A Kaupapa Māori Co-Design Approach for Developing a Healthy Lifestyle Support Tool for Use in New Zealand Māori Communities

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Ko wai au?
Te Tiriti ō Waitangi: 1840
Impacts of colonialisation

• Pervasive land confiscation
• Loss of mātauranga (knowledge) and resources
• Destabilisation of Māori socio-political organisations
• Racism and discrimination
• Loss of access to traditional food sources for many Māori
• Deliberate exclusion from higher education until 1970s
• Wide-scale migration into urban centres
  – Increased consumption of cheap processed foods
  – Reduced physical activity levels
Obesity prevalence (% of population)

NZ Health Surveys

Maori men

Maori women
Māori health

- Diagnosed and undiagnosed diabetes 9.8%
- Pre-diabetes 30.4%
- Cardiovascular disease 7.4%

- Compared with non-Maori
  - 2 times more likely to die from CVD & IDH
  - 1.5 times more likely to die from stroke
  - 2 times more likely to have diabetes
## Determinants of obesity

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<tr>
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<th>Maori</th>
<th>Non-Maori</th>
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<tbody>
<tr>
<td>High-school education or less (%)</td>
<td>55</td>
<td>44</td>
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<tr>
<td>Low food security (%)</td>
<td>16</td>
<td>6</td>
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<tr>
<td>Live in most deprived areas (%)</td>
<td>41</td>
<td>15</td>
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<tr>
<td>Median income per week ($)</td>
<td>475</td>
<td>575</td>
</tr>
<tr>
<td>Unemployment (%)</td>
<td>16</td>
<td>7</td>
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<tr>
<td>Home ownership (%)</td>
<td>28</td>
<td>50</td>
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</table>

Between 1997 and 2008:
- Maori reporting being fully food secure decreased from 48 to 35%
- Maori reporting low food security increased from 9 to 17%

*Source: ANS 2008/09, NZ Ministry of Health and Statistics NZ, 2013 Census*
Dietary patterns: Maori vs non-Maori

Less likely to consume
• 5+ Fruit and vegetables
• Low fat foods
• Wholegrain bread

More likely to consume
• Sugary drinks
• Fast food
• Hot chips
• Battered fish
• Fatty meats

Source: ANS 2008/09, NZ Ministry of Health and Statistics NZ
He korowai oranga: Māori health strategy

Underpinned by the key principles of the Treaty of Waitangi

- Partnership
- Participation
- Protection
• Indigenous Innovation - contributing to economic growth through distinctive research and development
• Taiao / Environment - achieving environmental sustainability through iwi and hapū relationships with land and sea
• Hauora/Health - improving health and social wellbeing
• Mātauranga - exploring indigenous knowledge and science and innovation
Ngā Pou Rangahau – Strategic Plan for Māori Health Research

Our Mission
Mā te rangatiratanga me ngā tikanga Māori nga rangahau hauora Māori e arahi
Exercising rangatiratanga over the decisions that affect
Māori health research

Our Vision
To conduct Māori health research that produces knowledge that changes
our lives for the better and to broaden and deepen Māori health research
through the expression of rangatiratanga and mātauranga

GOAL 1
Transforming Māori health research knowledge and practice

GOAL 2
Enhancing the application of Māori methodologies to health research

GOAL 3
Translating research into Māori health gains

GOAL 4
Promoting Māori ethics processes and good practice

GOAL 5
Extending the Māori health research workforce and promoting a culture of research

GOAL 6
Strengthening the value of the HRC to respond to the needs of Māori for the benefit of New Zealand
Research that is responsive to Māori

- Identifies how Māori will benefit from the research
- Includes appropriate Māori voices/expertise
- Applies Māori engagement methods/principles
- Identifies specific and agreed Māori roles & responsibilities
- Commitments e.g. decision making, IP, resourcing and support must be addressed
- Includes a research dissemination plan
- Identifies & manage risks for Māori
Ngati & Healthy

Participatory, community-led diabetes prevention healthy lifestyle intervention amongst Ngāti Porou community in Tairāwhiti/East Coast
Diabetes in Tairawhiti before the Ngati and Healthy Intervention began

Figure 2. Age-specific prevalence of diabetes (known and newly diagnosed) and insulin resistance with normal glucose tolerance

Ngāti & Healthy

- Involvement of NP community and health workers in development of research and in research team
- Priority given to relationship building
- Consultation with NP community to identify barriers to access & participation
- Use of community resources to increase accessibility to the intervention activities
- Regular feedback given to community using appropriate communication styles
- Supportive environment to facilitate individuals’ adoption of healthy lifestyles
Ngāti & Healthy

• Based on a health survey and consultation the objectives of Ngāti and Healthy were:
  – weight loss (5-10% of initial weight)
  – increased physical activity
  – increased intakes of whole grain cereals, vegetables and fruit
  – reduced intake of energy dense foods high in fat and sugar.
The NGATI and HEALTHY Research showed ...

- 11% have DIABETES
- 4% have PRE-DIABETES
- 37% have INSULIN RESISTANCE (the TOO MUCH Syndrome)

Ngati and Healthy & the TOO MUCH Syndrome (Insulin Resistance)

Learn how to control the TOO MUCH Syndrome!

In your community ONCE A MONTH

- Matakaoa
- Ruatoria
- Tokomaru Bay
- Uawa

Contact:
Halon Pahau 06 8632245
David Tipene-Leaoh 06 8678550
Your local Kaawhina or Ngati Porou Hauora Health Centre

Preventing Diabetes & Heart Disease with regular exercise and healthy eating
Ngati & Healthy Results

• Between 2003 & 2006
  – insulin resistance decreased from 36% to 25%
  – diabetes prevalence decreased from 13% to 11% (p = 0.003)
  – Proportion achieving exercise goals increased from 45% to 60% (p = 0.002)
  – Proportion choosing wholegrain bread increased from 42% to 65% (p = 0.044)
mHealth for diabetes and obesity prevention in Maori and Pasifika communities

A partnership
Aim
to design and evaluate a culturally tailored, personalised mHealth lifestyle support programme for Māori and Pasifika communities
mHealth

Medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices.

WHO Global Observatory for eHealth
Co-design

The creativity of designers and people not trained in design working together in the design development process.
Te Timatanga – getting started

Whakawhanaungatanga

Our values:

**Trust**
*Building trust with our teams and communities*

**Respect**
*Respect for different world views, cultures and expertise*

**Manaakitanga**
*Working, learning sharing together & supporting one another*

**Empathy**
*Listening and communicating with openness & transparency*

**Innovation**
*Thinking outside the square*

**Adaptability**
*Open to change & flexibility in our approach*

**Tika Pono/Aroha**
*Doing what’s right and wrapping it up with love*
Hui and fono -

Focus Group
Hui No#1
Sept

What does Health and Wellbeing mean to you?
What are your hopes and dreams for you, whanau, hapu, iwi?
What are some of the barriers?
What kind of mobile tools might support your wellbeing?

Tools
- Brainstorming thoughts
- Using metaphors of their ancestors journey migrating to NZ
- Designing – using creative resources creating a journey
- Discussion
Te Hekenganui (*the great migration*)

- **Hawaiki;** a place our people left, overpopulation, famine and warfare were contributing factors that lead to the migration
  - What changes do I/my whanau need to make?

- **Waka;** used to travel the Te Moana nui a Kiwa. Rangatira and Tohunga helped navigate our waka safely
  - how would we navigate ourselves/whanau to a better hauora?
  - who should lead this process?

- **Aotearoa;** arrival at the promise land and new beginnings
  - What are the long term/short term goals and desires for me and my whanau?
Te Hekenganui – *the journey continues*

On arrival in Aotearoa, Maori had to adapt to a new environment. *Tikanga* and *Kawa* had to change to keep our people safe.

– *How can we use new technologies to meet our goals for hauora?*
Hauora is about maintaining a strong connection with whānau, to place and to whakapapa

- Intergenerational connections
- Loving supportive relationships
- Strengthening cultural & spiritual identity
- Strengthening community
- Connecting with whakapapa and the land/environment
- Achieving good health within financial constraints
- Better futures for younger generations
**VALUES**
- Ensuring that I participate and engage with my whānau
- Ensuring that I have a balance, Mind, Body and Soul
- Ensuring that everything I do is surrounded by happiness and aroha

**MOTIVATIONS**
- To step outside of my comfort zone and try new things
- Continue group activity because we spring off each other
- To encourage my whole whānau to be active

**GOALS**
- To initiate a kai plan
- To commit to training 3x a week
- Maintain healthy lifestyle

**BARRIERS**
- Time (e.g., not making it to training)
- Cost of kai is too expensive
- Weather, to participate in outdoor group fitness
- Work, taking me away from my goals

**CONTEXT**
Hone is a father of two who works for a Whānau Ora agency. He is driven by the collective wellbeing of whānau within his community. He believes that through healthy living, physical activity and clear goals better health can be achieved. He hopes that through his mahi with the local Whānau Ora agency he may help whānau achieve better health outcomes. He sees a lot of unhealthy lifestyles around in the community and hopes that one day his mahi will have an impact on his whānau. Although he loves his mahi he is restricted by the amount of time he can spend working alongside whānau and finds it very frustrating that healthy outcomes cannot be reached quicker and more directly. He doesn’t always understand why people don’t just make changes straight away.

**TECHNOLOGY USE**

**PHYSICAL HEALTH**

**SPIRITUAL HEALTH**

**MENTAL HEALTH**
With mHealth how might we:

• Create a safe, engaging (fun) and informative space through technology?

• Support cultural aspirations AND health?

• build capacity & knowledge (health, food, māra kai, resource/time management, exercise, technology) to encourage sustainable behavioural changes?

• Provide supports that are affordable & accessible for whānau?

• meet the needs of ALL members of the community?
What might an mHealth tool look like?

• Colourful
• Inter-generational
• Information about local resources
• Easy to use
• Simple, clean design
• Printable info for non-technical whanau
Prototyping – an app

- customisable content
- linkage with social media platforms
- activity suggestions
- connect and share info with friends/whanau
- culturally relevant healthy food information
- add and share recipes
- set and share challenges (wero)
- activity planner & calendar
- karakia/prayer/whakatauki for activities
- healthy tips (text notifications)
- achievement badges
- activity tracker
A Māori food system

- Weather
- Cultivated foods (kumara)
- Geothermal heat
- Foods of the forest (birds)
- Foods of the sea (fish, shellfish)
- Gathered foods (fern root)
Evaluation

- 3 month RCT
- Control = delayed access to the app
- Recruitment 24 clusters of ~40 individuals
- Outcomes:
  - change in self-reported fruit & veg intake, smoking, alcohol, physical activity level
  - Usage metrics – connections, challenges completed, usage, information added, pages accessed etc
  - Cultural identity....
Assessing effects on cultural identity

### Section 1: Tūhononga: cultural connections

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<tbody>
<tr>
<td>In my life as a whole, it is very important for me to be involved in things to do with Maori culture.</td>
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</tr>
<tr>
<td>I feel well connected to my Maori cultural identity.</td>
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1 = Strongly disagree  
6 = Strongly Agree

**Open ended:** Do you have any reflections to add about how your engagement with this app has impacted Tūhononga?

**Which of these do you know? [check any number of items]**
- your iwi or tribe
- your hapū or sub-tribe
- your maunga or mountain
- your awa, moana, river or water
- your waka or canoe
- your tipuna, tupuna or ancestor
- marae

### Section 2: Mauri and wellbeing

**Mauri - the essence of life, vitality, integrity and energy that can indicate the wellbeing of a life force.**

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<tbody>
<tr>
<td>My mauri is strong</td>
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<tr>
<td>I feel physically well</td>
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<tr>
<td>I feel mentally well</td>
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</tr>
<tr>
<td>My life is well balanced</td>
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1 = Strongly disagree  
6 = Strongly Agree

**Open ended:** Do you have any reflections to add about how your engagement with this app has impacted mauri?

### Section 3: Whanaungatanga: whānau wellbeing and social connectedness

**Your whānau are blood and non blood relationships.**

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</thead>
<tbody>
<tr>
<td>I feel well connected to my whānau</td>
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<td>6</td>
</tr>
<tr>
<td>The well-being of my whānau is great</td>
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<td>6</td>
</tr>
<tr>
<td>I feel well connected to my community</td>
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<td>6</td>
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<tr>
<td>I feel well connected to the Taiaroa (environment)</td>
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**Open ended:** Do you have any reflections to add about how your engagement with this app has impacted Whanaungatanga?

### Section 4: Rangatiratanga: self determination, motivation and management

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<tbody>
<tr>
<td>It is important to set healthy lifestyle goals for myself</td>
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<td>2</td>
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<tr>
<td>I am confident that I can make healthy food choices most of the time</td>
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<td>6</td>
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<tr>
<td>I am confident that I can be physically active</td>
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<tr>
<td>I am able to lead my whānau to make healthier lifestyle choices</td>
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<tr>
<td>My whānau and I are able to access safe, affordable, healthy kai</td>
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<td>2</td>
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**Open ended:** Do you have any reflections to add about how your engagement with this app has impacted Rangatiratanga?

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HEALTHIER LIVES  | He Oranga Hauora
National Science Challenges
Conclusions

Co-design empowered our communities to take an active role in the research.

They described a holistic vision of health centred on family wellbeing and maintaining connections to people and place.

The prototype app aims to support healthy lifestyle change through strengthening cultural identity.

We argue that this research approach should be considered best practice for developing health interventions targeting Māori communities in NZ in future.
Collaborators

- Prof Jim Mann
- Dr Kirsten Coppell
- Ngāti Porou Hauora
- Tairāwhiti communities
- Waiwhetu Community
- Te Ha Oranga o Ngati Whātua
- Toi Tangata
- Prof Cliona Ni Mhurchu
- A/Pro Andrew Jull
- Dr Riz Firestone
- Jacqui Grey
- Rangimarie Mules
- Leonie Matoe
- Crystal Pekepo
- Callie Corrigan
- Debbie Goodwin
- Megan Tunks
- And many others....