Ngātiwai Whakapakari Tinana:
strengthening bodies through a Kaupapa Māori fitness and exercise programme

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ABSTRACT

INTRODUCTION: Activity based weight loss programmes may result in modest reductions in weight. Despite the small successes demonstrated by these interventions, there are few examples that specifically address the disparity of obesity for Māori compared to non-Māori.

AIM: This research highlights the results of a Kaupapa Māori fitness and exercise programme that aimed to assist mainly Māori adults, to lose weight. The programme was designed to support participants by using Māori cultural values.

METHODS: A Muay Thai kickboxing exercise programme was developed with community involvement. Kaupapa Māori principles underpinned the programme, such as whanaunga-tanga and tino rangatiratanga. Ninety-three participants were followed for at least 3 months. Participants' blood pressure, weight, body mass index, mental wellbeing scores, and waist and hip circumferences were collected at regular intervals. Multiple linear models were used to calculate estimated changes per 100 days of the programme.

RESULTS: The mean duration of participation was 214 days. The estimated weight loss per participant per 100 days was 5.2 kg. Statistically significant improvements were noted in blood pressure, waist and hip circumference, systolic blood pressure and mental wellbeing.

DISCUSSION: The improvements in physical and mental wellbeing are thought to have stemmed, in part, from the use of Kaupapa Māori principles. The success of this programme strengthens the argument that programmes aiming to address the precursors of chronic disease need to be designed for Māori by Māori in order to reduce health inequities.

KEYWORDS: Obesity; Weight loss; Kaupapa Māori

Introduction

Weight loss programmes

Weight loss programmes generally encourage individuals to increase their activity and decrease their caloric intake through educational advice and, occasionally, group support.1 Structured programmes may lead to a 2–4% greater weight loss than no intervention.1 Primary care approaches to obesity management include prescribing weight loss medication,2 referral to activity programmes3,4 and brief intervention counselling. There is moderate evidence to suggest that these approaches may lead to weight loss. Weight loss medication, for example, can lead to a 3-kg reduction in weight that is maintained over the course of a year.2 Referral to activity programmes by general practitioners (GPs) may result in sustained increases in energy expenditure and increases in quality of life.3
Brief intervention counselling by GPs can lead to weight loss, although the reduction in weight is small and is less than where more intensive support is given.5 Despite the small successes demonstrated by these interventions, none of the approaches specifically address the disparity of obesity for Māori compared to non-Māori.6 Māori have a high burden of obesity compared to non-Māori.6 This health inequity is likely due to a multitude of factors. Some of the more ‘distal’ determinants of health inequity include socioeconomic deprivation,7,8 structural and systematic barriers to health care,9 and colonisation. Trauma due to colonisation is an ongoing process that has effect on health through psychological, biological and inter-relationship mechanisms.10 Reducing the burden of obesity and associated health issues for Māori, therefore, requires a multi-pronged approach that addresses barriers facing Māori in tackling what is inappropriately labelled a ‘lifestyle’ disease.

A medicalised focus on behaviour change tends to introduce barriers that play into disengagement of Māori from long-term condition (LTC) management. These include transportation barriers, the need to care for children at home, disempowerment,11 discrimination12 and socioeconomic disadvantage.13 Some programmes, while not specifically focused on obesity, have attempted to mitigate these barriers. For example, Hotu et al.14 describe a medicalised programme providing intensive individualised LTC management with ethnically ‘similar’ health-care assistants. Despite an initial improvement in several health indicators, long-term follow up failed to demonstrate meaningful improvement in health.15 While medical approaches to managing LTC are critical, Labonté and Laverack16 argue that sustainable long-term changes to people’s health and their health behaviour are more likely to occur through community activation and empowerment than a ‘top-down’ approach. Some examples of recent successful community-led, Māori-focused LTC programmes include the Ngāti and Healthy Prevent Diabetes Project,17 Project REPLACE18 and Kaupapa Māori exercise and lifestyle programmes.19,20 All programmes were underpinned by a Māori world view. In addition, participants in these programmes were encouraged to modify their eating habits and increase their exercise through social engagement. Group-based or social activity programmes tend to be very acceptable to Māori.18 Social activity may have greater benefits than just supporting and encouraging fitness and exercise, and subsequent weight loss. Social activity has been linked to improvements in quality-of-life scores for Māori.21 One explanation for this relates to the concept of whanaungatanga, in which participants make reciprocal relationships with each other that leads to the formation of a whānau.14 The process of whanaungatanga creates accountability and may result in participants persisting with activity because they have the support of others and a mutual commitment to support these others. Grace20 demonstrated that whanaungatanga and manaakitanga (caring and support), inherent in a group-based fitness programme, was consistent with Māori tikanga (ways of doing things) and participants’ values. The concepts of social activity and whanaungatanga underpin the programme presented in this paper – a Kaupapa Māori fitness and weight loss programme delivered by a Tai Tokerau-based iwi health provider, Ki A Ora Ngātiwai.

**Rationale for the programme**

The genesis of this programme started when a group of Māori women approached Ki A Ora Ngātiwai and asked for assistance in losing weight. In response, Ki A Ora Ngātiwai used whānau ora funding, via Te Pou Matakana, to deliver a fitness and exercise programme. This programme consisted of a 1-h workout, at least
three times per week, using the principles of Muay Thai kickboxing, a non-contact martial arts-based workout that involves both high repetition resistance training and low-intensity long duration aerobic exercise. Resistance exercise can result in weight loss, reduction in adiposity, improved glycaemic control and reduction in insulin resistance. For adults with type 2 diabetes, resistance training may result in greater improvements in glycaemic control and lipid profile than aerobic exercise, perhaps mediated through an increase in glucose transporter proteins in skeletal muscle. Workouts involving non-contact martial arts may result in higher consumption of calories compared to aerobic-only workouts. However, the defining features of this programme were that it was community-led, focused on whānau, developed supportive environments rather than focusing on individual behaviours, and was embedded in a Kaupapa Māori paradigm.

**Kaupapa Māori Theory**

Kaupapa Māori refers to something that is for Māori, by Māori and underpinned by a Māori world view. The Kaupapa Māori principles demonstrated in this study occurred at three levels. The first level involved organisational principles. The second level involved principles operating at the programme implementation level. The third level involved the principles operating in the study analysis.

Other authors have suggested that Kaupapa Māori operationalises the principle of tino rangatiratanga or self determination that underlies Article Two of Te Tiriti O Waitangi, which recognises the right of iwi to organise as iwi and control the resources that they own. Ki A Ora Ngātiwai is an iwi-mandated primary health-care organisation. In this context, tino rangatiratanga meant that ownership, development and control of this programme rested with Ki A Ora Ngātiwai.

Matauranga Māori, or Māori knowledge and Māori ways of knowing, guided both staff and clients in implementation of the programme. Matauranga Māori encapsulates Māori theory on the world and is considered a natural or ‘normal’ way of being. Kaupapa Māori is not an individualistic-focused paradigm – it emphasises whānau. Whānau involvement made the implementation of this programme a collective responsibility. Whānau does not necessarily mean a literal family but instead, as in this programme, may mean a metaphorical family developed through the process of whakawhanaungatanga. The underlying intent is that the benefits of the programme accrue to the collective whānau rather than individuals.

The final level of Kaupapa Māori present in this study is the critical analysis approach taken by the authors. The study by Smith suggested that Kaupapa Māori needs to address power differentials and that this can be achieved in a way that de-centres Western world views by articulating a positive and proactive view of Māori strengths.

**Methods**

The programme consisted of a series of workouts (as previously described). The workouts were supervised by a qualified fitness instructor and a health promoter. An active Facebook page connected participants when not engaged in gym work. One hundred participants were enrolled into the Ki A Ora Ngātiwai fitness and exercise programme by word-of-mouth from community members or by referral from the Ki A Ora Ngātiwai clinical team. Participants were not involved in any other exercise or gym programmes. Data were collected from participants 3 monthly by the nursing staff of Ki A Ora Ngātiwai. These data included weight, height, blood pressure (BP), waist and hip circumference and a wellbeing survey – the Warwick-Edinburgh Mental Wellbeing Scale (WEMWS). This wellbeing scale is a validated and reliable measure of positive aspects of mental health. There are 14 items in the scale with a maximum score of 70, indicating excellent mental wellbeing, and a minimum score of 14. The population mean is estimated to be ~51. A change of three units indicates a minimal clinical important difference for individuals.

Data were analysed in Stata 11 (StataCorp, College Station, TX, USA). Descriptive statistics were calculated for each measurement category. Multiple linear models (using the xtmixed
command in Stata) were developed to analyse the repeated-measures data with adjustments for age and gender. Predicted changes per 100 days in the programme were calculated.

This study is considered a minimal-risk audit under the New Zealand Health and Disability Ethics Committee guidelines and is therefore exempt from ethics approval.

Results

Most participants (93%; 93/100) continued with the programme for at least 3 months, with a mean duration of participation of 214 days. Of the 93 participants, 74 were female, 89 were Māori and 83 were aged 20–49 years. Mean weight at the start of the programme was 103 kg (range up to 210 kg), mean body mass index (BMI) was 37 kg m$^{-2}$ (range up to 71), mean systolic BP was 134 mmHg (range up to 180) and mean WEMWS wellbeing score was 44 (interquartile range 25–67). Change in weight from baseline for each participant is displayed in Figure 1. Predicted changes per 100 days in the programme, based on multiple linear models, are displayed in Table 1.

Discussion

The results of this Kaupapa Māori fitness and exercise programme demonstrate substantial weight loss. The weight loss achieved is greater than the average weight loss seen with individual dietary education programmes or medication, suggesting that the social aspects of this programme or the form of exercise undertaken was the key difference. As seen with other studies on weight loss, decreases in BP also occurred, despite the mean BP not being excessively high.

A weakness of this research is that metabolic markers, such as HbA1c and lipid levels, were not collected. Primarily, this was because the programme was not designed as a research project and the participants had few underlying medical conditions that warranted regular laboratory measurements.

A significant increase in mental wellbeing was noted in the programme. The baseline WEMWS wellbeing score was 44 (below the estimated population mean of 51). While the WEMWS is a validated measure, it has not, to our knowledge, been studied in New Zealand before. Therefore, the significance of a baseline of 44 is unknown. This baseline increased to a predicted figure of 50.5 after 100 days of the programme. The increase in mental wellbeing is likely due to the social and cultural aspects of the programme, although the effects of weight loss and the emotional lift from undertaking exercise cannot be excluded.

This programme was developed with Whānau Ora funding. Whānau Ora was introduced nationally in 2010.39 Despite a large number of initiatives, there are few, if any, examples of Whānau Ora in the scientific literature. This is,
therefore, one of the few studies demonstrating the outcomes possible through Whānau Ora.

Participants recorded video interviews as a component of the programme, but due to the retrospective audit nature of this study and the lack of pre-existing consent, these interviews were not analysed nor presented in this paper. A qualitative study may have helped identify aspects of the programme that led to its success. Anecdotal evidence, based on conversations with participants and observations from staff, indicated that whakawhanaungatanga and manaakitanga acted as powerful motivating factors in retaining participants in the programme. Staff observed participants encouraging each other outside of the gym by texting each other to ensure that people would come along to a gym session, as well as giving each other dietary advice when they bumped into each other in the supermarket. Some participants included their entire whānau - grandparents, parents and children (the latter attended a separate programme for tamākiri). Participants also remarked to staff that they did not feel judged for the shape of their bodies, unlike contemporary gyms. Warbrick et al. argued that Māori men valued camaraderie, as well as giving each other dietary advice when they bumped into each other in the supermarket.

The whanau-centric and generational aspect of the programme emphasised interdependence. The concept of interdependence is consistent with the assertion of Henry and Pene whereby Kaupapa Māori sits outside paradigmatic categorisations and that it is the underlying assumptions and processes, such as interdependence, that determine Kaupapa Māori. Similarly, Warbrick et al. argues that iwi-centric weight loss initiatives that focus on collectivity and whānau, rather than individuals, are examples of a Māori epistemology. In this positioning, the Muay Thai component of the programme, although drawing from a non-Māori cultural tradition, is simply a vehicle of exercise discipline and it is the intrinsic processes and relationships of the programme that reflect Kaupapa Māori principles and encourage participation and adherence.

While weight loss programmes through exercise are not unique or novel, it is the Kaupapa Mā ori framework that underpins this programme and makes it unique from a non-Māori perspective. From a Māori perspective, there is nothing novel about whakawhanaungatanga. This is a normal part of being Māori and lends support to the argument that programmes aimed to address the precursors of chronic disease need to be designed for Māori by Māori if they are to reduce health inequities.

References