Building Healthy Community Relationships Through Food Security and Food Sovereignty

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Kaylia Marquis, BA
Kahnawake is a Kanien’kehaka (Mohawk) community. The Mohawk Nation is part of the Haudenosaunee (Iroquois) Confederacy.
BACKGROUND
Building Relationships

- Foundational way of thinking for Onkwehon:we
- Basis for strong society
- Collaboration – for positive change
- Public health and Health promotion value community building for health.

Photo source: http://www.kanehsatakevoices.com
“Planting Group”

- Grouping diverse interests around food & health
- Research suggesting food insecurity experiences in Kahnawake Families
- Health Canada Aboriginal Diabetes Initiative funds for food security
- Kahnawake Environment Protection Office shared goals

Kahnawake Schools Diabetes Prevention Project (KSDPP)

- Community-university partnership since 1994
- Goal: Prevent type 2 diabetes in future generations
- KSDPP today - research, intervention, dissemination and training (community mobilization & degrees)
- Grassroots effort, building local community to support healthy lifestyles
- Community Advisory Board & Research Team responsible for ensuring ethical research.


KSDPP Governance & Consensus decision-making

“People across the Fire”
Consensus through Discussion

“Fire Keepers”
Confirms the decision of the two sides

“Well Keepers”
Global input
Develop the agenda

Researchers
KSDPP Staff
Community Advisory Board

Slide adapted from McComber, 2008
Community Advisory Board
2012

Community Advisory Board reviewing PhD research proposal (2009)

Community Advisory Board Strategic meeting (2000)
Community Vision for KSDPP
Food security & relationships

• All Kahnawakero:non are in excellent health. Diabetes no longer exists. **All the children and adults eat healthily at all meals** and are physically active daily. The children are actively supported by their parents and family who provide nutritious foods obtainable from family gardens, local food distributors and the natural environment. The schools as well as community organizations, maintain programs and policy that reflect and reinforce healthy eating habits and daily physical activity. There are a variety of physical activities for all people offered at a wide range of recreational facilities in the community. All people accept the responsibility to cooperatively maintain a well community for the future Seven Generations
FOOD & NUTRITION RESEARCH IN KAHNAWAKE
Diabetes prevention through healthy eating, physical activity & positive attitude

<table>
<thead>
<tr>
<th>Top 3 Food Sources</th>
<th>% of total nutrient provided by food</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy</strong></td>
<td></td>
</tr>
<tr>
<td>White Bread</td>
<td>8.5</td>
</tr>
<tr>
<td>French Fries</td>
<td>6.3</td>
</tr>
<tr>
<td>Milk, 2%</td>
<td>5.9</td>
</tr>
<tr>
<td><strong>Protein</strong></td>
<td></td>
</tr>
<tr>
<td>Milk</td>
<td>10.1</td>
</tr>
<tr>
<td>Beef, e.g steak</td>
<td>9.0</td>
</tr>
<tr>
<td>Ground beef</td>
<td>8.1</td>
</tr>
<tr>
<td><strong>Carbohydrate</strong></td>
<td></td>
</tr>
<tr>
<td>White bread</td>
<td>11.5</td>
</tr>
<tr>
<td>Cola</td>
<td>6.5</td>
</tr>
<tr>
<td>French Fries</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>Fat</strong></td>
<td></td>
</tr>
<tr>
<td>French Fries</td>
<td>9.4</td>
</tr>
<tr>
<td>Frankfurters, bologna</td>
<td>7.4</td>
</tr>
<tr>
<td>Ground beef</td>
<td>6.9</td>
</tr>
</tbody>
</table>

- No traditional foods made it
- 17% percent of recalls included *Corn Bread*
- No recalls included Squash

Interventions were designed to enhance consumption of traditional food – individual, school, family & community level.

Baseline dietary intake, one 24-hour recall n=164 children (age 10 to 12)

Changes in dietary intake 1994 to 1998

<table>
<thead>
<tr>
<th>Food</th>
<th>1994 (n=156)</th>
<th>1998 (n=146)</th>
<th>P values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of consumers</td>
<td>Mean amount consumed</td>
<td>% of consumers</td>
</tr>
<tr>
<td>Meat (20% fat)</td>
<td>39.1%</td>
<td>303±354 kcal/d</td>
<td>33.6%</td>
</tr>
<tr>
<td>French fries</td>
<td>26.0%</td>
<td>521±434 kcal/d</td>
<td>22.6%</td>
</tr>
<tr>
<td>Chicken + skin</td>
<td>12.8%</td>
<td>249±249 kcal/d</td>
<td>14.4%</td>
</tr>
<tr>
<td>Pork sausage</td>
<td>8.0%</td>
<td>228±187 kcal/d</td>
<td>6.8%</td>
</tr>
<tr>
<td>Hotdogs</td>
<td>31.8%</td>
<td>169±93 kcal/d</td>
<td>34.2%</td>
</tr>
<tr>
<td>Chips</td>
<td>21.2%</td>
<td>226±152 kcal/d</td>
<td>26%</td>
</tr>
<tr>
<td>Bacon</td>
<td>8.3%</td>
<td>118±71 kcal/d</td>
<td>3.4%</td>
</tr>
<tr>
<td>Whole milk</td>
<td>42.9%</td>
<td>168±137 kcal/d</td>
<td>25.3%</td>
</tr>
<tr>
<td>All High-Fat</td>
<td>90.4%</td>
<td>992±506 kcal/d</td>
<td>62.2%</td>
</tr>
<tr>
<td>Cola</td>
<td>38.5%</td>
<td>204±128 kcal/d</td>
<td>42.5%</td>
</tr>
<tr>
<td>White sugar</td>
<td>59%</td>
<td>96±99 kcal/d</td>
<td>64.4%</td>
</tr>
<tr>
<td>Other sodas</td>
<td>10.9%</td>
<td>130±80 kcal/d</td>
<td>20.6%</td>
</tr>
<tr>
<td>Fruit drinks</td>
<td>38.1%</td>
<td>172±116 kcal/d</td>
<td>52.0%</td>
</tr>
<tr>
<td>Cocoa mix</td>
<td>7.0%</td>
<td>52±46 kcal/d</td>
<td>10.3%</td>
</tr>
<tr>
<td>Brown sugar</td>
<td>3.2%</td>
<td>22±11 kcal/d</td>
<td>4.8%</td>
</tr>
<tr>
<td>Jams &amp; Jellies</td>
<td>10.0%</td>
<td>53±35 kcal/d</td>
<td>26.7%</td>
</tr>
<tr>
<td>All High-Sugar</td>
<td>93.0%</td>
<td>58±30 kcal/d</td>
<td>7.5%</td>
</tr>
<tr>
<td>Chocolate</td>
<td>15.4%</td>
<td>80±55 kcal/d</td>
<td>13.6%</td>
</tr>
<tr>
<td>Ice cream</td>
<td>7.7%</td>
<td>96±62 kcal/d</td>
<td>9.8%</td>
</tr>
<tr>
<td>Pies</td>
<td>5.1%</td>
<td>62±11 kcal/d</td>
<td>9.0%</td>
</tr>
<tr>
<td>All High-Fat High-Sugar</td>
<td>26.3%</td>
<td>83±57 kcal/d</td>
<td>56.2%</td>
</tr>
<tr>
<td>All Vegetables</td>
<td>69.2%</td>
<td>2.2±1.9 kcal/d</td>
<td>67.1%</td>
</tr>
<tr>
<td>All Fruits</td>
<td>73.1%</td>
<td>4.4±4.1 kcal/d</td>
<td>81.5%</td>
</tr>
</tbody>
</table>

The average amounts consumed are for consumers only.

Interventions designed to address water consumption and sugar in sweetened beverages individual, family, school, community.

### Changes in BMI from 1994 to 2002

#### Age- and Gender-Adjusted Odds Ratio Estimates of Outcome Variables by Study Year:
Kahnawake, 1994–2002

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</thead>
<tbody>
<tr>
<td>BMI, quintile (n = 1622)</td>
<td>Ref.</td>
<td>1.08 (0.89–1.31)</td>
<td>1.12 (0.87–1.43)</td>
<td>1.30 (1.01–1.68)</td>
<td>1.37 (1.03–1.81)</td>
</tr>
</tbody>
</table>

#### Measures of nutrition§

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Key sugar food items intake per week, tertile (n= 1308)</td>
<td>Ref.</td>
<td>0.70 (0.51–0.95)</td>
<td>0.47 (0.34–0.65)</td>
<td>0.32 (0.23–0.45)</td>
<td>0.29 (0.21–0.39)</td>
</tr>
<tr>
<td>Key fat food items intake per week, tertile (n= 1320)</td>
<td>Ref.</td>
<td>0.78 (0.57–1.05)</td>
<td>0.92 (0.67–1.26)</td>
<td>0.75 (0.54–1.03)</td>
<td>0.35 (0.25–0.47)</td>
</tr>
<tr>
<td>Fruit and vegetable intake per week, tertile (n=1224)</td>
<td>Ref.</td>
<td>0.97 (0.68–1.37)</td>
<td>0.31 (0.22–0.43)</td>
<td>0.24 (0.17–0.35)</td>
<td>0.25 (0.18–0.35)</td>
</tr>
</tbody>
</table>

* Higher quintile refers to higher BMI

§ Higher tertile refers to more frequent intake of sugar, more intake of fat, and more intake of vegetables.

Students in 2002 at a significantly higher risk of having a higher BMI & decreased risk for consuming key sugar, key fat, and fruit and vegetables (FFQ data).

Promoting well-being & Preventing Diabetes

HEALTH, ENVIRONMENT, CULTURE
Ohenton Karihwaṭekekwę

• "The words that come before all else"
• Acknowledges all facets of creation, each role in nature, and our place in it.
• Connections - interdependence
• Responsibility

Cycle of Ceremonies

• Annual calendar outlining traditional responsibilities.
• Most ceremonies and festivals are centered around farming and food.
• Relies on the moon cycles and the natural world for timing.
FOOD SECURITY & FOOD SOVEREIGNTY
One bowl one spoon

• The belt represents the concept of ensuring that everyone is fed, that resources are shared equally amongst the people.

• Recognizes the communal aspect of land use, and by extension, access to food.
Building Relationships through food security and food sovereignty

• Different priorities bring community members together:
  – interested in organic, traditional,
  – non-GMO,
  – heirloom foods,
  – home gardeners,
  – survivalists,
  – home canners,
  – low-income households,
  – and those that support self-sufficiency for political, environmental, or other reasons.
Building Relationships through food security and food sovereignty

- Historically traditional agricultural families
- Young parents and youth learning and transmitting traditional knowledge and skills
- Formal organizations
- Lower income households
- Other organizations become involved (ie. Library) ‘easy to sell’
FOOD SECURITY RESEARCH
Environmental Scan of food security resources in Kahnawake

Piloted a tool to assess FS resources:

- Availability
- Access
- Utilization
- Community level resources

Extensive Health & Social services & programs.

Charitable assistance and food bank centralizing.

Gaps: Transportation, Land for food, Food production.

“Examining Haudenosaunee responsibilities and practices for food security and well-being in Kahnawake” – Bioversity International funded

Team: Treena, Alex, Morrison, Tiaiake, Kahente, Amelia, Kaylia, Judi
FOOD SECURITY PROJECTS
Farmers Markets
Farmer’s market
Seed Library
Food Preparation workshops

Funded by Health Canada’s Aboriginal Diabetes Initiative – Food Security Component 2014-2016
Many other areas...

**Food Cultivation** -
  - Garden Planning
  - Natural Pest Control
  - Composting
  - Crop Sharing
  - Seed Exchanges
  - Season Extension
  - Similar Offerings (in the past): Environment Office, Family Wellness Center (seminar)

**Foraging** -
  - Edible Landscape Walks
  - Food Forest Walks
  - Dandelion Dressing Workshop
  - Medicinal Walks
  - Similar Offerings: KMHC, Oherokon Rights of Passage, Creek Runs Clearer Young Teen Group,

**Food Preparation**
  - Kanien'keha Family Cooking Classes (with Wahonnise tho Niohtonne)
  - Washing Corn with Ashes

**Food Preservation**
  - Jams and Preserves
  - Pickling
  - Dehydrating
  - Appropriate storage strategies
Cultivating an Edible Landscape

• Three edible trees/bushes cultivated per year for five years.
• Almanac of one year's tree/bush cultivation for reference.
• Neighborhood Co-planting Project
• Food Map of existing edibles in the community (GPS)
• Formal arrangement with local government.
• Funded by Toronto Dominion Bank

Kahnawake's Local Arborist Chuck Barnett
Family Gardening Project

• Intergenerational knowledge transfer
• time outside, exercise
• spending time with kids
• kids eating fresh produce
• pride and capacity building
• Hard to keep young families committed...
• Evaluation needed
CHALLENGES
Challenges

• Difficult to coordinate, many moving parts
• Established networks difficult to mobilize
• Projects are universally supported verbally, commitment takes time to nurture
• Project funds are short term hard to sustain
• Evaluation needed, research is time consuming, benefits not always evident
FUTURE GOALS
On the Horizon...

- Grassroots Community Garden
- Greenhouse project
- Shovel to Fork Summer Camp
- Integration in curriculum schools
- Baseline food security status, changes over time & community needs
- Project evaluations
- Economic development & training

Fiddleheads in the early springtime