Effective Nutrition Education for Aboriginal Australians: Lessons from a Diabetes Cooking Course
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ABSTRACT
Objectives: To examine the experiences of Aboriginal Australians with or at risk of diabetes who attended urban community cooking courses in 2002-2007; and to develop recommendations for increasing the uptake and effectiveness of nutrition education in Aboriginal communities.

Methods: Descriptive qualitative approach using semistructured interviews with 23 Aboriginal course participants aged 19-72. Verbatim transcripts were coded using NVivo 7 software, and qualitative analysis was undertaken.

Results: Engagement and learning were increased by emphasizing the social aspects of the program, holding the course in a familiar Aboriginal community-controlled health setting and using small group learning with Aboriginal peers. Partnership with a vocational training institute provided teaching expertise, but there was conflict between vocational and health promotion objectives.

Conclusions and Implications: Nutrition programs for Aboriginal Australians should be social, flexible, and held in accessible, culturally appropriate settings and focus on healthful cooking techniques using simple, affordable ingredients.

Key Words: health education, health promotion, nutrition, Australian Aboriginal, diabetes mellitus (J Nutr Educ Behav. 2012;44:55-59.)

INTRODUCTION
Diabetes and obesity contribute strongly to the 11-year life expectancy gap between Aboriginal and Torres Strait Islander peoples and non-indigenous Australians. The diabetes rate is 3-4 times higher and diabetes-related death is 12 times higher in Aboriginal and Torres Strait Islander peoples. Over 50% of Aboriginal people are overweight or obese. Current dietary patterns in Aboriginal communities are often high in fat and carbohydrates and low in fruit and vegetables, and there is usually little access to traditional food. Aboriginal people experience marked socioeconomic disadvantage compared to other Australians.

Despite the recognition that diabetes and nutrition education are core to the management of diabetes, and that lifestyle education substantially improves risk factors and delays the onset of diabetes in people at high risk, Aboriginal people access diabetes and nutrition education less than other Australians. There has been little research aimed at identifying nutrition interventions that are effective in Aboriginal communities.

METHODS
Setting and Population
The Aboriginal Medical Service Western Sydney (AMSWS) is a large Aboriginal community-controlled primary health service governed by an elected board of community representatives. The AMSWS provides multidisciplinary care to the Aboriginal people living in the disadvantaged outer suburbs of Sydney. Staff includes Aboriginal health workers (AHWs), general medical practitioners (GPs), nurses, visiting medical specialists, and allied health staff.

Intervention
A series of cooking courses for Aboriginal people with diabetes and their families was held at the AMSWS from 2002-2007. The diabetes cooking course aimed to promote healthful eating through improved nutrition knowledge and cooking skills. The cooking course was run in partnership with the Western Sydney Institute of Technical and Further Education (TAFE), the local campus of Australia’s major vocational education provider. Each course consisted of...
of 18 weekly classes of 4 hours duration; a course was held every 6 months, and 11 courses were held in total. The classes were based on a TAFE hospitality cooking skills curriculum modified to promote healthful eating on a budget. Simple health messages regarding diet and lifestyle were promoted during formal and informal class discussions. The health benefits of limiting takeaway food and soft drinks; increasing fruit and vegetable intake; and decreasing sugar, salt, and fat intake were reinforced. Each class concluded with the students sitting down together to eat what they had cooked, and they took food home for their families to taste.

The TAFE nutrition teacher was an Aboriginal woman from the local community. She was assisted by AHWs, who provided transport for students to the AMSWS and health screening and education during some classes. Students were encouraged to access medical care while at the classes and to take breaks to attend consultations in concurrent GP, diabetes education, or podiatrist clinics.

A total of 73 students attended at least 1 class. The 12 students enrolled in each course were expected to attend all 18 classes, however, irregular attendance meant the average class size was 6-8.

Evaluation Methods

A qualitative evaluation of the course was undertaken by the AMSWS chronic care team, comprising two AHWs and a GP. The team had been involved in the development, cultural supervision, and implementation of the course since its inception. Data were collected through semistructured, in-depth interviews with 23 former cooking course students in 2007-2008. Purposive sampling was used to select these study participants for maximal variation of age, sex, attendance records, and viewpoints, using the research team’s knowledge of the course attendees.11

The interviews explored what motivated people to attend the course, their experiences of the course, and any perceived changes in their nutrition knowledge, skills, or dietary behavior. Their views on what was important in the promotion and delivery of nutrition education for them and their community were sought. Interviews lasted an average of 35 minutes and ranged from 15-75 minutes in duration.

Interviews were taped, transcribed, and coded using qualitative analysis software (NVivo 7.0.281.0, QSR, Doncaster, Australia, 2007). The team used an iterative design that involved the repeated collection and analysis of data until no new themes were identified. The interview data were de-identified, and pseudonyms have been used in this paper. Approval for the research was obtained from the AMSWS Board of Management, the Aboriginal Health and Medical Research Council Ethics Committee, and the University of Sydney Ethics Committee.

RESULTS

The study participants ranged in age from 19-72 years, with an average age of 48 years. All participants were Aboriginal, and most were female (83%). Course attendance by participants varied from 2 classes to 9 courses, the latter in the case of 1 participant. The range of time that had elapsed since participation in the course was from 6 months to 5 years. Most participants lived within a 3 km radius of the AMSWS.

Effectiveness of the Cooking Course

All participants reported that they had gained nutrition knowledge and cooking skills from being involved in the course. The benefits of decreasing fat and salt intake were the most valued nutrition messages. The new cooking skills that participants appreciated most were low-fat cooking techniques, hygienic food preparation, salad preparation, and using a wider range of vegetables. Improved ability to shop for healthful food because of a better understanding of food labels was valued. Most participants felt they had adopted more healthful eating behaviors. “Now I know that you can put some things in the oven and don’t have to chuck everything in the fat to cook it” (Donna, age 53). “Well, I’ve been eating more salads. I’m starting to like them” (Robyn, age 52).

Participants attributed other positive health changes to their attendance at the course. Weight loss, improved well-being, improved diabetes self-management, and greater motivation for other lifestyle changes, such as smoking cessation and increased physical activity, were reported. “What the course has done for me, it has made me look after myself” (Tom, age 51). “I wasn’t visiting my doctors as much as I used to. And I could do more things than I used to do, like walking, running” (Donna, age 53).

The success of the learning experience was highly valued by several participants, who took pride in demonstrating their competence as students. Some participants stated that they felt equipped and motivated to educate their family and friends as a result of attending the course. “I think they assume their kids won’t eat it. . . . I’ll take a photo and I’ll show them! ‘I thought you said your son doesn’t eat that!’” (Megan, age 38). “I try and educate those who want to listen. Those who don’t want to listen, well, I’ll just keep talking” (Greg, age 54).

Increasing Attendance at the Cooking Course

Most study participants said they attended the course because they wanted to improve their diet and their health, with many stating they had recently received a new diagnosis of pre-diabetes or another health diagnosis that worried them. However, several study participants reported they chose to attend the course solely for social reasons or because of an interest in cooking, even though they either had diabetes or were at high risk of diabetes. Despite their initial lack of health concern, these participants also reported beneficial dietary change.

All but 1 participant reported they were recruited to the course via personal invitation from the course conveners or their family and friends, and not through the other means that were used to promote the course (posters, flyers, and advertisements on the local Aboriginal radio station).
Participants believed that lack of self-confidence in cooking skills prevented people responding to advertisements; that cooking and other health courses should be advertised in as nonthreatening a way as possible; and that the social aspect of the courses should be emphasized.

Some of our people have never done any cooking. And they haven’t been taught cooking. So they don’t want to come in here, you know, without any knowledge of cooking. It’ll make them feel, you know, uncomfortable (Robyn, age 52).

**Strengths in Course Design**

Participants most strongly valued the social aspect of the course, often describing the course as fun. The small group learning with peers was identified as facilitating learning and contributing to the enjoyment of the course. This experience was enhanced by eating together at the end of each class.

Being in an environment where we’re all sharing and learning together. And we had great fun. . . . And then after that, sitting down and eating and you know, having a meal after we’d done the cooking (Janet, age 56).

The cultural targeting of the course was considered crucial to its success. Participants reported that they were attracted to the course because it was held at the AMSWS. They were used to accessing this center, transport was available, and they knew other students would be Aboriginal. Cultural appropriateness was increased by using an Aboriginal teacher supported by Aboriginal health workers. The ease of access to medical care while at the AMSWS was also considered valuable.

Well for myself if it was held at the TAFE I wouldn’t do it. I like to go where I know there’s going to be Aboriginal people and where I can feel more comfortable (Janet, age 56).

As far as I’m concerned the Aboriginal Medical Service is, is not only a hospital, it’s community, a community center. And the more things are in the community involved, the more it keeps the people happy (Jim, age 57).

The practical nature of the classes made the nutritional messages more understandable and powerful and gave participants opportunities to master more healthful cooking techniques and to taste more healthful food items and discover they were palatable.

When I first went to the diabetic clinic over here at the hospital, all they gave me was a chart . . . . It doesn’t tell you how to prepare the meal, what you can have, and what you can’t have (Greg, age 54).

**Course Weaknesses**

The majority of participants reported they faced significant barriers to implementing the dietary changes they wished to make. Many participants had difficulty influencing their families’ eating habits, which created a barrier to their own dietary change. Other important barriers were the higher cost of healthful food, their own food preferences, and medical problems like poor oral health and depression.12

There were some design features of the course that made it harder for some participants to convert new knowledge and skills into action, such as unfamiliar ingredients and recipes. One of the aims of the cooking course was to expose students to new food. However, the unfamiliarity of certain ingredients proved confusing for some and led to uncertainty as to where to buy them.

Doing it in the course you had the right food there. But then you had to go out to the shops and find your own stuff. . . . You probably need a manual (Brian, age 57).

Although participants reported using more healthful cooking techniques in their daily cooking, very few reported using recipes from the course again. Some of the recipes were considered to have too many ingredients to be practical or affordable. The course teacher had encouraged people to bring their own recipes along to be adapted for more healthful cooking, however participants had not done so, and some reported they did not use written recipes. Nevertheless, participants reported that the course had increased their understanding of how to read and use recipes, particularly the measurement of ingredients, with several noting that they were now able to understand television cooking shows. Several participants believed the course would have been more useful to them if the recipes had correlated better with their lifestyle. They would have preferred simpler food, more meat dishes, and meals suitable for children or for large families. “You can still do that without all that fancy stuff. You can still live healthy” (Daphne, age 62).

The partnership between the TAFE and the AMSWS in the delivery of the cooking course led to a mix of vocational and health promotion learning objectives and some inflexibility in course design. The TAFE aimed to engage more Aboriginal people in local vocational education programs. They required ultimate control of the course design and lesson content to link participation in the course to vocational qualifications, and they were unable to significantly change the course in response to participant feedback. However, the evaluation suggests that the vocational aims were not met. Qualifications were awarded to only some students in 2 of the 11 courses because of their failure to meet TAFE’s attendance criteria. Participants reported they were not influenced to attend the course to attain TAFE qualifications and did not go on to further vocational training as a result of attending the course. Furthermore, the vocational requirements, such as an emphasis on cooking techniques, strict attendance, and a lengthy course, were, for many, a barrier to attending classes.

I didn’t expect to learn what we were shown. Like all that chopping. ‘Cause you know how it is when you cook at home, it’s just all rough, you know, doing things, chuck the food in (Ivy, age 66).

Several participants considered that confining the eligibility to attend the cooking course to people with diabetes or at high risk of developing diabetes was inappropriate and that future courses should be available to all members of the local Aboriginal community.
DISCUSSION

The subjects interviewed in this study believed their participation in the cooking course assisted them to make dietary changes. A focus on behavior-related tasks rather than knowledge-based teaching increases the success of diabetes and nutrition education.\textsuperscript{13,14} Behavioral interventions are more likely to promote dietary change if they incorporate small group learning, goal setting, social support, family education, and food-related activities such as cooking and tasting.\textsuperscript{15} Cooking classes are, therefore, well placed to promote dietary behavior change and have been shown to be particularly useful for socially disadvantaged groups because members can develop the skills and confidence to enable dietary change.\textsuperscript{16-18}

Some argue that the cost of providing healthful cooking programs, despite their effectiveness at an individual level, is prohibitive given their lack of reach in the context of the epidemic of diabetes and obesity in the developed world.\textsuperscript{17} Similarly, some advocate reduced funding of nutrition education for Aboriginal adults in order to focus on the structural causes of poor diet such as poverty, poor housing, and poor access to healthful food.\textsuperscript{19} However, given that there has been little systematic provision of nutrition education in Aboriginal communities, as well as a paucity of evaluation of programs when they do occur, such programs should not be dismissed as being of little importance. The known effectiveness of lifestyle education in delaying the onset of diabetes and decreasing chronic disease risk factors means that all people, including those who are socially and culturally marginalized, must have access to effective health education in order to gain the knowledge, skills, and self-efficacy to enable them to choose more healthful diets.

Tailoring health education to the social, economic, and cultural needs of the community will increase its effectiveness.\textsuperscript{13,15,20} The findings of this study suggest cooking courses for Aboriginal people should focus on healthful cooking techniques and avoid complex or unfamiliar recipes and ingredients. Recommended foods should represent value for money. The practical and cultural accessibility of this course was increased by holding it in a well-known Aboriginal community-controlled medical service and providing transport to the classes. It is a common experience at the AMSWS that clients do not have cars and report that the cost and inconvenience of using public transport is a barrier to accessing health care, even when they live in adjoining suburbs. Strategies to ensure that nutrition education is culturally appropriate and accessible will vary between different communities and can be developed through community control of the program or extensive community consultation.

The target population for nutrition or diabetes education in the setting of Aboriginal communities is an important consideration. Educational interventions that target high-risk groups are more effective than those targeting the general community.\textsuperscript{15} This study supported other evidence that people with pre-diabetes may be particularly ready to consider lifestyle change, possibly because of the concern raised by this diagnosis.\textsuperscript{21} However lifestyle education at all levels of diabetes risk is still likely to be effective,\textsuperscript{22} and, given the high incidence of diabetes and obesity in Aboriginal people, it would seem appropriate to encourage attendance by the wider Aboriginal community, as recommended by the study participants.

Even when programs appear well designed, attracting adequate numbers of Aboriginal community members to health education programs remains difficult. The study findings suggest incorporation of a social component to the course was key to its success. People who are motivated to attend nutrition education in order to improve their health may be more prepared to change their dietary behaviour.\textsuperscript{23} However, it is interesting that participants who attended the course for social reasons reported successful dietary changes that were similar to those who joined because of concerns about their health. Enjoyment of the classes appeared to enhance both learning and engagement in the course. The participants recommended the use of personal invitations to join health programs, bringing along family and friends, and emphasizing that programs are fun and not difficult as methods to increase the reach and effectiveness of health education for Aboriginal people.

The partnership with TAFE provided a funding source and a skilled and valued teacher who acted as an important driver for the course. The skill and commitment of lifestyle program facilitators can determine the success of nutrition programs.\textsuperscript{24} However, there was no evidence that the incentive of a vocational qualification increased recruitment to the cooking program or led to ongoing interest in TAFE courses by participants. The vocational influence on the course design may even have had a negative impact on the health promotion objectives of the course; it was difficult to change the course content in response to participant feedback, and inflexible attendance requirements may have decreased the course’s appeal. Although health education programs of greater intensity are associated with greater behavior change, they are also associated with higher attrition rates.\textsuperscript{25}

This study had both limitations and strengths. All participant accounts were retrospective and were from widely varying perspectives in terms of the time that had elapsed since participation in the course, which may have led to recall differences, but also to richer data owing to a greater variety of viewpoints. The views of people who knew of the course but did not attend were not sought in his evaluation. This information would generate more insights into barriers to attending the course. The existing relationship between the researchers and participants may have kept participants from giving negative feedback on the cooking course; however, it may also have led to better rapport and participant confidence to disclose information.

IMPLICATIONS FOR RESEARCH AND PRACTICE

Cooking classes are a valuable form of nutrition education for Aboriginal Australians. Personal invitation from course conveners or other course
attendees may increase recruitment. Attendance is likely to be increased by promoting the social aspects of programs, providing transport, and holding classes in familiar community settings. A focus on healthful cooking techniques and use of familiar, affordable food is likely to increase effectiveness. A partnership with vocational training institutions in the delivery of community cooking courses can provide valuable teaching expertise, but it is challenging to integrate vocational and health promotion objectives.

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