mass index (BMI) and metabolic control (fasting plasma glucose, impaired glucose tolerance, diabetes, fasting insulin concentration, and fasting plasma triglyceride) were the specific outcome measures. Response rates among younger people (15-34 years) were poor and diminished from baseline (74%), 2 year (61%) and 4 year (43%) follow-ups. Response rates among the older cohort (35+ years) were consistently high: baseline (100%), at 2 year (90%) and 4 year (80%) follow-ups.

Results of the Community Surveys

Among those aged 15-34 years:

- Mean BMI increased over the 4 year follow-up equivalent to an approximate weight gain of 1 kg/person/yr ($p < 0.05$)
- The magnitude of this weight gain did not differ between genders ($p = 0.631$)
- Young women had a higher BMI than young men ($p < 0.001$)
- Mean glucose was greater for young women than young men ($p = 0.015$)
- Young women had higher fasting insulin concentrations than young men ($p < 0.001$)

Among those aged 35+:

- Mean BMI did not change
- Mean fasting insulin concentration tended to decrease with time ($p < 0.05$), no gender differences

Among both age groups:

- Mean fasting plasma concentration did not vary with time
- The prevalence of IGT (age-adjusted using the baseline survey sample as the reference population) was 17.7%, 21.1%, and 14.8% at baseline, 2 and 4 years, respectively
- The age-adjusted prevalence of diabetes was 24.1%, 21.8%, and 24.7% at baseline, 2 and 4 years, respectively

Fasting plasma triglyceride concentration did not change during the intervention period

The program continued to operate six years after it began. The sustainability is believed to be related to:

- Widespread community support
- Ongoing commitment from the Aboriginal Health Workers, community council, stored management, and other community groups
- Prompt feedback of results to the community from the academic staff, particularly in the early program stages.

Prevention of Chronic Disease and Conditions

- Cardiovascular Disease
- Type 2 Diabetes
- Overweight/Obesity

Risk Factors and Other Issues

- Physical Inactivity
- Unhealthy Eating/ Nutrition

Setting

- Community at Large
- Grocery Stores

Audiences

- Youth (13- 18 years)
- Adults (19-64 years)

Audiences Characteristics

- Aboriginal

Approach

- Education
- Environmental Support
- Policy

Program Description

Resources

None mentioned.

Other Information

While the program was specifically designed for an Australian Aboriginal community, it could be used in a Canadian Aboriginal community.

The program was a collaborative approach between the target community, the regional health centre, and researchers. The collaborative effort was seen as the key to success of the program.

Costs were not specified. However, funds were secured to hire a Diabetes Nurse Educator (who worked closely with researchers) and Aboriginal health Workers.

References

Rowley, K.G., Daniel, M., Skinner, K., Skinner, M., White, G.A. & O'Dea, K. (2000). Effectiveness of a community –directed 'healthy lifestyle' program in a remote Australian Aboriginal community. *Australian and New Zealand Journal of Public Health*, 24(2), 136-144.

Promising Practice

Source

Diabetes Life Education (Christchurch, New Zealand)

Overview

The Maori and Pacific Diabetes Awareness program is an innovative primary prevention strategy that builds on and taps into existing relationships in Maori and Pacific communities in Canterbury. It is based on community development models and approaches, and arose out of work done locally on barriers to Maori and Pacific people assessing health information and services, and an experimental community awareness and screening program in 1999. The overall aim of the program was to prevent diabetes and its complications by raising awareness of the modifiable risk factors for diabetes and other health problems and by training and supporting Maori and Pacific lifestyle advisors to work in their communities.

The target audience for the program was Maori and Pacific communities in Canterbury, New Zealand.

Results/Outcomes

The goal of the program was to reduce modifiable risk factors for diabetes and other health problems by supporting key Maori and Pacific Island people to encourage community action through culturally relevant programs and community leader training.

There were four program objectives:

- To identify 15 key people in the community from different Pacific Island and Maori groups in Canterbury and train them in diabetes prevention strategies
- To support these leaders in providing opportunities for education and lifestyle change for the people, as identified through their own community networks
- To resource the leaders and program participants to achieve personal and community development objectives for lifestyle change
- To evaluate both the training component and community development program in terms of qualitative and quantitative data.

The program began with a community consultation and needs assessment and was pilot tested in 2000. Process evaluation included focus group interviews with Maori and Pacific advisors. A community participant survey collected data on overall satisfaction. No results were reported. The Impact evaluation collected information on nutrition and exercise sessions. Participants reported an increased awareness of nutrition and that the awareness had resulted in the reduction of butter, fat and salt in cooking; reading nutrition labels; preparing healthy meals on a budget; eating more fruit; and preparing more low fat stir fry meals. They also requested more exercise sessions

While desired outcomes included a change in waist measurement for those in the exercise program, actual measurements were not taken as the BMI measurements and weight charts were not appropriate for Maori and Pacific people.

Some of the lessons learned included:

- Maori people are difficult to reach in groups
- It takes time to build relationships and trust
- The program was well received in the community and the aims were met.

Prevention of Chronic Disease and Conditions

- Type 2 Diabetes

Audiences

- Adults (19-64 years)

Risk Factors and Other Issues

- Physical Inactivity
- Unhealthy Eating/ Nutrition

Audiences Characteristics

- Aboriginal
- Community Volunteers
- Health Care Professionals

Setting

- Community at Large

Approach

- Education
- Environmental Support

Program Description

The key program activities included:

1. Healthy eating displays and cooking demonstrations to promote healthy eating
2. Sports days and a health fair
3. Group chair exercise sessions to promote physical activity (3 times/week)
4. A presentation on diabetes prevention to raise awareness
5. Diabetes screening

Leaders received 50 hours of training over several months, covering aspects of diabetes prevention, nutrition and physical activity, cultural issues and community development processes. Trainers included a diabetes specialist doctor, a public health doctor, dietitian, nurse, Maori health worker, Pacific Island nurse, and some of the leaders who had experience working in the community development model.

The program was advertised via radio, newspaper articles, and with posters. Advisors met monthly to discuss planning strategies, achievements and future directions.

Resources

Resources included a flip chart and poster encouraging take-out food as a treat, not a lifestyle, and a video on healthy eating.

Other Information

The cost of implementing the program over one year was \$77,000. Recommended staff resources for the program period (one-year) is 1.5 Full Time Equivalent (FTE). In addition, twenty individuals were trained as lay health advisors. Their time commitment is unknown.

The program was designed with extensive recommendations from the community.

References

No references available

Promising Practice

Source

University of Hawaii and the Queens Medical Center, Honolulu.

Overview

The Native Hawaiian Diabetes Intervention Program (NHDIP) was a four-year research project. The main objective was to determine whether a lifestyle intervention implemented with a family ('ohana) support (OS) person would improve lifestyle behaviours compared with a stand intervention (SI). The program was based on the Trans-theoretical Model and Stages of Change theory.

A culturally relevant lifestyle intervention was developed and implemented by peer educators in two rural Native Hawaiian communities.

The target group for NHDIP were individuals of Native Hawaiian ancestry, over 30 years of age, with diabetes or at high risk for the disease (determined by the presence of impaired glucose tolerance or two or more components of insulin resistance syndrome: hypertension, dyslipidemia, elevated triglycerides, low HDL cholesterol, central adiposity, and obesity).

Results showed that stage of change was significantly associated with positive dietary and exercise behaviours.

Results/Outcomes

Two types of evaluation were reported: process and outcome.

Process Evaluation

The process evaluation measured how effectively participants achieved the action/maintenance stage of behaviour change at follow-up. Results showed that stage of change was significantly positively correlated with dietary and physical activity behaviours. Native Hawaiians receiving the OS intervention were more likely to advance from pre-action to action/maintenance for fat intake and physical activity than those in the SI group.

Outcome Evaluation

OS participants who advanced from pre-action to action/maintenance showed more improvement in dietary fat intake and physical activity than those in the SI group. Mean changes in diet and exercise behaviours from baseline to follow-up were not statistically significant for either intervention group and had high variability.

These results should be interpreted with some caution, as there are several limitations (nonrandomized study design, relatively small sample sizes, and lack of a true control group). Nevertheless, the results are of interest because persuading individuals to change lifestyle behaviours is often difficult and therefore, understanding the process of improving lifestyle behaviours through mediators of behaviour change may assist in developing more effective and efficient interventions.

Prevention of Chronic Disease and Conditions

- Type 2 Diabetes
- Hypertension
- Overweight/Obesity

Audiences

- Adults (19-64 years)

Risk Factors and Other Issues

- Physical Inactivity
- Unhealthy Eating/ Nutrition

Audiences Characteristics

- Aboriginal
- Peer Support/Educator

Setting

- Community at Large

Approach

- Education
- Environmental Support

Program Description

The main purposes of this project were:

To evaluate whether participants receiving the 'ohana support (OS) lifestyle intervention showed greater improvements in diet and physical activity level and stage of change compared with the Standard Intervention (SI) group

To evaluate whether forward movement in stages of change was associated with improvement of healthy diet and exercise behaviours.

All participants in the OS intervention were asked to identify a support person who would attend all program activities and examinations with them over the 6-month program duration.

Participants in the standard intervention were asked to:

- Attend 3 group teaching sessions
- Follow-up by telephone with program staff

- Attend exercise classes over a period of 6 months

Participants in the ‘ohana support intervention were asked to:

- Use their support person to help them overcome challenges in making lifestyle behaviour changes
- Attend 5 group teaching sessions
- Follow-up face-to-face with program staff
- Attend exercise classes over a period of 6 months

Resources

No information on whether any resources used were developed specifically for the program. Program follow-up involved the distribution of two handouts: “Cutting Back on Sugar”, and “Continuing the Journey”.

Other Information

Research examinations were performed on site by trained community research staff who performed clinical measurements and interviewed participants using research questionnaires.

Community peer educators at both sites were trained regarding program implementation by the core research staff through didactic and role-playing teaching methods. Peer educators were then individually evaluated on site and/or videotaped during a teaching session after the launch of the program. Educators received verbal feedback and discussions were conducted with the core team every month to ensure standardization.

No detail was given regarding background or qualifications required. Lay individuals with no expertise were used in the program as ‘ohana supports for a friend or relative.

Costs were not reported.

This program required collaboration between core research staff, community peer educators, and ‘ohana support persons.

References

Mau, M.K., Glanz, K., Severino, R., Grove, J.S., Johnson, B. & Curb, J.D. (2001). Mediators of lifestyle behavior change in Native Hawaiians. *Diabetes Care*, 24(10), 1770-1775.

Source

Monash University (Victoria, Australia); University of British Columbia (Victoria, BC); Okanagan University College (Kelowna, BC)

Overview

The goal of this study was to design an effective community-directed initiative that could achieve:

1. Risk reduction or improved control amongst high-risk individuals or individuals at familiar risk for diabetes
2. Greater coping amongst individuals with diabetes and IGT
3. Community-wide diabetes risk reduction
4. Social environmental change

The target audience included on-reserve adult residents (aged 18+) of the registered Indian population in British Columbia's rural Okanagan region (n=475). Two communities served as comparison groups for the quasi-experimental design: Spallumcheen (n=212) and Penticton (n=238).

The study was a 24-month community-based non-insulin-dependant diabetes mellitus (NIDDM) prevention and control project. The Aboriginal community was involved in the design of the approaches used during a 7-month pre-intervention phase.

Results/Outcomes

Formative Evaluation

A formative evaluation was part of the planning stages of the program. During this 7-month period, qualitative data was gathered to identify strategies for prevention and control. Through interviews and public meetings, information was gathered about residents' perspectives about diabetes, information was shared on prevalence and outcome of the disease and local perception of the process of the illness was heard. This process assisted in creating an Intervention that linked formal theory with Aboriginal logic and cultural concepts.

Process Evaluation

Two areas of the study were measured by the Process Evaluation: Cross-sectional measurements, and surveys of community systems.

Cross-Sectional Measurements

Through telephone or home-visit interview, respondents provided ratings on a 10-point scale for the cross-sectional measurements:

1. Awareness of the project
2. Perceived knowledge of diabetes
3. Participation
4. Consumption of dietary fat
5. Consumption of complex carbohydrates

Results of Cross-sectional Measurements

Net increases occurred in the Intervention community in knowledge of diabetes, sweat-producing physical activity. No difference occurred in consumption of dietary fat, complex carbohydrates, or in participation or awareness of the project. Knowledge of diabetes was significantly greater in the Intervention community than in the comparison communities and the effect increased between surveys.

Surveys of Community Systems

Surveys were conducted during meetings with researchers, project workers, community health representatives, and nurses. Participants extensively debated standardized questions that asked about applying social change theory to community health initiatives.

Results of the Surveys of Community Systems

While participation in the Intervention was slow at the beginning, level of involvement grew over time. Publicity increased and people became more committed to preventing diabetes in their own community. Additional successes included:

- The creation of a coalition
- Numerous presentations on the project
- Support for hiring a recreation co-coordinator
- Increased participation on local sports teams
- Discussions of diabetes at gatherings
- Awareness of the need for physical activity

Despite the successes noted above, some family groups were resistant to change and opposed to the project.

No impact evaluation was evident.

Outcome Evaluation

A variety of physiologic, anthropometric and behavioural tests were taken as part of the outcome evaluation. Decreases for the Intervention group were achieved in systolic blood pressure and BMI, but not for:

- Fasting glucose, hemoglobin, cholesterol, triglycerides
- Weigh, height, waist and hip girth

Dietary behaviour, smoking and alcohol consumption, physical activity, psychosocial measures and knowledge did not change.

Prevention of Chronic Disease and Conditions

- Type 2 Diabetes

Risk Factors and Other Issues

- Physical Inactivity
- Unhealthy Eating/ Nutrition

Setting

- Community at Large
- Media

Audiences

- Adults (19-64 years)

Audiences Characteristics

- Aboriginal

Approach

- Education
- Environmental Support

Program Description

Community meetings were held to explain the study, foster support and facilitate recruitment. Comparison communities were told that they would not receive the Intervention but would receive the results of the study at its completion to help them develop diabetes prevention programs. They were also told that health care services would continue to be provided to the residents.

The study began with a planning phase to gather information that would assist in developing strategies to be implemented with the community. It was followed by a recruitment phase where people with diabetes and relatives at risk were approached through direct, face-to-face meetings with community workers. Prospective participants were asked to complete surveys at baseline, mid- and end- of the Intervention periods. All participants provided informed, written consent to participate.

The next phase involved cross-sectional surveys (baseline and end of project) to assess impact at the community level. These were conducted by phone or home visits.

At the 8-month point (after the planning phase), baseline screening occurred and included the following activities:

- A variety of activities to facilitate the development of skills for healthful living (such as walking group, aerobics and gentle exercise classes, cooking demonstrations, forums on diabetes)
- Media campaign to educate and empower community action and to promote supportive environments
- Public meetings to discuss aggregate community level results
- Distribution of flyers with diabetes, weight loss, diet and physical activity information
- Public acknowledgment of personal accomplishments to encourage modeling of behaviour
- Distribution of prizes

Resources

A number of resources were produced for the media campaign, including newspaper articles, newsletters, briefs, television and radio resources. Monitoring booklets were used to track individual changes throughout the study.

Other Information

Indigenous health workers took a training course on group dynamics, interviewing techniques and participant observation before conducting interviews. Registered nurses conducted the cohort measurements (physiologic and anthropometric).

No information on costs provided.

This Project involved extensive collaboration and community-level implementation of program activities. Other communities may want to consider a longer implementation timeline to ensure penetration of the program into the community and to allow for systematic evaluation. Involving Aboriginal people in the research process was seen as beneficial.

References

Daniel, M., Green, L.W., Marion, S.A., Gamble, D., Herbert, C.P., Hertzman, C. & Sheps, S.B. (1999). Effectiveness of community-directed diabetes prevention and control in a rural Aboriginal population in British Columbia, Canada. *Social Science and Medicine*, 48, 815-832.

Promising Practice

Source

University of Toronto and health care providers in Sioux Lookout, Ontario.

Overview

This program began in 1990 at the Sioux Lookout Zone Hospital. It evolved and grew in terms of staff and programs into a community-driven and local effort to prevent and manage non-insulin dependent diabetes mellitus (NIDDM) in the Aboriginal population.

The program involves diabetes education and health care services based on the goals of diabetes prevention and diabetes management. The initiatives include traveling foot-care and diabetes education programs, community health representative training programs, a youth camp, school programs, grocery store labeling programs and culturally relevant education manuals and materials.

That target group for the program was individuals of all ages living in the community of Sioux Lookout, Ontario. More specific target audiences for some activities included women in the community diagnosed with gestational diabetes and youth under the age of 18 diagnosed with NIDDM.

Results/Outcomes

The goal of the program was to provide personally and culturally relevant diabetes education programs to clients, families, communities and caregivers, and to do so at a local level.

The objective was to describe components of a program designed to prevent and manage NIDDM in a northwestern Ontario Aboriginal community.

The goal of the management section of the NIDDM program was to maximize daily quality of life through empowering clients, their families and communities. The goal of the prevention component of the program was to have activities aimed at the primary prevention of diabetes.

One type of evaluation (process) was reported on and another was underway (impact).

Process Evaluation

The program has had significant impacts on attitudes, knowledge, behaviours, and health outcomes. This has been determined through focus groups, client questionnaires, self-reports

of behaviour change and laboratory results. The youth camp has allowed youths with diabetes to meet each other and discuss issues of concern to them. Not further details are available.

The Sioux Lookout Diabetes Program has resulted in the community assuming a greater responsibility for local administration of prevention and management programs for NIDDM. It began as a hospital-based intervention and has evolved and grown into a large community-wide endeavour.

Prevention of Chronic Disease and Conditions

- Type 2 Diabetes

Audiences

- Youth (13 – 18 years)
- Adults Female (19-64 years)
- General Community (incl. children, youth, adults and seniors)

Risk Factors and Other Issues

- Alcohol and Other Drugs
- Physical Inactivity
- Unhealthy Eating/ Nutrition
- Stress

Audiences Characteristics

- Aboriginal

Setting

- Day Camp
- Elementary Schools
- Secondary Schools
- Community at Large
- Grocery Stores
- Hospital-based
- Media

Approach

- Awareness
- Education
- Environmental Support

Program Description

The SLDP began with funding for two diabetes educators. It has moved from the hospital into the community and is now managed primarily by the community. The two main components are: Diabetes Management and Diabetes Prevention. Diabetes Management includes the following elements:

- Diabetes education supported by regular follow-up
- Family members were encouraged to attend the education sessions
- Home visits
- Foot-care services and the training of clients in their own foot care

- A grocery store tour program with a food-labelling component in cooperation with the Northwest Company and Versa Foods. The goal was to assist clients in selecting healthy choices
- Store-level taste-tests
- Distribution of the “Northern Ontario Budget Wise Food Guide”
- Education for women with gestational diabetes and screening for diabetes following delivery
- A summer camp offered for youth with Type 2 diabetes under the age of 18 living in the Sioux Lookout Zone
 - The camp has an informal learning environment and the goal is to reinforce the impact healthy living has on blood glucose control
 - Discussions take place with a facilitator and youth around a campfire
 - Some common issues discussed include alcohol and the stress of relationships
- Efforts directed towards identifying people in the region with undiagnosed diabetes

The Diabetes Prevention component includes:

- Translated call-in radio shows which are related to a topic relevant to the community such as physical activity or stress management
- Development of catchy radio jingles
- Translated and highly visual newspaper ads on diabetes related topics
- Open houses for the communities at large
- Support groups (e.g. the Cook to Live and be Active for Life community kitchen group – which walks or plays dodge-ball as the food is cooking)
- Participation in a community-wide action group whose goal is to make Sioux Lookout an active living community
- School-based programs e.g. informative learning sessions and “Diabetes Jeopardy”

Resources

The “Diabetes Jeopardy” game was developed by the program and is used in schools. It reviews diabetes information and encourages students to take risks in a supportive environment. A translated taped radio show is available to explain diabetes basics and the grocery store program. A “Northern Ontario Budget Wise Food Guide” was also developed and illustrates how some nutritious and desirable choices can be cheaper than less nutritious but perceived cheaper foods.

Other Information

A vision for the future would include further development and coordination of the network of local diabetes workers in order to address more fully and support prevention and management needs on an ongoing basis.

References

Morrison, N., & Dooley, J. (1998). The Sioux Lookout Diabetes Program: Diabetes prevention and management in Northwestern Ontario. *International Journal of Circumpolar Health*, 57, Suppl 1, 364-369.

South Auckland Diabetes Project



Date of Intervention: N/A

Originally Reviewed: April 2005

Last Updated: July 2007

Promising Practice

Source

Whaiora Marae Health Promotion and Diabetes Disease Prevention Programme

Overview

The hub of Maori culture is the marae, a place where Maori identify, and where values and cultural practices are affirmed within an over-arching spiritual dimension. This is the setting where the South Auckland Diabetes Project (SADP) was implemented. The marae was selected in the belief that conventional settings for health education and services would have less impact with high-risk groups (for type 2 diabetes) such as the Maori.

The target audience for the program was the marae community, defined as anyone connected with the marae in a cultural, spiritual, family or social sense. A total of 436 individuals participated. Many of them knew little about diabetes, had low physical activity levels and high intakes of fatty foods. Furthermore, 40% had a family history of diabetes.

The program was initiated by a partnership between the SADP and the Whaiora Marae. It involved diabetes education, healthy lifestyle support program and exercise sessions at the marae.

When funding expired, the marae community established its own health program including the creation of a health and welfare portfolio, the declaration of a 'smoke-free' marae, and several health promotion days. In additions, marae catering provides low-fat, high-fibre foods and weekly line-dancing sessions.

Results/Outcomes

The goal of the program was to develop strategies to promote lifestyles likely to be associated with a reduced incidence of type 2 diabetes. The objectives were:

To provide health-related interventions such as education, diabetes awareness, nutrition, exercise and a support group for those affected by diabetes

To develop a continuing program that marae members would eventually run for themselves.

Both formative and process evaluations were part of the program. No impact or outcome evaluations were reported.

Formative Evaluation

The formative evaluation consisted of a cross-sectional survey of behavioural and metabolic risk factors for type 2 diabetes, along with qualitative data collection. The majority of the participants knew little about diabetes, had low levels of vigorous activity and high intakes of fatty foods. 40% of participants had a family history of diabetes. Undiagnosed diabetes, high blood pressure, hypercholesterolaemia, obesity, smoking and self-reported excessive alcohol consumption were common.

Process Evaluation

Qualitative assessment was carried out on several aspects of the process, including:

- The partnership meetings
- The program launch event
- Major promotional events
- Meetings of the diabetes support group
- Exercise sessions
- Interviews with the SADP's Maori cultural advisor, Maori liaison worker, medical director and diabetes specialist.

Overall interest in continuing the program is strong. Since the prevalence of diabetes was high and knowledge levels are poor, the program seems necessary. Access to a marae-based diabetes primary-prevention program is particularly important in view of the inequity in access to primary care among Maori.

Potential limitations of the study include an inability to assess participation rates due to confidentiality reasons as well as a lack of quantitative outcome evaluation.

Prevention of Chronic Disease and Conditions

- Type 2 Diabetes

Audiences

- Adults (19-64 years)

Risk Factors and Other Issues

- Physical Inactivity
- Tobacco Use
- Unhealthy Eating/ Nutrition
- Social Determinants of Health

Audiences Characteristics

- Aboriginal

Setting

- Community at Large

Approach

- Awareness
- Education

Program Description

There were three steps to program implementation:

Health Screening Sessions were used to collect baseline weight and other measurements, self-reports on eating and exercise habits, and diabetes knowledge scores. Blood pressure testing and laboratory tests for diabetes and lipids were conducted.

Health-Related Interventions **were introduced through a major launch event that included diabetes awareness, nutrition, exercise and a support group for those affected by diabetes.**

Marae-run Program included the creation of a health and welfare portfolio, the declaration of a 'smoke-fee' marae and several health promotion days (attracting 80-100 people), weekly line-dancing lessons and promotion of low-fat/high-fibre foods among marae catering.

Resources

A health and welfare portfolio was developed by the marae.

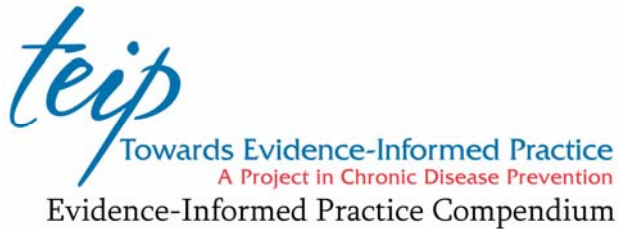
Other Information

Such a program would only be appropriate for an Ontario context if aboriginal members have access to a community similar to a marae, since it is the hub of Maori culture and attracts a large proportion of the Maori population.

References

Simmons, D. & Voyle, J.A. (2003). Reaching hard to reach, high-risk populations: Piloting a health promotion and diabetes disease prevention programme on an urban Marae in New Zealand. *Health Promotion Int.*, 18, 41-49.

Zuni Diabetes Prevention Program



Date of Intervention: N/A

Originally Reviewed: April 2005

Last Updated: July 2007

Promising Practice

Source

Department of Family and Community Medicine (University of Arizona); Zuni Public School District.

Overview

The Zuni diabetes Prevention Program is a community-based primary prevention project designed to reduce the prevalence of diabetes risk factors among high-school age youth. The Program strives to enhance knowledge of diabetes and to support increased physical activity, increased fruit and vegetable intake, and reduced soft drink consumption. The primary mechanisms of intervention are diabetes education, a school-based wellness center, supportive social networks, and modification of the food supply available to teens. Program evaluation uses a multiple cross-sectional model; assessment occurs at three points within the 4-year project. Midproject results indicate a significant reduction in soft drink consumption and an increase in glucose/insulin ratios, suggesting a decline in the incidence of hyperinsulinemia.

Results/Outcomes

The primary goal of the program is to reduce type 2 diabetes risk factors among Zuni high-school age youths:

- Reduce obesity and pattern of fat distribution
- Lower insulin resistance
- Increase physical activity levels and cardiovascular fitness
- Decrease consumption of sugared beverages
- Increase consumption of high-fibre foods, especially fruits and vegetables

Secondary risk factor targets:

- Improve knowledge, attitudes and behaviours related to type 2 diabetes
- Increase healthy food choices
- Increase physical activity

The program objectives include:

- Develop a faculty network at the high schools by having faculty attend regularly scheduled meetings and 1- and 2-day interactive workshops
- Develop a community network with parents and other youth-oriented organizations
- Recruit students to assist in data collection, event planning, and activity monitoring in the schools
- Develop a Zuni Teen Wellness Center in one of the high schools, and have students attend this facility
- Persuade the cafeteria staff to make healthier choices available to students

Three types of evaluation were described: formative, process and outcome. Although data for impact evaluation was collected, it was not reported for changes in knowledge, attitudes and beliefs related to Type 2 Diabetes.

Formative Evaluation

Researchers use five different methods of formative assessment:

1. Focus groups with high-school age youth addressing their understanding of the etiology, treatment, and epidemiology of type 2 diabetes and their attitudes and beliefs regarding health, nutrition, and physical activity
2. Interviews with high school faculty, staff, and administrators to record current biology, physical education, and health requirements and to develop a better understanding of the strengths and weaknesses of the school lunch program
3. Collection of single 24-hour dietary recalls from high-school age youth to assess food choices and serving sizes
4. Administration of a one-page questionnaire designed for youth to report their current knowledge and attitudes about the existing Zuni Wellness Center and other recreational facilities.
5. Discussion with food personnel to identify barriers to serving low-fat high-fibre foods in the school cafeteria.

Process Evaluation

Researchers measured attendance at the Wellness Center. The mean number of student visits per month increased with each year of operation.

Outcome Evaluation

Comparison from year 1 and year 3 reveal students had:

1. Decreased BMI
2. Decreased consumption of sugared beverages
3. Increased consumption of dietary fibre
4. Decreased resting heart rates (suggesting improved cardiovascular fitness)
5. Increased glucose/insulin ratios (suggesting a decline in the presence of hyperinsulinemia)

Items 2 and 5 above were statistically significant.

At the end of the program, fasting insulin levels had declined significantly from baseline in both males and females.

The program experienced problems with participation from school staff due to high turnover and inadequate administrative support. The program was described as a “gentle and consistent part of the students” lives since it exposed them to an environment that is conducive to healthy choices.

Although results of the program showed that only the changes in beverage consumption and insulin levels were statistically significant, the trends noted indicate that behaviours are changing in the desired direction.

Prevention of Chronic Disease and Conditions

- Type 2 Diabetes
- Overweight/Obesity

Audiences

- Youth (13-18 years)
- Families/Parents/Couples

Risk Factors and Other Issues

- Physical Inactivity
- Unhealthy Eating/ Nutrition

Audiences Characteristics

- Aboriginal

Setting

- Secondary Schools
- Community at Large

Approach

- Education
- Environmental Support

Program Description

The program lasted 4 years. It began with baseline assessment in the fall of 1993. Midproject assessment occurred in the fall of 1995 and final assessment took place in the spring of 1997. In each assessment, all 11th and 12th graders were targeted. In the 9th and 10th graders, only height, weight, knowledge, attitudes, and beliefs were evaluated.

There were four intervention strategies that were developed to target the identified risk factors:

1. The establishment of supportive social networks (community, high school faculty, and youth)
2. The construction of a wellness facility designed specifically for teens
3. Integration of diabetes education into the existing school curriculum
4. Modification of the food supply available to teens (through snack selections and cafeteria)

The timeline for the project included:

Year 1:

- Construction of Wellness Center
- Pop and water intervention: sugar-free selections added to machines
- Development of supportive networks
- Beginning of faculty education workshops

Year 2:

- Management of Wellness Center
- Introduction of a physical activity period
- Beginning of food service intervention: workshop held for personnel
- Further faculty education: work sessions with researchers to develop diabetes education units

Year 3:

- Purchase of additional equipment for the Wellness Center
- Removal of all sugared beverages from vending machines
- Implementation of diabetes education classes
- Development of the Wellness Center as a resource center

Year 4:

- End of project data collection

Resources

Diabetes education units were developed and integrated into the high school curricula in home economics, biology, geometry and computers.

Other Information

Program impact would be enhanced if the program could eventually attract strong support from school administration, high school staff, and parent-teacher organizations. Impact may also be improved by including standardized diabetes education units in the curricula.

Interested high school staff attended a 2-day interactive education workshop designed by program staff. Presentations on the program's objectives and strategies were provided annually at faculty orientation meetings and high school faculty meetings.

Interested high school faculty attended one-on-one work sessions to discover how to integrate diabetes education into their courses.

Food service personnel attended a 3-hour workshop, which provided demonstrations on low-fat cooking techniques and healthy recipes.

Costs were unknown, but thought to be reasonable.

The most difficult (and costly) part of the intervention may be the construction of a wellness facility if one does not already exist.

References

Ritenbaugh, C.K. et al. (2003). A lifestyle intervention improves plasma insulin levels among Native American high school youth. *Preventive Medicine*, 36, 309-319.

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