



Published in final edited form as:

Child Adolesc Social Work J. 2010 June 1; 27(3): 231–244. doi:10.1007/s10560-010-0197-6.

Healthy Living in Two Worlds: Testing a Wellness Curriculum for Urban Native Youth

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Abstract

The Healthy Living in Two Worlds project developed a wellness curriculum for urban, Northeastern Native American youth. The curriculum sought to increase physical activity, decrease or prevent recreational tobacco use, and increase healthy eating practices. The program was delivered in a summer day camp format to 16 Native American youth ages 9–13. These youth have considerable exposure to recreational tobacco use in their households and among their peers but they express an intention to resist pressure to use recreational tobacco products. Some of these youth do not eat regular meals, particularly breakfast and lunch. Program participants appear to be physically active and their activity seems to have increased after the program.

Keywords

Native American; American Indian; Wellness; Cancer prevention; Urban youth

Introduction

Native Americans are at high risk for numerous health problems including increasing risks for, and severe repercussions from, various types of cancer. While minimizing risk factors through reducing environmental toxins requires large scale environmental change, risk factors such as poor diet, recreational tobacco use, and a sedentary lifestyle can be modified through health conscious choices.

This project developed and implemented a culturally grounded wellness curriculum for urban Native American youth with the primary aim being program development to be followed later by more rigorous testing of the curriculum with larger samples. The project “Healthy Living in Two Worlds” was grounded in the recognition that urban Native Americans experience many cultural influences in addition to Native traditions. As a wellness curriculum it sought to teach “healthy living”; something that is far different from the day to day reality of many Native Americans. The project was supported by a grant from the National Cancer Institute (#RO3 CA11522-01). This article reports the results of the initial delivery of the Healthy Living in Two Worlds curriculum. Although the sample was small, this early step in an on-going research agenda provides useful information about how the youth responded to the program. This preliminary data informs further development and testing of the curriculum.

Literature Review

Risk Factors and Health Implications

Native Americans experience increasing risk factors for cancer and other chronic diseases. In particular, Native American and Alaska Native teenagers have the highest rates of smoking of any ethnic group (Hodge 2002). Health risks are also increased by poor dietary practices (Hatcher and Scarpa 2002) and an increasingly sedentary lifestyle (Going et al. 2003). These risks have led to rapidly increasing cancer rates (Intercultural Cancer Council 2002; Taylor et al. 1999). Cancer is now the leading cause of death for Native Alaskan women and the second leading cause of death for Native American men and women and Native Alaskan men (Burhansstipanov 1998b). Additionally, mortality and incidence of cancer has increased dramatically among urban Native Americans (Michalek et al. 1996).

Traditional eating and exercise patterns of Native Americans were healthier than contemporary lifestyles (Burhansstipanov and Dresser 1994). Cancer risk appears to be increasing with adoption of Western lifestyles and environmental changes (Risendal et al. 1999). Sudden changes in dietary practices associated with acculturation, reliance on government commodities, and subsidies for processed foods as well as loss of traditional physical activities puts Native Americans at risk for chronic diseases (Ballew et al. 1997; Brown and Brenton 1994; Cobb and Paisano 1998). Diet-related cancers are likely to rise as a result of these changes (Byers 1996).

The Haudenosaunee

The Haudenosaunee are a confederacy of six interrelated Native American nations. They were known as the Iroquois by the French and the Six Nations by the British. Their label for themselves, Haudenosaunee, translates as People of the Longhouse and reflects their culture, spirituality, and social organization. Originally the Haudenosaunee Confederacy consisted of five nations. From West to East they are the Seneca, Cayuga, Onondaga, Oneida, and Mohawk. In the 1700s they were joined by the Tuscarora who became the sixth nation of the Confederacy. The Haudenosaunee once occupied expansive territories from Ohio into New England as well as Ontario and Quebec. While still occupying both sides of the US/Canadian border, most Haudenosaunee on the US side are in New York State. Buffalo, New York where the study took place is traditionally Seneca territory but is now home to a variety of Haudenosaunee people and a few Native Americans from other nations.

In many Native cultures food has spiritual and social value. The meanings surrounding harvesting and preparation of food are closely linked with cultural integrity. Indeed, Native cultural traditions offer a strong basis for promoting good dietary practices and physical activity to reduce cancer risk (Byers 1996). Likewise, tobacco is sacred among Native people and was not traditionally abused or used in a recreational context. Incorporating traditional diet into health promotion programs can have positive long-term consequences for cancer prevention (Hughes et al. 1996).

Primary Prevention Programs

In 1987, the National Cancer Institute began initiatives to encourage primary prevention efforts with Native Americans (Burhansstipanov 1993; Hampton et al. 1996; Mahoney et al. 1996). There continues to be a need for community based, community driven, culturally competent cancer prevention programs (Burhansstipanov 1998a; Welty et al. 1993) and culturally appropriate, community based, family centered efforts to encourage healthy eating and physical activity in childhood (Story et al. 1998). Grounding interventions in Native culture can effectively prevent recreational tobacco use (Schinke et al. 1990). Prevention initiatives that incorporate culture, include community participation, and focus on behavior change have been

shown to be more effective with Native Americans than standard medical models (Joe 2001; National Cancer Institute 2002).

This project responded to calls in the literature (i.e., Hawkins et al. 2004; Michalek et al. 1996) to focus on the urban Native American population. Likewise, it targets an age group in need of prevention efforts. Risks related to diet, recreational tobacco use, and sedentary lifestyle are already in place for Native adolescents; thus, prevention efforts must target younger ages (LeMaster et al. 2002). A review of research on prevention efforts for Native youth found only one program that targeted urban youth, the Seventh Generation project in Denver, Colorado, which focused on substance abuse prevention. Virtually no research on Native Americans has focused on Northeastern populations.

The Healthy Living in Two Worlds Project

The Healthy Living in Two Worlds project targeted a young urban, Northeastern population. This project developed a curriculum grounded in social learning theory and tailored to the Haudenosaunee people while recognizing the multicultural context for this urban population. The work here can be used as a model for other urban Native populations to integrate local cultural traditions within a contemporary multicultural context. Members of the Native American community were involved in planning, design, and implementation of the project, thus, following the recommendations of other cancer prevention efforts in Native communities. The goals of the curriculum were to increase physical activity, decrease/prevent recreational tobacco use, and increase healthy eating among Native youth, thus supporting federal goals set forth in Healthy People 2010 (US Department of Health and Human Services 2002).

Program Development

The curriculum for the Healthy Living in Two Worlds program was developed by a team of three Native American helping professionals with expertise in culturally-based prevention activities. One curriculum writer (the PI) was a Lakota social worker adopted as Haudenosaunee who had lived in Haudenosaunee territory for 13 years at the time of the project. Another curriculum writer was a Cayuga (Haudenosaunee) prevention specialist who served as Coordinator of the Health and Wellness Services component of an urban Native American human service agency. The third curriculum writer was a Tonawanda Seneca (Haudenosaunee) working on a masters in education with experience in curriculum development and implementation. Additionally, an advisory board of Haudenosaunee people knowledgeable in their culture consulted with the curriculum writers to insure the program's appropriateness and meaningfulness.

The curriculum targeted the cancer risk factors of recreational tobacco use, unhealthy dietary practices, and a lack of physical activities. These factors were chosen because they are the primary behavioral factors associated with contracting cancer and because all these risk factors appear to be increasing for Native Americans. The curriculum was informed by prevalence data collected from urban Native American youth ages 9–13 in Western New York in phase one of this project (Weaver and Jackson under review). For example, the fact that many youth in the target population were shown to have asthma led the curriculum writers to include an educational component on the effects of second hand smoke on asthma symptoms.

The curriculum was delivered by a staff of five Native American youth workers overseen by a program coordinator who was also Native American and was one of the curriculum writers. Having one of the curriculum writers continue as the program coordinator led to continuity and an assurance that the goals of the curriculum were clearly understood and implemented appropriately. The youth workers were selected for their backgrounds in working with youth and familiarity with Native American cultures. Only one youth worker had a Native American

background that was not Haudenosaunee. Youth workers were trained in the goals and philosophy of the curriculum. They also received training on how to handle problematic youth behaviors and safety concerns. Youth workers conducted a “dry run” of some curriculum activities with Native youth in a neighboring city. This dry run was overseen by the PI and experienced youth workers from a local Native American agency who gave feedback to the Healthy Living in Two Worlds staff and helped them learn from the experience. Youth workers were also trained in how data collection fit with the curriculum and what type of information they should be documenting during the program.

The curriculum was implemented using a summer day camp format. The program ran 4 days a week from morning to mid afternoon, similar to a school day, with transportation provided to and from the site. The program was implemented at a large university with facilities such as a gym, swimming pool, outdoor space for games/sports activities, and a kitchen for basic food preparation. On Fridays, staff reviewed how the week had gone and planned for the next week. The curriculum included weekly field trips and guest presenters covering topics such as Haudenosaunee dance skills, lacrosse skills, and the traditional role of tobacco in Native American societies.

In a typical activity, male and female champion Smoke Dancers came in weekly. Smoke dance is a very fast Haudenosaunee dance that provides good exercise and is “flashy” and appealing to youth. It is a traditional dance that is also done competitively in contemporary times and is a source of cultural pride. The youth were provided with information on the importance of being active and the health consequences of a sedentary lifestyle. Instructions were provided on Smoke Dance techniques along with a discussion of health benefits and how Smoke Dancing can be integrated into a contemporary lifestyle.

In another typical activity, youth developed “family trees” identifying family members who had various ailments like cancer, diabetes, and asthma. This served as a platform for examining health behaviors like smoking and poor dietary practices and the consequences of these behaviors. This activity seemed particularly engaging for youth as they made personal connections with the material.

Methodology

The purpose of this pilot study was to evaluate the newly developed curriculum. A control group was not used during the pilot test because the main focus was to evaluate strengths and weaknesses in the program components, their delivery, staff training, the acceptability of the program to the target population, and their satisfaction with it.

Sampling

Youth were recruited for the pilot from those interviewed during the baseline data collection phase of the Healthy Living in Two Worlds project. All youth were Native Americans between the ages of 9–13 residing in the city of Buffalo, New York. In order to be included in the project youth needed to make a commitment to attend all 5 weeks of the program. No youth were excluded for health or disability reasons. Transportation limited the number of youth that could be included in the program. The program rented two 12 passenger vans. For safety reasons it was important to have two youth workers in each van for pick up and drop off. Additionally the program coordinator needed to ride on the van for all field trips. The initial sample consisted of 16 youth (8 boys, 8 girls).

The Pilot Study

Implementation of the program was overseen by the program coordinator while data collection was done by the PI and research assistant. The program coordinator had daily oversight of the youth workers and facilitated weekly staff meetings to ensure that the curriculum was delivered as planned and to identify any issues with the potential to compromise the fidelity of the study. The PI also attended weekly staff meetings and met with the staff an additional 1–3 times per week, as needed, throughout the program.

Instrument Development

Pre- and post-test measures were developed by a research team consisting of the PI, Research Assistant, a prevention specialist, and a methodologist. The instrument reflected knowledge, attitudes, and behaviors related to tobacco use, dietary practices, and physical activities. The health behavior questions were largely adapted from the Youth Risk Behavioral Survey (Centers for Disease Control 2003), an instrument that has been widely used with a variety of youth including Native Americans. The instrument also contained measures of cultural identity and reflected the Haudenosaunee context of the program. The cultural identity questions were based on the orthogonal model of cultural identity (Oetting and Beauvais 1991) and have been widely used with Native American youth from various tribal backgrounds. Questions in the instrument mirrored content areas on the curriculum and were designed to measure changes resulting from exposure to the curriculum. A draft of the instrument was evaluated by several Haudenosaunee youth to insure that the questions were clear and meaningful to this particular population. Minor changes were made based on their input. The final instrument contained 59 items.

Assessments

The pre-test and post-test assessments were conducted at the program site on the first and last days of the program. Materials were pre-coded with the youths' ID number and a tear-off fly-sheet with their name. The Research Assistant and PI read the questionnaire to individual youth and recorded their answers. Clarification of the meaning of questions was provided as needed. Interviews took approximately 10–15 min each although some interviews took longer as some youth appeared to have behavioral or comprehension difficulties. At the conclusion of the assessment session, the Research Assistant collected the assessment materials, detached and destroyed the fly sheet, and stored the assessment materials securely.

Data was also collected on youth attendance and participation. Additionally, information was gathered to assess the fidelity of the program. Qualitative data was collected to evaluate the process of program implementation as well as to gather feedback on perceptions of the program. In particular, qualitative data was collected through asking the youth for feedback on the program, youth worker logs, and weekly staff meetings. Process data is reported separately (Weaver in press).

The main dependent variables for the youth survey were measures of lifetime and past 30 days tobacco use, exercise frequency and physical activity participation, height and weight derived measures, and past week's frequency of consumption of food items. In addition to the youth survey variables, other dependent variables included knowledge of the risks and benefits of different dietary and physical activity practices and hazards of recreational tobacco use. When post-tests were administered, youth were asked to disregard meals and physical activities that happened during the course of the program so as not to artificially inflate the results of the program.

Results

Demographics

Sixteen youth with a median age of 10.8 years (range 9–13) completed a pre-test interview on the first day of the program. The average grade that the youth had just completed was 5th. The sample was 50% male and 50% female with a median height of 58.9" and a median weight of 101.3 lb. While all youth included in the program were Native American, many of them had difficulty answering a question about their cultural identity and six (37.6%) stated that they did not know their race/ethnicity.

On the last day of the program 11 youth completed a post-test interview. Their median age was 10.6 years and median grade completed was 4th. The group who completed the program were 36.4% male ($n = 4$) and 63.6% female ($n = 7$). They had a median height of 57.8" and a median weight of 94.5 lb. Changes in height and weight from pre-test to post-test were most likely due to attrition. All were Native Americans with 81.8% listing Native American as a primary identity.

Recreational Tobacco Usage

At pre-test none of the youth reported trying a cigarette but 50% ($n = 8$) reported living in a house where people smoke and 31.3% ($n = 5$) reported living in a house where people chewed tobacco. Additionally, 50% of youth ($n = 8$) reported "some" or "all" of their friends smoke with the other 50% reporting "none" of their friends smoke.

Given the presence of recreational tobacco use in their environment it is easy to speculate that youth may be susceptible to becoming smokers in years to come. Indeed, half of the youth ($n = 8$) reported that no one had talked to them about the harmful effects of smoking. At this time, however, all youth indicated they were likely to refuse a cigarette if it was offered to them by a friend or family member. Most youth (87.5%; $n = 14$) reported never being present at a ceremony where tobacco was used.

At post-test, 81.8% of the youth ($n = 9$) reported never trying cigarette smoking although recreational tobacco use seems to be a part of the household environment for most of them. Six youth (54.5%) reported living in a house where people smoke and 36.4% of youth ($n = 4$) reported living in a house where people chew tobacco.

At post-test, 72.7% of youth ($n = 8$) reported that someone in the family has talked to them about the harmful effects of smoking. 45.5% of youth ($n = 5$) reported that "none" of their friends smoke, and 54.5% of youth ($n = 6$) report "some" of their friends smoke. All youth reported they would refuse a cigarette offered by a friend or family member. At this time, 54.5% of youth ($n = 6$) reported attending a ceremony where tobacco was used.

Dietary Practices

At the time of the pre-test youth stated they "often" eat meals as a family, but "sometimes" prepare meals themselves. Whether youth prepare their own meals varies substantially depending on which meal it is, with youth typically assuming responsibility for their breakfasts but often eating meals with, and prepared by, caregivers at dinner.

Individual food choices were assessed using the Federal Government's Food Guide Pyramid. A reasonably balanced meal contained foods from two of the four recommended food groups (i.e., grain, fruit and vegetables, dairy, and protein). A healthy balanced meal contained three or more of the recommended food groups. A reasonably balanced meal was defined as having foods from at least 2 of the 4 required food groups. Meals were also rated for the presence of

unhealthy content such as fat, sodium, and sugar. Meals that appeared high in fat, sodium, or sugar were labeled unhealthy. For example, one youth reported eating a fast food breakfast from McDonalds which included a sausage McGriddle sandwich with cheese. According the McDonald's nutrition guide, a sausage McGriddle with cheese contains 32 grams of fat and 12 grams of saturated fat (62% of the recommended daily value percentage for saturated fat) and 1360 mg of sodium (56% of the recommended daily value percentage of sodium) (http://www.mcdonalds.com/app_controller.nutrition.index1.html#5). Due to the high sodium and fat content as well as the high daily value percentages, this meal was classified as unhealthy. The USDA National Nutrition Database for Standard Reference (<http://www.nal.usda.gov/fnic/foodcomp/search/>) was used to assess the nutritional value of non-fast food meals.

When asked about breakfast, 50% of the youth ($n = 8$) reported eating breakfast 2 of the past 3 days. Most of the youth (62.5%; $n = 10$) fix their own breakfasts “most of the time” ($n = 3$) or “all of the time” ($n = 7$). Most of the youth (68.8%) ate a reasonably balanced breakfast. Half of the youth (50%) ate an unhealthy breakfast.

When asked about lunch, 50% of youth ($n = 8$) reported eating lunch two of the past 3 days. Some youth (25%; $n = 4$) fix their own lunch either “most of the time” ($n = 3$) or “all of the time” ($n = 1$). Most youth (62.5%; $n = 10$) ate a reasonably balanced lunch while 18.8% of the youth ate an unhealthy lunch. When asked about dinner, 87.5% of youth ($n = 14$) reporting eating dinner each of the past 3 days. Five youth (31.3%) fix their own dinner “some of the time” ($n = 4$) or “most of the time” ($n = 1$). Most youth (87.6%; $n = 14$) ate a reasonably healthy and balanced dinner. Additionally, most youth (56.3%; $n = 9$) ate reasonably healthy and balanced meals throughout the day.

At the time of the post-test, most youth (63.6%; $n = 7$) stated they “very often” eat meals as a family but “sometimes” prepare meals themselves. As in the pre-test, whether they assumed responsibility for preparing their own food varied depending on the meal.

When asked about breakfast, 27.3% of youth ($n = 3$) reported eating breakfast two of the past 3 days and 36.4% of youth ($n = 4$) report eating breakfast all 3 days. Two youth (11.8%) reported not eating breakfast and one youth reported eating breakfast only once in the past 3 days. Most youth (63.6%; $n = 7$) fix their own breakfasts “most of the time” ($n = 2$) or “all of the time” ($n = 5$). Most youth (63.6%; $n = 7$) ate a reasonably balanced breakfast. At post-test, only two youth (18.2%) ate an unhealthy breakfast.

When asked about lunch, 54.5% of youth ($n = 6$) reported eating lunch all of the past 3 days. Ninety percent of youth ($n = 10$) fix their own lunch “most of the time” ($n = 3$), “some of the time” ($n = 5$) or “all of the time” ($n = 2$). Most youth (63.6%; $n = 6$) ate a reasonably balanced lunch. After the intervention, only one youth (9.1%) ate an unhealthy lunch.

When asked about dinner, 90% of youth ($n = 10$) reported eating dinner all of the past 3 days. Five youth (45.5%) fix their own dinner “some of the time”. All youth ($n = 11$) ate a reasonably balanced dinner, but 54.5% ($n = 6$) ate an unhealthy dinner. In terms of their general dietary practices most youth (81.8%; $n = 9$) eat reasonably healthy and balanced meals throughout the day. Table 1

Physical Activities

At the time of the pre-test, youth reported exercising five of the past 7 days. Most youth listed two different types of activities that they believed to be good exercise. These included playing basketball, lacrosse, swimming, and doing yoga exercises. On average youth engaged in exercise that burned between 300 and 399 calories per hour. Caloric figures were determined

by the number of calories burned per hour per activity through the Calorie-Count website from About.com (<http://www.calorie-count.com>). This website was chosen for its accuracy and because each activity was categorized by effort level. For example, according to this website, slow bicycling (low effort) burns approximately 408 calories per hour while fast bicycling (vigorous effort) burns approximately 680 calories.

The pre-test also collected information about how long the youth were sedentary (i.e., watching TV, playing computer games). On average youth reported sitting still 2.43 hours a day on weekends or vacation days.

At post-test on average youth reported exercising 6 of the past 7 days. Most youth listed three different types of activities they believed to be good exercise. On average youth engaged in exercise that burned between 400 and 499 calories per hour. At post-test youth reported sitting still approximately 1.4 hours a day on weekend or vacation days.

Measuring Change

A non-parametric SIGN test was used to determine if there were significant differences between pre- and post-test scores on attitude, behavior, and knowledge items. A SIGN test is useful in determining if the distribution of the two paired variables in a two-related-samples test are the same. Only one knowledge question was statistically significant at the $p = .05$ level. This true/false question asked youth if eating unhealthy foods was one of the biggest risk factors for cancer in Native Americans. Of the seven youth who answered “don't know” on the pre-test, five (71.4%) answered the correct answer of true on the post-test ($p = .031$). Sample size hindered the ability to detect changes from pre- to post-test, however, some change (albeit not statistically significant) seems present. For instance, of the six youth who ate an unhealthy breakfast at pre-test and remained in the program, five (83.3%) ate healthy foods for breakfast at post-test. It also appears there were some changes in youth who reported “don't know” on questions about tobacco use and questions about Native cancer risk and traditional Native foods. At post-test more of these questions were answered correctly.

Discussion

The Healthy Living in Two Worlds summer day camp implemented a newly developed, culturally grounded wellness curriculum that targeted the health risk behaviors of poor diet, recreational tobacco use, and a sedentary lifestyle in Native American youth. These three risk factors were the major focus of the wellness curriculum, with Haudenosaunee traditional teachings and values as a backdrop. Data collected from the program participants shows that some of these risk factors are already present in this young population while other risks have not yet materialized. It is clear that these youth have considerable exposure to recreational tobacco use in their households and among their peers but at this time they express a clear intention to resist pressure to use recreational tobacco products.

The data from the program reveal that these youth are not always eating regular meals. In particular, they appear to be less likely to eat breakfast and lunch than dinner and when they have breakfast and lunch, they are likely to fix these themselves. In some ways the missed meals reported by these youth may be a reflection of the substantial poverty in this community. It may also be a reflection that, for whatever reason, the caregivers are not very involved in these meals (particularly breakfast); youth are left to fend for themselves and may or may not prepare food. While in many ways this is a bleak picture, there is room for hope. If these youth have control over their breakfast and lunch choices this presents an increased opportunity for teaching healthy dietary practices.

These youth seem to be physically active and their level of physical activity seems to have increased after exposure to the Healthy Living in Two Worlds curriculum. This finding is different than findings of other studies that have identified an increasingly sedentary lifestyle as a significant problem for Native youth.

Reflections on the Program and Participants

While no items on the instrument measured emotional or behavioral issues, both the PI and Research Assistant conducting the interviews noted that several youth were resistant or appeared confused, particularly during the pre-test. The one area of the survey that youth consistently had difficulty answering assessed cultural identity.

A few youth expressed some hostility during the program as well as during administration of the pre-test. In particular, some male youth were defiant of female staff members. A few youth had to be suspended from the program for refusing to follow directions or for unsafe behavior. There was also a problem where an older male youth hit a younger female youth thus leading her to leave the program. The older male youth was prescribed medication for behavioral issues but this medication appears to have been administered inconsistently by the mother, thus leading to many problems in the program. Problems also occurred with some parents who refused to cooperate with program safety guidelines thus leading to additional withdrawals from the program.

Attrition was a concern in the program but the factors behind the attrition provide crucial information for further program development. Four of the five youth who left the program are accounted for by the factors noted above: the youth who was hit, the one who did the hitting, and uncooperative parents. The fifth youth who dropped out did so after taking the pre-test the first day when he decided he was not interested in the program. While this attrition compromises the ability to make meaningful pre/post comparisons it is important to remember that the primary objective of this stage of the project was to develop and mount the program. Valuable lessons are learned from examining the reasons for attrition and these inform refining the program prior to larger scale testing.

While administering pre- and post-tests, observing the program, and participating in staff meetings, it is the PI's observation that two different types of youth participated in the Healthy Living in Two Worlds program. The first type of youth was engaged in and enjoyed the program. The second type was resistant to the structure, disruptive, and not receptive to the program. Lack of structure in the home environment (including lack of parental supervision and lack of regular meals) and behavioral issues seems to characterize this second group. Additionally, the second group was heavily male. While the numbers in the program made it difficult to determine statistical differences between those who remained and those who dropped out of the program, staff including the PI observed apparent differences between these populations. Given this distinction, it may be important to develop two versions of the Healthy Living in Two Worlds curriculum to address these different types of Native youth.

While not part of formal data collection efforts, the PI regularly received anecdotal feedback on the program. For example, the mother of a participant ran into the PI at a human service agency and stated that her daughter was really enjoying the program and wished it was 5 days a week instead of four. In a separate incident, a social worker assigned to the parent of one of the youth stated to the PI that the parent reported her daughter no longer wanted to drink soda with dinner and was now requesting more water. Additionally, the PI received multiple inquiries from parents and community members asking if we would run the summer program again. This informal feedback speaks to both the impact of and positive response to the program. This anecdotal information is useful in refining the curriculum but is limited in that

it was not collected systematically and those who felt negatively about the program might not have felt as free to give this type of casual feedback.

Strengths and Limitations

This project took an important step in addressing the significant concern of cancer risk factors in Native American youth. It is particularly significant in that it addressed an underserved segment of the Native American population, urban youth in the Northeast. It is important that the project was developed by Native Americans for Native Americans. The project was overseen by Haudenosaunee cultural advisors to insure cultural appropriateness as well as by leading researchers to insure methodological rigor. It is also a strength that it is grounded in the culture of the region, thus making it more relevant and meaningful to this population rather than a generic or pan-Indian curriculum.

The small number and the fact that this is a convenience sample are limitations. The number of drop-outs of the program is also a limitation but this may also be one of the biggest sources of learning in the project. As noted above, the drop-outs may indicate that this program was not engaging a particular segment of the Native youth population while it did appear to engage another segment. This is valuable information that informs a continuing line of research on cancer prevention with urban Native youth.

Conclusion

The increasing behavioral factors that put Native youth at risk for cancer in later life combined with repeated calls in the literature for early prevention efforts and attention to urban populations led to the creation of the Healthy Living in Two Worlds project. This project had Native American involvement at every stage and level with culture as an important backdrop rather than an “add on” feature. The traditional original instructions of Native people can serve as an important foundation for healthy contemporary lifestyles. While this project is small, it is an important step in a critical direction. This article describes the development and implementation of a culturally grounded wellness curriculum that is slated for further testing. This is a first step in a larger process rather than a project designed to produce generalizable knowledge. The next step is to take what was learned here, refine the curriculum, and see if it can be developed as an effective template that can be adapted for use with different urban Native American communities and different segments of Native populations, including hard to reach youth. This project and its successors may take us one step closer to making Healthy Living in Two Worlds a reality for contemporary urban Native youth.

References

- Ballew C, White LL, Strauss KF, Benson LJ, Mendlein JM, Mokdad AH. Intake of nutrients and food sources of nutrients among the Navajo: Findings from the Navajo Health and Nutrition Survey. *Journal of Nutrition* 1997;127(10):2085s–2093s. [PubMed: 9339174]
- Brown AC, Brenton B. Dietary survey of Hopi Native American elementary students. *Journal of the American Dietetic Association* 1994;94(5):517–522. [PubMed: 8176126]
- Burhansstipanov L. National cancer institute's native American cancer research projects. *Alaska Medicine* 1993;35(4):248–254. [PubMed: 8160917]
- Burhansstipanov L. Native American cancer programs: Recommendations for increased support. *Cancer* 1998a;83(s8):1849–1855.
- Burhansstipanov L. Cancer mortality among Native Americans. *Cancer* 1998b;83(11):2247–2250. [PubMed: 9840522]
- Burhansstipanov, L.; Dresser, CM. Native American monograph #1. National Cancer Institute; 1994. Documentation of the cancer research needs of American Indians and Alaska Natives.

- Byers T. Nutrition and cancer among American Indians and Alaska Natives. *Cancer* 1996;78(7):1612–1616. [PubMed: 8839581]
- Centers for Disease Control. YRBS 2003 questionnaire. 2003. Retrieved October, 2003 from <http://www.cdc.gov/nccdphp/dash/yrbs2003/questionnaire.htm>
- Cobb N, Paisano RE. Patterns of cancer mortality among Native Americans. *Cancer* 1998;83:2377–2383. [PubMed: 9840538]
- Going S, Thompson J, Cano S, Stewart D, Stone E, Harnack L, et al. The effects of the pathways obesity prevention program on physical activity in American Indian children. *Preventive Medicine* 2003;37:s62–s69. [PubMed: 14636810]
- Hampton JW, Keala J, Luce P. Overview of national cancer institute networks for cancer control research in Native American populations. *Cancer* 1996;78(7):1545–1552. [PubMed: 8839568]
- Hatcher, JL.; Scarpa, J. Trends Child Research Brief. Washington, DC: Knight Foundation; 2002. Encouraging teens to adopt a safe, healthy lifestyle: A foundation for improving future adult behaviors.
- Hawkins EH, Cummins LH, Marlatt GA. Preventing substance abuse in American Indian and Alaska Native youth: Promising strategies for healthier communities. *Psychological Bulletin* 2004;130(2): 304–323. [PubMed: 14979774]
- Hodge, FS. American Indian and Alaska Native Teen Cigarette smoking: A review. 2002. Retrieved June 2002 from <http://cancercontrol.cancer.gov/trcb/monographs/14/m1417.pdf>
- Hughes CK, Tsark JAU, Mokuau NK. Diet-related cancer in Native Hawaiians. *Cancer* 1996;78(7):1558–1563. [PubMed: 8839570]
- Intercultural Cancer Council. American Indians/Alaska Natives and Cancer. 2002. Retrieved March 2002 from <http://iccnetwork.org/cancerfacts/cfs2htm>
- Joe JR. Out of harmony: Health problems and young Native American men. *Journal of American College Health* 2001;49:237–250. [PubMed: 11337899]
- LeMaster PL, Connell CM, Mitchell CM, Manson SP. Tobacco use among American Indian adolescents: Protective and risk factors. *Journal of Adolescent Health* 2002;30:426–432. [PubMed: 12039512]
- Mahoney MC, Michalek AM, Wiggins CL, Tenney M, Bad Wound D, Burhansstipanov L. Native American cancer conference III. *Cancer* 1996;78(9):1533–1537. [PubMed: 8839566]
- Michalek AM, Mahoney MC, Burhansstipanov L, Tenney M, Cobb N. Urban-based Native American cancer-control activities; services and perceptions. *Journal of Cancer Education* 1996;11:159–163. [PubMed: 8877576]
- National Cancer Institute. 2002 [Accessed June 2002]. <http://cissecure.nci.nih.gov/ncipubs/details.asp?pid=203>
- Oetting ER, Beauvais F. Orthogonal cultural identification theory: The cultural identification of minority adolescents. *The International Journal of the Addictions* 1991;25(5A & 6A):655–685. [PubMed: 2101397]
- Risendal B, Dezapien J, Fowler B, Papenfuss M, Giuliano A. Cancer prevention among urban Southwestern American Indian women: Comparison to selected year 2000 national health objectives. *Annals of Epidemiology* 1999;9(6):383–390. [PubMed: 10475538]
- Schinke SP, Orlandi MA, Schilling RF, Botvin GJ. Tobacco use by American Indian and Alaska Native people: Risks, psychosocial factors, and preventive intervention. *Journal of Alcohol and Drug Education* 1990;35(2):1–12.
- Story M, Strauss KF, Zephier E, Broussard BA. Nutritional concerns in American Indian and Alaska Native children: Transitions and future directions. *Journal of the American Dietetic Association* 1998;98(2):170–176. [PubMed: 12515418]
- Taylor TL, Denny CH, Freeman WL. American Indian and Alaska Native trends in behavioral health, 1990–1996. *American Journal of Health Behavior* 1999;23(5):345–351.
- United States Department of Health and Human Services. Healthy people 2010: Understanding and improving health. 2nd. Washington, DC: Government Printing Office; 2002.
- Weaver HN. The healthy living in two worlds project: An inclusive model of curriculum development. *Journal of Indigenous Voices in Social Work*. in press.

Weaver HN, Jackson KF. Cancer risk factors for urban Native Americans: Baseline data from the healthy living in two worlds project. under review.

Welty TK, Zephier N, Schweigman K, Blake B, Leonardson G. Cancer risk factors in three Sioux tribes: Use of Indian-specific health risk appraisal for data collection and analysis. *Alaska Medicine* 1993;35(4):265–272. [PubMed: 8160919]

Table 1

Pre and post-test unhealthy meal percentages

Youth	Breakfast	Lunch	Dinner	Day average
Pre-test (<i>n</i> = 16)	50.0% (<i>n</i> = 8)	18.8% (<i>n</i> = 3)	68.8% (<i>n</i> = 11)	45.9% ^{<i>a</i>}
Post-test (<i>n</i> = 11)	18.2% (<i>n</i> = 2)	9.1% (<i>n</i> = 1)	54.5% (<i>n</i> = 6)	27.3% ^{<i>b</i>}

^{*a*} 45.9% of youth at pre-test reported eating unhealthy meals high in fat, sodium, and/or sugar

^{*b*} 27.3% of youth at the end of the intervention reported eating unhealthy meals high in fat, sodium, and/or sugar